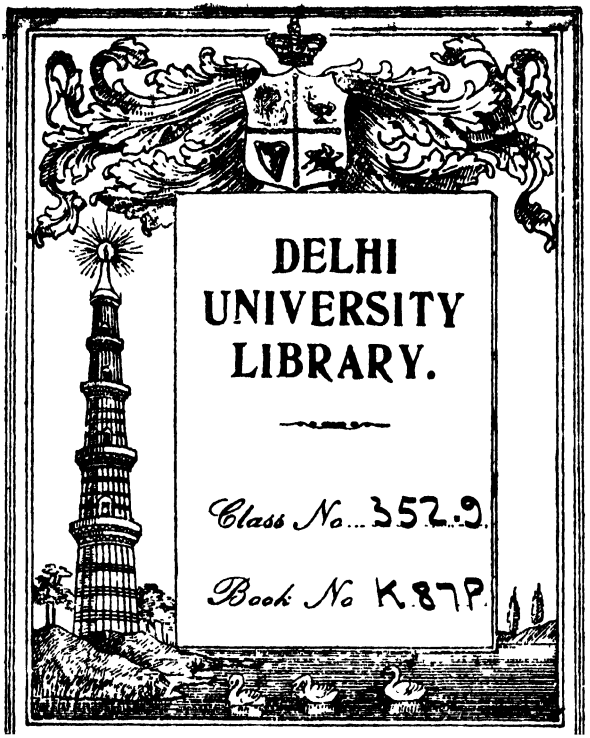
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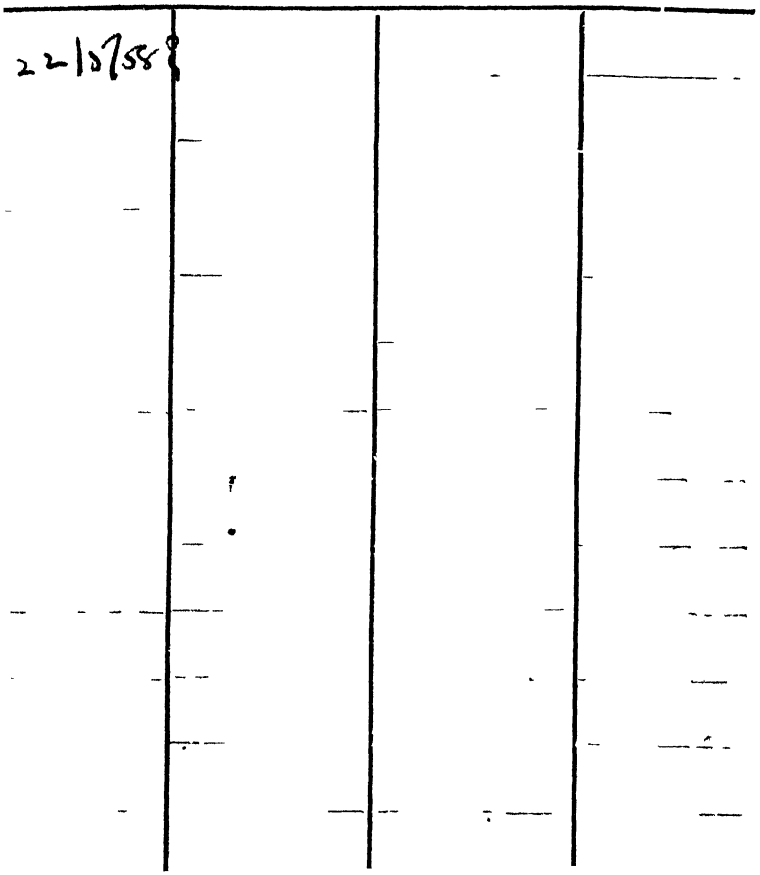

PRINCIPLES AND METHODS OF MUNICIPAL TRADING

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Principles and Methods of Municipal Trading

BY

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PREFACE

A WORD of explanation is necessary as to how this book came to be written. In 1906 "Municipal Trading" was the subject set for the Warburton Essay Prize at the University of Manchester. It was in writing the short essay which, in an unfinished form, was awarded the prize, that I first came into close contact with the subject-matter of this book. Later, during my tenure of the Langton Fellowship at Manchester, I continued my investigations into Municipal Trading, and this book embodies the results of my work in connection with the Prize and the Fellowship.

In view of the controversial character of municipal trading, it is desirable to make quite clear from the outset the standpoint from which I approach the subject. I have attempted to study municipal trading at work, and have devoted considerable space to an examination of the policies and methods commonly adopted by local authorities in respect of their trading undertakings. Further, the various reasons which appear to have led to a development of municipal trading are considered, and a good deal of attention is given to the financial aspects of the problem, as without a clear understanding of the items which should, and the items which should not, be charged against the revenue of trading undertakings of local authorities, it is impossible to deal at all satisfactorily with the question of the results achieved by these enterprises. I seek to show what has happened in the past and what is being done at present; as far as possible I avoid expressing opinions and

content myself with indicating the most obvious conclusions towards which the facts point.

My inquiries have practically been limited to the United Kingdom and to Germany, the two countries in which municipal trading has probably reached its highest stage of development. The subject is enormous, and to collect and digest the vast mass of detailed information, on which anything approaching a complete study could be based, was beyond my powers with only a limited amount of leisure at my disposal. This consideration was very important, as the information collected would be liable to become out of date before it was used, if too long a period were to be devoted to the investigations. Almost every week some new development in connection with municipal trading is occurring, so that there is really no end to the inquiries which might be made. I have tried to survey what appear to be the most important problems relating to the subject, but necessarily there are many gaps in the book.

The chief sources from which I have secured my information are indicated in an Appendix; the exact references will be found in the footnotes throughout the book. For the annual reports, etc., of various trading departments I am beholden to many municipal officials for having kindly supplied me with copies of their publications. But my obligations to some of these gentlemen, both in this country and in Germany, are particularly great, because, either by correspondence or at interviews they accorded to me, they answered various questions I put to them with reference to the undertakings with which they are connected. In this matter I am indebted to leading municipal officials in all the following towns: Belfast, Bradford, Burnley, Glasgow, Hull, Liverpool, London, Manchester, Norwich, Salford and Sheffield; Berlin, Bonn, Cologne, Dresden, Düsseldorf, Frankfort-on-the-Main, Hamburg, Heidelberg, Leipzig, Ludwigshafen, Mayence, Mannheim, Osnabrück and Wiesbaden. From among these

many permanent heads of trading departments I may perhaps be allowed to name five to whom I am especially indebted: Mr. J. Dalrymple, General Manager of the Glasgow Corporation Tramways; Mr. A. R. Fearnley, General Manager of the Sheffield Corporation Tramways; Mr. J. M. M'Elroy, General Manager of the Manchester Corporation Tramways; Mr. Frederick A. Price, Superintendent of the Manchester Corporation Gas Department; and Herr Direktor Stahl, of the Düsseldorf Corporation Tramways. It is to Messrs. M'Elroy and Stahl that I owe, amongst other things, the materials on which the two diagrams on pages 240 and 244 are based, and I have to thank those gentlemen, and also Mr. Dalrymple, for permission to publish them.

My best thanks are due to my father for assisting me in preparing the manuscript for the press and in correcting the proofs, to my colleague, Mr. James Baxter, for revising the proofs, and to Drs. M. Douglas, J. D. Jones and J. Robinson for advice or assistance in connection with special points arising out of the proofs.

DOUGLAS KNOOP.

SHEFFIELD, *March* 1912.

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CHAPTER I

THE SCOPE OF MUNICIPAL TRADING

§ 1. As a preliminary to any discussion of the principles and methods of municipal trading, it is necessary to define the term municipal trading. In a general way it is possible to distinguish between the political, and the economic, functions of local government. The former, whether they be exclusively for the common good, as for example, the provision of police, the maintenance of highroads, or the lighting of the public streets, or whether they be partly for the common good and partly for the welfare of particular individuals, as for example, the relief of the destitute and the free education of children, are paid for entirely out of funds provided from the rates or by taxation. The economic functions are performed primarily for the benefit of individual members of the community and not for the benefit of the community as a whole, as for example, the provision of water, gas, swimming-baths and cemeteries. In the case of such economic undertakings the products, or services, are paid for entirely or partially by the consumers as such. The mere selling of a product, or service, by an undertaking of a local authority can hardly be said to mark the undertaking as an economic one, and certainly does not necessarily constitute it a trading enterprise. Thus an Education Committee which charges admission fees to its secondary schools, a Cleansing Committee which sells stable manure, concentrated manure and mortar, which it manufactures from refuse, and a Sewage Committee which sells grease and clinkers are not generally regarded as economic undertakings, let alone trading enter-

prises, in view of the fact that the functions performed are largely political, and the vast bulk of the expenditure of these departments has to be met out of the rates or from taxation. On the other hand, where it is intended by a local authority that the cost of one of its economic undertakings shall be met entirely out of the receipts obtained by the sale of the product or service in question, a trading enterprise clearly exists, and the undertaking of such an enterprise by a local authority is described as municipal trading, whether the local authority be technically a municipality or not, and whether the receipts of the undertaking are actually sufficient to meet the total expenditure or not.

§ 2. Where it is not the intention of the local authority that an economic undertaking shall be self-supporting, but on the contrary, that it shall be subsidised from the rates, opinions differ as to whether such undertakings should be regarded as within the scope of municipal trading. In these cases there cannot really be any question of profit and loss, in consequence of which it is somewhat difficult to treat them as trading enterprises. Nevertheless, it is frequently done,[1] so that it is necessary to examine the problem rather closely. Where a local authority deliberately undertakes to subsidise an economic undertaking from the rates, it probably occurs most frequently on sanitary grounds. Thus, if swimming-baths were to be made self-supporting, a very high charge for admission would have to be levied. This would restrict their use to the middle and upper classes, and one of the principal objects of the baths, to provide bathing facilities for the lower classes, would be defeated. With the object of not discouraging the poorer classes by making the admission fee too high and at the same time of not keeping away the richer classes by charging too little for admission, a distinction is generally made between first and second-class baths, and in addition preferential treatment is frequently granted to some sections of the community, such as children, to enable them to bathe at reduced charges or entirely free of charge. The desirability of supporting swimming-baths more

[1] For example, swimming-baths and wash-houses, also cemeteries, are included in the recent *Parliamentary Return relating to Municipal Trading (United Kingdom)*, 171, 171 I., 171 II., 171 III., 171 IV., 171 V.

or less largely out of the rates is admitted almost universally, and the only question is how large the subsidy shall be.

The great importance of a supply of pure milk for the nourishment of children, and particularly of infants, is generally acknowledged. The inspecting and testing of milk to check adulteration and to secure as far as possible its freedom from dirt and germs is a recognised function of the State, the ordinary consumer not being in a position to make the necessary physical, chemical and bacteriological investigations. The very close relationship which exists between the infantile mortality rate and the supply of milk, has led some local authorities in the interests of public health to make special provision for securing a proper supply of milk for babies. It is, of course, not done with the object of deterring mothers from suckling their infants, as it is clearly recognised that under normal conditions this is the safest method to adopt, whenever possible.[1] The sterilised or humanised milk is prepared at a depôt, and is supplied in sets of bottles, each containing just sufficient for one meal; each day an empty set is returned and a full one obtained in exchange. The charge made does not generally exceed the cost of the raw milk, so that the cost of preparing it falls upon the rates. It may also be found desirable to appoint a lady inspector to give advice to the mothers and to see that the directions for the use of the milk are properly carried out. Where humanised milk for infants is supplied to well-to-do parents, or where sterilised milk is sold for ordinary use, a charge should be made sufficient to cover the whole cost of production, but where it is supplied to poor mothers with the object of combating infantile mortality, a good case for subsidising such an undertaking from the rates can be established.[2]

[1] For example, no child is admitted to the Battersea Municipal Milk Depôt unless the mother can satisfy the Medical Officer of Health, by the production of a written recommendation of a medical practitioner, or otherwise, that it is impossible or inadvisable for her to suckle her infant. *Parliamentary Return relating to Municipal Trading* (*United Kingdom*), part iv. p. 27.

[2] Municipal milk depôts are established in Battersea, Bradford, Burnley and St. Helens amongst other places. See the *Parliamentary Return relating to Municipal Trading* (*United Kingdom*) and the evidence before the Committee on Municipal Trading, 1900, Q. 3203. Much interesting information is contained in L. Spiegel, Kommumale Milchversorgung, *Schriften des Vereins für Socialpolitik*, vol. 128, pp. 219-243.

Another type of enterprise which is subsidised out of the rates on public health or sanitary grounds is the building of houses. This does not relate to all housing undertakings of local authorities, but only to such as have been carried out in connection with schemes for clearing unhealthy areas; or, in other words, to those coming under Part I. or Part II. of the Housing of the Working Classes Act, 1890.[1] It is hardly possible to demolish a slum under any circumstances, and particularly if restrictions are placed upon the use which may be made of the site, without incurring a considerable expenditure for which no return can be secured. Generally an obligation is placed upon the local authority to re-house some at least of the persons displaced. For this purpose part of the area cleared is commonly used; the land must either be disposed of to a builder or building company, subject to suitable conditions and covenants, or the local authority must itself undertake the provision of the dwellings. This latter contingency frequently arises, as the limitations placed upon the use of the site for a number of years often make it very difficult to dispose of the land to private builders, either at all, or on terms which are considered satisfactory by the local authority.[2] The houses or tenement blocks provided by a local authority under these circumstances are not a trading enterprise. The land is much too valuable to enable working-class dwellings built upon it to be entirely self-supporting; if the clearance scheme and the subsequent re-housing operations are to be carried through, a subsidy, frequently a very large one, must be granted from the rates. Whether the municipality decides to provide and manage the dwellings, or to dispose of the land at a loss to a private builder, the result will be the same: the buildings erected will constitute a burden on the rates. It is impossible to generalise about such improvement schemes; each must be judged on its merits, after careful consideration of the

[1] Part I. of the Act relates to large unhealthy areas and Part II. to small unhealthy areas. Under the latter part, the sites when cleared are often allowed to remain open spaces, no obligation being imposed to re-house the persons displaced.

[2] See the evidence given by Mr. David S. Waterlow, Chairman of the Housing of the Working Classes Committee of the London County Council, before the Committee on Municipal Trading, 1900, especially QQ. 3665-3695.

urgency with which it is required and the cost that it is likely to involve.[1]

One other economic function, which is frequently undertaken by local authorities for sanitary reasons, is the provision of burial-grounds and cemeteries. The fees for interments are fixed by the Local Government Board, and the income is very seldom sufficient to meet the expenditure; thus a burden is usually imposed upon the rates, except in a few cases where the capital expenditure, or a considerable portion of it, has been repaid. On the ground of public health, provision of burial facilities at moderate prices should be made, and if, owing to the necessity of making adequate provision for future generations, cemeteries and burial-grounds cannot be made self-supporting, a claim for assistance from the rates can fairly be made.

A class of undertaking which is sometimes subsidised from the rates, though in other cases it is self-supporting or even remunerative, is that pertaining to the supply of water. Where a subsidy from the rates is granted to a water undertaking it is, of course, on the grounds of public health and sanitation. In many cases where no direct subsidy is granted, the charges made for water are arranged so as to relieve the poorer consumers. The two policies have much in common, and will be treated together when the methods of charging for water and the financial results achieved by water undertakings are considered.

§ 3. There are other than sanitary grounds for which an economic undertaking of a local authority may receive assistance from the rates. Thus the general welfare of the community may be advanced as the reason. The cost of building and maintaining a bridge may be met partly by the tolls levied from people using the bridge and partly from the rates. In most cases such an undertaking is so clearly for the common good that the whole burden is placed upon the rates. On the same grounds it is probably justifiable to subsidise a municipal ferry from the rates, or even to make

[1] Some reference to the method of book-keeping adopted in connection with the subsidies granted to improvement schemes and the subsequent housing operations will be found on pp. 12-15. The case of the provision of houses by local authorities, other than in connection with the clearance of unhealthy areas, is discussed in the next chapter.

no charge at all to the persons using it. Such a ferry would presumably exist only where it was impossible or undesirable to build a bridge, or where, in view of the quantity of traffic or the financial position of the local authority concerned, the moderate cost of equipping and maintaining a ferry was preferred to the large expenditure involved in building and maintaining a bridge. Although on the analogy of the policy of making no charge, generally pursued in regard to a bridge, a municipal ferry should be maintained entirely from the rates, yet in consideration of the possible abuse of a free ferry by people travelling backwards and forwards merely for amusement, it may often be found expedient to make at least a nominal charge. As illustrations of free ferries, that provided by the London County Council across the Thames at Woolwich and that provided by the Oxford City Council across the Thames below Oxford may be mentioned. Two cases of municipal ferries for which a charge is made are those maintained by the Borough of Sunderland across the River Wear and by the Borough of Middlesbrough across the River Tees. The former is subsidised out of the rates, the latter realises a net surplus, some of which is devoted to the relief of the rates.[1] It would have been far more satisfactory if the scale of charges had been reduced or if the surplus had been accumulated to help to pay for the new transporter bridge which is to supersede the ferry.[2]

The case of subsidising municipal dock and harbour undertakings is generally based on somewhat similar reasons to those given for erecting a bridge largely, if not entirely, at the public expense. It is held that the trade and industry of the town will increase in prosperity, in consequence of which all the citizens will benefit indirectly. But it is quite clear, that, however much the citizens as a whole may benefit indirectly, undertakings of this character will be to the direct advantage of certain traders, and it is necessary to secure a fair division of the burden of maintaining

[1] *Parliamentary Return relating to Municipal Trading* (*United Kingdom*), part v. pp. 112, 113, 197, 198, 199.

[2] The transporter bridge was opened in October 1911. The Birkenhead Ferry across the mouth of the Mersey between that town and Liverpool is of the character of a steamboat undertaking, and will be considered elsewhere.

docks and harbours among the different parties interested. If such undertakings can be made self-supporting, they should be conducted so as to pay their way. If this is not possible, on account of the greatness of the capital expenditure involved and the competition of other harbours, the question of a municipal subsidy will have to be considered. This should be done very carefully in each case before a policy of subsidising is adopted, because it is quite possible to attempt the development of a port by imposing too great a burden upon the ratepayers.[1]

A very similar case is that of the financial assistance given to the Manchester Ship Canal Company by the Corporation of Manchester. The construction of the canal would never have been completed but for the loan of five million pounds by the Corporation to the Company. For many years the Company was not able to pay any interest, or only a small part of the interest, in respect of the debentures issued in return for the loan. When the Corporation borrowed the money in order to lend it to the Ship Canal Company, they knew that for at least several years the interest would have to be provided from the borough funds, and as a matter of fact at one time the rates were increased by more than a shilling in the pound on account of this transaction. The citizens of Manchester were willing to incur this burden because they believed that it would ultimately be for their benefit, and Parliament, in approving of the arrangement, apparently shared this view.[2]

Other undertakings which are sometimes subsidised by municipalities, on the ground that it is for the general welfare of the ratepayers, are the bathing establishments and places of amusement in health and pleasure resorts. This may merely take the form of advertising the attractions of the towns, either by means of posters or by advertisements inserted in newspapers, or these undertakings may actually be owned and managed by the local authorities, and a deficit may be deliberately incurred because they believe that this direct burden on the rates will be more than compensated

[1] Some account of the assistance required from the rates in the case of the Bristol and the Preston Harbour and Dock undertakings is given below on p. 309.

[2] Further reference to the Manchester Ship Canal Company will be found on p. 122.

for by the indirect gain accruing to the town through the increased number of visitors attracted to it. Many English towns have obtained parliamentary powers to advertise, and they make use of them to a considerable extent. On the continent, the bathing establishments, pump-rooms and kursaals at the various spas or watering-places are generally managed by the governments or municipalities. In this country, the Corporation of Harrogate owns the baths, wells and pump-rooms, and also a winter garden, a kursaal, concert-rooms and gardens. The municipality also provides a good band for the entertainment of the visitors.[1] The provision of suitable entertainments and amusements for the visitors is apparently essential if a spa is to prove attractive, so that if private enterprise does not provide these, when the baths and wells of a spa are managed by the local authority, it is desirable to allow the local authority to do so. In Buxton, the baths and pump-room, which were originally the property of the Duke of Devonshire, now belong to the local authority, but the provision of entertainments and amusements is almost entirely in the hands of the Buxton Garden Company. The Corporations of Bath and Leamington own the baths and pump-rooms and also provide concerts, but in no other English watering-place does the municipality appear to have made the same provision for entertaining visitors to the town as in the case of Harrogate.

§ 4. Another reason for which municipalities sometimes subsidise undertakings is to encourage the intellectual life of a town. It is on this ground that municipal theatres are established on the continent of Europe. In large towns, like Frankfort-on-the-Main and Lyons, there are two municipal theatres, the one devoted to opera, the other to drama. In smaller towns, like Freiburg i. B. and Osnabrück, there is only one theatre in which operas and dramas are performed more or less alternately. The most usual arrangement is for the local authority to own the theatre and to lease it on favourable terms to some actor-

[1] See the evidence of Mr. D. S. Ward, Chairman of the Wells and Baths Committee of the Harrogate Corporation, before the Joint Committee on Municipal Trading, 1900, QQ. 2522-2566, and the *Municipal Year Book*, 1911, p. 84.

manager, who is in this way subsidised by the municipality. In return, the lessee is generally restricted with regard to the character of the plays he can produce, the repertoire consisting entirely of classical plays or modern pieces of a high standard. As a general rule the same piece is seldom given more than twice in one week, the existence of a stock company enabling these frequent changes of programme to be made. An exceptional arrangement is for a municipality to own and manage a theatre, as is the case in Freiburg i. B. There a deficit, which represents the amount of the subsidy, is incurred in connection with the theatre. The municipal theatres enjoy no monopoly, and privately owned theatres frequently exist in the same towns.

Several of the undertakings, where the question of a subsidy from the rates arises, are concerned with transport facilities. Formerly tolls were frequently charged for the use of main roads, but that has become a rare occurrence so far as this country is concerned, and the whole burden of providing and maintaining roads is now generally placed upon the rates. We have considered the case of bridges, ferries, docks and harbours and ship canals, and have seen that the financial position of such undertakings may vary from being entirely self-supporting to complete dependence on the rates. Sometimes a local authority may be desirous of subsidising other transport undertakings, such as a tramway. This may be the case with a small local authority adjoining a large municipality. The small area would benefit greatly by being linked up with the big one, and yet it may not be possible to equip and maintain a tram line on a remunerative basis. The ratepayers would then have to decide whether they, as a whole, would benefit sufficiently to justify a subsidy. There are several municipal tramways in existence, the expenditure of which exceeds the receipts, and which consequently have to receive assistance from the rates,[1] but there is no information available to show whether it was anticipated before the lines were constructed that such assistance would be necessary, and that therefore it was the deliberate intention of the local authorities concerned to subsidise the undertakings, or

[1] See Chapter VIII. pp. 315, 317-323.

whether it was intended that the enterprises should pay their way, in which case the deficits must be regarded as a loss. As a general rule, in view of the many urgent claims upon the rates, it is not easy to justify the subsidising of transport undertakings, which in any case are more likely to benefit a section than the whole of the community, and still less can a loss be regarded with equanimity, as this, of course, implies unintentional assistance from the rates. This applies not merely to tramways but also to steamboats.[1] In a few cases exceptional circumstances may exist which will justify a subsidy from the rates being granted to a transport undertaking.

So far as lighting undertakings are concerned, there seems to be no ground for subsidising them from the rates. Especially is this the case with electricity, which is used by a very small proportion only of the ratepayers. It is interesting to note, that this appears to be the view of the Board of Trade, who refuse to grant an order if they are not satisfied that an undertaking can be established without involving the local authority in a loss. Three orders were refused in 1910[2] on this ground. In spite of the caution exercised by the Board of Trade, some municipal electrical undertakings incur a loss and require assistance from the rates.[3]

§ 5. Sufficient has been said to show that a local authority may pursue one of two policies with regard to its undertakings of an economic character. It may regard them

[1] The London County Council obtained an Act in 1904 to enable them to inaugurate a service of steamboats on the Thames. Apparently it was intended that the undertaking should pay its way, but even if this was not the case and the need for a subsidy from the rates had been foreseen, it was impossible to justify the amount of aid required from the rates. In 1905-6 the working expenses exceeded the receipts by £31,150, and this sum as well as the debt charges of £17,458, or £48,608 in all, had to be charged on the rates. In 1906-7 the total amount of aid required from the rates was £40,520. The undertaking was then abandoned by the Council, the total loss involved being estimated at £300,000 (W. B. Peat and F. W. Pixley, *Report on the London County Council Steamboats*, pp. 15, 16). The question as to whether or not steamboats are suitable for municipalisation is considered on p. 89.

[2] Those promoted by the Ballyclare Urban District Council, the Brumby and Frodingham Urban District Council, and the Templemore Urban District Council (*Board of Trade Report under the Electric Lighting Acts 1882 to 1902*, for 1910).

[3] See pp. 315, 318, 323-328, below.

as strictly trading enterprises, to be managed on a self-supporting basis, or it may deliberately subsidise them from the rates for sanitary or other reasons. According as one policy or the other is adopted in respect of any particular undertaking, different standards of criticism must be adopted. If the undertaking is to be run as a trading enterprise on commercial lines, various questions have to be considered. Is the undertaking one which is suitable for management by a local authority? Is it being administered on a sound financial basis? Is the selling policy adopted equitable? What is the relationship of the management to the workers? Is the scheme of management adopted, the best that can be devised? These are some of the problems which must be dealt with in any systematic treatment of municipal trading. On the other hand, if the undertaking is to be subsidised, the first and all-important problem is whether the undertaking is such as to make a subsidy desirable or justifiable. It is against the policy of subsidising in any particular case that criticism must first be directed. If it is decided that a subsidy should be paid, the question will arise whether or not the undertaking is to be managed by the local authority, as the subsidy might of course be paid to a private enterprise. Assuming the service is municipalised, then the selling policy adopted and the labour conditions imposed will call for attention. Finally, the efficiency of the administration will have to be considered, much in the same way as the administration of education, or of the roads, or of the police is subjected to criticism. That supreme test by which the efficiency of any trading enterprise of a local authority can be judged, whether it is actually self-supporting, cannot be applied to a subsidised undertaking, which must be judged by different standards. Consequently cases of self-supporting and of subsidised municipal undertakings should be kept quite distinct. The deliberate intention of a local authority to subsidise an economic undertaking should be clearly expressed from the outset, and should always be kept well in the foreground, as the problem of municipal subsidies to economic undertakings differs from that of municipal trading. The former would include such things as the agreement by which the

Corporation of Bradford undertakes to pay the Midland Railway Company a sum of £10,000 per annum in return for improved railway facilities, and the offers by various local authorities in America to remit taxes for a number of years in favour of new industrial undertakings which start business in their areas, as well as the other cases of subsidies which have been mentioned above. In order that a sum contributed from the rates to an economic undertaking may be regarded as a subsidy, as distinct from a payment made to a trading enterprise on account of a loss incurred, it is not only necessary that it should be the deliberate intention of the local authority to give a subsidy, but that such intention to subsidise should be approved of by the ratepayers as a whole and by the authority which sanctions the particular municipal undertaking.

§ 6. Whatever attitude is adopted with regard to subsidies, no good result can be obtained by confusing the two distinct policies, viz., the trading policy under which it is sought to conduct an undertaking on a self-supporting basis, and the subsidising policy under which part of the burden of an economic undertaking is deliberately placed upon the rates. If the former policy is pursued, an excess of expenditure over revenue respresents a loss; if the latter policy is adopted, the annual deficit represents the whole or part of the subsidy. The annual contribution from the rates would represent only part of the subsidy, if some of the capital outlay of the undertaking had been debited to the capital account of some other department of the local authority. In fact, this may have occurred to such an extent, that the annual income of the subsidised undertaking may exceed its annual expenditure. Then, if the accounts are not very explicit, people are led to believe that the subsidised undertaking has made a "profit." An illustration of this contingency may be drawn from the "re-housing" schemes[1] of the London County Council. The

[1] Parts I. and II. of the Housing Act of 1890 and the various Improvement Acts make it compulsory for the Council to re-house persons of the working classes displaced consequent upon a clearing scheme or improvement. The operations of the Council under these heads are referred to as "re-housing" schemes (*Report on the London County Council's Working-Class Dwellings*, by W. B. Peat and F. W. Pixley, p. 1).

Council was under a statutory obligation to carry out these schemes; they could not possibly be rendered self-supporting, as the land to be employed was much too costly for the purpose to which it was to be put. The undertakings had to be subsidised, and the form the subsidies took was to write down the commercial value of the sites to the "housing" value, which is the amount which it is estimated that Companies would have been willing to pay for the sites, with the obligation to erect workmen's dwellings upon them. The difference between the commercial and the "housing" value of the sites was charged to the improvement schemes. As a result of these transactions, the "re-housing" schemes were able to show a surplus which amounted in 1907-8 to £5563.[1] Between 1894 and 1908, they contributed a net sum of £18,715 in relief of the rates,[2] or an average of £1337 per annum. In contemplating the figures there is a considerable danger of forgetting that the commercial value of the sites used for the re-housing schemes was £882,080, whereas the housing accounts were charged with only £271,574, the amount by which the sites were written down being £610,506.[3] The annual debt charges on this last sum must have been some £25,000, so that actually in 1907-8 there was a burden on the rates of about £20,000 in connection with the re-housing schemes.

The whole question raised is really one of book-keeping. The method of writing down the commercial value of cleared sites to their "housing" value for purposes of re-housing schemes and of debiting the difference to an improvement account has the approval of such authorities as the Select Committee of 1902 on the Repayment of Loans by Local Authorities[4] and Mr. W. B. Peat and Mr. F. W.

[1] See *Report of the Housing of the Working Classes Committee of the London County Council*, 1907-8, pp. 3, 6.

[2] *Ibid.* p. 34. [3] *Ibid.* p. 37.

[4] § 65 of their Report is as follows: The Committee do not wish to express any opinion as to the economical character of municipal building operations, but they think that the manner in which the profit and loss account of re-housing schemes is in many places presented is calculated to convey a wrong impression as to the annual charge upon the rates arising from these schemes. Interest and sinking fund payments on the whole amount given for the insanitary area or buildings, or expended upon demolition, are often charged against the re-housing scheme. It appears to the Committee that the capital charges against the re-housing part of a scheme under Parts I. or II.

Pixley.[1] It is doubtful, however, if the policy is quite sound, as it places all re-housing operations on exactly the same footing, whereas there are really two distinct classes, those which are undertaken solely because the law requires it, and those which are an essential part of clearance schemes, and which would be undertaken, after clearances of unhealthy areas had been made, even if no legal obligation existed. Where clearance schemes are undertaken with the primary object of providing better housing accommodation for the working classes, as is often the case, it is only fair to charge to the cost of the re-housing operations the commercial value of such part of the site as is used for building purposes, as the houses are not really erected under compulsion, but as part of a deliberate policy to replace slum dwellings by respectable working-class property. The cost of any land used for street widening under such a scheme should be charged to an improvement account. The result of such book-keeping would be to show a considerable deficit on the housing accounts. This would represent the subsidy from the rates to the housing part of the clearance scheme, and nobody would fail to realise the costliness of such operations, of which there is considerable danger under the other system of book-keeping. Where, on the other hand, the primary object of a clearance or improvement scheme is to embellish a town or to increase its transit facilities, by laying out new roads or squares, building bridges and so forth, and re-housing operations are merely incidental to the improvements and are engaged in only because of the legal obligation, it is perhaps reasonable to reckon the site used in this way at its "housing" value, but it should be made quite clear in every financial statement issued in connection with the undertaking that the land is charged at its "housing" or nominal value and not at its real or commercial value; if this is not done, there is a danger of leading the general

of the Act should be only interest and sinking fund charges in respect of that part of the total loan raised which is rightly attributable to the cost of building the houses and to the housing value of their sites, *i.e.* that price which such sites would fetch in the market if sold, subject to a covenant to build upon them working-men's dwellings. The rest of the loan should be regarded as expended on a sanitary improvement and repaid in a period not exceeding sixty years.

[1] See their *Report on the London County Council's Working-Class Dwellings*, p. 4.

public astray with regard to the true cost of re-housing operations. A careful study of the official reports enables a complete view of the financial transactions connected with the undertakings to be grasped, but if any one relies on some more accessible source of information, the housing value of the sites may be given amongst the capital expenditure without any indication of the writing down which has occurred,[1] and people are led to believe that the undertakings are self-supporting, or even profitable.

An advantage of taking the sites at their housing value is that it facilitates comparisons between the results achieved by the actual building operations, though too much reliance cannot be placed on these figures, as the housing values of the sites are merely estimates, and the lower they are, the more favourable the results will be.[2] Even where the commercial value of the sites is taken for calculating the deficit, the "housing" value might be used to obtain an indication of the efficiency with which the actual housing undertakings are administered. In every case where an undertaking has been subsidised out of the rates this should be made clear in the accounts. The fact that there is a deficit which has to be made good out of the rates, and the extent of the deficit, should be evident to any one who looks at a summary financial statement, and not merely to those who examine the accounts in detail.

§ 7. An undertaking which was originally subsidised from the rates might ultimately come to require no subsidy, though it does not follow that it could then be described as self-supporting, as it would first be necessary to decide whether the accumulated deficits in the past, together with

[1] This, for example, is the case in the *Municipal Year Book*, to which many people are likely to turn for information. A summary of the financial results for the year, showing a profit on the year's working, is reproduced directly from the *Report of the Housing Committee*. Neither in the original table, nor in the copy, is any indication given that the figures in the column showing capital expenditure on land are merely nominal.

[2] Cf. W. B. Peat and F. W. Pixley's *Report*, p. 4. In Manchester the method of valuing the sites used for re-housing purposes within the central parts of the city is somewhat rough and ready: the land is all taken as worth 10s. per square yard, although the cost of it (including the unhealthy dwellings to be demolished) varied from £1 : 10s. to £5 : 6 : 9 per square yard. See *City of Manchester. Housing of the Working Classes. History of the Schemes.* Published by direction of the Sanitary Committee, 1904.

interest on them, should be debited to the capital cost of the undertaking. If the enterprise had been a trading one, all losses would have to be eliminated before there could be any question of a profit. Where, however, a subsidised undertaking is in question, it is probably correct to ignore past deficits in ascertaining the present position, otherwise it amounts to going back on the original deliberate decision of the local authority to subsidise. On the other hand, in ascertaining the present financial position of an enterprise, the debt charges in respect of such capital expenditure as has been incurred on behalf of the undertaking, but has been charged to some other account, must not be overlooked. The receipts of the undertaking must be sufficient to cover these as well as its working expenses and the debt charges on such capital expenditure as have been charged to its account, before it can be said to be self-supporting; otherwise by charging sufficient of the capital expenditure to other accounts an undertaking which was really heavily subsidised might be made to appear remunerative. If at any time it can be shown that an undertaking which has been subsidised from the rates can meet from its annual revenue its running charges, all necessary renewals and repairs, and the interest and sinking fund instalments in respect of the *whole* of the capital spent on the undertaking, it may be described as self-supporting. Thus, if shortly the Manchester Corporation receives on its holding of debentures and preference shares in the Manchester Ship Canal Company more than sufficient to pay all the interest and sinking fund charges in connection with the capital borrowed by the Corporation and lent to the Company, it will have ceased to be a subsidised undertaking and will be described as self-supporting.

§ 8. Instead of dividing the economic undertakings of local authorities into those which it is deliberately intended to subsidise and those which it is intended shall be self-supporting, it is sometimes more convenient to distinguish between all economic undertakings on the one hand, and such of them as do not receive a subsidy, on the other. The former may be described as the reproductive enterprises, the latter as the trading enterprises of local authorities. In respect of certain classes of reproductive undertakings, such as water-

works, docks and harbours, where some of the individual undertakings are subsidised and some are not, these are discussed in the later chapters along with the industries which are managed on purely trading lines, but the other types of non-trading reproductive enterprises are regarded as being outside the scope of this book, and consequently are not dealt with, apart from the brief consideration they have received in this chapter.

CHAPTER II

THE DEVELOPMENT OF MUNICIPAL TRADING

§ 1. IN the previous chapter the more usual grounds were briefly discussed on which the subsidising of economic undertakings by local authorities is advocated. Attention must now be turned to municipal trading properly so called, and the reasons must be considered for which local authorities engage in reproductive enterprises on a self-supporting basis. Practice and theory unite in signalling out certain industrial undertakings as possessing a strong tendency to become monopolies, owing to the nature of the businesses. Some of these industries, such as railways, telegraphs and telephones, are national in their scope; others, such as water, gas, electricity and trams, are local in their scope. All industries of this type require the investment of a large amount of capital throughout the area which they serve, in order to distribute the product or service which they supply. As soon as one such undertaking has laid its mains or its lines in a district, no direct competitor is likely to enter the field, as it is improbable that the population of the district could support two similar undertakings. In most cases it is not even desirable that two similar undertakings should enter the same district, as the capital cost of distributing the product or service would be thereby doubled, which would be almost certain to lead to a rise in price. Further, it would be almost impossible to prevent the competing concerns from coming to some kind of understanding which would do away with competition.

It is generally admitted that in the interests of economy in production and in distribution, and in order to secure

the lowest possible selling prices, it is desirable not to attempt to secure any direct competition in the matter of water, gas, electricity[1] and trams; it is better that an undertaking providing one of these services should be given a monopoly for its services in the whole of the area of the local authority, unless that area be very large, in which case it may be divided. Thus in London there are now two principal gas companies, the Gas Light and Coke Company north of the Thames and the South Metropolitan Gas Company south of the Thames. Formerly there were more companies, but they have been reduced in number by a process of amalgamation. There are several electricity companies and municipal electrical undertakings in the Metropolitan area, but each has practically its own district.[2] The tramway service is provided by the London County Council, the London United Tramways Company, and the Metropolitan Electric Tramway Company, each of which serves a different part of the area. Other towns in which two tramway undertakings exist are Birmingham[3] and Leipzig.[4] Formerly there were two tramway companies in Dresden, but they were both municipalised about 1906. In Lyons, two tramway companies, each with a different gauge, existed for a considerable time, but they amalgamated a few years ago. All these cases of two or more similar public utility services[5] in the same town may be regarded as exceptional.

[1] The Electric Lighting Act, 1888, contemplated competition, and the method adopted by the Board of Trade shortly after the passing of that Act was to allow competition between two, but not more than two bodies of undertakers. See the evidence of Sir Courtenay E. Boyle, Permanent Under Secretary of the Board of Trade, before the Municipal Trading Committee, 1900, QQ. 10, 11. The policy of the Board of Trade appears to have changed in this respect. In any case competition is not likely to prove effective in the matter of electricity.

[2] Where two undertakings do supply the same area the one appears to generate direct current, the other alternating current, or the one sells current in bulk to the other.

[3] Those belonging to the Corporation of Birmingham and to the City of Birmingham Tramway Company.

[4] See Weigel, "Die Gemeindebetriebe der Stadt Leipzig," *Schriften des Vereins für Socialpolitik*, vol. 129, part vii. pp. 135-155.

[5] The expression public utility services, or more briefly public utilities, is generally used somewhat vaguely. In the recent *Report of the Board of Trade Enquiry into the Earnings and Hours of Labour of Workpeople*, the fourth volume deals with the Public Utility Services and comprises labour engaged in water, gas, electricity and tramway undertakings, and also in road, sanitary, etc., services. In the *Report of the National Civic Federation Commission upon Municipal and*

§ 2. Assuming that the policy of no direct competition in respect of water, gas, electricity and tramways is the one likely to be adopted in most districts, the local authority finds itself face to face with the problem of monopoly. There appear to be three possible methods of dealing with this. The first method is to leave the monopolist entirely free to charge what prices he pleases and to provide such service as is agreeable to him. In view of the fact that the demand for water and gas is probably inelastic,[1] when reasonable prices are charged, the monopolist could secure his maximum monopoly revenue only by considerably restricting output and by raising prices to something well above the cost of production. If no restriction of any kind were placed upon a private monopolist in these cases, the general public would probably be exploited to a considerable extent. The case of tramways is different. In the first place, a tramway service is not a necessity in the way in which a supply of water is, or even a supply of gas is. Many people have no requirement for transport facilities in the ordinary way on account of the fact that they live close to their work. In the second place, the amount of indirect competition is generally considerable. Of course this is true to some extent of gas. Oil in the one direction and electricity in

Private Operation of Public Utilities, "public utilities" are understood to mean water, gas, electricity and tramways undertakings, and it is in this restricted sense that the expression is used in this book.

[1] The demand for an article is said to be inelastic if a rise in price causes only a slight falling off in consumption and an increase in the total takings, or conversely, if a fall in price leads to but a slight increase in consumption and a decrease in the total takings. Thus if 100,000,000 cubic feet of gas could be sold at 2s. 6d. per 1000 cubic feet and the price were raised to 2s. 9d. and 96,000,000 cubic feet were then sold, it would be said that at these prices the demand for gas was inelastic, as the total takings at the lower price would be £12,500 (= 100,000 × 2s. 6d.) and at the higher price £13,200 (= 96,000 × 2s. 9d.). The converse position will be seen to be true if 2s. 9d. is regarded as the original price and 2s. 6d. as the new price. The demand for an article is said to be elastic if a rise in price causes a marked falling off in the demand for an article and a decrease in the total takings, or conversely, if a fall in price causes a marked increase in the demand for an article and a rise in the total takings. Thus if 60,000 units of current were sold for domestic lighting purposes when the price was 4d. per unit and a rise in price to 4½d. caused the consumption to fall to 48,000 units, the demand for current would be said to be elastic at these prices, as the total takings would be £1000 (= 60,000 × 4d.) at the lower price and only £900 (= 48,000 × 4½d.) at the higher price. Generally speaking, the demand for necessities is inelastic and for comforts and low-priced luxuries elastic.

the other may compete with it, but if moderate prices are charged, a very large field remains open to gas in which it has little to fear from competition.[1] Tramways have generally to face railway competition as far as the suburban traffic is concerned; whilst in the town areas proper and in such outer areas as are not served by railways a system of motor or horse omnibuses may either actually exist or may be called into existence at any time, if the fares charged are sufficient to justify it. In some cases the competition of cabs and motor cars may have to be taken into consideration, though this applies only to people of some means. As far as people of small means are concerned, bicycles are much used by people who live some way from their work. Finally, many persons will prefer to walk unless a good service be provided at low fares. In view of these conditions the case for restricting a private tramway monopolist is not so strong as where water or gas is concerned; nevertheless there are reasons of a somewhat different character why some control should be exercised, even if it is not necessary on account of fares. On the one hand, there will be a tendency for the monopolist to select only those routes which promise to be the most remunerative, and on the other hand, the service he provides may ignore the general interests to such a degree as to give reasonable grounds for complaint. For example, he might provide a service during certain hours of the day only, or during certain parts of the year, within the ordinary town area.[2]

The case of electricity is probably more like that of tramways than that of gas. In the first place, part at least of the demand for electric current is probably elastic,[3] so long as the prices charged are reasonable. As a result it will generally pay the monopolist better

[1] This point will be dealt with more fully below.

[2] Some routes are especially built for holiday traffic, and it does not seem unreasonable to close them out of the season. A case of a Company refusing to provide a winter tramway service on the ordinary routes recently arose at Scarborough. The Company found the winter service could be maintained at a loss only, and consequently gave it up entirely. The town sought the assistance of the Board of Trade in compelling them to provide a service. The Company was ordered to do so, or in default to pay a fine for every day that they did not give a certain minimum service.

[3] See footnote on p. 20.

to make large sales at low prices than small sales at high prices. In the second place, a monopolist selling electric current has to face keen competition. His monopoly relates merely to the use of the public streets for the purpose of distributing current. There is nothing to prevent works or private individuals generating current for their own use, or even selling it to other occupants of the same block, as this can be done without the wires crossing a public street. Of recent years the cost of installing a small plant run by a gas engine or a petrol engine has considerably diminished, so that the competition of private individuals has increased. A works employing steam power can provide itself with electric current for lighting purposes, during such hours as the engines are running, at such a slight additional cost as to make competition from an electric-lighting station almost impossible. On the other hand, if the owners of works decide to employ current exclusively for power and lighting purposes there will be keen competition as to whether special plant is to be installed or current is to be purchased. The undertaking which possesses the monopoly of distributing electric current, besides having to compete with various independent producers of current, has to compete with other forms of light and power. As far as light is concerned, coal gas is the most serious competitor where it exists. In most cases in this country a gas supply exists when electric light is first introduced and all houses are equipped for the use of gas. This holds the monopolist in check to a considerable extent, and obliges him to make moderate charges if he wishes to gain and keep many consumers. Until recently, electric lighting, if it had to be produced by steam power, was likely to prove a good deal more expensive than gas, however low the charge might be, but the discovery of the metallic filament lamps has considerably modified the advantage possessed by gas for lighting purposes.[1] If electric current for lighting purposes has no coal gas competition to face, acetylene or petrol gas may cause it to lose some large consumers, and oil, both large and small

[1] The question of the competition of gas and electricity is considered in more detail on pp. 204-206.

consumers. As far as current for power purposes is concerned, the possible or actual competition of steam, coal gas, Mond gas, or some other form of suction gas, petrol, or water power has to be met. Sufficient has been said to show that the electricity monopolist is so much restricted by competition in the matter of drawing up his tariff as to make it doubtful if any other control of prices is necessary, assuming that a method of affecting such control can be devised. It does not follow, however, that no control of any kind is desirable, as the monopolist, if left free, would probably limit himself to selling current in the more densely populated part of his supply area, so as to keep the distributing cost as low as possible. Besides, although competition tends to modify prices and keep them within reasonable limits in the case of trams and electricity, it may not always be strong enough to do so actually. Hence, for one reason or another, it is generally considered undesirable to leave a water, gas, electricity, or tramway monopolist entirely free to manage his business as he chooses, and one of the two other methods of dealing with the problem of monopoly has to be adopted.

§ 3. The second method of dealing with a local monopoly is to control it. As every company which wishes to supply the general public with water, gas, electricity, or tramway facilities requires the use of the streets, consent to establish the undertaking has to be obtained from the central or local authority concerned, and it is in the granting of the lease or concession that the opportunity is afforded of providing the requisite control.

(*a*) In the Act of Parliament or in the Provisional Order authorising the establishment of a public utility company, the terms on which the company is allowed to operate and the area which it may, or must, serve are carefully defined. Various provisions are often inserted to control the operations of the undertaking in the future. These generally relate to some or all of the following things: the price to be charged, the dividend which may be distributed, the issue of capital, the quality of the product, and the pressure to be maintained. Prices may be controlled in one of two ways: either a maximum price is laid down or the

price is linked up with the rate of dividend which may be paid, by means of what is known as a sliding scale. The former device is more common than the latter; on most tramway undertakings the maximum fare is fixed at 1d. per mile or fraction thereof;[1] in the case of electricity supply undertakings the maximum price which may be charged for current is frequently 13s. 4d. per quarter for a consumption up to twenty units per quarter, and 8d. for each additional unit.[2] As far as gas is concerned, there is no sort of uniformity about the maximum prices where such exist. In Liverpool, for example, the maximum price is 4s. 6d., in Cheltenham 4s., in Grimsby 3s. 9d., and in Cardiff 3s.[3] per thousand cubic feet.

A considerable number of gas companies operate under what is known as a sliding scale. The object is to secure that prices shall be reduced as profits increase. A standard price is fixed by the Board of Trade;[4] there is also a standard dividend and an initial scale. If the standard price is charged, the standard dividend may be paid; if the price is lowered, the dividend may be raised according to the scale, whereas if the price is raised, the dividend must be lowered. As an illustration, the sliding scale in force at the South Metropolitan Gas Company may be quoted. The standard price is fixed at 3s. 1d. per 1000 cubic feet for 14 candle-power gas, the standard dividend at 4 per cent. If during the whole of any half-year the price charged shall have been 1d., or a part of 1d., above the standard price, the dividend payable for that half-year shall be reduced below the standard rate by $\frac{1}{15}$ of 1 per cent for every 1d., or part of 1d., above the standard price. If the price shall have been 1d. or more below, the dividend may be increased $\frac{1}{15}$ of 1 per cent for every full 1d. below.[5] Under the sliding scale

[1] *Report of the National Civic Federation Commission on Public Ownership*, part ii. vol. ii. pp. 429, 430.

[2] *Ibid.* p. 276.

[3] *Board of Trade Return of all Authorised Gas Undertakings other than those of Local Authorities, 1909.*

[4] See the evidence of Sir Courtenay E. Boyle, Permanent Secretary to the Board of Trade, before the Joint Committee on Municipal Trading, 1900, QQ. 34, 35, 36.

[5] *Report of the National Civic Federation Commission on Public Ownership*, part ii. vol. ii. p. 146. Prior to 1896 the standard rate was 10 per cent, and the standard price 3s. 6d., but in that year the standard rate was reduced to 4 per cent and the stock was increased to $2\frac{1}{2}$ times the former amount (*ibid.* p. 41).

of the Newcastle-upon-Tyne and Gateshead Gas Company the standard price is 2s. 9d. per 1000 cubic feet and the standard dividend $3\frac{1}{2}$ per cent. The dividend may be raised by $\frac{1}{8}$ of 1 per cent for every fall of 1d. in the price, and must be reduced by the same amount for every increase of 1d., or part of 1d., in the price.[1]

Where a sliding scale exists, this regulates not merely the prices, but also the rate of dividend. In other cases, a maximum dividend is fixed, 10 per cent being that most commonly adopted in the case of gas companies. In the case of electricity and tramway companies[2] it appears that maximum dividends are seldom fixed. Where provision is made about the maximum or standard rates of dividend, it is necessary to take precautions with a view to preventing the watering of capital. If a company is allowed to issue stock or share bonuses for which no cash is paid, or for a consideration which is less than the real value, the amount distributed as dividend can be increased without increasing the rate of dividend.[3] The device often adopted under these circumstances is to introduce the so-called "auction-clauses" into a company's act or provisional order. Under these clauses, it is generally provided that all new issues of ordinary and debenture stock must be offered at public auction or tender, in lots of not more than £100 nominal value, that the reserve price shall not be less than par value, and that all stock not sold in this manner may be offered to the stockholders at the

Further provisions concerning the South Metropolitan sliding scale are as follows: If the profits exceed the amount which may be divided according to the sliding scale, the excess, up to 1 per cent per annum on the paid-up capital, may be carried to a fund to be invested in securities until it accumulates with interest to 5 per cent of the paid-up capital; this fund is to be used as an insurance fund to meet extraordinary claims from accidents, strikes, etc. All excess profits beyond this amount shall be carried to the credit of the divisible profits for the next year.

[1] *Ibid.* p. 147.

[2] Municipal electrical undertakings are usually under certain restrictions with regard to the amount of profits they may make. See p. 171, below. Restrictions on municipal undertakings are considered elsewhere.

[3] For example, if a gas company which was paying the maximum dividend of 10 per cent on its capital of £50,000 distributed, for no consideration whatever, £50,000 of fully paid stock as a bonus to its stockholders, and then continued to pay 10 per cent dividends, it would have increased the amount paid in dividends from £5000 to £10,000.

reserve price, and all premiums received shall be applied to capital purposes, but shall not bear interest.[1]

Statutory provisions regarding the character and the quality of the service to be given generally exist in the case of gas works. One of these relates to the pressure to be maintained,[2] as measured by the height of the column of water it is able to balance, another to the minimum candle power of the gas supplied, a third requires that the gas shall contain no trace of sulphuretted hydrogen.

It will be noted from what is said concerning the way in which control is exercised over private monopolists, that far more appears to be done in this matter in respect of gas companies than in respect of tramway and electricity companies. As has already been pointed out, control is much more necessary in the former than in the latter cases, and this is doubtless one reason why tramway and electricity undertakings are left comparatively unfettered. Another reason is that it would be very difficult, if not absolutely impossible, to apply a sliding scale to these enterprises owing to the complex conditions which have to be considered in making even the slightest alterations in electricity tariffs and tramway fares.[3] Even the prices laid down as the maximum which may be charged are so high as rarely to impose a real check on the monopolists, though this is probably equally true of the maximum prices fixed in connection with many gas undertakings. When the maximum price is fixed at the time a public utility service company is established, it may be of some value, but with the development of the industry as a whole, and of the undertaking in particular, it is likely very shortly to become merely nominal. In the case of electricity and tramway companies, it is sometimes provided in the lease that, at intervals, the Board of Trade, if requested by the company, the local authority, or a certain number of ratepayers, may revise the limits,[4] but it has not been possible to find a record of a single occasion on which this

[1] *Ibid.* p. 142.

[2] This applies, for example, to both the South Metropolitan Gas Company and to the Sheffield United Gas Company, and so does the regulation concerning candle power. In the former the minimum candle power is 14, in the latter 16 (*ibid.* p. 139).

[3] See the chapter on the Selling Policies of Municipal Trades, and also what is said about the average cost of electric current on p. 348.

[4] *Ibid.* pp. 277, 435.

has been done. Under any circumstances, even a frequent revision of the maximum prices which may be charged is never likely to give anything like as satisfactory results, from the point of view of the consumers, as the sliding scale device. There are still a good many gas companies, the prices and dividends of which are not linked up in this way, and every opportunity should be taken, when any such undertaking applies for a new Act or Provisional Order in connection with some extensions, to arrange for the introduction of a sliding scale.

(*b*) In this country perpetual concessions have been granted to gas and water companies which render very difficult any revision of the conditions affecting control, because Parliament would be very loath to interfere with an existing contract and to modify the control in any way against the wishes of the company. As a last resource, the local authority might obtain an Act of Parliament conferring upon it compulsory powers to purchase the undertaking at market price. Gradually perpetual leases have come to be regarded with disfavour, both by the general public and by Parliament; when new public utility services came into being, after water and gas undertakings had been in existence many years, a policy of granting short leases was adopted by Parliament, one important consideration being that if mistakes were made in the conditions laid down, or in the matter of imposing control, a fairly early opportunity would occur for rectifying them. Thus the Tramway Act, 1870, provided for twenty-one year leases, and the same duration of lease was provided for by the Electric Lighting Act, 1882, though six years later by the Electric Lighting Act, 1888, the maximum duration of an electric lighting concession was fixed at forty-two years.

The proper duration of a concession to undertake the supply of a public utility service is not very easy to decide, if both parties to the concession, the company, on the one hand, and the general public, on the other, are to be treated fairly. The real crux of the matter lies in the method to be adopted in valuing the undertaking when the lease elapses. If the value of the undertaking as a going concern, including potential earning capacity, is adopted,

the purchase is made on the same terms as if the undertaking had been granted a perpetual concession; in other words, one of the principal objects of granting a short lease, that is, not to give the lessee a vested interest in the monopoly temporarily conceded to him, would be defeated. To secure fairer treatment for the general public some other method of valuation must be adopted. The Tramways Act, 1870, provides that the sum to be paid for a tramway undertaking shall be the value of the physical assets of the company at the time of the expiration of the lease, or in other words, the cost of reconstruction; that is to say, nothing is to be paid for the goodwill or any intangible asset of the business or as compensation for compulsory sale, and the same conditions apply to electricity companies. These terms may inflict a hardship on the company; any difference to the disadvantage of the lessee between the sums actually expended on plant and buildings (less the provision made for depreciation) and the sum that it would cost at the date of the sale to reconstruct the plant and buildings as they stand, must be provided for out of accumulated profit; this will be a particularly serious matter if the price of plant of all kinds has fallen considerably since the undertaking was established. In view of the fact that the lessee is considerably restricted by his lease, and above all by competition, in the charges which he is able to make, and further that some years will probably elapse after the commencement of the undertaking before reasonable profits can be earned, a twenty-one years' lease may inflict an unfair burden on the capitalist, and he may find it impossible to recoup himself for the early losses incurred and for any expenditure made with the object of developing the business. The only solution seems to lie in adjusting the duration of the lease to the character of the undertaking, so as to enable an efficiently managed company to recover the whole of its capital expenditure at the end of the lease, and to earn what, in view of the risks involved, may be regarded as a reasonable profit during the lease. This would necessitate varying the length of the lease according to the nature of the industry, and very possibly according to the development of the local area concerned. Thus,

if a twenty-one years' concession was just adequate for a horse-tram undertaking, it is presumably inadequate for an electric tramway undertaking in which a much larger capital outlay is involved and a much greater annual provision for depreciation and obsolescence must be made, and in connection with the plant of which there is a far greater prospect of a difference arising between the cost of construction and the cost of reconstruction, owing to the continual technical improvements in the methods of manufacture adopted in the newer industry. In a similar manner, the various risks involved in an electric lighting undertaking are probably much greater than those connected with a horse tramway. Consequently the lease in the former case should be longer than in the latter. That was not recognised at first in this country, and the duration of an electricity supply company's lease was fixed at twenty-one years by the Electric Lighting Act, 1882, but very soon it was realised that generally private capitalists were unwilling to proceed with such a short lease, and by the Electric Lighting Act, 1888, the maximum duration of an electric-lighting lease was extended to forty-two years. Subject to that maximum, each application can be treated on its merits as regards duration of lease, which is a much sounder principle to adopt than granting all leases of the same length, as it makes it possible to take the character of the area to be served into consideration. The business of an electricity supply company is likely to develop much more rapidly in a densely populated than in a sparsely populated area. Further, the cost of distribution will be proportionately much larger in the latter than in the former case. Consequently a company supplying electric current in an area with a scattered population is likely to incur a considerable loss in the early years, and also stands to lose more by reduced cost of reconstruction of the plant at the end of the concession than a company supplying a densely populated area, owing to its greater outlay on plant in proportion to the quantity of current sold, and this should be allowed for by granting a longer lease.

Apart from the possibility of modifying the control exercised over a public utility company, there is another advantage which can be urged in favour of short leases,

namely, the fact that a company knows that within a few years its lease will come up for reconsideration and that the service is likely to be municipalised if it has failed to satisfy the general public by not treating the consumers fairly and equitably. This should tend to act as a salutary restriction on the policy adopted by a company, and is likely to be particularly effective during the later years of a lease, provided the company feels that there is a real prospect of the concession being renewed if a satisfactory service is given. If, on the other hand, the company has reason to believe that the local authority is determined to take over the service at the expiration of the lease, the company will probably aim at securing as large a profit as possible during the last years of its existence, without any consideration for the public well-being. It will not be prepared to reduce prices and sacrifice its profits temporarily with a view to increasing the number of consumers and ultimately increasing the profits of the undertaking. A company whose days are numbered cannot be expected to pursue a far-sighted policy and to sacrifice the present for the future.

This last point is closely related to a disadvantage associated with short leases. During the latter part of the concession the management is likely to be unprogressive; the company will be very loath to incur new capital expenditure in view of the possible loss which would arise, if the local authority decided to take over the undertaking and the assets were valued accordingly. This would apply especially if there was any question of a radical change in the system of conducting the undertaking. Thus the electrification of tramways in this country was probably delayed for some years by the fact that many tramway companies' leases were approaching their termination at the moment when the adoption of electricity as the motive power for propelling tramways had become a practical problem.

(*c*) Before leaving the question of the control exercised over water, gas, electricity and tramway companies by means of clauses introduced into their leases, another problem concerning such leases may be shortly considered, namely, the way in which such statutory companies obtain their

powers, and the position adopted by the local authorities concerned towards the granting of such powers. The desired powers may be obtained either by special Act of Parliament or by a Provisional Order, issued under some general Act of Parliament such as the Gas and Water Works Facilities Act, 1870,[1] the Tramways Act, 1870,[2] or the Electric Lighting Acts, 1882 to 1902.[3] The Tramways Act, 1870, provided that in all cases the consent of the local authority should be required when Provisional Orders were sought for tramway undertakings. The veto with regard to bills was brought about soon after 1870 by the passing of a standing order by the House of Commons which was shortly afterwards adopted by the House of Lords.[4] The reason this policy was adopted was probably due to a considerable extent to the fact that opposition before a Parliamentary Committee was more expensive than many of the smaller local authorities were able to undertake. The absolute veto of a local authority to a tramway scheme, which was presumably granted to protect a district from a tramway which in the opinion of the local ratepayers was not wanted or was likely to prove a nuisance, has apparently in practice not infrequently been used to impose conditions upon tramway promoters, in particular with reference to street widening and street paving. It should be noted in this connection that under the Tramways Act, 1870, the tramway authority is responsible for the paving of the roads traversed between the lines and eighteen inches beyond on both sides, and it does not seem reasonable to expect

[1] Under this Act, between 1871 and 1910 inclusive, 714 orders were applied for, 664 orders were made by the Board of Trade, and 650 orders were confirmed by Parliament (*Report of the Board of Trade of Proceedings under the Gas and Water Facilities Act, 1870*, Session 1910, Cd. 5455).

[2] Under this Act, between 1871 and 1907 inclusive, 633 orders were applied for, 487 orders were made by the Board of Trade, and 466 orders were confirmed by Parliament (*Report of the Board of Trade of Proceedings under the Tramway Act, 1870*, Session 1907, Cd. 3677).

[3] Under these Acts, between 1883 and 1909 inclusive, 1361 orders were applied for, 1086 orders were made by the Board of Trade, and 1069 orders were confirmed by Parliament. Of these 309 have since been revoked, or repealed, or have expired (*Report of the Board of Trade of Proceedings under the Electric Lighting Acts, 1882 to 1902*, Session 1910, 203).

[4] See the evidence of Mr. Albert Gray, Counsel to the Lord Chairman of Committees in the House of Lords, before the Committee on Municipal Trading, 1900, QQ. 338, 339, 340.

the tramway authority to maintain any other part of the road. The question of street widening is particularly likely to lead to difficulties. A street which is quite suitable in width and in the matter of curves for ordinary traffic may not be practicable for tramway traffic. If tram lines are to be laid, who is to pay for the widening which may be necessary? If the lines are to be laid along a main thoroughfare, which is most usually the case, the general public as well as the tramway company should benefit by the widening, and consequently it seems only reasonable that the local authority should share the burden of the improvement with the company. Where the ordinary traffic is insufficient to justify the widening, the whole burden should presumably fall on the tramway undertaking. In both cases, where expense had been incurred by the company in respect of street widening insisted upon by the local authority, that portion of the burden, which was still unexpired at the moment when the local authority decided to take over the tramway undertaking, should become the charge of the municipal tramway department, as that department would then benefit by the widening. To apportion the burden of the widening between the old and the new tramway undertakings, the cost originally incurred for this purpose should be kept quite distinct from the other expenses; the number of years for which the central authority would sanction a loan by a local authority for this purpose would be ascertained, say forty years; then the sum annually to be set aside to accumulate at compound interest in order to redeem the debt in respect of the widening, at the end of the forty years, or whatever the period might be, could easily be calculated. The company would pay the interest and sinking fund contribution in respect of the debt so long as it held the lease; after that the payment should be made by the municipal tramway department. It would probably simplify matters if the local authority did the necessary street widening and if the Tramway Company undertook to pay to the local authority annually a sum equal to the interest and sinking fund charges, so long as it held the concession or until the debt was liquidated, if this latter event occurred first.

At present, when a tramway company widens streets at its own expense to comply with requirements of the local authority and is bought out by the local authority at the end of the twenty-one years' lease, the price it receives covers the cost of reconstructing its plant and machinery only, and nothing is paid in respect of street widening, which does not appear to be a fair or equitable arrangement. With regard to sharing from the outset the cost of street widening between tramway undertaking and local authority, the decision ought probably to rest with some independent outside authority, such as the Local Government Board, as there is a danger of too little of the cost being debited to the local authority's improvement account if the tramway undertaking is managed by a company, and too much of it being debited to the improvement account if the undertaking is managed by the local authority.[1]

Another condition which local authorities have sometimes tried to impose is to require the tramway company to pay an annual rent during the years that the lease runs as a sort of wayleave, but this has not been allowed by the central authority.[2] This, of course, does not refer to the case of local authorities constructing the track and leasing it to companies; under such circumstances a rent is charged for the use of the track, the payment generally being such sum as is just sufficient to meet all the capital charges in connection with the debt incurred by the local authority on account of the undertaking leased. For example, the Edinburgh tramway undertaking is owned by the Corporation, and is leased for twenty-one years from June 1898 to the Edinburgh and District Tramway Company at a rent of 7 per cent on the capital expenditure.[3] In Germany, on the other hand, in cases where the lines have not been constructed by a local authority and leased

[1] This point is dealt with more fully below. See p. 130.

[2] See the evidence of Mr. Albert Gray, Counsel to the Lord Chairman of Committees in the House of Lords, before the Committee on Municipal Trading, 1900, Q. 343.

[3] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part vi. p. 12. The rent paid in this case was more than sufficient to cover the capital charges, and in each of the years 1902-3 to 1905-6 £5500 of the rent received was applied in aid of the rates.

to a company, but where all the capital invested has been found by the company, the local authority may demand an annual contribution from the company as a sort of wayleave. Thus, in the concession granted by the Corporation of Berlin to the Berlin Tramway Company it is provided that the company shall pay to the Corporation 8 per cent of such part of its gross receipts as are earned on lines within the municipal area. Further, if in any year the net surplus of the company exceeds 12 per cent of the capital of the company at the time when the concession was made, the Corporation is entitled to one-half of such excess. In respect of any new capital which may be issued, the company can retain only 6 per cent interest before sharing the excess with the municipality. The Corporation therefore takes half the net surplus after interest has been allowed at the rate of 12 per cent on the old capital and 6 per cent on the new capital, and this payment is in addition to, and quite distinct from, the share in the gross receipts.[1]

As local authorities do not always appear to consider any particular scheme simply on the ground of the proposed tramways being in the public interest or not, and as their refusal to give the necessary sanction in some cases appears unreasonable, it would probably be more satisfactory if their veto were limited, as is the case with electric lighting undertakings. Where electricity is concerned, if the promoters are applying for a provisional order, which is usually the case, the method of proceeding by bill not being common in the case of electricity, the consent of the local authority is required, but the difference between electricity and tramways is that the Board of Trade may grant the order without the consent of the local authority if it thinks this has been withheld unreasonably.[2] In that case a special report must be made to Parliament. This may not happen very frequently, but the fact that the Board of Trade have the power to grant an order, in spite of the veto of the

[1] Vertrag der Stadtgemeinde Berlin mit der Grossen Berliner Pferde-Eisenbahn - Actien - Gesellschaft und der Neuen Berliner Pferdebahn-Gesellschaft betreffend Umwandlung des Pferdebahnbetriebes in einen elektromotorischen, § 11.

[2] Electric Lighting Act, 1888, section 1. See also Mr. Albert Gray, *loc. cit.* QQ. 321, 396.

local authority, is likely to make the local authorities more reasonable in considering private schemes which may be brought forward. As illustrations, one or two recent cases of the exercise by the Board of Trade of their powers in this connection may be mentioned. On two occasions in 1910 and on one in 1909 the Board of Trade dispensed with the consent of the local authority.[1] On each of these occasions the Board of Trade under Section 1 of the Electric Lighting Act, 1888, made a special report stating their reasons. The special report made in connection with the Ardrossan, Saltcoats and District Electric Lighting Order, 1910, is of particular interest, as the ground on which the Corporation of Ardrossan refused their consent was that the grant of the order would result in the introduction of competition with the Corporation's gas undertaking. The Board of Trade ordered a local inquiry to be held on their behalf, at which evidence was produced to show that there was a demand for electricity in Ardrossan. "As the policy of the Board has been to hold that objection on the grounds of competition with a gas undertaking, even when belonging to a local authority, is not sufficient reason to justify them in refusing to grant an Electric Lighting Order, the Board decided to dispense with the consent of the Corporation of Ardrossan."[2] It has often been urged that corporations owning gas works have impeded the introduction of electricity supply undertakings in this country, so that this definite statement by the Board of Trade of their policy in this matter is especially deserving of attention.

Another method by which a company can obtain the right to distribute electricity in a particular area, is for the powers, duties and liabilities of a local authority under a provisional order already granted, to be transferred to the company.[3] Such a deed of transfer requires the approval

[1] The Ardrossan, Saltcoats and District Electric Lighting Order, 1910, the Smethwick Electric Lighting Order, 1910, and the Walton-on-the-Nase Electric Lighting Order, 1909, were granted under these circumstances (*Reports of the Board of Trade of Proceedings under the Electric Lighting Acts, 1882 to 1902*, for the sessions 1909 and 1910).

[2] *Special Report by the Board of Trade under Section 1 of the Electric Lighting Act, 1888*, July 1, 1910 (Cd. 5210).

[3] They may also be transferred to another local authority; this involves

of the Board of Trade. A local authority is particularly likely to be willing to consent to the transfer of its order, if the terms offered by an existing company, in the matter of charges to be made for current, are very much more favourable than any it could hope to establish if it generated its own current. These transfers of powers from a local authority to a company are not at all infrequent, and during 1908, eleven, during 1909, nine, and during 1910, eighteen deeds of transfer of orders from local authorities to companies were approved by the Board of Trade.[1] Of these orders, one in 1909 and eleven in 1910, all originally granted to local authorities in South Lancashire, were transferred to a single Electric Power Company.[2]

§ 4. The third method of dealing with the problem of monopoly is for the local authority to undertake the management of services concerned. This is urged on various grounds. One important consideration is that the method of control does not always prove satisfactory. Attention has been drawn above to some of the difficulties associated with long and short leases respectively. Many of the companies undoubtedly provide good service at reasonable prices. Others are probably not so well managed and give cause for dissatisfaction, though whether the local authority would manage the undertakings any better is another question. It may be argued that the efficiency of the existing companies is partly due to a desire to make a good showing when their management is compared with that of municipal undertakings of a similar character. On the other hand, the companies work at a disadvantage in so far that certain restrictions are imposed on them by law from which municipal undertakings are generally free. At this point it is not possible to discuss the whole question of municipal *versus* private management; it must suffice to note that the difficulty of drafting a lease entirely satisfactory to

the question of a local authority trading outside its own area, and will be considered in Chapter VI. Sometimes an order granted to a company is transferred to a local authority, and the undertaking is then municipalised before the expiration of the company's lease.

[1] *Reports of the Board of Trade of Proceedings under the Electric Lighting Acts, 1882 to 1902*, Sessions 1908, 1909, and 1910.

[2] The Lancashire Electric Power Company.

both parties is probably one of the principal causes which have favoured the development of municipal trading.

A second reason for which the water, gas, electricity and tramway services have frequently been municipalised, is that they all involve certain rights in connection with the public streets; mains and lines must be laid and kept in repair, and this cannot be done without pulling up the streets and obstructing traffic. There is a strong feeling on the part of many local authorities that they should have direct and exclusive control of the streets. This may be due in part to the fact that they are legally responsible for the maintenance and upkeep of the streets in general, in consequence of which they hold that they alone should be entitled to interfere with the streets in any way. Another consideration which weighs with local authorities is that the more undertakings which have rights over the streets, the more obstructions to traffic are likely to occur. If the water, gas, electricity and tramway services are all under the local authority, it can be arranged that they shall all work in conjunction with the Highway Committee, and in this way the disturbance of the streets can be minimised. In the case of tramways, another solution of this difficulty sometimes exists, namely, that the local authority shall construct and maintain the track and lease it to a company which manages the tramway. In the days of horse trams this was a more common arrangement than it is at present, the safety of electric tramways depending much more than that of horse tramways upon the conditions of the track, which may easily render divided responsibility for the undertaking undesirable.[1] The case of a corporation laying and keeping in repair water, gas, or electricity mains and leasing them to a company has not occurred in practice, so far as the writer is aware, and certainly does not appear very feasible.

A third reason put forward in favour of municipalising certain monopolistic enterprises is that a private company will be unwilling to undertake extensions which may probably,

[1] What actually happens at present, when electric tramway tracks are leased, is generally that the lessee is entirely responsible for the maintenance of the track, and as far as interference with the streets is concerned, is practically in the same position as if he had constructed the track.

or even only possibly, prove of an unremunerative character. This argument applies most strongly to the supply of water. In scarcely any other industry is it necessary to look so far ahead in order to provide an adequate supply as in the case of water. In a year or two the output of most undertakings can be doubled or trebled, but to secure an additional supply of water to a town, ten or more years of continuous work may easily be required. This means that for several years a large amount of capital will be unproductive, thus seriously affecting the profits of the undertaking and making boards of directors very chary about entering upon any large scheme. A further point of great importance is that whereas the size of an ordinary business can be increased by small increments, this is frequently not possible in the case of a water undertaking. To secure a comparatively small quantity of extra water it may be necessary to undertake a large and costly scheme of extension, which will either involve a great increase in the price of water for many years to come, or a very heavy financial loss. It is the duty of a local authority, and not of a water company, to foresee the development of a town and to make proper provision for its future requirements of a sanitary character. An adequate supply of water is just as essential to the public health as a proper system for dealing with sewage,[1] and in the last resort a local authority must act, if a company is unwilling to do so. It is almost inconceivable that a water company would have undertaken the great schemes by which Manchester draws its supply of water from Lake Thirlmere in Cumberland, a distance of some 96 miles, Liverpool its supply from Lake Vyrnwy in North Wales, a distance of some 78 miles, and Birmingham its supply from the Elan Valley in Mid-Wales, a distance of some 80 miles. These three schemes, which when completed will each cost some five or six million pounds, have been commenced within the last twenty-five years to supplement other large sources of supply.[2]

[1] The great sanitary importance of a plentiful supply of water frequently affects the selling policy adopted with regard to water, as is pointed out in Chapter VI.

[2] The actual amounts expended on the construction of the original and of these supplementary water works up to 1906 were £6,484,779 in Liverpool, £6,976,959 in Manchester, and £7,917,673 in Birmingham (*Parliamentary Return relating to Municipal Trading* (*United Kingdom*), part ii. pp. 1, 22; part iii. p. 1).

Similar considerations apply, though to a lesser degree, to the municipalisation of the tramway service as to the municipalisation of the water supply. It is sometimes desirable that extensions of an unremunerative kind shall be undertaken for social reasons. The construction of a tramway in anticipation of a future development of traffic is likely to prove temporarily unremunerative, but is nevertheless a purely business undertaking, as it is done with the object of making profits. On the other hand, it may be desirable to offer special facilities to certain parts of a town with a view to inducing people to live farther out, and thus relieve the congestion in the centre. This may be done by constructing a line which is likely to prove unremunerative for all time, whatever fares are charged, or by charging especially low fares on particular routes, or by granting special facilities to certain classes of the population, in the form of workmen's tickets or otherwise.[1] In small towns, where it is very difficult to make tramways pay their way at all, whatever fares are charged and however much the services are restricted to the most populous routes, there is no possibility of managing the tramways on a remunerative basis and at the same time of effecting social improvements. To do so in these cases, it would be necessary to adopt a subsidising policy; but it must be borne in mind that congestion of central areas is likely to be less aggravated in smaller than in larger towns; further, if a number of people are displaced from the central area, there should be no great difficulty in finding accommodation for them within reasonable distance of their work. It is in the larger towns that a need for assisting the decentralisation of the population by means of a generous tramway policy may exist, and it is in such towns, where a considerable amount of remunerative traffic is likely to be found, that such a policy can be adopted without affecting the self-supporting basis on which the undertaking as a whole is managed. This cannot be done, of course, without diminishing the profits of the enterprise. However, as the making of profits is not generally a primary object of municipal trading, the cost should not be allowed to stand in the way of a desirable policy of social reform.

[1] For more details see Chapter VI. on selling policies.

A fourth reason which is sometimes adduced for municipalising the supply of gas, electricity and tramways is to secure for the local authority the profits of these public-service industries. This has perhaps never been more clearly expressed than in connection with the municipalisation of the Birmingham gas supply in 1875.[1] Mr. Joseph Chamberlain, who was then Mayor, told the Council, and also Parliament, that while for sanitary and other reasons he did not want to make any profit on water, which was a necessity of life, he did want to make a profit on the gas, to enable him to carry out a great improvement scheme, Birmingham being a comparatively poor town, having no estates, a large population, and a low rateable value. The town set out with the deliberate intention of making a profit on the gas undertaking in order to relieve the pressure of the rates,[2] and has succeeded in its intention. Although the desire to make profits from an undertaking is not often so openly expressed as a reason for municipalising an industry as was the case in Birmingham, it is probably not infrequently at the back of people's minds when they express their approval of municipal trading. It will be well, therefore, to examine the matter closely. Before doing so, however, it is necessary to define what constitute the "profits" of a municipal trading enterprise. This is too large a question to enter upon here, but is dealt with at length in the chapter on the Financial Aspects of Municipal Trading. The further consideration of this reason for municipalising certain services is consequently deferred till that chapter. Here, however, it may be pointed out that if the principal object of the local authority is to make "profits" from certain services in order to reduce the rates, this might be achieved quite as well, or even better, by taxing the private monopolist instead of managing the monopolies.[3] It could be done by selling the concession, or by requiring the monopolists to pay over a portion of the surplus revenues.[4]

[1] Under the Birmingham (Corporation) Gas Act, 1875.

[2] See the evidence of Mr. E. Orford Smith, Town Clerk of Birmingham, before the Committee on Municipal Trading, 1900, in particular QQ. 1885, 1893, 1894.

[3] The contrast between the two policies is illustrated, so far as central governments are concerned, by the English method of taxing tobacco and the French method of monopolising the production and sale of tobacco.

[4] In Germany concessions are

It may be noted here that there is another argument in favour of municipal trading which is directly opposed to the one which has just been considered. It advocates municipalisation in order that commodities may be sold at cost price. This attitude towards municipal trading is not nearly so common as the other, which sees in municipal trading an opportunity of securing sums in relief of the rates. These two reasons in favour of municipal trading will be considered together when the question, whether or not it is desirable that municipal enterprises should make "profits," is discussed below.

§ 5. The four services, the municipalisation of which we have been discussing so far, possess certain common characteristics, which must be borne in mind when considering the desirability of municipalising other enterprises. They are all monopolistic in character, and they all involve interference with the public streets. Three of them, water, gas and tramways, have something else in common, though not all to the same degree; they are all more or less necessities, and to a very large extent the body of consumers coincides with the body of ratepayers. This being so, the local authority, for the purpose of providing water, gas and tramways, may be regarded as a society of consumers who unite to provide themselves with certain necessities of life, with a view to saving the profits of the middleman, much in the same way as the members of a co-operative store unite to provide themselves with other necessities of life,[1] some of which not infrequently are especially made for them by workers whom they employ, *e.g.*, bread and cakes, boots and shoes, and various articles of clothing. Electricity, of

frequently granted to public utility service companies on the condition that a certain share of the revenue is to be paid over to the local authority. The case of the Berlin Tramway undertaking was mentioned on p. 34. An illustration from the electricity industry may be given here. The agreement between the Leipzig Corporation and the Electricity Company in that town, which was terminated in 1905, after it had been in force ten years, provided that the company had to pay to the town 16 per cent of the gross revenue as rent for the use of streets, bridges, etc., and a share of the profits if the balance of net revenue exceeded 6 per cent on the capital outlay (Weigel, "Die Gemeindebetriebe der Stadt Leipzig," *Schriften des Vereins für Socialpolitik*, vol. 129, part v. p. 36).

[1] As far as the writer is aware, the comparison between municipal trading and co-operative distribution was first made by Dr. Edwin Cannan in his article on the "Principle of Municipal Trading," which appeared in the *Independent Review*, November 1905.

course, cannot be regarded as a necessity, nor is it consumed by the majority of ratepayers. Where a local authority generates electric current, it does so in order to provide for a particular class of ratepayers, who, generally speaking, are selected from the richer rather than from the poorer portion of the community, a fact which the local authority should bear in mind, in conjunction with the fact that sanitary considerations hardly apply, when it decides upon the selling policy to be adopted.

§ 6. There is another class of undertakings which, partly on grounds similar to those which have led to the municipalisation of the four services so far considered, and partly because it may not be trading at all, but merely the privilege of levying an indirect tax, is very commonly under the management of local authorities, namely, market and fairs in which various kinds of produce, and also cattle, are dealt in either wholesale or retail. The undertakings may include buildings of various kinds in which goods are stored and bought and sold, or they may represent only the setting aside of certain public streets and squares on specified days for market purposes. The market undertakings occupy a peculiar position, in that the right to hold a market is frequently a monopolistic privilege of great antiquity. In a good many cases the market rights have been vested in municipalities from very early times, as, for example, in the cases of Bristol,[1] Edinburgh,[2] Hull[3] and Preston.[4] In other cases they belonged to the Lords of the Manor, and have been purchased from them, together with any market buildings which they may have erected. Thus, the Corporation of Manchester, in 1846, purchased the market buildings and the rights connected therewith from Sir Oswald Mosley, the Lord of the Manor, for £200,000;[5]

[1] "The Markets have belonged to the Corporation from time immemorial" (*Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 7).

[2] "By Royal Charters dating from the reign of David II. to James VI. of Scotland and various local Acts of Parliament, the Magistrates and Council have power to hold markets on sites chosen by themselves" (*ibid.* part vi. p. 15).

[3] "The market rights were conveyed to the Corporation by a very old charter which was subsequently confirmed by Edward I." (*ibid.* part v. p. 51).

[4] "The Market rights of the Corporation are very ancient. They were originally granted and have been many times renewed and extended by Royal Charter" (*ibid.* part ii. p. 142).

[5] *Ibid.* part ii. p. 40.

whilst the Corporation of Sheffield purchased the markets and the market rights from the Duke of Norfolk, the Lord of the Manor, for £526,000, as recently as 1899.[1] In some towns market undertakings did not exist until they were established by the local authorities in modern times, as, for example, in Birkenhead[2] in 1848 and in Southampton[3] in 1865.

There is more than one reason why it appears desirable that the market undertakings should belong to the local authority. In so far as they represent no capital outlay, but merely the right to levy a toll for the use of public streets or squares for market purposes, it is only proper that this right should be vested in the local authority. Whether special buildings have been erected or not, the market undertakings practically always enjoy a local monopoly which is not easily controlled if in private hands. Another advantage of public ownership is that it facilitates the sanitary control or inspection which is necessary in the interest of public health of many of the articles dealt in. This last consideration makes it very desirable that the market undertakings should be extended to include abattoirs or slaughterhouses, and that the use of these by butchers should be made compulsory, as is frequently the case in continental countries. There was a Royal Commission on Markets which sat from 1888 to 1891 and reported in favour of markets being placed under the management of local authorities. Under the Public Health Act, 1875, local authorities have power to acquire markets, and it is the policy of the Local Government Board to raise no objections, when applications are made to borrow money for this purpose.[4]

§ 7. Another type of enterprise which is connected with the streets, and which tends to become monopolistic in character, is the telephone business. In this country telephones have been a source of contention between the believers in public and private ownership respectively, ever

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part i. p. 37.

[2] *Ibid.* part ii. p. 164.

[3] *Ibid.* part v. p. 150.

[4] See evidence of Sir (then Mr.) S. B. Provis, Permanent Secretary to the Local Government Board, before the Committee on Municipal Trading, 1900, Q. 1002.

since they were first introduced. On the whole the municipalities have played a comparatively small part in the struggle, which has chiefly centred round the central government, as represented by the Postmaster-General, on the one hand, and the National Telephone Company, on the other. In 1892, the Postmaster-General came to an agreement with the National Telephone Company in reference to the telephone business of the company; the general outline of the arrangement was that the trunk wires which connect large towns should be worked by the Postmaster-General and that the business within the towns, which is generally called exchange business, should be left in the hands of private companies.[1] In subsequent years this arrangement has been modified in two respects. In a few cases the Postmaster-General issued licences to local authorities authorising them to carry on telephone undertakings, and in 1905 an agreement was entered into by which the Post Office was to take over the business of the National Telephone Company from January 1, 1912. The nationalisation of the telephone business is entirely outside the scope of this book. Here the only thing that calls for consideration is the establishment of certain municipal telephone exchanges. From time to time various local authorities complained about the dearness and the inefficiency of the service provided by the National Telephone Company, which had absorbed practically all the other companies. Whether these complaints were justified or not, they constituted one reason why certain municipalities desired to establish a telephone business. Further, the laying down of wires, where the underground system was adopted, necessitated taking up the streets, the right to do which some local authorities were very loath to see done by or on behalf of a private company.[2] No local

[1] See evidence of Sir Robert Hunter, Solicitor to the Post Office, before the Committee on Municipal Trading, 1900, Q. 4030.

[2] Neither the Postmaster-General nor one of his licensees can take up the streets to lay underground wires without permission of the road authorities concerned, but whereas the road authority can refuse its consent to a company without right of appeal, the Postmaster-General can appeal ultimately to the Railway Commission. Once he has obtained the necessary permission he can if he chooses lay underground wires for the use of a company to whom permission to take up the streets has been refused. This actually happened in Glasgow and caused a great deal of friction (Sir Robert Hunter, *loc. cit.* QQ. 4026, 4027, 4037, 4038, 4939).

authority appears to have gone as far as to seek to buy the undertaking of a telephone company in their area, but a few obtained the necessary permission to establish a competitive undertaking.[1] The attitude of the Postmaster-General, who gave the permission, appears to have been that competition may temporarily be very desirable as a means of improving the service, but that in the long run the telephone service is not one that lends itself to competition, as it is very inconvenient for subscribers if there are two systems between which there is no communication.[2] If there is intercommunication this necessitates some kind of understanding between the two undertakings, which may lead to an amalgamation, and in that case competition ceases absolutely.[3] If the undertakings continue to operate on a friendly footing in the same area there is not likely to be much real competition, and in any case there will be a certain amount of overlapping and duplication of working expenses which will raise the cost of supplying the service, and in the long run this cannot be in the best interest of the subscribers. It has been stated by the Postmaster-General that the transfer of the undertaking of the National Telephone Company to the Post Office will do nothing to prejudice the future of the municipalisation of telephones;[4] but it is difficult to see how the permanent duplication of

[1] *E.g.* Glasgow in 1900, Portsmouth in 1901, Hull in 1902, and Brighton and Swansea in 1903 (Sir Charles Hunter, *loc. cit.* Q. 4025, and *Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. pp. 62, 78, 182; part iii. p. 191).

[2] Sir Robert Hunter, *loc. cit.* Q. 4047.

[3] For example, the Swansea Corporation Telephone undertaking was sold to the National Telephone Company in 1907 (*Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 182).

[4] See speech of Mr. H. Samuel (Postmaster-General) in the House of Commons, July 14, 1911, on the motion for the second reading of the Telephone Transfer Bill, *Parliamentary Debates, House of Commons*, vol. 28, No. 104, col. 649.

"The Act of 1899 which empowers the local authorities to conduct telephone systems, if they so wish, remains, and is not affected by the new measure. My own inclination is opposed to the municipalisation of telephones, and I think that expert opinion throughout the country is also opposed to the municipalisation of telephones. I have received no request from any corporation to embody any municipal system of telephones in this bill. The Association of Municipal Corporations has not approached me, nor has the Glasgow Corporation passed any resolution. I fully recognise and agree, however, that nothing should be done to prejudice future municipalities in the matter. Nothing is done to prejudice them now."

the local exchange business can benefit subscribers; on the other hand, there is nothing to indicate that the Post Office intends to hand over the local administration of telephones to the municipalities. The local areas for telephone purposes ought to be much larger than those of particular municipalities, and probably better results can be obtained if the whole system of the country is directly under one management, with such decentralisation of the administration as may be found suitable in the interest of efficiency, than if a whole number of semi-independent telephone authorities are set up in different towns. The distinction between local calls and trunk calls is only artificial, established as a matter of financial expediency. Everything should be done to diminish the distinction between local calls and trunk calls as much as possible, and the creation of numerous municipal telephone exchanges could only tend to increase it, and any movement in this direction seems undesirable.

§ 8. There still remain numerous cases of municipal trading, the reasons for the development of which are quite different from those enumerated in connection with water, gas, electricity, tramways and markets. These remaining cases can be grouped roughly into five classes. In the first are the industries and trades which are subsidiary to those enterprises mentioned above or to non-trading undertakings of local authorities. In the second, operations connected in some way with the land may be placed together. In the third are enterprises organised to supply necessities of life other than those which, owing to the nature of the business, are subject to clearly marked monopolistic tendencies. The fourth group consists of undertakings established to provide credit facilities. In the fifth and last group are placed a number of miscellaneous enterprises which are too varied to permit of special classification. These different classes of trading undertakings will now be considered separately.

§ 9. The first class, which consists of subsidiary trades or industries, includes such varied undertakings as the manufacture and installation of electric light fittings, the "wiring" of houses for electric light, the supplying of gas stoves, gas cookers and gas fittings, the conducting of a wholesale or retail coke business, the manufacture of

sulphate of ammonia, the repairing and building of tram cars, the carrying of parcels by tramway, the provision of cold-air stores, the manufacture of ice and the sale of water at high pressure for hydraulic purposes. Furthermore, a corporation may pave its own streets, lay its own sewers, and erect any buildings which may be required for municipal purposes. Many of these trades and industries, it will be noted, may be in direct competition with those conducted by private undertakings; consequently it is necessary to consider very carefully on what grounds, if any, they can be justified. It appears possible to distinguish three relationships which the subsidiary industries may bear to the principal industries; firstly, it may be necessary that they should be established in order that the principal industries may be efficiently managed; secondly, they may evolve directly out of the principal industries, so that it is impossible to conduct the latter without conducting the former; and thirdly, they may be connected with the principal industries in a manner less close than in the other two cases, yet close enough to justify their existence.

(i.) Amongst the subsidiary undertakings, which it is often urged are necessary for the proper management of the principal undertakings, are cold-air stores and ice manufactories in connection with markets, the supply of meters, fittings and stoves in connection with gas and electricity supply undertakings, and the running of omnibuses in connection with tramways. Each of these enterprises must be considered separately. (*a*) A cold-air stores or refrigerator for the preservation of both meat and dairy produce is at the present day an essential adjunct to a market, and in the case of fish a supply of ice is equally essential. Powers to provide these things were frequently obtained by municipalities before private enterprise had undertaken their supply. Thus in Manchester, the Markets Committee established a cold-air stores at a time when the frozen meat trade was just developing, and no store had been erected by private enterprise. Since then private stores have been established, one of which belongs to a firm which has branches all over the country, and which quotes preferential rates to importers, provided

that in any town in which they do business they use the cold-air stores of the firm if such exists. This has harmed the municipal cold-air stores, as well as the fact that private stores are able to make advances on the goods stored, which the municipal undertakings cannot do. In the case of perishable produce which has to be exhibited on the market in order to secure purchasers, the convenience of a cold-air stores immediately at hand, for the temporary storage of produce, may still justify the establishment of a municipal undertaking to enable the market to fulfil its function properly. On the other hand, the cold storage business in a general way does not seem suitable for municipal management. As far as the supply of ice is concerned, which is indispensable, for example, for a fish market if an adequate supply is not forthcoming at reasonable prices, the market authority may be forced into providing it. Strictly speaking, under these circumstances the ice should be sold by the local authority only to its market tenants for use in the market, but it may be in the interest of the public health, as enabling food offered for sale to be kept in better condition, that shopkeepers and dealers who have food to keep on their own premises should be allowed to purchase ice on the same terms as the market tenants. Up to this point the sale of ice could still be regarded as subsidiary to the market's undertaking.[1] If a local authority sells ice in small quantities to all who desire it, that authority must be regarded as engaging in the retail ice business,[2] a form of municipal trading which will be discussed below in connection with the supply of necessities other than those which, owing to the nature of the business, are subject to clearly marked monopolistic tendencies.[3]

(*b*) The question of a local authority supplying fittings

[1] In Bolton the municipal markets and cold-air stores undertaking sells ice at £1 per ton (*Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 85).

[2] The prices charged for ice by the Wolverhampton Municipal Cold Stores and Ice Manufactory undertaking range from 8d. per ¼ cwt. and 1s. per ½ cwt. to 25s. for 1 ton, 45s. for 2 tons, and 63s. 9d. for 3 tons (*Parliamentary Return on Municipal Trading* (*United Kingdom*), part iii. p. 108). If the corporation delivers ice at these prices this is practically a case of a retail ice trade. Even if customers have to fetch their ice it hardly affects the retail character of the trade.

[3] See p. 75, below.

and other equipment in connection with its gas and electricity undertakings is one of considerable difficulty. It probably brings municipal enterprise into direct competition with more private businesses than any other generally recognised kind of municipal trading, and it is strenuously opposed by all ironmongers.[1] The crucial point is, whether it is essential to the success of gas and electricity works, that these should be allowed to supply fittings, etc. The different kinds of equipment supplied must be considered separately. Every consumer requires a meter to measure the quantity of gas or current consumed. On the grounds of expense and convenience the great majority of people prefer to hire meters rather than to buy them. This being so, it is certainly simplest that the undertaking which sells gas or current should provide the meter and make a charge for the use of it. This may be done either by means of a separate rent or by charging a slightly higher price for gas or current, in which cases meters are provided nominally free of charge. The case of gas stoves, cookers and grillers is somewhat different. It is not necessary that all, or in fact any consumers, should have these, yet in view of the increasing use of electricity for lighting purposes the development of the use of gas for heating and cooking purposes is essential in many towns, if the gas undertaking is to grow and prosper, and it becomes very desirable that gas-works should push this branch of their business. To do so, it is probably necessary that they should loan stoves, cookers and grillers, as many people who are unwilling or unable to buy them, will hire them if facilities with this object are offered. The charges for hiring may either take the form of a special rent or be embodied in the price of the gas.[2] The position

[1] See the evidence of Mr. R. H. Smith, General Secretary of the Ironmongers' Federated Association, before the Committee on Municipal Trading, 1900, QQ. 2946-3035. At the annual conference of the Ironmongers' Federated Association held at Manchester in March 1911, the following resolution was adopted unanimously: "That in view of certain municipalities having recently sought extended powers respecting the execution of internal work in electric lighting and gas-fitting, this Conference considers it desirable that the general subject of trading by local governing bodies should be reconsidered, and in the interests of local trading communities, so far as possible, eliminated" (Report in the *Manchester Guardian*, March 22, 1911).

[2] The advantages and disadvantages of the two methods will be considered in the chapter on the selling policies

with regard to the installing of electric fittings and the "wiring" of the inside of houses for electric lighting is not quite the same. Originally it was very difficult to persuade people to adopt electric light. Houses were usually equipped for gas, and frequently neither the landlord nor the tenant was willing to incur the expense of putting in electric wires and fittings. Hence certain local authorities undertook to put in wires and fittings, and to recoup themselves by a rent, or by charging a higher price for current. This appears to be a good deal more speculative business than the loaning of gas stoves or cookers, for whereas the latter can easily be put in and removed without much cost, if occasion to do so arises, the value of the electric "wiring" is chiefly in the cost of installing it, and consequently cannot be recovered if a consumer leaves a house, and it remains vacant, or the new tenant refuses to use current.

The loaning of fittings and wires in connection with an electricity supply undertaking does not occupy the same relationship to the principal industry, as the loaning of stoves and cookers does to the gas lighting industry to which they are clearly subsidiary, as the industry can quite well exist without them. The supplying of fittings and wires is an essential preliminary undertaking to the electric lighting industry, as the supplying of fittings and pipes is to the gas lighting industry. The two industries are quite distinct, and there is no necessity that they should be under the same management. On the other hand, electric heating apparatus, fans, etc., are subsidiary to the electric lighting industry, and stand in the same relationship to that industry as gas stoves and cookers do to the gas lighting industry. The position with regard to electric motors and gas engines is practically the same, though as these are generally used for business purposes it will probably be only the small power consumers who will prefer to hire rather than to buy them. Taking everything into consideration, the installing of electric lighting fittings and the "wiring" of houses by a municipal

of municipal trades. The Manchester Corporation Gas Works is one of those which loans meters, cookers and grillers free of charge. On March 31, 1911, 180,981 meters, 53,730 cookers, and 30,831 grillers belonging to the Corporation were in use. (See the *Annual Report for the year 1910-11*, p. 4, and the *Description of the Works*, March 31, 1911, p. 18.)

department, in return for a direct or indirect rent, appear undesirable as a general thing, although conceivably special circumstances might exist in some cases to justify them. The loan of apparatus for heating and power purposes is justifiable on the ground that the sale of current for these purposes is very desirable in order to facilitate the sale of current for lighting purposes.[1]

All that has been said so far with regard to gas and electric fittings, etc., has been on the assumption that these are to be loaned for a direct or indirect charge. The case of a municipality selling or even manufacturing these articles has still to be considered. There appears to be no sound reason to justify such an undertaking. A municipality may loan them because many people cannot afford to buy them, and from the point of view of the undertakings as a whole, it is very desirable that gas and current should be used for heating and power purposes. If consumers are willing to purchase stoves, etc., ironmongers exist to meet their requirements. There is no reason why a local authority should undertake this branch of business unless it be merely to make a profit, and that in itself is not a sufficient ground to establish any branch of municipal trading. To sell stoves, etc., at cost price, or even at a loss, in order to increase the sale of gas and current is an unsound policy, because there is no guarantee that customers will not leave the district and take their cheap purchases with them, to the detriment of the local undertakings and to the benefit of some other gas and electricity works elsewhere. The business of manufacturing fittings or appliances of any kind appears quite unsuited for municipal management. Local authorities first obtained powers to supply and manufacture gas-fittings by taking over gas companies and their powers, the acts authorising the transfer stating that sections so and so to so and so of the gas companies' acts were to apply to the corporations, the powers concerned being contained in one of these sections.[2] Thus the question does not originally appear to have received that careful consideration by

[1] The connection between the sale of current for lighting and for power purposes will be dealt with fully in Chapter VI.

[2] See evidence of Mr. Albert Gray, counsel to the Lord Chairman of the House of Lords, before the Committee on Municipal Trading, 1900, Q. 304.

Parliament which it merited, and the fact that certain corporations have these powers must not be taken as really indicating parliamentary approval.

(*c*) The running of omnibuses in connection with municipal tramways, with the object of feeding the tramway system, is not very common. Where it occurs it is generally on the outskirts of a town along routes on which it is considered that a tram line will not pay its way. Once it is ascertained that an omnibus service will be likely to benefit the tramway undertaking sufficiently to justify its existence, a decision will have to be come to, as to whether the omnibus service is to be maintained by private enterprise or by the municipal department. If, as is quite likely, it is anticipated that the service will be unremunerative for the time being, and that as the traffic develops it will be replaced by an extension of the tramway system, the probability is that no private firm will enter upon the business. The local authority will then either have to establish the service, or give up the idea of feeding their trams by means of omnibuses. On the whole the latter is probably the best expedient to adopt, although circumstances might exist under which the running of an unremunerative omnibus service could be justified. On the other hand, if it can be established so as to pay its way, there seems no reason why the local authority should undertake it, unless private enterprise fails to supply the need.

(ii.) Amongst the second type of subsidiary undertakings, namely, those evolving directly out of certain principal industries, the most important are connected with the by-products of gas-works. The repairing shops organised in connection with tramway undertakings also belong to this class. (*a*) The sale of coke, tar and ammoniacal liquor are subsidiary to the gas industry. In the process of manufacturing coal gas it is impossible to avoid producing these three by-products, and they must be disposed of in some manner. The simplest thing is to sell them in bulk to wholesale dealers, but frequently much better prices can be obtained with comparatively little extra outlay, if they are disposed of in some other way or in some other form. Thus coke may be sold retail, and ammoniacal liquor may be con-

verted into ammonia sulphate and sold as manure. The more surplus revenue that can be realised on the by-products, the more cheaply the gas can be sold; consequently once a local authority is allowed to manufacture coal gas, it is only fair to allow it to deal with the by-products to the best advantage.[1]

(*b*) It seems only natural that a tramway undertaking should establish a workshop in which its cars can be repaired, and wheels and other parts which wear can be renewed whenever the occasion arises, which on a large system, where several hundred cars are employed, must be continually the case. Tramcar works are to be found in very few towns, and to send cars away to be repaired would certainly be very costly, even if feasible. In any case, skilled men will have to be employed to overhaul the mechanical and electrical equipment of the cars, as the safety of travelling depends upon their being kept in proper condition; and the service of joiners, painters and other artisans will be required if the car-bodies are not to be allowed to assume a worn and battered appearance. Under these circumstances, it is simplest if all repairs can be done in the tramway workshop.

(*c*) Some local authorities, however, are not content with merely repairing their cars, they also build new ones, or in any case build car-bodies to place upon trucks which they purchase. Building cars cannot possibly be said to evolve out of the management of a tramway system, nor is it in any sense necessary for the efficiency of such an undertaking. Probably the reason why it is done, is that in the repairing shops all the requisite workers and materials are at hand, and in order to provide more work for these shops, with a view either to occupying more fully men, who must be kept on in any case in connection with the repairs which are continually required, or to employing more men, the building of cars is undertaken. Another possible reason is that the repairing shops once in existence, the departments think they can build cars more cheaply than they can buy them. This last reason does not sound at all convincing and must be regarded as inadequate. To build cars merely

[1] The question of the sale of gas by-products will be treated more fully in the chapter on the Selling Policies of Municipal Trades.

for the sake of finding employment for more men is equally unsatisfactory. If, however, the extra men are wanted in order to form a reserve from which additional motor-men and conductors can be drawn when required to enable an abnormally large service to be maintained on special occasions,[1] the car building is in any case to some extent justified, and if this consideration, together with the desire to find more regular employment for the repairing staff, constitute the motives for the car building, the justification may perhaps be regarded as adequate.

(iii.) The last class of subsidiary industries is that of which it cannot be urged that the management by local authorities is either necessary for the successful conduct of the principal undertakings, or that it evolves directly out of the principal industries. Nevertheless, if a particular subsidiary trade of this type is to be carried on at all, it may be best that it should be managed in conjunction with the principal undertaking. As illustrations, the sale of water at high pressure for hydraulic purposes, the establishment of a tramway parcel carrying scheme, and the execution of works of various kinds by municipal departments, may be considered. (*a*) The case of a local authority selling water at high pressure for hydraulic purposes is somewhat peculiar. There are probably not many towns where demand for such water exists, but where this is the case, and the water-supply undertaking belongs to the local authority, there appears to be good grounds for municipalising the service. As special mains will have to be laid, there will be both interference with the streets and a strong tendency to monopoly. On the other hand, sanitary considerations and universality of use cannot be advanced in its favour, as in the case of the ordinary water-supply; consequently, if the service is municipalised, it should be managed on an entirely self-supporting basis.[2]

[1] I was informed by the manager of the Frankfort-on-the-Main municipal tramways that a uniform making department was established with the express object of providing a reserve of men to staff the trams required to provide the extra Sunday service.

[2] In Manchester the Waterworks Committee has laid down within the city a system of hydraulic power capable of being utilised for working lifts, hoists, cranes, presses, suction cleaners, and other machinery. The pressure is 1000 lbs. per square inch, and the supply is continuous. Power is supplied to more than 2000 machines, the total

(*b*) To judge a tramway parcel carrying scheme it is necessary to consider the details of each scheme separately, as everything depends upon the way in which the undertaking is organised. Under any circumstances it can hardly be regarded as essential to the success of the tramway system, although it may lead to a better utilisation of the system than would otherwise be possible. On the other hand, a very considerable extra organisation will be necessary, in addition to the ordinary tramway service, if a large scheme for the collection and delivery of parcels is to be conducted efficiently. Thus, in the case of the Manchester Corporation Tramway Parcels Express, which was established a few years ago, a scheme was organised by which parcels were collected and delivered, not only in the area served by the Manchester Tramways, but in all the surrounding districts. To carry out this scheme the ordinary tramway service had to be supplemented by special electrically equipped freight cars, numerous vans and horses, hand-carts, and a large extra staff of men and boys. In addition, one hundred and fifty collecting and distributing depôts were established.[1] The scheme had to be given up in October 1906, on account of a decision of the High Court that the Tramways Committee had exceeded its legal powers, though only in so far as it collected and delivered parcels which were not carried on the Manchester trams; all the special preparations made to facilitate the parcel carrying were apparently legal.[2]

length of mains laid being nearly 23 miles. There is a similar installation in Glasgow.

[1] *Report of the National Civic Federation Commission on Public Ownership*, part ii. vol. ii. p. 479.

[2] Attorney-General *v.* Manchester Corporation, 1906, 1 Ch. 643. "By virtue of various Provisional Orders and private Acts of Parliament the Manchester Corporation had power to use all tramways belonging to or in lease to the Corporation, or on which they had power to place or run carriages, 'for the purpose of conveying and delivering animals, goods, minerals, or parcels.' The Corporation worked a large system of tramways, of which they were owners or lessees, extending all over the city and suburbs of Manchester and a considerable surrounding district. They had commenced, or advertised their intention to commence, a general parcels' delivery business within and beyond the area covered by their tramways, not confined to parcels and goods carried on their tramways. This action was brought by the Attorney-General, on the relation of Manchester ratepayers, to restrain the carrying on of such a business:—

"*Held*, that under the power given by the Act of 1899 the Corporation had powers to carry on the business of common carriers upon their tramways, and as ancillary to that business to do all things necessary for the collection and delivery of parcels carried on their tramways. For this purpose they had powers to maintain stations or

Quite apart from the legal question in this particular case, it may be questioned whether the possession of an electric tramway system is sufficient justification for undertaking a large parcel carrying scheme. If the ordinary tramway service forms a very small part only of the scheme, as was the case in Manchester, there does not seem any adequate reason for it. A parcel carrying trade is not for the general good of the community, nor is it one which can be advantageously limited to a small area, yet under certain circumstances a small scheme for carrying parcels by tram may prove useful. Outlying parts of a town which can be reached by tram will be considerably benefited by such a scheme, as a tramway department can provide a much more frequent and rapid service between such parts and the centre than any private carrier, but care should be taken to limit the system as far as possible to the tramways. This can best be done if no provision is made for collecting parcels, and if the delivery of parcels is restricted to the immediate neighbourhood of tram routes. If a car line runs out from a town into hilly country, and constitutes the only mechanical transport service which such high lying district possesses, it may even be desirable for the tramway undertaking to offer certain facilities for carrying goods other than mere parcels. Thus the trams which climb the long hill from Dresden to the Weisser Hirsch have accommodation for carrying three bicycles, the charge being the same as that for passengers. Further, to certain of the cars, trailers are attached in which laden hand-carts, along with the dogs which help to pull them, can be drawn up to the Weisser Hirsch. Under the existing circumstances the provision made for carrying freight by the Dresden municipal tramways appears justifiable. It is impossible to generalise about tramway parcel carrying schemes, each must be considered on its merits; but there is at least one condition with which any such scheme must comply before it can be

warehouses for receiving and storing parcels and goods, to provide horses, vans, carts, and to employ servants, messengers, and agents for the purpose of collection and delivery. But all these services must be confined to parcels and goods carried or to be carried on the tramways; the Corporation had no power to carry on a general parcels' delivery business apart from their tramways."

approved of, namely, that it must involve very little if any organisation apart from the ordinary tram service. Amongst the undertakings in connection with which small parcels carrying schemes are conducted are the Manchester Corporation Tramways and the Bradford City Tramways. The former earned a net revenue of £2484 during 1910-11 [1] and the latter of £1748.[2] Both these schemes are strictly subordinate to the principal undertakings.

(*c*) The case of the execution by local authorities on their own account of various kinds of works differs from the other subsidiary enterprises which have been considered, in that there is no question of selling a product. In one sense therefore, it cannot be regarded as trading at all, but on the other hand, it involves more or less direct competition with private undertakings, and calls for attention, and this seems the most suitable place to consider it. Paving streets, constructing sewers, and erecting buildings are preparatory rather than subsidiary processes in connection with the performance of various municipal functions. The work must either be let out by contract, subject to municipal supervision, or be carried out by the local authority on its own account. In the case of street paving and of preparing macadamised and other roads, the bulk of the work is in the nature of repairs, which it is extremely difficult to measure up beforehand and consequently almost impossible to let by contract. Thus the local authority will practically be obliged to do most of the work on the roads itself, although when an occasion arises to lay out a new road, the work may quite well be done by a contractor. The position with regard to the construction of sewers is somewhat different. The work to be done can be definitely ascertained beforehand; the difficulty of handing over the work to a contractor lies in the supervision. The work is covered up so quickly that between one visit of an inspector and the next, various defects, which time alone will reveal, may be hidden from sight. It is frequently felt that this can best be avoided by the local authority doing the work on its own

[1] *Annual Report of the General Manager of the Manchester Corporation Tramways for 1910-11.*

[2] *Annual Report of the General Manager of the Bradford City Tramways for 1910-11.*

account. As the number of men employed in such work is not very great, and as by combining repairs with new work, pretty regular employment can probably be found for them, the method does not seem open to serious objections. The case of organising a works department to erect the buildings required from time to time by a local authority is quite different. There is no valid reason why the practice, almost universally adopted by private individuals and firms, of having buildings put up by contractors should not be followed by local authorities. There is no difficulty about supervising a contractor, and there is no reason to think that the work of an experienced contractor will be inferior to, or more costly than, that of a municipal works department. On the other hand, on more than one ground a municipal works department is very undesirable. The erection of buildings by even the largest local authority is likely to be spasmodic, and it would be almost impossible to find regular employment for a building staff. There is no guarantee that such a department would erect a building at the estimated cost. If the building cost more than was anticipated, which is not at all unlikely, the burden would fall on one or other of the committees of the local authority, whereas normally it would fall on the contractor. Further, the number of municipal employees would be largely increased without there being any absolute need for it. This touches on the large question of the relationship of a local authority and its employees, which is discussed in a later chapter. The conclusion reached there may be anticipated, viz., that an increase of municipal employees, where it is not really necessary, is an undesirable thing. The principal case of a municipal works department established to erect buildings of various kinds for the local authority was that inaugurated some years ago by the London County Council, and which has since been discontinued. Quite apart from whether the work done by this department was both inefficient and costly, as suggested by its numerous opponents, its abolition must be welcomed on the ground alone that no adequate justification can be found for the establishment of such a department.

§ 10. The next class of municipal trading enterprises

which calls for attention is that associated in some way with the land. This includes undertaking of working class housing operations, dealing in building plots, the loaning of allotments, and the ownership and management of estates other than in connection with the previously mentioned activities. (*a*) Reference has already been made to the rehousing operations conducted by local authorities in connection with the clearance of slum areas.[1] In these cases the undertakings are deliberately subsidised and are consequently outside the scope of municipal trading. Here we are concerned with the undertaking by local authorities of house building operations, where there is no question of rehousing people displaced by improvement schemes. The local authorities under these circumstances enter into direct competition with private builders, and we must consider on what grounds this is done and how far they can be justified. It is frequently argued that working-class houses are overcrowded on the one hand, and insanitary on the other; further, that even where remunerative rents are forthcoming for suitable houses, enough may not be erected, and that the local authorities cannot compel private persons or companies to build. Admitting that overcrowding does often exist, it does not follow that it is due to inadequate housing accommodation in the town concerned; it is more likely to be caused by too many people wishing to reside in particular districts of a town. As soon as these are fully built up, no more accommodation can be provided, and unless people wishing to live there can be persuaded to reside in other parts of the town, overcrowding will result. The mere building of new houses on the outskirts will not check this overcrowding, which tends to occur in the more central parts of a town. Other measures will be required; one is to provide better transit facilities, so that people may travel more quickly and more cheaply between houses in the outskirts and works or mills in the centre of a town; this will doubtless encourage people to live on the outskirts, but in spite of these facilities many people whose hours are long and who commence early in the morning will prefer to live close to their work, and the congestion may still continue. Under

[1] See p. 4.

these circumstances, another measure would be necessary to force people away from the centre: strict regulation of the number of families or individuals who may live in every house, based upon the air space it contained, in a similar manner to that in which the accommodation of a school or factory is regulated at the present time. Such a regulation raises the question of the limits of state interference in general, and not of municipal trading in particular, and consequently a discussion of it is outside the scope of this book. The attempt to deal with the housing problem by means of improved transit facilities is considered below in connection with the fare policies of tramways undertakings.

With regard to the unsanitary character of many existing working-class houses, the state of affairs contemplated is not such as to make the houses unfit for human habitation, nor even sufficient to constitute them slum property, as in this case they would be unhealthy areas, which would come within the scope of subsidised improvement and rehousing schemes. The statement made that many working-class houses are in an unsanitary condition refers to such things as the inadequate conveniences with which many of these houses are provided, the lowness of their rooms, the smallness of their yards, and also the fact that some of them are "back-to-back." The explanation is that these houses were built, either before the days of building by-laws, or in accordance with building by-laws which are now regarded as antiquated and which have since been altered. Some of these defects cannot be removed without pulling down the houses, but sanitary conveniences can be made adequate, and "back-to-back" houses can be converted into "through" houses, if the local authority insists upon these improvements being made. Not infrequently the prospective cost of these alterations, which will probably be divided between landlords and tenants, the latter being charged higher rents, but not sufficient to cover the whole outlay, is a stumbling-block, as very likely neither the landlords nor the tenants desire the improvements, or in any case are not anxious to pay for them. Under these circumstances, influence may be brought to bear upon the Council of the local authority to prevent steps being taken to remedy the

evils, or members of the Council may do nothing in this connection, in order not to render themselves unpopular with voters. No amount of new house building, whether by private enterprise or by the local authority in the outer parts of a town, can remedy the defects of older houses in the inner parts of a town where a great many people wish to live. Nothing but the careful enforcement of more stringent regulations is likely to lead to improved conditions in the inner parts of a town, and it goes without saying, that it will lead to a rise of rents, as a more expensive article cannot be obtained at the same price as a cheaper one.

The assertion that remunerative rents are forthcoming for suitable houses, and that nevertheless private enterprise is not providing new houses, if it is correct, merely shows that opinions differ as to the future prospects of cottage property in a particular district. It might be remunerative at the moment, and yet cease to be so in a short while. If private builders, whose business it is continually to gauge the present and future demand for housing accommodation, are unable to see a reasonable prospect of making new building operations pay their way, it is a bold thing for the Council of a local authority to launch out upon a building scheme on the express understanding that it is to be maintained on a self-supporting basis. The Council is likely to secure the requisite land on less favourable terms than the private builder, the cost of erecting the building will probably be higher, as it is very unlikely that a municipal housing committee will be as careful as a private builder about little economies (as distinct from jerry work) which may make all the difference to him between a small profit and no profit or even a loss. Even if a local authority paid nothing more for the land or the buildings than a private builder would do, there still remains the fact that private enterprise, which must be regarded as more expert in this matter than a Town Council, anticipates unfavourable conditions in the future. If for one or more of these reasons, the local authority is unable to make their scheme self-supporting, which is more than likely, a burden will be imposed upon the rates for the benefit of the few municipal tenants, at the expense of the great bulk of the ratepayers. Such a building

scheme is not for the general welfare, but for the particular advantage of those who occupy the houses, and as a general rule, if nice four, five, or six room cottages with all modern conveniences are built, they are occupied by well-to-do artisans on whose behalf rate aid cannot possibly be justified. Even where rehousing schemes are undertaken on the sites rendered vacant in connection with clearance and improvement schemes, experience shows that it is the exception for the people actually displaced to occupy the new dwellings, and the chances that new municipal cottages, erected on the outskirts of a town, will be tenanted by people, who have been displaced by the erection of a school, or some other municipal building, or by some street improvement scheme in the centre of a town, are very slight indeed.[1]

House building is a difficult business, which requires much careful watching and anticipating of demand. The element of risk involved is very considerable; the whole character of a neighbourhood may deteriorate owing to causes over which property owners have no control, and in consequence of such changes the value of house property will fall. Again, a rise in the general standard of housing accommodation, such as has occurred during comparatively recent years, may compel landlords to make alterations which, however desirable from a sanitary point of view, may be entirely unremunerative. All circumstances considered, the housing business does not appear a suitable trading enterprise for local authorities to engage in, but sometimes a certain amount of house building may be justified by way of experiment, in order to act as a guide and ideal in the matter of the carrying out of development schemes, and to provide reliable information on which new and improved building regulations can be based. There is good reason for thinking that more improvements in the matter of the

[1] The first 150 cottages erected by the Manchester Corporation on the Blackley Estate, which lies about four miles from the centre of the town, were for the purpose of providing accommodation for persons of the labouring classes displaced by three street improvements effected in or near the centre of the city, viz., the widening of Rochdale Road, the making of the new street from Fairfield Street to Ardwick, and the widening of Long Millgate (*City of Manchester: Housing of the Working Classes. Published by the direction of the Sanitary Committee*, pp. 14-21). As a matter of fact, not one of the persons so displaced appears to live on the Blackley Estate.

housing of the working classes can be achieved by the preparation and enforcement of suitable town planning schemes and of good building regulations, and by the establishment of rapid and cheap transit facilities, than by the erection of cottage property by local authorities.

Town planning schemes have been carried out in Germany for a good many years nearly always with excellent results. In this country, it has only been possible to establish such schemes since the Housing, Town Planning, etc., Act was passed in 1909, and so far not very much use appears to have been made of it. On the other hand, local authorities have been authorised to conduct housing undertakings since 1890, when the Housing of the Working Classes Act was passed. Under Part III. of that Act and of subsequent amending Acts, a local authority can build houses for the working classes, without formally proving that there is any deficiency of housing accommodation, and although no cottage property of any kind has been demolished, provided that the Local Government Board will sanction the necessary loans.

The importance of building schemes undertaken under Part III. of the Housing Act being self-supporting in character appears to be generally recognised in principle, but seldom acted upon.[1] The action of the London County Council in this respect may be given as an illustration. In 1896, it passed a resolution that action should be taken under Part III. of the Housing Act, 1890, with a view to the purchase of land and the erection of dwellings thereon, provided that no charge be placed on the County Rate thereby.[2] As a matter of fact, a deficiency of £60,145 had arisen in connection with the working of these schemes up to March 31, 1907. The largest part of this loss (£47,530) was in respect of estates in course of development,

[1] A list of figures relating to cottages and cottage flats built by local authorities in urban districts and boroughs will be found in the *Municipal Year Book*, 1911, p. 669. In the last column the net return per cent on outlay is given, but as only the total working expenses have been deducted from the rents received in order to ascertain the net return, depreciation, interest, and sinking fund have to be provided for out of what remains. Not less than 4½ to 5 per cent on the capital outlay is likely to suffice for these purposes, yet the net return on capital outlay represents 4½ per cent or more in only ten of the fifty-six cases for which returns are given.

[2] *Report on the London County Council's Working-Class Dwellings*, by W. B. Peat and F. W. Pixley, p. 7.

but a not inconsiderable amount (£8379) was in respect of dwellings in occupation. The rest was accounted for by dwellings in course of erection.[1] In 1907-8, the total deficiency in respect of the London County Council undertakings under Part III. of the Housing Act was £10,606.[2] The position in London appears to be typical of what is happening in most other towns, where building schemes under Part III. of the Housing Act have been carried out, and can only be described as distinctly unsatisfactory.

(*b*) One type of municipal housing scheme calls for separate mention, namely, the erection of common lodging-houses. Where such are provided by a local authority, the principal object generally is that they should serve as models, though at the same time it is intended that they should supplement the existing accommodation where that is inadequate. The municipalities seek to maintain these undertakings on a self-supporting basis, though they do not always succeed in doing so, and where they are run at a loss they compete unfairly with private undertakings, which it is not intended that they should entirely displace; also they fail to serve as models, as proprietors of common lodging-houses cannot be expected to adopt arrangements which prove unremunerative. On the other hand, if a municipal common lodging-house is run so as to pay its way, it may serve a useful purpose by showing how such institutions can be managed and at the same time enable more reliable information to be collected concerning the people who frequent common lodging-houses, which may be of considerable assistance in considering any measures for dealing with casual labour.[3]

(*c*) Municipal departments for dealing in building plots (*Grundstücksfonds*) have been established in certain German towns, for example, in Düsseldorf,[4] Barmen,[5] Gelsenkirchen,[6]

[1] *Report on the London County Council's Working-Class Dwellings*, p. 7.

[2] *Report of the Housing of the Working Classes Committee of the London County Council*, 1907-8, p. 25. Of the total deficiency, £6352 was in respect of estates in course of development, £3540 in respect of dwellings in occupation, and £714 in respect of dwellings in course of erection.

[3] Amongst the towns which have established municipal common lodging-houses are London, Glasgow, Manchester, and Belfast. See *Municipal Year Book*, 1911, p. 661.

[4] O. Most, "Die Gemeindebetriebe der Stadt Düsseldorf," *Schriften des Vereins für Socialpolitik*, vol. 129, part ii. p. 118.

[5] *Kommunales Jahrbuch*, 1908, pp. 146, 147.

[6] *Ibid.* 1909, pp. 173, 174.

Stettin[1] and Duisburg.[2] The object of these departments is to manage such vacant building plots as the towns already own, to purchase new plots with the idea of increasing the municipal holdings, to make adequate provision in good time, and consequently on the most favourable terms, for the future requirements of the local authorities in the matter of sites for new schools and other municipal buildings, and to sell such plots as are not required by the local authorities whenever good opportunities offer. Incidentally it is hoped that these departments will secure for the municipalities a share of the unearned increments, and also that they will exercise an influence upon the development of new parts of the towns. When one of these departments is established all vacant building plots in the possession of the various municipal departments are generally transferred to it, and a certain capital is placed at its disposal with which to make purchases. Thus in Düsseldorf, the department was established in 1902 with a capital of £250,000, and in addition plots to the value of about £500,000 were transferred to it. On March 31, 1908, the department owned plots of a book value of some £875,000.[3] The expenses of these undertakings consist chiefly of the interest and sinking-fund charges in respect of the total capital employed. In the early years the profits on the transactions will probably be insufficient to meet these charges, and they are either met out of capital for the time being, or the deficits are carried forward. Ultimately it is expected that the departments will more than pay their way and that surpluses will be available for the purchase of still more land.

A municipal department for dealing in building plots is engaged in a similar undertaking to an estate development company which is largely actuated by social motives. The real estate business, as the Americans call it, is essentially speculative, and therefore *prima facie* unsuitable for municipal management. There are, however, certain circumstances which will tend to minimise the risks, when a local authority speculates in building plots, provided there is close co-operation between the various municipal departments, as it

[1] *Kommunales Jahrbuch*, 1910, p. 175.

[2] *Ibid.* pp. 193, 194.

[3] O. Most, *loc. cit.* p. 120.

is intended there should be; advance information will be available concerning any town-planning scheme which may be formulated, and concerning future developments of various kinds, in consequence of which it should be possible to buy the right sort of plots at lower prices than would otherwise be the case, and also to avoid making undesirable purchases. A close connection between the building-plot department and the other departments of a municipality would certainly tend to reduce the risks involved in land speculation, when engaged in by the local authority, but it also seems to be fraught with considerable danger of abuse. Alterations might be made in town-planning or improvement schemes simply with the object of enabling the building-plot department to realise profits by purchases and sales of land. Further, if in spite of its favoured position, a building-plot department made unsuitable purchases of which it could not dispose, there would be a temptation for the Town Council to insist upon the other departments using these unsaleable sites to meet requirements for which they were not well adapted, merely in order to relieve the building-plot department of its burden. The prevalence of either of these abuses could not be easily detected, unless they were practised on such a large scale as to become notorious. The ease and frequency with which abuses can occur, and the speculative character of a business which deals in building plots, however well supplied with information the management may be, appear completely to outweigh the advantages which may arise from the municipalisation of such a business.

(*d*) Another class of municipal undertaking associated with land is the provision of allotments, and in some cases even of small holdings. Individual members of the working class frequently find it very difficult, if not impossible, to secure the use of small plots of land which they can use as vegetable gardens, as many landlords do not care about subdividing their fields for this purpose. One way to meet this difficulty is for the various people seeking allotments to form an association which can then rent a field and sublet it in small plots to its members. If for some reason or other this arrangement cannot be carried out, and it is nevertheless desirable to provide people with oppor-

tunities of securing allotments, the local authority may intervene, purchase or rent suitable land, and let it or sublet it as allotments. Provided the rents charged are such as to enable the schemes to pay their way, and the local authorities only act when there is a real demand for facilities which cannot be met by voluntary efforts, there does not appear to be any objection to municipal allotments, as it is undesirable to place difficulties in the way of men who are engaged in mines, or mills, or works of some kind, when in their spare time they are anxious to cultivate a small plot of land, which can hardly fail to be a healthy method of occupying their leisure. Such information as is available shows that a considerable number of local authorities in this country have provided allotments, either under the Small Holdings and Allotments Act, 1908, or under some earlier statute. In connection with several of these undertakings a loss appears to have been incurred,[1] which is not desirable, as there is no adequate justification for it.

(*e*) A good many towns possess estates of one kind and another which have not been acquired in connection with particular reproductive or unproductive undertakings. In Germany, local authorities often own large tracts of forest and agricultural land either within or without the municipal boundaries. In many cases the property has belonged to the community as such from time immemorial. The forests are generally administered directly by the local authorities, but the arable land is rented to farmers. In the United Kingdom, the number of local authorities owning revenue-producing estates, which have not been acquired for any special purpose, is comparatively small. Amongst these Liverpool and Doncaster may be mentioned as being in very favourable positions. In the latter town the famous race-course is situated on the Corporation property, and is managed by the local authority, much to the financial advantage of that body. Once towns own estates which have not been acquired for any special purpose, it is the duty of the local authorities to manage the estates so that the general public may derive the maximum benefits; whether this can best be achieved by letting the property,

[1] See *Municipal Year Book*, 1911, pp. 821-827.

or by utilising it directly in some way, will call for consideration in each individual case.

§ 11. There are various municipal trading enterprises relating to the supply of necessities which can be grouped together for consideration. Those, such as water, that are subject to clearly marked monopolistic tendencies have been previously discussed. Here we are concerned only with necessities sold under competitive conditions, such as bread, milk and meat. (*a*) The question of a municipal bread supply may be dealt with first, as this has probably received more attention in theory and practice than the supply of any other article falling within this group. The arguments in favour of municipal bakeries are based principally upon grounds of public health, and to a less extent upon the price charged for bread and upon the conditions of the workers in the bread industry. Each argument must be considered separately; the first one turns on the fact that many private bakehouses leave much to be desired in the matter of the sanitary conditions under which the work is done, and also as to the methods of doing the work. In many cases bakehouses are situated in cellars; the water supply may be insufficient, the ventilation quite inadequate; such sanitary conveniences as exist are often in too close proximity to the bakehouse; the whole place is frequently dirty and damp. It is hardly possible that bread produced under these conditions should be pure; it may easily be contaminated and become a source of considerable danger to the consumer. The remedy clearly lies in the strict enforcement of proper regulations, which would prohibit the use of any premises as bakehouses, which did not comply with such minimum sanitary conditions as it was thought desirable to lay down. The conditions prevailing in many industries were altered during the nineteenth century by Factory and Workshop Acts, and there is no reason why bakehouses should not be brought under closer control. Experience has generally shown that in all industries, the state of affairs in small workshops and factories is much worse than in large ones, and the effect of strict regulation would doubtless be to make it impossible for a large number of small producers to continue in business,

and thus lead to the concentration of the bread industry in fewer hands. Such a movement would hardly be popular, but it would be likely not merely to bring about better sanitary conditions in bakehouses, but also the more extended use of modern kneading machinery and steam ovens, and a reduction in the cost of production. This points to a solution of the objection to the present system of organising the bread supply, viz., that the prices charged are often too high. A large number of small master bakers, each with only a very limited sale, are compelled to charge fairly high prices in view of the considerable fixed expenses which they have to meet; they are also frequently unable to avail themselves of the most modern methods of production, which involve considerable capital outlay, and which are suited for comparatively large bakehouses only.

Stricter sanitary regulations concerning bakehouses would be practically certain to lead to production on a larger scale. One result of this might be to enable the limited number of large baking establishments to come to an understanding with a view to keeping up prices. Against such a contingency the general public would appear to have three safeguards. In the first place, if the price fixed was unduly high it is hardly conceivable that outside competition would not spring up, as there is no sort of natural or legal monopoly about the bread supply. In the second place, the fact that people can bake at home, and actually do so in many parts of the country, should act as a check on prices. In the third place, it is possible to organise a co-operative bakery, which might be run independently, or as a department of a general co-operative stores. Perhaps the former would be preferable, as being likely to excite less opposition and to attract more members. The success of the great co-operative bakeries in Belgium, not uncommonly two in one town, the one organised by the Socialists and the other by the Catholic party, is worthy of mention in this connection.

The increase in the scale of production and the introduction of co-operative bakeries, besides leading to the establishment of sanitary and healthy conditions in bakehouses, to the introduction of the most modern scientific methods of

bread making, and to reductions in prices, should bring about an improvement in the position of the workers engaged in this industry.[1] Co-operative Societies generally make a point of giving fair treatment to their workers, and in large private bakeries, where the organisation of the journeymen would be much easier than it is at present in a large number of small ones, reasonable terms of employment could doubtless be secured by organised efforts if the employers were unwilling to concede such terms voluntarily.

That the present organisation of the bread industry is unsatisfactory in many places may be admitted, but this is quite different from accepting the municipalisation of the bread supply as the remedy. The industry is one which calls for proper regulation by the central government, and not for State management, which can be justified only under special circumstances which do not exist in this case. There is no reason to think that the best results will not be achieved by competitive undertakings operating under suitable conditions; and the proper function of the State in the matter is merely to see that such conditions are observed.

The country in which the principal experiments relating to the municipalisation of bread have been made is Italy. As early as the "eighties" of last century, some communal bakeries were established in rural districts to help to fight an illness known as pellagra which was caused by the population living too largely upon a maize diet. As potatoes do not flourish in Italy and rye is almost unknown, the only remedy was to substitute wheat bread for maize. Wheat bread was either a high-priced luxury, or entirely unknown, in the threatened districts. On medical grounds it was necessary that a plentiful supply at reasonable prices should be available. Under these circumstances the local authorities would presumably have been justified in supplying wheat bread at a loss, and whether the undertakings were subsidised

[1] For an unfavourable account concerning labour and other conditions in bakehouses in this country, see an I.L.P. pamphlet, "A Municipal Bread Supply," by T. H. Griffen, three years organiser to the Amalgamated Union of Bakers and Confectioners. Assuming the statements made in the pamphlet are correct, it is impossible to say how far they are typical or exceptional. The Italian conditions are described in G. Michels-Lindner, "Geschichte der modernen Gemeindebetriebe in Italien," *Schriften des Vereins für Socialpolitik*, vol. 130, part i. pp. 54-71.

or were conducted so as to be just self-supporting, they could not be regarded as trading enterprises. The first of these communal bakeries was established in Pasian di Prato in 1884.[1] Amongst the municipal bakeries which have been established as trading enterprises, that which existed at Catania in Sicily from 1902 to 1906 was probably the largest, some 100,000 lbs. of bread being baked daily. The local authority had made unsuccessful attempts to regulate the price of bread, which was said to be unreasonably high; but the immediate cause which led to the undertaking was a general strike proclaimed by the journeymen bakers. There was no previous investigation of any kind, nor any public agitation in favour of municipal bakehouses, the whole thing was started on the spur of the moment. To reduce the opposition of the private bakers many of these were appointed distributing agents; further, far more journeymen bakers were employed than the size of the undertaking justified, and both these policies imposed a heavy financial strain on the enterprise. There were also minor mistakes in the management which tended to have a similar effect.[2] The undertaking was given up in August 1906 as the result of an unfavourable report by a Government Commission.[3]

The largest existing municipal bread undertaking in Italy is that at Palermo. This produces some 45,000 lbs. of bread daily, which represents about one-sixth of the local consumption. The enterprise was established as part of a general policy to break down a "ring" in the local milling industry. In March 1903, it was decided to purchase flour outside the district and to bake some bread. Later a corn mill was rented by the local authority. Although the undertaking is on such a considerable scale, modern methods are employed to a small extent only; of the twenty ovens, only one is a modern steam oven, whilst in two of the three bakehouses the kneading is done by hand.[4] Other towns which have municipal bakeries managed by the local authorities in competition with private enterprise are Ravenna, Livorno (Leghorn) and Udine.[5]

[1] See Michels-Lindner, *loc. cit.* pp. 44-52.

[2] The buildings were inadequate and there was a want of proper supervision.

[3] Michels-Lindner, *loc. cit.* pp. 74-93.

[4] *Ibid.* pp. 100-104.

[5] *Ibid.* p. 99.

Conditions are so different in Italy and the United Kingdom, both in respect of the wealth of the two countries and of the stages of industrial development which they have reached, that a policy which must be condemned in the latter country may conceivably be justifiable in the former. There, if the force of competition is inadequate to secure reasonable prices being charged, and the mere fact that the old system by which municipalities fixed the price of bread[1] has not been abolished, although it can no longer always be successfully applied, points to this being the case, and if people are too poor to establish co-operative bakeries, some more definite municipal intervention may be necessary. Possibly the best solution would be for the local authorities to help in organising co-operative bakeries, as has actually occurred in some places in Italy.[2] But if for some reason this is not feasible, the only solution may be to establish a model municipal bakery, but under any circumstances it should not be done except as a last resource.

(*b*) The same demand for municipalisation does not appear to exist in the meat trade as in the bread trade; possibly because the poorer classes of the population are not so largely concerned. Actually the need for proper control is quite as great as, if not greater than, in any other industry engaged in the supply of articles of food. The control provided should relate to the sanitary conditions of the slaughter-house used, to the health of the animals slaughtered, and to the soundness of meat offered for sale. All of these requirements can best be secured by the compulsory use of municipal slaughter-houses,[3] erected and maintained on the latest sanitary principles, in conjunction with a rigorous

[1] Town Councils are entitled to fix the price of bread by establishing a *calmiere*. This may be compared with the policy adopted by many French municipalities of fixing each week a *taxe officieuse du pain* and in a few cases still a *taxe officielle du pain*. Each is based upon the current price of corn, the calculations being made according to a fixed rule which allows for the cost of baking and for the bakers' profits. The *taxe officieuse* is merely semi-official and indicates to purchasers what constitutes a reasonable price for bread. The *taxe officielle* is an official price which may not be exceeded for the specified qualities of bread. No prices are fixed for the finer qualities of bread (*pain de luxe*). The notices on which the prices are printed each week have to be displayed in a conspicuous position in every baker's shop.

[2] Michels-Lindner, *loc. cit.* p. 96.

[3] Butchers slaughter their own animals, paying a fee to the municipality for the use of the slaughter-house.

inspection, which is really only possible if all the slaughtering is done in comparatively few places. In Germany and France a great deal more has been done in this matter than in this country, where there is considerable scope for improvement. It is in Germany too, that the nearest approach to municipal trading in meat exists. In nearly every German town there is a public stall (*Freibank*[1]) for the sale of inferior qualities of meat. It is organised and managed by the local authority which sells the meat on behalf of private individuals, the expenses being covered by the deduction of a small commission from the receipts realised by the sales. The meat is sold in small quantities only, and the amount which any one household can buy on one day is limited. Restaurants and boarding-houses are generally not allowed to buy at the public stall, and meat dealers not under any circumstances.[2] Towns sometimes arrange for the sale of high-grade meat at the public stalls in order to break down the monopoly of the gilds of butchers, when these are accused of maintaining the retail prices of meat at an unduly high level above the wholesale prices. Two cases in which this policy was successfully adopted occurred during 1908 in Landsberg a. L. and in Diedenhofen. In the former town the local authority sold the high-grade meat on commission, in the same way as is done with the inferior qualities. In the latter town the local authority slaughtered pigs and sold the meat on its own account. In both cases the special facilities offered for the retail sale of high-grade meat were withdrawn, after the gild of butchers had undertaken adequately to reduce their prices.[3] In some cases the mere threat by the local authority to permit the sale of high-class meat at the public stalls, or to subsidise some private butchers in order to force down prices to a reasonable level, is sufficient to secure the desired object, as happened, for example, in Bonn in 1908.[4]

Another country in which special circumstances have sometimes arisen that have led local authorities to undertake the supply of meat is Italy. There the attempts of

[1] Literally this is a selling place free from the municipal gild regulations (Sanders, *Handwörterbuch der deutschen Sprache*).

[2] *Kommunales Jahrbuch*, 1908, pp. 46, 47.

[3] *Ibid.* pp. 55, 56.

[4] *Ibid.* pp. 54, 55.

municipalities to regulate the meat trade either in respect of prices or otherwise are sometimes strenuously opposed by the butchers, who even close their shops for some days as a protest. This occurred, for example, in Naples in August 1908, on account of a new by-law that the meat of any animal, an organ of which veterinary inspection had shown to be infected, might be offered for sale only in a cooked condition.[1] During these butchers' strikes the local authorities sometimes supply meat. Thus in Venice, in 1906, six municipal butchers' shops were opened during a strike. One has since been continued permanently, not with the idea of lowering prices, but of improving the quality of the meat sold at the usual prices.[2]

The difficulties in the local meat trades both in Germany and in Italy appear to arise from a want of free competition. In Germany, at least, old gild organisations are still in existence, which once doubtless served a useful purpose, but which now are quite as likely to prove a danger as a safeguard to the general body of consumers. Under modern conditions, to compel all dealers in a trade to meet together for certain purposes, is almost to invite the formation of price agreements, which it will be very difficult to check if it is in the power of the dealers' association to restrict entries to the trade. The direct sale of meat by a local authority may prove efficacious on occasions, but the real remedy from unreasonably high prices undoubtedly lies in securing perfectly free competition, so that any one who wishes may trade as a butcher, provided, of course, he complies with such slaughter-house and veterinary regulations as exist. The public meat stalls in German towns can hardly be regarded as municipal trading; they really constitute part of the policy of control, for, by compelling certain inferior qualities of meat to be sold at specified places, the general public which buys at ordinary butchers' shops is protected from possible deception. At the same time poor people who are anxious to secure meat cheaply are given a chance of doing so. Such cases of municipal trading in meat as have existed in recent times appear to have represented

[1] Michels-Lindner, "Geschichte der modernen Gemeindebetriebe in Italien," *Schriften des Vereins für Socialpolitik*, vol. 130, part ii. p. 130.

[2] *Ibid.* p. 131.

abnormal efforts on the part of the local authorities to deal with more or less special circumstances, and as such may have been justified; as a general thing the butchering business is quite unsuitable for municipal management; it should be organised and conducted by private enterprise, subject to proper sanitary and veterinary control by the central or local authorities.

Amongst the latest suggestions in favour of a municipal supply of bread and meat, was that formulated by the French government in the autumn of 1911, to mitigate, if possible, the recent increases in the cost of living.[1] The proposals were embodied in a bill, which provided that municipalities might either lend money for the establishment of local co-operative butchers' and bakers' shops, or establish such shops themselves. In this latter case, the funds would be advanced to the manager or tenant installed by the local authority. These co-operative and municipal shops were to be subject to all the ordinary State, municipal and trade imposts. Interest at the rate of 4 per cent per annum was to be charged on the money lent, which in no case was to exceed half the original capital expenditure, together with half the trading capital of any shop. The number of these shops was not to exceed one for every five thousand inhabitants. The proposals were received with much hostile criticism, and there does not appear to be any great prospect of the bill being passed into law.

(*c*) A somewhat peculiar case is that of a municipal retail supply of ice. In many countries during the hot summer months it is almost impossible to keep meat, fish, butter, milk, etc., without a plentiful use of ice, which for all practical purposes must be regarded as a necessity. If the weather is sufficiently cold in winter to allow of blocks of ice being cut from ponds, this ice can be stored in ice cellars and will be available for use in summer. Where however, very little, if any, natural ice is available, it will be necessary to rely upon artificial ice, and there is a danger that the industry may pass into the hands of speculators, and that the charges will be exorbitant. The problem will then be how to secure effective competition. The simplest arrange-

[1] See *The Times*, Nov. 2 and 3, 1911.

ment would be to organise a co-operative ice supply company, which would either import ice, or, if necessary, manufacture it and then distribute it. Very possibly the mere threat to organise such an undertaking would suffice to bring about the desired reduction of prices. If the consumers were too poor to find the necessary capital, or if the municipality already possessed an ice manufactory in connection with its market enterprises, the local authority might be desirous of establishing a retail ice undertaking. Under the latter circumstances where the retail sale of ice could be commenced, and, if it were so desired, discontinued at any time without involving much expense, less objection could be taken to such a proceeding to combat unreasonably high prices than in the former case, particularly if it involved the erection of an ice factory, which might easily prove to be a losing concern were it met by determined competition from the private undertakings that it was attempting to displace. Under any circumstances it would be an encroachment upon the field of competitive industry, for which adequate justification could hardly be found.

In Italy various municipalities have undertaken the supply of ice. Some have established ice cellars in which ice collected in winter is stored for distribution at moderate prices in summer; others have established artificial ice factories, the largest undertaking of the kind being that at Reggio Emilia, which was erected in 1902 at a cost of some £8000. Ice is sold wholesale at 2.50 lire per 100 kilograms, and retail at 5 centesimi per kilogram. There is a cold-storage factory warehouse and a slaughter-house in connection with the ice factory.[1]

(*d*) Reference has already been made to the existence of municipal milk depôts, established to supply sterilised milk for use by babies,[2] with the object of minimising as far as possible the high death-rates amongst infants. As sterilised milk is somewhat costly to produce, its sale at remunerative prices would in many cases fail to achieve the object for which it is supplied, because poor people cannot afford to buy it; consequently these undertakings are deliberately

[1] Michels-Lindner, "Geschichte der modernen Gemeindebetriebe in Italien," *Schriften des Vereins für Socialpolitik*, vol. 130, part ii. pp. 132-136.

[2] See p. 3, above.

subsidised out of the rates, and are not trading enterprises at all. Sometimes it is suggested that local authorities should undertake the general milk supply on the grounds that milk is a necessity, and that it closely affects the public health. The degree to which an article is a necessity cannot be accepted as a criterion of the desirability of municipalising its supply, although it must be considered when a question of introducing municipal management arises. Careful inquiry may show on the one hand, that it is justifiable for a local authority to supply an article which is clearly not a necessity, for example, electric current, and on the other hand, that it is very undesirable that it should supply an absolute necessity such as clothing. The fact that the purity of the milk supply is intimately related to the public health is a ground, not for municipalising the industry, but for controlling and regulating it. At the present time milk is subject to a certain amount of inspection, but whether this inspection is adequate is another question. It is comparatively easy to check adulteration, the difficulty is to check contamination which may arise not merely at the farm,[1] or in the course of transit between the farm and the dealer's, or whilst it is at the dealer's or during the time it is being delivered, but also in the home of the consumer. A good deal can be done by municipal regulations, but it is difficult to enforce these when much of the milk is not produced in the immediate neighbourhood of the towns where it is consumed, as is generally the case in big cities.[2] A much more comprehensive inspection than that which even the most energetic local authority can maintain within its own area is required, if satisfactory results are to be secured. At present every local authority in this country is charged with the supervision of milk production in its own district, but some naturally carry out

[1] The first question is whether the cow is healthy. Then there remains to be considered that the milk of a healthy cow may be affected by dirt on the udder, on the hands of the milkers, or on the utensils, and by the dust and air of the stall. See Spiegel, "Kommunale Milchversorgung," *Schriften des Vereins für Socialpolitik*, vol. 128, p. 223.

[2] Much interesting information concerning the sources of the Manchester milk supply is contained in a paper read before the Manchester Statistical Society in November 1909 by Professor Delépine. See *Transactions of the Manchester Statistical Society*, Session 1909-10, pp. 1-50.

their duties less efficiently than others, and many towns have secured powers to inspect cowsheds, etc., outside their own areas, in those cases where the towns derive part of their supplies from outside areas. Even under these circumstances, unless a town which obtains a considerable part of its milk supplies from a distance maintains a large staff of inspectors, it will have to place considerable reliance upon the efforts of the various local sanitary authorities. A close co-operation between the various local authorities is absolutely necessary if adequate inspection is to be maintained. If Rural District Councils, on which the farming interests are presumably strongly represented, prove lax in the administration of the law, powers of inspection should be conferred on the County Councils either instead of, or in addition to, those possessed by Rural Councils. Even where the friendly assistance of the farmers and others concerned can be secured, it is impossible to be absolutely sure of the purity of any milk offered for sale, as bacteriological impurities can be ascertained only after a lengthy investigation, which cannot be completed until long after the milk is consumed.[1]

One point must not be forgotten in considering the efforts which should be made to increase the purity of the milk. Some, at least, of the improvements which might be made could not fail to prove expensive, in consequence of which the price of milk would undoubtedly rise. One reason why Municipal Milk Depôts cannot supply pure fresh milk for infants, instead of sterilised milk, is that the former would prove even more expensive than the latter, which is already costly to produce.[2] A municipal fresh-milk undertaking could give no better guarantee of purity than well-managed, carefully controlled private enterprises, and the need for inspection at every stage in the production would be practically no less if the local authority were the dealer instead of private firms, as the suggestion that the municipal milk supply should be entirely from municipal model dairy farms, and not purchased from farmers, cannot be contemplated for a moment. It would involve a complete disorganisation of the farming industry of the

[1] Spiegel, *loc. cit.* p. 227. [2] *Ibid.* p. 228.

country, and if a very high standard of purity were prescribed there would be a large increase in the cost of milk, which might easily outweigh the advantages of the greater purity. This same standard, if desired, could be obtained on a private model dairy farm, but it would probably be impossible to sell the milk at a remunerative price. No case which is at all sound can be made out for the municipalisation of the milk supply; the proper function of the State in relation to the industry is to enforce an adequate inspection and supervision at every stage of production, so as to secure that all milk sold shall reach a reasonable standard of purity.

§ 12. The next class of municipal trading undertakings are those established to provide credit facilities, primarily for people in small circumstances. These undertakings take the form of savings banks, of ordinary banks, or of pawnshops. Local authorities also lend money on mortgage, either indirectly through their savings bank, or directly through municipal mortgage departments. British local authorities do not appear to engage in any of these enterprises, but on the continent municipal credit institutions of various kinds are quite common. (*a*) In Germany there are a very large number of municipal savings banks, due probably in a considerable measure to the fact that there is no State institution of the kind. Many of them were established in the first half of the nineteenth century, at a time when facilities for safely disposing of small sums hardly existed. Of the 1508 savings banks which existed in Prussia in 1901, 686 were municipal and 185 were private, the bulk of the remainder being so-called "rural" and "district" savings banks.[1] In Saxony all savings banks are municipal institutions.[2] Some indication of the size of these institutions can be gathered from the table on the next page, in which the number of depositors and the amount due to depositors in certain municipal savings banks are given.

The municipal savings banks are all managed on the principle that they shall be self-supporting, but not profit-making institutions. Nevertheless considerable diversity

[1] *Second Series of Memoranda, Statistical Tables and Charts prepared in the Board of Trade with reference to British and Foreign Trade and Industrial Conditions*, p. 182.

[2] *Ibid.* p. 183.

TABLE showing the Number of Depositors and the Amount due to Depositors in certain Municipal Savings Banks in Germany.[1]

Town.	Year in which Savings Bank was founded.	Number of Depositors.	Amount due to Depositors.	End of Year to which Figures relate.
			Marks.	
Düsseldorf .	1825	86,782	61,359,084	1907
Freiburg i/B.	1826	28,751	31,888,005	1908
Halle a/S. .	1857	85,212	46,825,817	1907
Leipzig .	1826	198,284	70,573,759	1907
Magdeburg .	1823	170,558	91,900,000	1907
Mannheim .	1822	37,826	26,893,186	1906
Munich .	1824	115,566	56,973,994	1906
Remscheid .	1840	18,131	17,180,000	1908

exists in the rate of interest paid on deposits. The rates most commonly paid appear to vary from 3 to 4 per cent. Thus, for example, in 1908 the rate of interest paid by savings banks was 3 per cent in Berlin, Königsberg and Magdeburg, 3½ per cent in Frankfort-on-the-Main, Düsseldorf and Hanover, and 4 per cent in Duisburg, Essen and Dortmund.[2] The results of an investigation concerning 535 public savings banks in Germany, with deposits exceeding £200,000,000 in 1908, are summarised in the following table :—[3]

Number of Savings Banks.	Rate of Interest on Deposits.	Amount due to Depositors.
	Per cent.	Marks.
97	3	886,000,000
24	3¼	188,000,000
95	3⅓	593,000,000
137	3½	973,000,000
34	3¾	266,000,000
148	4	1,205,000,000
535	...	4,111,000,000

[1] Compiled from the Monographs relating to these eight towns, published in the *Schriften des Vereins für Socialpolitik*, details of which will be found in Appendix A.

[2] Silbergleit, "Preussens Städte," quoted in *Kommunales Jahrbuch*, 1909, p. 536.

[3] The figures, from a paper by H. Reusch in *Die Sparkasse*, No. 655, 1909, are quoted in the *Kommunales Jahrbuch*, 1909, p. 536.

The explanation of the variations in the rates of interest appears to lie in the different methods adopted of investing the funds of the banks: as the proportion invested in mortgage increases, the rate of interest on deposits rises; on the other hand, the more of the funds that are invested in gilt-edged securities, the lower the rate of interest on deposits falls. To show how differently the savings banks funds are used, two illustrations relating to large Prussian municipal savings banks may be given: at Altona 95 per cent of all the investments held are mortgages, in Frankfort-on-the-Oder only 21½ per cent.[1] These are the two extreme cases so far as the 109 Prussian towns with a population of over 25,000 inhabitants are concerned.

In addition to investing some of their funds in gilt-edged securities and in making loans to local authorities,[2] practically all the municipal savings banks lend money on the security of land and buildings, generally on those situated within the town boundaries. Not infrequently they appear to assist in the erection of small dwellings. Sometimes, with this object in view, the municipalities co-operate with their savings banks, the latter lending, say, up to half the value of the property on the first mortgage, and the former lending a further sum on a second mortgage. Thus in Crefeld, if the value of the property does not exceed £2000, the savings bank will lend 50 per cent of the value on first mortgage, and the town will lend a further sum on second mortgage at 4½ per cent, up to 75 per cent of the total value. Beginning not later than one year after the occupation of the new building, the borrower must pay at least a further 2 per cent on the loan to provide for its repayment.[3] In Magdeburg, to facilitate the erection of

[1] *Kommunales Jahrbuch*, 1909, p. 536.

[2] An investigation concerning the loans effected by the larger German towns during the years 1879 to 1907 showed that 25.88 per cent of the total amount was lent by their own savings banks, 8.47 per cent by other savings banks, and only 6.04 per cent by private banks. During the same period 6.21 per cent of the total stock issued by these towns was taken over by their own savings banks, 0.51 per cent by other savings banks, and 86.69 per cent by private banks (Dr. Otto Most, *Mitteilungen der Zentralstelle des deutschen Städtetages*, Nr. 13/14, 1908, quoted in the *Kommunales Jahrbuch*, 1909, p. 535).

[3] *Kommunales Jahrbuch*, 1910, p. 586. That facilities are granted on property with a value as high as £2000 is due to the fact that the erection of working-class flats is contemplated.

small dwellings, the town will lend on second mortgage up to 70 per cent of the total value of the property, after taking into account any advance of the savings bank, which is prepared to lend up to 50 per cent of the value on first mortgage.[1]

(*b*) In a few cases a local authority lends money on house property quite independently of the savings bank. In Düsseldorf there is a Municipal Mortgage Department which was established in 1900. The industrial development of the town was proceeding very rapidly, yet few dwelling-houses were being erected, apparently because it was not sufficiently remunerative. To encourage house building, the municipality decided to lend its credit to private builders and to make loans on mortgage on favourable terms. Ordinary rules of safety are observed, and as a general thing the loans made may not exceed three-fifths of the value of the property. In the case of small dwellings the Department may lend up to two-thirds of the value. To facilitate building, the town makes loans on houses which are about to be erected, whereas most societies will not lend until the houses are finished.[2] A scheme was inaugurated in June 1907 by the town of Liége, by which money can be lent to workmen to enable them to erect houses.[3] No workman can borrow more than £260. The rate of interest is 3 per cent, and an additional ½ per cent has to be paid to provide a cumulative sinking fund by means of which the debt will be repaid after 66 years. The borrower must also insure his life for not less than £40. The town does not require the borrower to provide anything; even the site and the stamp duty and law charges in connection with the transfer of the property may be paid for out of the loan. The municipality takes a first mortgage on the property, but this is certainly not an adequate security in view of the fact that it has lent more than the full value of the house. The object of the scheme is to help people who are too poor to avail themselves of the assistance of the state-aided building

[1] *Kommunales Jahrbuch*, p. 596.

[2] O. Most, "Die Gemeindebetriebe der Stadt Düsseldorf," *Schriften des Vereins für Socialpolitik*, vol. 129, part ii. pp. 103-111.

[3] *Report of an Enquiry by the Board of Trade into Working-Class Rents, Housing and Retail Prices in the Principal Industrial Towns of Belgium*, p. 105.

societies, but in practice the people who are availing themselves of it are quite young skilled artisans.

(*c*) Municipal banks, as distinct from savings banks, are very exceptional; two such are those which exist in Breslau and Chemnitz. The former—Die Städtische Bank zu Breslau—has a capital of £150,000 and the latter—Die Chemnitzer Stadtbank—has a capital of £25,000. The object of these banks is described as the encouragement of commerce and trade, the acceptance of deposits, and the transaction of the financial business of the municipalities. Both banks are conducted on a profit-making basis. The average annual net surplus during the five years 1902-6 was £11,000 in Breslau, or 7⅓ per cent on the capital invested, and £6000 in Chemnitz, or 24 per cent on the capital invested.[1]

(*d*) Municipal pawnshops are very common on the Continent of Europe. In some countries private pawnshops exist alongside of the public ones, but in others all pawnbroking establishments are public institutions, being conducted either by the local or the central authorities. Some of the public pawnshops are of considerable antiquity, dating in the case of Italy from the end of the fifteenth century. In France the first *mont de piété* was established in the sixteenth century. In this country all pawnshops are conducted entirely by private enterprise. Some years ago the London County Council considered the advisability of establishing pawnshops in London, but nothing came of it.

§ 13. In judging these various types of municipal credit institutions there can be no hesitation in describing a general banking business as quite unsuitable for management by local authorities. As to the rest, it is necessary to bear in mind the conditions under which they were inaugurated, the objects for which they were established, and the principles on which they are conducted. The primary object of a savings bank is to provide a means of placing small sums in absolute security, whence they can be withdrawn at any time when required. The fact that savings banks pay interest on deposits causes some people to deposit money with them as an investment, but in so far as these institutions are used for this purpose, they are only fulfilling a secondary function.

[1] *Kommunales Jahrbuch*, 1908, pp. 367, 368.

They pay interest because in the course of their business they earn profits which, after the payment of all expenses and the accumulation of a reserve fund, must be distributed amongst the depositors, if the undertakings are not to be more than self-supporting. Savings banks must do something with their deposits; to hoard them in vaults would nowadays be regarded as an unsound economic policy to adopt; a means of investing the funds must be found which is absolutely safe so far as it can be. To secure this object the State has frequently established savings banks and has given the depositors its guarantee that they will be repaid in full whenever they desire it. This is, of course, the position with regard to the Post Office Savings Bank in the United Kingdom. If the central government does not undertake to provide facilities for saving, the question arises whether local authorities are justified in doing so, and if so, how they are to employ the funds accumulated. As a general principle, it seems undesirable that a savings bank should be run for profit, as the risks are thereby immediately increased. Where private enterprises are established purposely to provide facilities for the accumulation of small sums, they are generally of a semi-public type, such as the various trustee savings banks in this country. Of quite recent years some of the large English joint-stock banks have opened savings departments that enjoy the security afforded by the large resources of big institutions conducting a conservative banking business, but these departments have no bearing on problems, the solution of which lies abroad and in the past. In Germany there were no State savings banks, so that if private citizens of suitable standing were not forthcoming to organise an institution which would both impress the general public with its stability, and at the same time afford every indication of being conducted on absolutely sound lines, local authorities were practically forced into establishing savings banks, as the disastrous results attending the collapse of institutions in which people of small means have placed their savings, make the provision of some undertaking, in which little sums can be allowed to accumulate in safety, most desirable.

The most natural way for a municipal savings bank to

invest its funds in order to incur a minimum risk, would be in gilt-edged securities, and the interest on deposits would be based upon the yield obtained from the sums invested. The payment of the interest would doubtless be absolutely safe, but fluctuations in the market value of the securities might easily occur. A reserve fund would, of course, be provided out of revenue to meet normal falls in market value, but a great depreciation in gilt-edged securities, such as has occurred during the last decade, would be likely to place many savings banks in a very serious predicament. For example, in 1908, the fall in the market value of the gilt-edged securities held by German municipal savings banks was equivalent to $4\frac{1}{2}$ per cent of the cost price of the securities.[1] In other years recently the fall must have been considerable, if not as great as that in 1908. One thing which makes the position of the German municipal savings banks less serious than it otherwise would be, is the fact that part of their funds are employed in other ways, viz., as loans on mortgage, and as temporary loans to local authorities. Although money invested in these loans cannot be realised as easily as that invested in gilt-edged securities, and requires the exercise of more supervision, it possesses the great advantage of not being subject to capital depreciation, and if proper caution is exercised, little or no capital losses should be incurred in connection with foreclosure of mortgages. Another point in favour of loans to local authorities and on mortgages is, that a higher rate of interest is earned, but this is not of the same importance, as it has already been mentioned that the primary object of a savings bank is to make absolutely sure that it can repay all its deposits when required, and not to pay a high rate of interest on deposits. If this primary object can be better achieved, as it apparently can, by spreading the investments over gilt-edged securities, loans to local authorities, and loans on mortgage, than by restricting the investments entirely to gilt-edged securities, municipal savings banks must be held to be justified in acting accordingly, provided that too big a proportion of the assets are not locked up in investments which cannot be realised in a reasonable period of time. The fact that a

[1] *Kommunales Jahrbuch*, 1909, p. 535.

week's notice has to be given before anything exceeding a very modest sum can be withdrawn from a savings bank, and often a much longer notice where large sums are concerned, considerably reduces the proportion of cash and quite easily realisable assets, which need be held by these institutions, and makes their position different from that of a bank, which has to be prepared to meet large payments on demand.

That a municipal savings bank, which has been established to provide a safe place for the accumulation of small sums, in the absence of any other reliable institution, may be justified in investing some of its funds in mortgage and in loans to local authorities, is quite different from establishing a savings bank in order to facilitate the raising of loans by local authorities and the advancing of money on mortgage with a view to encouraging building operations in a town. On the one hand, a savings bank formed under such circumstances, as a subsidiary department of a kind of municipal building society undertaking, could never inspire the confidence of the general public, and on the other hand, if money is to be provided by a local authority to assist building operations, quite apart from whether such action is justifiable or not, it should be kept entirely separate from all other funds controlled directly or indirectly by the local authority, and the last thing to do is to jeopardise the safety of the savings bank by involving it in building speculations. Such loans as a genuine savings bank makes on mortgage should be selected purely from a business point of view, the excellence of the security offered being the all-important consideration. The investment policy of such an institution should be determined solely by the desire for complete safety, and no effort to effect reforms should be allowed to influence the management of the bank in utilising the funds. If working-class house property affords as good security as other kinds of property, a reasonable proportion of the mortgages chosen by the bank may fairly be in respect of such land and buildings; but if mortgages on such property are not absolutely first class, they should be left entirely alone, and on no account should a savings bank offer preferential terms in favour of mortgages on working-class property; it has one duty to perform, namely, to serve its

depositors to the best of its ability; to act in a manner prejudicial to their interests by advancing money on second-rate security, or on unduly advantageous terms, must be regarded as a breach of trust.

Although a municipal mortgage department is clearly an institution for providing credit facilities, it is also a method of dealing with the housing problem. In Liége the town desired to encourage workmen to build houses for themselves to occupy. There is more than one state-aided building society[1] in the town which offers the utmost facilities that are compatible with even moderate safety, and many workmen have availed themselves of the opportunity thus afforded them to erect houses. To invite unskilled workmen with low wages, whose employment in any particular place must be somewhat uncertain, to undertake the burden connected with the purchase of a house by instalments does not seem a desirable policy, and they appear to think so too, as experience is showing they are unwilling to avail themselves of the scheme. On the other hand, there can be no possible justification for assisting by a financially unsound scheme the young skilled artisans who are accepting the terms offered by the town. In Crefeld, Magdeburg and Düsseldorf the object of the municipalities is to assist private builders in erecting working-class dwellings by lending them money on more favourable terms than could be secured elsewhere. There is no intention on the part of these towns to lose money over these transactions, and there is no information to show to what extent the terms granted by the municipalities are more favourable than those which can be obtained from private credit institutions, so that it is difficult to judge how far building operations are likely to be stimulated. If these municipal mortgage departments really required adequate security for the loans granted, and if the rate of interest charged is sufficiently high, not merely to meet the expenses of the

[1] Through the State savings bank large sums of money are placed at the disposal of the building societies at low rates of interest to enable them to extend the scope of their operations. Accounts of some of these societies in various Belgian towns will be found in the *Report of an Enquiry by the Board of Trade into Working-Class Rents, Housing and Retail Prices in the Principal Industrial Towns of Belgium.*

departments, including the sums required for the service of their debts, but to enable a reserve fund to be accumulated proportionate to the risks involved in accepting second mortgages, the treatment accorded cannot be very preferential, and is not likely to stimulate building to any considerable extent. If the departments are prepared to lose money, more building may be encouraged. In any case a certain number of working-class families, or a few private builders, or both these small groups, appear likely to obtain all the advantages associated with the municipal efforts. It is difficult to see that the community as a whole will be benefited at all. A German local authority which tackles the housing problem by means of a carefully managed mortgage department probably stands to incur less loss than an English local authority which takes action under Part III. of the Housing of the Working Classes Act, 1890. On the other hand, a mortgage department affords no information upon which better building or town-planning regulations can be based, which is at least one point that can be advanced in favour of a small building scheme under Part III. of the Housing Act. The opinion has already been expressed that the house-building business should be left to private enterprise, though a little experimental building by local authorities may, under some circumstances, be justifiable. For a municipal mortgage department it does not seem possible to find any justification.

The present ownership of pawnshops appears to be largely a matter of history. In many countries of continental Europe the making of small loans on the security of pledges has been regarded since the end of the Middle Ages as one of the recognised methods of dealing with destitution. The first pawnshops, the Italian *monti di pietà*, were established by charitable persons who wished to rescue the poor and needy from usurious money-lenders, and these semi-philanthropic institutions were gradually introduced into various countries, the State or the local authorities frequently finding the necessary funds. In England, the lombarding business, as it was then called, continued in private hands. From time to time Acts have been passed to regulate the management of pawnshops, and limits have

been placed upon the rate of interest which may be charged upon loans for less than £10. In judging the rate of interest charged by pawnbrokers, it must be remembered that the whole of the working expenses, including cost of management and insurance against loss in connection with forfeited pledges, have to be paid out of the charges made for loans, before the return on the capital invested can be ascertained. In view of the competition which exists among pawnbrokers in this country, it is difficult to believe that the profits are very great. To municipalise the pawnbroking business after it has reached its present stage would imply not merely a change in the form of ownership, but a complete alteration in the attitude adopted by the public towards pawnbroking. It would receive sanction as an official method of dealing with destitution, a position it does not occupy at present. The whole problem of how to deal with destitution has been receiving much attention of late, and it would be very undesirable to contemplate instituting public pawnshops, without a very careful preliminary inquiry concerning the relationship of such a proceeding to the various other methods of reform which have been suggested.

§ 14. The development of the principal groups of municipal trading enterprises has now been considered, but reference must still be made to a few miscellaneous undertakings which cannot be made to fit into any general scheme of classification. One such undertaking is that of the maintenance of a service of steamboats on the Thames, which was done for a couple of years by the London County Council. The enterprise was authorised by the Thames River Steamboat Service Act, 1904. A service was inaugurated in June 1905 between Greenwich and Hammersmith.[1] Very heavy financial losses were incurred, and after a couple of years the undertaking was abandoned.[2] There never appears to have been any justification for a local authority to provide a service of steamboats on the Thames. This should have been left to private enterprise if the demand for such service was sufficient to enable it to be conducted on a remunerative basis. If this was not possible, and

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part iv. p. 11.

[2] *Report on the London County Council's Steamboats*, by W. B. Peat and F. W. Pixley, p. 16.

consequently no steamers were run, that was no reason for the London County Council to step in and provide a service at a dead loss. Another case of municipal steamboats is that of the Birkenhead ferries undertaking, which maintains a service between Birkenhead and Liverpool across the mouth of the Mersey, which is about a mile wide at this part. The circumstances are quite different there from those in London. In the first place, this steamboat service affords one of the principal methods of communication between these two large towns,[1] and is consequently in great demand. In the second place, the Woodside Ferry Company, which conducted the principal service before the local authority took it over, brought an action against their competitor, the Monks Ferry Company, and obtained a verdict that they had an ancient right of ferry which the defendants had infringed. In consequence of this decision the Monks Ferry was closed in 1839.[2] The service constituted practically a monopoly, subject to no control. It closely affected the welfare of the inhabitants of Birkenhead, and it seems quite justifiable that the Commissioners for the Improvement of the Township of Birkenhead, the predecessors of the Corporation, should have purchased it in 1842 under a local Act. It is maintained on a more or less self-supporting basis. In 1902-3 there was a small sum available in relief of the rates. In 1903-4, 1904-5, and 1905-6 a small contribution had to be made to the undertaking from the rates to enable the proper sum to be set aside for depreciation.[3]

In a few cases in Germany municipalities engage in the publishing and printing business so far as newspapers and official gazettes are concerned.[4] There appear to be four towns which publish daily newspapers, viz., Elberfeld,[5]

[1] Its position was even more important before the building of the Mersey Tunnel.

[2] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 171.

[3] *Ibid.* p. 170.

[4] See J. Ehrler, "Gemeindezeitungen, Druckereien und Plakatinstitute," in the *Schriften des Vereins für Socialpolitik*, vol. 128, pp. 347-374, and an article by him on the same subject in the *Mitteilungen der Zentralstelle des deutschen Städtetages*, pp. 62-67, quoted in the *Kommunales Jahrbuch*, 1909, pp. 529, 530.

[5] *Täglicher Anzeiger für Berg und Mark.* Daily circulation at end of 1908, 8410.

Freiburg in B.,[1] Dresden[2] and Zittau.[3] In the two last cases the newspapers belong to foundations (*Stiftungen*) which are controlled by the municipalities. Amongst the towns which publish official gazettes are Berlin, Breslau and Stuttgart. If a town has a great many notices of one kind and another to make public every week, there may be some justification for the publication of an official gazette, though the same publicity will hardly be attained as through the medium of advertisements in an ordinary newspaper. On the other hand, an ordinary newspaper undertaking appears quite unsuitable for municipal management.

A trading undertaking of quite a special character exists in Colchester, where the local authority owns oyster beds on which a considerable profit is made.[4] In Brighton there is a Municipal Aquarium, bought from a company in 1901, which has proved to be an unremunerative undertaking.[5] The County Borough of Blackpool owns a sea water-supply undertaking, of which the Corporation itself is the chief customer for street watering purposes.[6] The city of Bradford owns and manages a conditioning house in which the true weight, length, and condition of articles of trade and commerce commonly used in the city, viz., wools, tops, noils and yarns, are ascertained and certified. The undertaking is conducted on a self-supporting basis.[7] It is impossible to make any generalisations about miscellaneous municipal enterprises such as those mentioned by way of illustration. Each one must be judged on its merits, after a careful consideration of all the surrounding circumstances.

§ 15. In the course of this chapter all the reasons in favour of municipal trading which have been advanced from time to time by various writers have not been considered; reference has practically been restricted to such as can be shown to have exercised a direct influence on the establishment of particular municipal trading enterprises. There are,

[1] *Freiburger Tageblatt.* Daily circulation at end of 1908, 6300.

[2] *Dresdener Anzeiger.* Daily circulation in 1907, 32,700.

[3] *Zittauer Nachrichten und Anzeiger.* Daily circulation at end of 1908, 5750.

[4] Evidence before the Joint Committee on Municipal Trading, 1900, QQ. 3878, 3879, and *Municipal Year Book*, 1911, p. 57.

[5] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part iii. pp. 192-194.

[6] *Ibid.* part ii. pp. 228, 229.

[7] *Ibid.* part i. pp. 65-67.

however, one or two reasons which may have led indirectly to an extension of municipal trading that call for mention. (*a*) Amongst such reasons is the desire to improve the conditions of labour by increasing the number of municipal employees as much as possible, the idea being that local authorities are better employers than private firms. This, to some extent at least, is probably true, but it raises the large question as to whether local authorities do not sometimes overpay their work-people and grant them unduly favourable conditions of employment. If higher wages and improved conditions lead to a more than proportionate, or even a proportionate, increase in the efficiency of the labour, the granting of the better terms is clearly a sound economic policy to adopt. The low productive power of labour which is underpaid, and which is compelled to work during unreasonably long hours, causes it to be more costly to employers than well-paid labour which is thoroughly efficient. It must, however, not be forgotten that it is just as much in the true interests of a private employer to pay adequate wages and to grant proper conditions, so as to secure the service of really efficient work-people, as it is in the case of a local authority. On the other hand, there is a danger that a municipality may raise wages and improve conditions beyond the point where any corresponding increase in the efficiency of the work-people can be looked for. Under these circumstances labour must be described as overpaid ; the influences which tend to bring about this state of affairs are discussed below in the chapter on the Labour Policies of Municipal Trades.[1]

(*b*) The fact that most local authorities can borrow money more cheaply than the majority of private trading enterprises is sometimes put forward as a reason for adopting a large policy of municipalisation. The reason, however, appears to be quite unsound. The functions of any authority or institution must be determined by clearly established principles, and not according to the price at which it can borrow money.[2] The Bank of England receives

[1] See pp. 297-304.

[2] That price will depend to a large extent upon its functions.

enormous sums on deposit, without paying any interest at all in respect of them, yet no sane person would advocate that the Bank should engage in various more or less risky industrial enterprises, merely because it is able to obtain large sums free of interest. Such business would be clearly outside the recognised functions of the Bank. If the low price at which a municipality can at present borrow money were a reason for engaging in trading enterprises, there would be no limit to the sphere of activities of a local authority, and it might even become financially interested in such speculative things as rubber plantations or gold mines, though, judged by ordinary standards of what constitute the functions of municipalities, rubber plantations and gold mines are not suitable undertakings for management by local authorities. The functions of local authorities must first be considered quite apart from the cost of carrying them into effect, and the fact that it is anticipated that a municipality can do certain work cheaply, is no ground for undertaking the work, unless it can be clearly shown that it is adapted for municipalisation.

(*c*) Another consideration which may have led to an extension of municipal trading is the saving in the cost of management in the case of public, as compared with private, ownership: there are no directors' fees to be paid and the salaries of municipal officials are often lower than those of the officials of private undertakings. The saving may easily be more apparent than real. The fees paid to directors of companies are often small when compared with the increased earning capacities of the companies due to their efforts. On the other hand, the unpaid aldermen and councillors who constitute the trading committee of a local authority may contribute little or nothing to the success of the undertaking for which they are responsible, and sometimes may even cause it to be less successful than if the management had been left entirely in the hands of the officials. As far as these latter are concerned, the fact that they often receive lower salaries than the corresponding officers of companies may penalise rather than benefit the undertaking which they manage; underpaid officials are no cheaper than underpaid

work-people, and experience seems to show that local authorities tend to err in the direction of underpaying their officials,[1] whatever the treatment may be which they mete out to their labourers. Another point which must be borne in mind in this connection is whether local authorities are more likely than companies to overstaff their undertakings. But even if it can be shown that a municipality is able to manage a trading undertaking really more cheaply than a company, it is no more a reason for municipalising such an enterprise than is the fact that municipalities can generally borrow money more cheaply than private enterprises. In every case where the municipalisation of an undertaking is to be justified, it must be based on the general principles concerning the proper functions of local authorities.

[1] This point is dealt with more fully in Chapter VII. See especially pp. 304, 305.

CHAPTER III

THE EXTENT OF MUNICIPAL TRADING

§ 1. IN the foregoing pages the forces which have led to the development of municipal trading have been analysed and the great variety of trading enterprises conducted by one local authority or another has been briefly indicated. Closely related to this aspect of the problem of municipal trading is the question as to how extensively these various enterprises are carried on by local authorities. Unfortunately it is impossible to obtain complete information on this subject, and it is necessary to be satisfied with such details as can be pieced together from a variety of sources. The two countries in which the municipal management of trading enterprises appears to be most extensively adopted are the United Kingdom and Germany, and it is to these two countries, or to parts of them, that the figures in this chapter relate.

The amount of the outstanding loans of local authorities for "trading" and certain other "reproductive" purposes in different years gives an indication not merely of the present extent, but also of the growth of the various undertakings. This information is given for England and Wales in the table which follows; detailed figures were not published for any year before 1884-85, consequently that year and the years 1894-95, 1904-5, and 1907-8, this being the last year for which the figures are available, have been selected. At the end of 1907-8, English and Welsh local authorities had outstanding loans amounting to over two hundred and sixty-seven million pounds in respect of "trading" enterprises.

TABLE showing the Outstanding Loans of Local Authorities in England and Wales for "Trading" and certain other "Reproductive" Purposes at the end of 1884-85, 1894-95, 1904-5, and 1907-8.[1]

Purposes.	1884-85.	1894-95.	1904-5.	1907-8.
Water Works . . .	£30,327,000	£43,970,000	£114,699,000[2]	£122,547,000[3]
Gas Works	13,769,000	16,932,000	23,831,000	23,358,000
Electricity Supply . .	...	1,379,000	25,639,000	28,667,000
Tramways and Light Railways	1,168,000	1,467,000	25,315,000	33,300,000
Harbours, Piers, Canals, Docks, and Quays .	28,538,000	32,778,000	43,555,000	46,874,000
Markets	5,004,000	5,771,000	7,736,000	7,590,000
Advances to Manchester Ship Canal Company	...	5,127,000	5,088,000	5,051,000
Total of the above ("Trading" Debt)	£78,806,000	£107,424,000	£245,863,000	£267,387,000
Baths, Wash-houses, and open Bathing-places	562,000	1,470,000	2,940,000	3,131,000
Cemeteries	2,369,000	2,718,000	3,077,000	3,120,000
Housing of the Working Classes . . .	3,532,000	4,352,000	8,962,000	10,510,000
Total of all the above ("Reproductive" Debt)	£85,269,000	£115,964,000	£260,842,000	£284,148,000

Of this debt, some forty-eight million pounds were in respect of the Metropolitan Water Board and twenty-five million pounds in respect of the Mersey Docks and Harbour Board. Water works accounted for some 46 per cent of the trading loans, gas works for 9 per cent, electricity supply for 11 per cent and tramways for 12 per cent. During the twenty-three years between March 1885 and March 1908, the outstanding debt in respect of water works increased by some 300 per cent, in respect of gas works by some 70 per cent, in respect of tramways and light railways by some 2750 per cent, whilst the debt in respect of electricity works, which was nothing at the beginning of the period, amounted to more than twenty-eight million pounds at the end of the

[1] Extracted from the *Annual Taxation Returns*, 1907-8, part viii. p. 116.

[2] Includes £45,944,000, the outstanding debt of the Metropolitan Water Board.

[3] Includes £48,123,000, the outstanding debt of the Metropolitan Water Board.

period. This period saw the growth of practically two new types of municipal enterprise—electricity and tramway undertakings—yet the borrowing incurred in connection with these two together was only two-thirds of that incurred in connection with water undertakings. Even if the outstanding debt of the Metropolitan Water Board is excluded, the new loans incurred in respect of water undertakings considerably exceeded those incurred in respect of any other trading undertakings. In 1884-85 the total outstanding loans of English and Welsh local authorities were £173,208,000,[1] and the "trading" debt represented 46 per cent and the "reproductive" debt 49 per cent of the total debt.[2] In 1907-8 the total outstanding loans of English and Welsh local authorities were £503,646,000,[3] and the "trading" debt represented 53 per cent and the "reproductive" debt 56 per cent of the total debt or, if the loans contracted by the Metropolitan Water Board were entirely excluded from the calculations, 48 per cent and 52 per cent respectively. From these figures it will be seen that the "trading" debt represented a somewhat larger proportion of the total debt in 1907-8 than in 1884-85. Speaking quite broadly, about half the outstanding loans of English and Welsh local authorities are for reproductive purposes and half for other purposes. In Germany the proportion appears to be about the same, for an inquiry relating to all outstanding loans, at the end of 1907, of Prussian towns with a population of over 10,000 showed that 52.7 per cent were for reproductive purposes.[4]

§ 2. An examination of the purposes for which particular local authorities have contracted loans, shows that the proportion due to reproductive and to other purposes varies considerably from town to town. In the tables which follow, the outstanding loans of ten large English and ten large German towns have been set out. The first columns of figures show the total outstanding loans, the second columns the amount of outstanding loans for reproductive

[1] *Annual Local Taxation Returns*, 1907-8, part viii. p. 116.

[2] The difference between "trading" and "reproductive" enterprises is defined above on p. 16.

[3] *Ibid.* 116.

[4] Silbergleit, "Preussens Städte," *Denkschrift zum hundertjährigen Jubiläum der Städteordnung*, quoted in the *Kommunales Jahrbuch*, 1909, p. 543.

purposes, and the fourth columns the amount of outstanding loans for other purposes. The other columns show the proportion of debt due to reproductive and to other purposes. The very large proportions of reproductive debt in Birmingham, Bristol and Manchester are due to the abnormally heavy borrowings in respect of the water undertaking in Birmingham,[1] to the costly harbour and dock undertaking at Bristol,[2] and to the large loan to the Manchester Ship Canal Company in the case of Manchester.[3]

TABLE showing the Outstanding Loans of certain English Towns on March 31, 1909.[4]

Town.	Total Loans outstanding on March 31, 1909.	Loans outstanding for Reproductive Purposes.		Loans outstanding for other Purposes.	
		Amount.	Percentage of Whole.	Amount.	Percentage of Whole.
Birmingham	£17,728,000	£14,097,000	80	£3,631,000	20
Bristol . .	8,760,000	6,647,000	76	2,113,000	24
Manchester.	22,981,000	16,282,000	71	6,699,000	29
Sheffield. .	9,873,000	6,244,000	63	3,629,000	37
Bradford .	8,723,000	5,516,000	63	3,207,000	37
Liverpool .	16,002,000	9,981,000	61	6,021,000	39
Leeds . .	13,157,000	7,312,000	55	5,845,000	45
Nottingham	6,087,000	3,262,000	54	2,825,000	46
Newcastle .	3,836,000	1,545,000	40	2,291,000	60
Hull . . .	3,753,000	1,208,000	32	2,545,000	68

[1] £8,258,000 outstanding on March 31, 1909.

[2] £5,931,000 outstanding on March 31, 1909.

[3] £5,051,000 outstanding on March 31, 1909.

[4] Compiled from the *Annual Local Taxation Returns*, 1908-9, part v. The following purposes have been treated as reproductive: tramways and light railways, water, gas, electricity, markets, burial grounds, harbours, piers, and docks, housing of the working classes and loan to Manchester Ship Canal Company. Loans for baths and wash-houses are not given separately in the returns, so could not be included amongst the loans for reproductive purposes. Had it been possible to do this, the proportion of loans for reproductive purposes would have been somewhat greater and that for other purposes somewhat less than is shown in the table.

TABLE showing the Outstanding Loans of certain German Towns on April 1, 1908.[1]

Town.	Loans outstanding on April 1, 1908.	Loans for Reproductive Purposes.		Loans for other Purposes.	
		Amount.	Percentage of Whole.	Amount.	Percentage of Whole.
	Marks.	Marks.		Marks.	
Düsseldorf . .	114,300,000	89,000,000	78	25,300,000	22
Dortmund . .	80,400,000	53,100,000	66	27,300,000	34
Berlin . . .	397,000,000	259,000,000	65	138,000,000	35
Cologne . . .	142,900,000	87,600,000	61	55,300,000	39
Barmen . . .	56,800,000	30,800,000	54	26,000,000	46
Elberfeld . .	54,400,000	29,000,000	53	25,400,000	47
Magdeburg . .	60,000,000	31,000,000	52	29,000,000	48
Hanover . .	69,900,000	32,300,000	46	37,600,000	54
Charlottenburg	120,800,000	52,900,000	44	67,900,000	56
Frankfort o/M.	222,900,000	79,900,000	36	143,000,000	64

§ 3. The table on page 96 gives only the loans outstanding in connection with certain municipal undertakings. This information can, however, be supplemented from other sources. In 1904-5 there were 1142 municipal and 231 private water undertakings in the United Kingdom; the former employed a capital of £128,819,000 and the latter of £18,718,000.[2]

In 1909 there were 293 gas undertakings belonging to local authorities in the United Kingdom and 501 belonging to companies. The outstanding capital of the former was £30,479,000 and of the latter £90,121,000.[3]

Of the 300 street and road tramway and light railway undertakings in existence in 1909 in the United Kingdom, 176 belonged to local authorities and 124 belonged to companies. The total expenditure on capital account was £49,569,000 in the case of the former and £23,373,000 in the case of the latter.[4]

In 1909 information was collected concerning 451

[1] Silbergleit, "Preussens Städte," *Denkschrift zum hundertjährigen Jubiläum der Städteordnung*, quoted in the *Kommunales Jahrbuch*, 1909, p. 544.

[2] The figures are quoted from the *Municipal Year Book*, 1911, p. 460. They are based on the Local Taxation Returns and on Directories brought out by private enterprise, no official returns relating to water enterprises being published.

[3] *Parliamentary Return relating to Authorised Gas Undertakings.*

[4] *Parliamentary Return of Street and Road Tramways and Light Railways.*

electrical supply works in the United Kingdom. In 241 cases local authorities were generating and distributing current, in 7 cases local authorities purchased current in bulk and distributed it; in 1 case a Joint Board of Local Authorities generated and distributed current, whilst in 202 cases the supply of current was in private hands.[1] From another source we learn that, in 1910, 325 local authorities and one Joint Board of Local Authorities held between them 384 Electric Lighting Orders, whilst 151 companies or private individuals held 351 Electric Lighting Orders.[2] In some cases, although an order has been granted, no current is supplied; this applies especially to local authorities. On the other hand, some companies hold orders relating to areas which are scattered over fairly large districts, and it is not always feasible to supply them all with current from one central power station. In view of these considerations it seems certain that there are fewer than 326 public electricity supply undertakings and more than 151 private electricity supply undertakings in this country. No information is available concerning the total amount of capital invested in electrical undertakings.

The number of local authorities carrying on Harbour, Dock, Pier, Canal and Quay undertakings in England and Wales during 1907-8 were as follows:—[3]

County Council	1
County Boroughs	10
Other Boroughs	28
Urban District Councils	9
Other Harbour, Dock, etc., Authorities	55
Total	103

The outstanding loans of these authorities were £46,874,000, exclusive of the five million pounds advanced by the Manchester Corporation to the Manchester Ship Canal Company.

[1] Tabulated from the *Electrical Review* list of electricity supply works in the United Kingdom, June 1909.

[2] Compiled from the index of the Provisional Orders confirmed by Parliament prior to the session of 1910, which were in force in 1910, published in the *Report by the Board of Trade respecting the Applications to, and Proceedings of, the Board of Trade, under the Electric Lighting Acts, 1882 to 1902, during the year 1909-10.*

[3] The *Annual Local Taxation Returns*, 1907-8, part viii. p. 43.

From the various figures quoted it will be noticed that nearly five-sixths of the water undertakings in the United Kingdom belong to local authorities, whereas in the case of electricity undertakings and tramways a little more than half are municipal. In the case of gas works, on the other hand, nearly two-thirds belong to companies.

TABLE showing the Number of Boroughs in England and Wales (other than Metropolitan Boroughs) which owned and managed Water, Gas, Electricity and Tramway Undertakings during the Year 1908-9.[1]

Service.	County Boroughs.			Non-County Boroughs.			All Boroughs.		
	With Separate Undertakings.	Participating in Joint Undertakings.	Both Forms of Management.	With Separate Undertakings.	Participating in Joint Undertakings.	Both Forms of Management.	With Separate Undertakings.	Participating in Joint Undertakings.	Both Forms of Management.
Water Supply Undertakings	48	5	53	159	20	179	207	25	232
Gas Supply Undertakings .	33	0	33	71	2	73	104	2	106
Electricity Supply Undertakings	65	0	65	79	4	83	144	4	148
Tramway and Light Railway Undertakings[2] . .	50	0	50	20	4	24	70	4	74
Total Number of Boroughs	74			253			327		

In the table given above there is shown the extent of municipal water, gas, electricity and tramway undertakings amongst the 327 boroughs of England and Wales, other than the Metropolitan Boroughs. It will be observed that the seventy-four County Boroughs all engage in trading enterprises to a very marked degree. Amongst the non-county boroughs the amount of trading is considerably less, except in the case of water. In view of the fact that in these boroughs the population is nearly always below 50,000, and in numerous cases very much below,[3] this result is hardly

[1] Compiled from the *Annual Local Taxation Returns*, 1908-9, part v.

[2] To ascertain which tramway undertakings given in the *Local Taxation Returns* were worked and which leased, it has been necessary to compare the *Local Taxation Returns* with the *Board of Trade Returns* relating to Tramways and Light Railways.

[3] Of the 253 non-county boroughs 66 had in 1901 a population of less than 5000, and 111 a population of less than 10,000.

astonishing. In many of these towns where there is no municipal tramway or electricity department, there is probably no private undertaking of the kind either, the number of inhabitants not being sufficient to justify the establishment of such an undertaking.

§ 4. The great bulk of the information available concerning municipal trading refers almost exclusively to water, gas, electricity and tramway undertakings; for those local

TABLE showing the Number of "Reproductive" Undertakings carried on by seventy-three of the largest British Local Authorities during the four Years ending March 31, 1906.[1]

Service.	Thirty London Local Authorities.	Forty-three large Local Authorities outside London.	Seventy-three large British Local Authorities.
		£	
Water Supply	...	33	33
Sea-water Supply	...	1	1
Gas Supply	...	23	23
Electricity Supply	16	41	57
Tramways—			
(1) Owned and worked by the Local Authority	1	34	35
(2) Owned but not worked by the Local Authority	...	4	4
Markets (and Slaughter-houses)	3	40	43
Baths (and Wash-houses)	26	41	67
Working-class Dwellings	16	26	42
Model Lodging-houses	...	3	3
Cemeteries	8	6	14
Milk Depôts	2	2	4
Harbours and Quays	...	8	8
Ferries	...	3	3
Steamboats	1	...	1
Conditioning-house	...	1	1
Ice Manufactory	...	1	1
Flag-making	...	1	1
Telephones	...	4	4
Aquarium	...	1	1

[1] Compiled from the *Parliamentary Return on Municipal Trading* (*United Kingdom*), 1902-6. A list of the local authorities will be found in Appendix A, p. 389.

authorities, however, which were included in the *Parliamentary Return* for the years 1902-3 to 1905-6, a more complete survey of trading activities can be given. This is done in the table on the opposite page. The London local authorities, to which the first column of figures relates, are the London County Council, the Corporation of the City of London, and the twenty-eight Metropolitan Boroughs. All of these are within the supply area of the Metropolitan Water Board, and consequently were indirectly interested in the Water Supply undertaking. Again, the one tramway undertaking, owned and managed by a local authority in London, is that belonging to the London County Council; their system serves the areas of practically all the other twenty-nine authorities, so that municipal trading in London is really much more extensive than is suggested by the table. Amongst them, the seventy-three local authorities to which the information relates, carried on nineteen different kinds of "reproductive" undertakings, but of these only nine—water works, gas works, electricity works, tramways, markets, baths, working-class dwellings, cemeteries and harbours—were engaged in by more than 10 per cent of these local authorities, whereas in six cases only a single enterprise of the kind existed.

§ 5. The extent of Municipal Trading in Prussia is indicated by the following figures, which show the number of municipal undertakings of each kind in Prussian towns in 1905-6, the total number of such "towns" being 1279.

Municipal Gas Supply Undertakings	440
Municipal Electricity Supply Undertakings	201
Municipal Water Supply Undertakings	561
Municipal Tramway Undertakings	35
Municipal Light Railway Undertakings	35
Municipal Slaughter-house Undertakings	424
Municipal Market-hall Undertakings	38
Municipal Harbour and Quay Undertakings	97
Municipal Forests and Estates Undertakings	1210
Municipal Building Plots Undertakings	452
Municipal Dwelling-house Undertakings	615
Municipal Undertakings for housing own Employees	314[1]

Unfortunately the return gives no indication of the

[1] "Preussische Statistik," Heft 217, quoted in the *Kommunales Jahrbuch*, 1910, p. 596.

number of private undertakings, so that it is impossible to say what proportions of the various industries are under municipal management. Some information on this subject is available for the larger German towns, so far as gas, electricity, water and tramways are concerned. The tables which follow relate to towns with populations exceeding 20,000, except in the case of tramways, where they relate only to towns with over 50,000 inhabitants; from them it will be seen that of the 214 water undertakings 203 are under public and 11 under private management, of the 216 gas undertakings 177 are under public and 39 under private management, of the 170 electricity undertakings 128 are under public and 42 under private management, and of the 82 tramway undertakings, 33 are under public and 49 under private management. In other words, in the larger German towns 95 per cent of the water undertakings, 82 per cent of the gas undertakings, 75 per cent of the

TABLE showing the Number of Municipal and Private Water Undertakings in German Towns with a Population exceeding 20,000 in 1907.[1]

	Towns with Population 20,000-50,000.	Towns with Population 50,000-100,000.	Towns with Population over 100,000.	All Towns with Population exceeding 20,000.
Number of Towns with a Population exceeding 20,000 . . .	134	44	41	219
Number of Towns with a Water Supply . .	130	43	41	214
Number of Towns with a Municipal Water Supply	123	41	38	202
Number of Towns obtaining Water Supply from other Local Authorities . .	...	...	1	1
Number of Towns obtaining Water Supply from Private Undertakings .	7	2	2	11

[1] Paul Mombert, "Die Gemeindebetriebe in Deutschland," *Schriften des Vereins für Socialpolitik*, vol. 128, p. 10. The figures are compiled from the *Adressbuch der Städte-Verwaltungen Deutschlands*, 1907. Auf Grund amtlicher Mitteilungen bearbeitet von Albert René.

TABLE showing the Number of Municipal and Private Gas Undertakings in German Towns with a Population exceeding 20,000 in 1907.[1]

	Towns with Population 20,000-50,000.	Towns with Population 50,000-100,000.	Towns with Population over 100,000.	All Towns with Population over 20,000.
Number of Towns with a Population exceeding 20,000	134	44	41	219
Number of Towns with a Gas Supply	132	43	41	216
Number of Towns with a Municipal Gas Supply	112	32	33	177
Number of Towns obtaining a Gas Supply from Private Undertakings	20[2]	11	8	39

TABLE showing the Number of Municipal and Private Electricity Undertakings in German Towns with a Population exceeding 20,000 in 1907.[3]

	Towns with Population 20,000-50,000.	Towns with Population 50,000-100,000.	Towns with Population over 100,000.	All Towns with Population over 20,000.
Number of Towns with a Population exceeding 20,000	134	44	41	219
Number of Towns with an Electricity Works	85	44	41	170
Number of Towns with a Municipal Electricity Works	62	30	33	125
Number of Towns obtaining Current from other Local Authorities	3	...	...	3
Number of Towns obtaining Current from Private Undertakings	20[4]	14	8[5]	42

[1] Paul Mombert, *loc. cit.* p. 34.

[2] This includes one works leased by a municipality to a company.

[3] Paul Mombert, *loc. cit.* p. 56.

[4] These include six works leased by municipalities to companies.

[5] These include one works leased by a municipality to a company.

TABLE showing the Number of Municipal and Private Tramway Undertakings in German Towns with a Population exceeding 50,000 in 1907.[1]

	Towns with Population 50,000-100,000.	Towns with Population over 100,000.	All Towns with Population over 50,000.
Number of Towns with a Population exceeding 50,000[2] . . .	44	41	85
Number of Towns with a Tramway Undertaking	41	41	82
Number of Towns with a Municipal Tramway Service	17	16[3]	33
Number of Towns with a Private Tramway Service . . .	24	25[4]	49

electricity undertakings, and 40 per cent of the tramway undertakings belong to the local authorities.

§ 6. Owing to the different bases on which the information is collected, no accurate comparison between the extent of municipal trading in England and Germany is possible, but the position in the 85 German towns with a population exceeding 50,000 and in the English and Welsh County Boroughs,[5] which practically fulfil the same condition with regard to population, may be roughly compared. Of the 85 German towns with a population over 50,000, 93 per cent possess municipal water undertakings, 76 per cent gas undertakings, 74 per cent electricity undertakings, and 39 per cent tramway undertakings. Of the 74 English and Welsh County Boroughs, 72 per cent possess municipal water undertakings, 45 per cent gas undertakings, 88 per cent electricity undertakings, and 68 per cent tramway undertakings. Taking these four kinds of enterprises as a whole, German and English large towns, excluding the Metropolitan Boroughs, appear to engage in them to a very similar extent.

[1] Paul Mombert, *loc. cit.* p. 75.

[2] Owing to the difficulty of distinguishing light railway and tramway undertakings it was not possible to ascertain the figures for private undertakings in 134 towns with a population of 20,000-50,000. In towns of this size there were 23 municipal tramway undertakings.

[3] In five of these towns there were private as well as municipal tramway undertakings.

[4] These include two undertakings leased by municipalities to companies.

[5] See table on p. 101.

CHAPTER IV

THE MANAGEMENT OF MUNICIPAL TRADES

§ 1. WHERE a local authority is authorised by a special Act of Parliament, or by a Provisional Order issued by a government department under statutory powers, to engage in a trading enterprise, it must be laid down in what body the management of the undertaking is to rest. The most usual arrangement is for the management to be vested in the Council of the local authority; there are, however, various exceptions to this method of administering a municipal trading enterprise, to which further reference will be made below. The most usual arrangement may be considered first. The Town Council has complete control of the undertaking, but delegates the actual management to a committee of the Council, which does all such acts and things as are necessary to carry on the undertaking; all acts of the committee, however, are subject to the confirmation of the Council, and the minutes of the Committee are submitted to the Council from time to time for approval. The size of the trading committees of different councils varies considerably; but this has probably comparatively little effect on the success of the undertakings; the essential things are the efficiency of the chairman and of one or two of the most active members of the committee on the one hand, and the ability of the principal officials on the other. The relationship between the committee and the principal officials is very similar to that existing between a board of directors of a company and their managers. In some trading and industrial companies the directors, or some of them, take a good deal more active part in the management of their undertakings than in

others. In these cases one or more members of the Board are often described as managing directors, and others may also devote their whole time to the undertaking. Where the directors meet once a fortnight or once a month, and then merely act in an advisory and supervising capacity and restrict their activities to determining the general business policy, far more power is placed in the hands of the general manager, and the success of the enterprise depends much more largely upon his ability. Municipal trading committees in this country act very much as boards of directors of this latter type. The committees are not generally in a position to criticise the technical advice tendered by their experts; for technical advice they rely largely on their managers and engineers; the committees must co-operate with their expert advisers to secure the most efficient administration. It is the committee's function to control the officials and to examine carefully any suggestions made by these for the improvement of the service; in particular they must examine the business aspect of all new proposals. They should not hesitate to reject any proposal which appears unsound, but on the other hand, they should be very chary about initiating new schemes against the advice of their chief officials, as such schemes are more than likely to end badly. Exactly how much power will rest in the hands of a manager under this type of committee system will depend very largely upon the chairman of the committee, whether or not he keeps in close touch with the department and is regularly informed of what is being done, and whether he insists upon being frequently consulted by the officials between the meetings of the committee.

There is another type of municipal committee organisation which resembles that of a board of directors, one of whom devotes his whole time to the undertaking. In this case each committee has a paid chairman. On German Town Councils there are a number of paid Aldermen who are selected according to the particular departments of the municipality over which they are to be placed in charge. They are generally studied men, who have gained practical experience outside the service of the municipality. When appointed, they devote their whole time to their municipal

work. A former schoolmaster will very likely be appointed to take charge of the Municipal Education Department, an architect or a doctor to preside over the Building or Sanitary Committee, an engineer to administer the gas and electricity works. Trading departments employ managers, engineers, and superintendents as in England, but their position is less independent, in view of the fact that the chairmen of the committees are more or less experts in their particular spheres, and that these chairmen are able to devote much of their time to controlling the departments of which they are in charge. The system helps to secure that element of continuity which is sometimes lacking in the administration of municipal departments in this country, when the chief members of a committee may give up their work at the same time, owing to defeats at the polls or for other reasons. Under these circumstances the carrying on of old policies will depend entirely upon the paid officials, whereas in Germany the chairmen of committees are not affected by elections. Another advantage of the paid chairman is that, taken as a whole, he is likely to represent his department more ably on the Council than an unpaid chairman who may not have a complete grasp of the points under consideration.

§ 2. So far it has been assumed that a Town Council delegates its powers, in respect of each trading enterprise it is authorised to undertake, to a separate committee, and that in this way a Waterworks Committee, a Gas Committee, an Electricity Committee and a Tramways Committee may be formed amongst others. This is the usual arrangement in this country. In Germany, on the other hand, it is common to find committees formed to manage two or more enterprises. In Cologne, Heidelberg, Bonn, and other towns the water, gas, and electricity works are administered by a single committee. The trams are generally under a separate management, though not always, as for example in Frankfort-on-the-Main, where the tramways and the electricity works form one department. The direction of all the various municipal undertakings in a town, however varied they may be, rests ultimately with one body, the Council; the only question is to what extent the committees are to be

specialised. It must presumably depend partly upon the amount of work to be done, but this is not the only consideration. If two departments of a municipality have ground in common, it may be desirable to place them under one committee. Thus, in Manchester the municipal housing undertakings are managed by the Sanitary Committee, whereas under the London County Council there is a separate Housing of the Working Classes Committee. On the other hand, the Tramways undertaking of the London County Council is managed by their Highways Committee, whereas in Manchester the Highways Committee and the Tramways Committee are quite distinct. Originally the Manchester electricity works were managed by the Gas Committee, but after the undertaking had been in existence three or four years, a separate committee was established on the ground that the new department was growing too big. It is doubtful, however, if separate committees for gas and electricity are always advantageous. It is quite possible to have one committee for the two, without in any way treating the newer electricity department as subordinate to the older gas department, and if this is done, the friction, which is always liable to occur between two departments which are to a considerable extent competitors, may be avoided. As far as production is concerned, gas and electricity have little in common, even if coke from the gas works is used for heating the boilers of the electricity works. Where there is only one committee the control of the production of gas and of current is left largely in the hands of the officials especially appointed for each works. On the other hand, in what relates to selling, it seems very desirable that the policies adopted with regard to gas and electricity should be properly co-ordinated. The object of a municipality must be to serve the citizens as efficiently as possible; at the same time the financial stability of the undertakings must be borne in mind. Severe competition may secure the former, but can hardly secure the latter object. There is the further difficulty that gas and electricity are subject to different conditions so far as external competition is concerned. Electricity has a harder battle to fight, and low prices must be charged to some customers if its use on a large scale is

to be secured. For certain purposes gas is in a strong position, and whether the price is a little higher or a little lower does not affect the consumption very much. As a result it may be found feasible to secure a larger profit in the case of gas than in the case of electricity, and under these circumstances the two undertakings are not competing on equal terms. Consequently it is probably better to do away with all idea of unrestricted competition, to realise that there are certain purposes for which electricity is more suited, and others for which gas is more suited, as well as some for which either may equally well be used, and to act accordingly. As it is impossible to prevent gas being displaced to some extent by electricity, it seems best to accept this as a fact, and instead of struggling against it, to seek to extend the use of gas in new directions,[1] in particular for heating and cooking purposes. In those towns where the gas and electricity undertakings are municipal, it is the duty of the Council to see that both undertakings are properly utilised and that a good service of light, heat and power is provided, and it seems not improbable that this can be best secured if the Council is advised by one committee which has carefully considered the light, heat and power problem as a whole, instead of being advised by separate gas and electricity committees.

§ 3. As soon as a municipality is desirous of trading outside its boundaries, the problem of management assumes a new form. Under these circumstances two or more local authorities are involved, and the question is how are they to share in the administration of the enterprise concerned? In practice this problem has been dealt with in various ways. Perhaps the simplest solution, and the one most commonly adopted in this country, is for the larger local authority to manage the whole undertaking, and for it to sell its products or services retail to the inhabitants of the smaller local area. The following table shows to what extent English and Welsh Boroughs, which managed water, gas, electricity and tramway undertakings, traded beyond their boundaries in 1908-9. The figures relate to 532 trading departments, and of these 231 or 43 per cent. sold products

[1] The competition of gas and electricity is dealt with more fully below on pp. 114-6.

TABLE showing the Number of Boroughs in England and Wales (other than the Metropolitan Boroughs), which traded beyond their Boundaries during the Year 1908-9.[1]

	Water Supply.	Gas Supply.	Electricity Supply.	Tramways and Light Railways.
County Boroughs—				
Supply Area within Boundary . .	8	8	52	26
Supply Area extending beyond Boundary .	40	25	13	30
All Undertakings . .	48	33	65	56
Non-County Boroughs—				
Supply Area within Boundary . .	101	27	68	11
Supply Area extending beyond Boundary .	58	44	13	8
All Undertakings . .	159	71	81	19
All Boroughs—				
Supply Area within Boundary . .	109	35	120	37
Supply Area extending beyond Boundary .	98	69	26	38
All Undertakings . .	207	104	146	75

or services outside their local areas. Taking all boroughs into consideration, the proportion was highest in the case of gas supply and lowest in the case of electricity supply. In these cases the smaller local authority has no say at all in the management, and from its point of view the trading municipality occupies a very similar position to that which a company would occupy. Where this arrangement is adopted, the principal point for consideration is the fixing of prices outside the boundary of the trading authority. This is dealt with at length in the chapter on the selling policies of municipal trades.

The powers to engage in such undertakings are either granted directly by Provisional Order or by Act of Parliament, or are transferred to the trading municipality by the neighbouring townships. Hertford, Taunton and New Windsor have, among other towns, obtained direct powers by Provi-

[1] Compiled from the *Annual Local Taxation Returns*, 1908-9, part v.

sional Order to supply electricity in areas not included within their own districts.[1] The Manchester Corporation in 1897 obtained power by Act to take, subject to the approval of the Board of Trade, transfers of electricity powers from local authorities of districts adjacent to the city;[2] by a further Act[3] this provision was extended so as to include districts in proximity to the city. Similar powers have been given by Acts to other Corporations, *e.g.*, Glasgow,[4] Blackpool[5] and Stockport.[6] To supply gas beyond its own district a local authority must obtain a special Act of Parliament.[7] Many towns have obtained the necessary powers, as for example, Manchester, Birmingham, Leeds, Nottingham, Leicester and Birkenhead. As far as tramways are concerned, the Board of Trade do not consider that they have power by Provisional Order to authorise local authorities to construct tramways beyond their boundaries,[8] and consequently this can only be done by authority of special Act of Parliament. Such powers have frequently been granted, and Glasgow, Manchester, Leeds, Bradford, Salford and Bolton are amongst the towns which work tramways outside their own area.

§ 4. In the case of water, gas and electricity a municipality which sells outside its boundaries, instead of dealing directly with the consumers, may sell in bulk to the smaller local authorities and leave them to arrange for the distribution of the products. This method possesses the advantage that it leaves each local authority in control of its own streets, and also enables it to adopt such selling policies as it chooses. Thus, Salford draws the whole of its water supply in bulk from Manchester, and Stockport obtains some of its supply from Manchester in the same way. Various local authorities have obtained powers by Act of Parliament to sell electricity in bulk to other bodies who are authorised

[1] See Memorandum handed in by Sir Courtenay Boyle, Permanent Under Secretary of the Board of Trade, to the Joint Select Committee on Municipal Trading, 1900, and printed as an Appendix to the *Report*, p. 347.

[2] Manchester Corporation Act, 1897, sec. 39.

[3] Manchester Corporation Act, 1899, sec. 22.

[4] Glasgow Corporation (Gas and Water) Act, 1899.

[5] Blackpool Improvement Act, 1899

[6] Stockport Corporation Act, 1899.

[7] Sir Courtenay Boyle's Memorandum, *loc. cit.* p. 349.

[8] *Ibid.* p. 355.

to supply, including St. Helens, Blackpool and Salford.[1] Where a municipality obtains its water from a considerable distance, the Local Government Board do not think it unreasonable that it should supply other local authorities on the way, provided it does so in bulk.[2] Under these circumstances, even an obligation is sometimes imposed upon a Corporation by Parliament to supply with water such local authorities along the route of the pipes as desire it, as for example, is the case with the Corporation of Manchester.[3]

Mention may be made here of another arrangement of a somewhat similar character by which local authorities purchase their supplies of gas or electricity in bulk from private undertakings. Thus the town of Hull purchases its gas in bulk from the British Gas Light Company. In Germany there is a considerable movement in favour of such an arrangement in all those cases where it is possible for a town to avail itself of particularly cheap supplies of gas or electricity. This is likely to arise in the case of gas in the neighbourhood of large coke works which are willing to dispose, on very favourable terms, of their gas, which to them is merely a by-product; in the case of electricity where there are large generating stations situated in advantageous positions to utilise water power or to secure at low prices supplies of fuel, either coal, lignite, or peat, or possibly the waste gases of furnaces. At high voltages, current can be transmitted long distances with comparatively little loss of voltage, so that the towns desirous of obtaining supplies need not be in the immediate vicinity of the generating stations. A few examples may be quoted. Essen now buys its gas in bulk from a large coke works and has closed down its own works. Osnabrück has arranged to purchase current in bulk from a large generating station a good many miles away where plentiful supplies of peat are immediately at hand. In this latter

[1] See Memorandum by Sir Courtenay Boyle, *loc. cit.* p. 348.

[2] See evidence of Sir (then Mr.) S. B. Provis, Permanent Secretary to the Local Government Board, before the Committee on Municipal Trading, 1900, QQ. 1029, 1031.

[3] Manchester Corporation Act, 1879, sec. 81. See the evidence of the late Sir James Southern before the Committee on Municipal Trading, 1900, Q. 2316.

case the electricity purchased is merely to supplement the current generated by the municipal undertaking. The town of Königshütte, in Silesia, buys its electric current in bulk from a large iron works and retails it to the inhabitants.[1] The French town of Le Creusot purchases gas in bulk from a large iron works and sells it to the public at a profit.[2]

§ 5. The position with regard to tramways is somewhat different from that of water, gas and electricity. Where these are sold by a municipality outside its own area, it is primarily for the benefit of the local authorities supplied. As far as tramways are concerned, it may be quite as much in the interests of the local authority which manages the undertaking as in those of the adjacent areas that the system should be extended beyond the municipal boundaries. This will be so wherever the area within which the population tends to move backwards and forwards is greater than the municipal area. If the suburbs of a town happen to lie outside the boundaries, and the tramways are limited to the municipal area, the residents in such outside districts will, to a large extent, be deprived of a convenient and cheap form of transport, and the undertaking will suffer financially in consequence. The increase in traffic due to the extension of the system to the suburbs may make all the difference between a remunerative and an unremunerative undertaking, and at the same time confer a benefit on the dwellers in the suburbs. Again, the utility of any tramway system will be considerably increased if it is linked up with the systems of neighbouring towns, and if through cars are provided. Further, in the case of small areas with comparatively few inhabitants, an independent tramway system is a financial impossibility; on the other hand, it may be feasible to manage a tramway in such a district as part of a larger system, either with a view to future developments of traffic or to provide a through route between two larger centres of population. In all these cases every party may

[1] H. Lücker, "Die Gemeindebetriebe in den Städten, Kreisen und Landgemeinden des Oberschlesischen Industriebezirks," *Schriften des Vereins für Socialpolitik*, vol. 129, part x. p. 30.

[2] *Report of an Enquiry of the Board of Trade into Working-class Rents, Housing and Retail Prices in the Principal Industrial Towns of France*, p. 102.

be said to benefit by the extension of the system beyond the boundaries. Various methods are adopted to secure the advantages of a tramway system planned with a view to the maximum utility without reference to municipal boundaries. One method is to allow the central trading authority to construct and to manage the lines in the small adjacent areas, as has happened in the case of Glasgow and also of Cologne. A second method is for the smaller areas to construct their lines and then to lease them to their big neighbour for a period of years. Thus Manchester pays rent to various local authorities for the use of their lines, the payments being calculated to reimburse the various local authorities for their capital expenditure. The leases are generally for twenty-one years, the city to provide the overhead equipment as well as the necessary rolling stock.

A third method which is somewhat similar to the previous one is where one local authority hands over the management of its tramways to another local authority, for which the latter receives a certain remuneration. This is the case with Ludwigshafen a. R., which has entered into an agreement with the neighbouring town of Mannheim, situated on the opposite bank of the Rhine. Ludwigshafen obtained the concession for its lines, which it constructed and equipped. They are managed by Mannheim as part of its system. All revenue from the Ludwigshafen lines, after deducting expenditure, is handed over to Ludwigshafen. Mannheim provides the necessary rolling stock; all repairs and renewals of the same are effected by Mannheim at the expense of Ludwigshafen. For the use of the rolling stock, Ludwigshafen pays Mannheim 4 per cent interest on the capital outlay and 4 per cent depreciation. The cost of management is divided between the two towns according to the number of car kilometers run on each set of lines. From the sum received, Ludwigshafen pays interest on its capital outlay, and provides for depreciation at agreed rates. Of the surplus which remains, 10 per cent is paid to Mannheim as remuneration for its management of the undertaking.[1] In the case of Dresden, the Corporation has

[1] Otto Moericke, "Die Gemeindebetriebe Mannheims," *Schriften des Vereins für Socialpolitik*, vol. 129, part iv. pp. 155, 156.

constructed certain lines outside its boundaries, and these form part of its tramway system; but it also manages certain lines outside the town which have been constructed by and belong to the state of Saxony and certain neighbouring local authorities.

A fourth method which may be adopted, and which is generally preferred where the two local authorities in question are both large, is to arrange for mutual running powers. Thus the Manchester cars run into Oldham and into Ashton-under-Lyne, and the cars of those two towns come into Manchester. Through cars are run between Leeds and Bradford, half the service being provided by the one and half by the other Corporation. In this case certain mechanical difficulties had to be overcome, owing to the fact that the gauge in the two towns is different. The basis of these mutual running agreements generally is that each Corporation takes the fares collected in its own area, and that any excess mileage run by the cars of either Corporation is to be paid for at a specified rate. For example, in the agreement between Sheffield and Rotherham for running through cars, it is stipulated that the payment for excess mileage run by the cars of either Corporation is to be 5½d. per car mile.[1] During the year 1909-10 the payment made by the Rotherham Corporation to the Sheffield Corporation on this account was £96 : 17s.[2]

§ 6. Another method of managing undertakings which trade in the areas of two or more local authorities, is to establish a Joint Board of Management. This applies not only to tramway but also to other undertakings, and, as a matter of fact, so far as this country is concerned, is much more common in the case of water than in the case of tramways, gas, or electricity. In England and Wales during the year 1907-8 there were twenty-five Joint Boards or Committees for the supply of water, two for the supply of water and gas, one for the supply of gas, and one for the supply of electricity and the management of a tramway under-

[1] *Annual Report of the General Manager of the Sheffield Corporation Tramways for the year ending March 25, 1910*, p. 5.

[2] *Sheffield Corporation Tramways, Report and Statement of Accounts for the year ending March 25, 1910*, p. 4.

taking.[1] The authorities which undertake the supply of gas and of water must lay pipes in practically every street within their areas, and it is always possible to fix the prices in such a way that the undertakings are self-supporting. Under these circumstances the income to maintain a joint undertaking is provided by the consumers, who will fall roughly into groups, proportionate to the populations of the different local areas. In this way each local authority supports the joint undertaking approximately in proportion to its population, and this affords a basis on which the various authorities can be represented on the Board. On the other hand, the tramway authority is faced at the outset with the choice of routes, and has frequently to consider the question of new routes and the extension of old ones. Most of the more important towns feel that they should have complete control over the development of their tramway system, as it may be desirable for social reasons that some unremunerative line should be constructed, which cannot well be done at the expense of the other members of a Joint Board. Again, it is difficult to decide in what proportions various local authorities should share in a joint scheme, as the populations of the different areas may not afford a satisfactory basis, for it is unlikely that the residents of each area will use the tramways in proportion to their numbers; this will be especially so if a tramway just passes through a corner of a local area. The matter is particularly serious, as a loss may easily be incurred in connection with a tramway system, and the question will arise, How is it to be shared amongst the members of the Joint Board? One of the other methods mentioned above of dealing with the problem seems to afford a much easier solution of the difficulties. Nevertheless, the method of a Joint Board may prove desirable for the undertaking of a particular line or lines, where small towns are concerned and the development of through traffic is essential; it would be financially unsound to maintain more than one management, and yet no one local authority predominates sufficiently to claim to manage the whole system, or no one local authority is prepared to take the whole risk. One example of such a joint tramway under-

[1] *Annual Local Taxation Returns*, 1907-8, part viii. p. 41.

taking in this country is afforded by the Stalybridge, Hyde, Mossley and Dukinfield Joint Tramway and Electricity Board, which was established by Act of Parliament in 1901. The tramways managed by the Board consist of about twenty-one route miles; the Board also supplies electric current for power and lighting. Each of the four local authorities appoints six members of the Board, and any loss or profit is shared equally amongst them. Thus in 1908-9, each Corporation had to pay over to the Joint Board to meet the deficiency in revenue £2595 in respect of the tramways and £116 in respect of the electricity supply.[1] In Germany, the Bonn-Godesberg Tramway belongs jointly, in equal shares, to Bonn and Godesberg. Each local authority appoints an equal number of members to the joint committee of management, and nominates the chairman in alternate years; the profits or losses are shared equally. The line is managed by the Bonn Tramway Department. A new tramway is planned from Bonn to Königswinter, in which Bonn and two other local authorities, through whose area the line is to pass, will share equally.

So far as water is concerned there are various joint authorities, there are also one or two joint gas authorities, and one or two joint authorities which manage gas and water undertakings. A few cases may be given as illustrations. The greatest of these joint undertakings is the Metropolitan Water Board, which was created in 1902 by the Metropolitan Water Act of that year. The Board is composed of sixty-five representatives nominated by the constituent authorities of the London water area. The Board has taken over the undertakings of eight Metropolitan Water Companies and of two Urban District Councils, and now supplies a population exceeding seven millions. The sum invested in the undertaking is nearly forty-seven million pounds.[2] The Tees Valley Water Board was formed under the Stockton and Middlesbrough Corporations' Waterworks Act, 1876, and is composed of the representatives of the Middlesbrough, Stockton-on-Tees and Thornaby-on-Tees

[1] *Annual Local Taxation Returns*, 1908-9, part v. pp. 174, 176, 214.

[2] See *Municipal Year Book*, 1911, pp. 245-9.

Corporations. The first has provided six-twelfths, the second five-twelfths, and the third one-twelfth of the capital, and the profits or losses are divided in these proportions.[1] The Board supplies water not only in the three contributory boroughs but also outside those boroughs. A very large scheme which is not yet completed is that of the Derwent Valley Water Board, created under an Act of 1899. It is owned jointly by the Corporations of Derby, Leicester, Nottingham and Sheffield. The four Corporations will obtain water in bulk from the Board to supplement their existing sources of supply. A scheme in which numerous local authorities participate is the Bury and District Joint Water Board, which belongs to the Bury Corporation, Bury Rural District Council, Haslingden Corporation, Little Lever Urban District Council, Radcliffe Urban District Council, Ramsbottom Urban District Council, Rawtenstall Corporation, Tottington Urban District Council and Whitefield Urban District Council. The capital invested in the undertaking is some £1,500,000.[2]

A joint gas undertaking is that of the Edinburgh and Leith Corporations Gas Commissioners, who were instituted by Act of Parliament in 1888 to acquire the undertakings of the Edinburgh and Leith Gas Light Companies. The area of supply includes the burghs of Edinburgh and Leith with certain adjacent parts of the country. The undertaking is managed by a Board of Commissioners appointed by the two Corporations.[3] A joint gas and water authority is the Accrington Gas and Water Board, which is composed of representatives of Accrington Corporation, Church Urban District Council, Clayton-le-Moors Urban District Council, Great Harwood Urban District Council, and Rishton Urban District Council. It supplies gas and water within and also beyond the areas of these local authorities.[4]

Where a Joint Board of some kind is formed, the capital required for the undertaking must either be subscribed by the constituent authorities, as is the case with

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 186.

[2] *Municipal Year Book*, 1911, p. 400.

[3] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part vi. p. 7.

[4] *Municipal Year Book*, 1911, p. 400.

the Tees Valley Water Board,[1] or must be borrowed by the Board directly from the public, as in the case of the Metropolitan Water Board and the Edinburgh and Leith Corporations Gas Commissioners. If this latter procedure is adopted, the loans are generally secured not only upon the revenues of the undertaking, but also upon the rates of the constituent authorities.

§ 7. The system of a joint committee is not the only one under which an enterprise, which is practically municipal, is not directly managed by each local authority concerned. Sometimes, where only one municipality is in question, a special and independent body is created to manage a particular undertaking, and the Town Council is not given the direct control. This occurs not uncommonly in this country in the case of harbour undertakings. Thus, whereas in Bristol and Preston the harbours are managed by committees of the Town Council, in London we find the Port of London Authority; in Liverpool the Mersey Docks and Harbour Board, and in Southampton the Southampton Harbour Board. On these Harbour Boards the various shipping interests as well as the local authorities are generally represented, if they do not in fact predominate.

In Italy, under a law of March 29, 1903, provision is made for the management of the more important municipal trading undertakings by special commissions, *azienda speciale*, instead of by the Town Councils. A Technical Director assists the Commissioners, who have to be selected from outside the Town Councils amongst citizens who as far as possible are well acquainted with the trade concerned. These commissions are subject to considerable control by the Provincial Councils, but appear to be quite independent of the Town Councils. The administration and the accounts of a commission have to be kept entirely separate from those of the municipality to which it belongs. In the case of smaller undertakings and of those which are not of a strongly trading character, direct management by municipalities, *ad economia*, is permitted. As the preliminary processes con-

[1] In 1908-9 Middlesbrough's share of the net revenue of the Board was £53,100, and the Council had to find £4347 to make up the amount required to meet loan charges (*Annual Local Taxation Returns*, 1908-9, part v. p. 48).

nected with the municipalisation of an undertaking, as well as the subsequent management, are simpler and more free from restraint where this latter method of management is adopted, towns prefer to use it wherever possible, and this is facilitated by the fact that the law does not lay down very clearly what undertakings must be managed by a separate commission, and that the provincial authorities are not very strict in their interpretation of the law.[1]

§ 8. There is still one other way in which a local authority can participate in the management of trading undertakings; it may own shares in the companies which manage them. These cases can be subdivided into two classes, the one in which the municipality holds, and the other in which it does not hold, a controlling interest in the undertakings concerned. So far as this country is concerned, Parliament does not approve of local authorities subscribing to undertakings over which they have not absolute control;[2] nevertheless certain instances do occur. Thus the Corporation of Hull were allowed to subscribe for £100,000 of shares in the Hull and Barnsley Railway Company when the line was being erected. The Corporation complained of the monopoly of the North-Eastern Railway Company, and were anxious that an independent line should be built; their subscribing for shares, however, was not so much to facilitate the construction of the line as to prevent, if possible, its ultimate absorption by the North-Eastern Railway Company. The holding of the Corporation in the Company is very far from giving them a controlling interest. Another example is the case of the £5,000,000 of debentures in the Manchester Ship Canal Company purchased by the Corporation of Manchester. Without this financial assistance the canal could never have been completed, as it cost a great deal more to construct than was anticipated. The Corporation provided a little less than one-third of the capital of the undertaking, but by Act of Parliament is entitled to appoint more than half the Directors, so that it has virtual control.[3]

[1] G. Michels-Lindner, "Geschichte der modernen Gemeindebetriebe in Italien," *Schriften des Vereins für Socialpolitik*, vol. 130, part ii. pp. 17-24.

[2] See the evidence of the Hon. E. Chandos Leigh, Counsel to the Speaker, before the Committee on Municipal Trading, 1900, QQ. 637-644.

[3] See also p. 7, above.

Another case is that of the Widnes Corporation, which invested £25,000 in the Widnes and Runcorn Bridge Company, which was formed to build and manage the transporter bridge across the Mersey between Widnes and Runcorn. The undertaking has proved unremunerative, and is about to be transferred to the Widnes Corporation.

In Germany the ownership of shares by local authorities in companies which engage in industrial undertakings appears to be more common than in this country. In Düsseldorf there is a special fund for participating in such industrial undertakings as are closely related to the public welfare. The town has allotted £750,000 for the purpose. So far some £400,000 has been employed to purchase shares in the Rheinische Bahngesellschaft, the company which owns and manages the tramway between Düsseldorf and Crefeld.[1] The town nominates half the members of the Board of Directors.[2] Another case is that of the town of Heidelberg, which owns some 80 per cent of the shares of the local Tramway Company. The towns of Cologne and Bonn hold shares in the Köln-Bonner Kreisbahnen, which consist of two light railways between Cologne and Bonn. The one is equipped for electric traction, being especially intended for through traffic, and runs mostly through open country close to the banks of the Rhine; the fast trams do the journey in forty-four minutes, and a half-hourly express service in both directions is maintained throughout the day. The older steam-tram route links up the various villages at the foot of the hills, and is used almost exclusively for local traffic. A special company is being formed to construct and manage the suburban tramways round Mannheim; the shares will be held by the town of Mannheim and the Süddeutsche Eisenbahn Gesellschaft, the latter at present holding concessions for some of the routes. These will be transferred to the new company, together with new concessions still to be obtained. In Frankfort-on-the-Main in 1909 the two then existing gas companies combined and formed a new company with a capital of M. 13,000,000.

[1] All details relating to this fund will be found in O. Most, "Die Gemeindebetriebe der Stadt Düsseldorf," in the *Schriften des Vereins für Socialpolitik*, vol. 129, part ii. pp. 123-127.

[2] Most, *loc. cit.* p. 67.

The Imperial Continental Gas Company holds the majority of the shares, but the town of Frankfort bought M. 3,000,000 of shares. The town representatives can vote at meetings of shareholders and the Lord Mayor has the right to attend all board meetings, but has no vote.

The system of managing undertakings of a more or less public character by means of companies in which the local authorities concerned have a controlling interest is one which, under some circumstances, may make it preferable to direct management by municipalities. It is less subject to political and popular pressure, which is perhaps of most consideration in the case of tramways, which of all public services appear most exposed to popular agitations in favour of concessions of some kind or other that are likely to undermine the financial stability of the undertaking. The number of people in the direct employ of local authorities is held in check, which may be a consideration of some importance. It also facilitates the introduction of experts on to the body which manages the undertaking. It has the further advantage that a town council which desires larger contributions from its trading enterprises cannot by a mere vote compel the company to pay over the sums desired in the way in which they can force a municipal committee, against the wishes and advice of the members of the committee. Finally, the accounts are necessarily kept quite separate from those of the local authority which holds the controlling interest, so that it is easier to ascertain the correct financial position of the enterprise. Against this system can be urged that it is not truly democratic, and that it is a device to lessen, if not to do away with, the popular control of public utility services. Further, if it were applied to tramways the municipality would lose the direct control of the streets, which is one of the strongest motives for municipalising certain services. Again, in the case of small undertakings it is probably more economical not to establish an entirely new administrative staff, but to utilise the service of existing municipal officers as far as possible. In weighing up the advantages and disadvantages of the system, a most important consideration is the efficiency of the town councillors and of the municipal officers concerned.

Where the local administration is in able hands there is less reason for adopting the system than otherwise. The circumstances under which it is most attractive are where the undertaking in question is already in the hands of a company with a long or perpetual concession, and the local authority is anxious to secure some say in the management. This might be done most effectively by a purchase of shares in the company.

CHAPTER V

THE FINANCIAL ASPECTS OF MUNICIPAL TRADING

§ 1. THE principal problem with which we are concerned in this chapter is the method to be pursued in order to ascertain the "profits" of a trading enterprise conducted by a local authority. This involves a critical examination of the accounts of trading undertakings, as there is reason for believing that in many cases the financial statements issued by trading departments do not accurately represent the true position of the departments. The most difficult point in this connection is that concerned with the provision made for depreciation. First the question when a municipal undertaking may be said to have made a "profit" will be considered, and then the further question of whether or not it is desirable that a trading department should make a "profit." Finally, in view of the want of uniformity which exists in preparing municipal financial statements, the method of auditing municipal accounts will receive some attention.

The profits of an undertaking may be defined as the excess of the total incomings or revenue over the total outgoings or expenditure of the business. The difficulties in connection with the profits of a municipal trading enterprise arise in determining whether the various items which properly constitute the Income and Expenditure of the undertaking have been rightly entered in the accounts. More questions arise in connection with items of expenditure than with items of income, but both are of great importance. The principal item amongst the receipts should be the revenue obtained from the sale of the products or services

sold, including by-products; amongst the other receipts may be rents obtained for the use of land or buildings belonging to the undertaking, or interest on bank deposits and investments. The special point which arises, if the enterprise is a municipal undertaking, is whether some policy adopted by the trading department with regard to the charges made to the other departments of the Corporation in respect of products or services sold to them, does not influence the receipts either to the detriment or to the advantage of the particular trading department.

§ 2. If a trading department does not sell at ordinary prices to the remaining corporation departments, it may do one of three things: supply them free of charge, undercharge them, or overcharge them. Thus if a Gas Committee provides the street lighting free of charge, the receipts of the department are less than they should be to the extent of the value of the gas and services [1] provided. For example, in Colne and Dewsbury the Gas Committees make no charge for gas for street-lighting purposes.[2] In Oldham gas is supplied free to all municipal buildings, public clocks and all street lamps, and water is also supplied free to all municipal buildings.[3] In other cases trading departments sell water, gas, or electricity, as the case may be, to other municipal departments at less than the prices charged to the general public. Thus in Hull the charge for water supplied to the public baths and parks is 3d. per 1000 gallons, and to all other municipal departments 4½d. per 1000 gallons, the ordinary charge being 6d. per 1000 gallons.[4] In Cardiff water for sanitary purposes is supplied to the Council at the rate of 2½d. per 1000 gallons, the ordinary price being from 6d. to 1s. 6d. per 1000 gallons.[5] In Liverpool electric current is sold to the Health Committee at 1d. per unit, whereas the price paid by private consumers for lighting purposes is from 3¾d. to 2½d. per unit, according to circumstances.[6] In Birmingham the price of gas for street-lighting purposes

[1] That is, the cost of maintaining lamps and paying lamplighters if these burdens fall upon the Gas Committee.

[2] *Parliamentary Return relating to all Authorised Gas Undertakings of Local Authorities.*

[3] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. pp. 96, 99.

[4] *Ibid.* part v. p. 38.

[5] *Ibid.* part v. p. 81.

[6] *Ibid.* part ii. p. 8.

is 1s. per 1000 cubic feet, the charge made to ordinary lighting consumers being 1s. 10d. to 2s. 6d. per 1000 cubic feet, according to the consumption.[1] Where, as in these cases, Corporation Departments are undercharged, this tells against the receipts of the particular Trading Department in the same way, though in a less degree, than if no charge had been made.

In the cases of products or services provided free of charge or at reduced charges by a Municipal Department, fairly complete information can generally be obtained, and it should be possible for most undertakings to establish a new profit and loss account in which the real value of all the products and services sold is entered amongst the receipts. This would show to what extent the receipts, and consequently the profits, had previously been under-estimated, or the losses had previously been over-estimated.

The other way in which the receipts may be affected is by a Trading Committee overcharging one or more of the remaining Corporation Committees. This may be done deliberately or unintentionally, but in either case it is generally veiled by the fact that the surrounding circumstances differ from those connected with the sale of the same commodity to private consumers. Thus an Electricity Committee may undertake to light the streets of a town in return for a fixed sum per lamp paid by the Corporation.[2] No other consumer of electricity purchases current on the same sort of terms, so that there is no basis for comparison, unless an elaborate calculation be made to ascertain the approximate price of current per Board of Trade unit paid by the Corporation for street-lighting purposes; even then it would be necessary to bear various considerations in mind concerning the cost of providing the particular service,[3] before any satisfactory conclusions could be reached as to whether the Corporation was being charged too much, just enough, or too little for the current supplied. Another case in point is that of current sold by a Municipal Electricity Department to a Municipal Tramway Depart-

[1] *Parliamentary Return relating to all Authorised Gas Undertakings of Local Authorities.*

[2] Gas for street-lighting purposes is often sold at so much per lamp.

[3] This point will be dealt with more fully in the chapter on the selling policies of municipal trades.

ment. Here the price charged per Board of Trade unit can be ascertained, but there is no private power consumer who purchases large quantities of current for traction purposes, and consequently a basis for comparison is again lacking. In big towns where the tramway departments handle a large traffic and have very little to fear from competition, they have not much difficulty in making a good profit, whereas the Electricity Departments have far more competition to face and find it difficult to make both ends meet. Hence there is a distinct temptation to make both of these undertakings show a reasonable return on their capital outlay, by transferring some of the surplus of the Tramway Department to the Electricity Department, in the form of an abnormally high price paid for current. If a Trading Department overcharges another department, its receipts are improperly increased, and consequently its profits are likewise improperly increased or its losses improperly diminished.

Many Municipal Tramway undertakings in this country complain that they are being overcharged for current and that they are bolstering up electricity undertakings. Quite recently the Municipal Tramway Association and the Municipal Electrical Association have agreed upon a new basis on which current for traction purposes is to be charged, namely, the actual cost of production of the energy supplied, instead of the average cost for all classes of load, as is now commonly the case. If an Electricity Department realises a surplus on the transaction it is to be shown separately. For the purpose of ascertaining the cost of production, sums set aside for the repayment of loans are not to be included, but depreciation is to be charged on the assumption that the life of land is 100 years, of buildings 60 years, and of plant and machinery, including mains, 20 years.[1] The adoption of this basis of charging will not prevent an Electricity Department from being bolstered up by a Tramway Department, but it will show clearly to what extent such bolstering up occurs, of which at present it is impossible to form a definite opinion.[2]

[1] Report of the Joint Committee of the Incorporated Municipal Electrical Association and the Municipal Tramways Association on the question of charging for tramway current.

[2] Some tramway undertakings have

§ 3. The questions concerning the expenditure of Municipal Trading Departments which require special attention are two: the first is whether certain expenditure incurred in connection with a Trading Department has been properly charged to the capital or revenue account of the particular Trading Department as the case may be; the second is whether sufficient provision is being made out of revenue to provide for the wear and tear of the various fixed assets. Further, if one Trading Committee overcharges another, as was mentioned above, in so far as it exaggerates the receipts of the one it exaggerates the expenditure of the other, and thereby diminishes its profits or increases its losses.

The item which may perhaps most easily be slipped out of the capital account of the Trading Department is the cost of street widening in connection with the tramways.[1] One aspect of the cost of street widening has been referred to in connection with the conditions made by local authorities before giving their consent to Tramway Companies' leases.[2] In the matter of street improvements a Tramway Department should be treated in the same way as a Tramway Company. If a street is widened for

their own generating stations, which appear to supply current at much lower cost than it can be purchased at an electricity works, for example at 0.3d. or 0.4d. per unit instead of, say, 1d. per unit. These low figures per unit are deceptive on more than one ground. In the first place, they are works costs, and include no debt charges or provision for depreciation. In the second place, there is probably no accurate control over the meters, as the tramway undertaking has no financial interest in checking how many units are metered; on the other hand, the more current that is recorded the lower the working cost per unit. In the third place, the current is probably metered at the power station where it is generated at low pressure and distributed throughout the town. In this way far more current will be metered than is actually used, as the loss of current when transmitted at low voltage will be very considerable. Where current is purchased from an electricity works it will very likely be distributed at high voltage to sub-stations, where it is transformed down and then recorded before it is supplied to comparatively short feeders. In this way little more current will be metered than is actually used by the cars. In consequence of these considerations the difference between the nominal cost of current produced in a tramway power station and the price of that purchased from an Electricity Department is no indication of the extent of the overcharge, if any, made by an Electricity Department to a Tramway Department.

[1] Any street widenings paid for after business has been begun may be debited to revenue account, which is certainly preferable in the case of small improvements.

[2] See pp. 31-33, above.

purposes of general traffic, a tramway undertaking might nevertheless derive sufficient direct benefit from the improvement to justify its being charged with part of the expense. Where streets are widened in connection with tramway schemes, if it be reasonable that the local authorities share the cost with a Tramway Company it may fairly do so with its own Tramway Department. In that case part of the cost would be charged to the street improvement account of the local authority, and part to the capital account of the Tramway Department. If the local authority could not reasonably be expected to share the expense of street widening with a company, then the whole burden of the cost should be borne by the Tramway Department. In London, where improvements and widenings are made for the purposes of general traffic, from which the tramways have derived or will derive benefit, no part of the cost is charged to the London County Council Tramway undertaking, though a considerable proportion of it ought probably to have been so charged.[1] Where improvements have been undertaken in connection with tramway schemes, the ordinary basis of apportionment adopted by the London County Council is that one-third of the cost is charged to the Tramway undertaking, but on various occasions only a smaller share has been charged to the Tramways, and in some cases nothing at all. Consequently the Tramways capital account has been undercharged by a substantial sum.[2] A case of the whole of a street improvement being charged to a Municipal Tramway Department is that of the street widening undertaken round the site of the old Manchester Royal Infirmary in order that additional tram lines might be laid down. The site already belonged to the Corporation, but the interest and sinking fund charges in respect of that part of the land which was used for the street widening scheme are paid by the Tramway Department.[3]

Another item which should be debited to the capital

[1] *Report on the London County Council's Tramways*, by W. B. Peat and F. W. Pixley, pp. 14-17.

[2] *Ibid.* pp. 11-14, 16.

[3] In 1909-10 this annual payment amounted to £4048, the value of the land used being about £100,000. See the *Annual Report of the General Manager of the Manchester Corporation Tramways for 1909-10*, p. 14.

account of a Trading Department is the cost of obtaining the original powers to establish the Department. Where the method employed is to obtain a private Act of Parliament this item may be quite considerable. These items of expenditure affect not only the capital amount of a trading undertaking, but also its annual revenue account, as interest and sinking fund contributions will have to be paid in respect of the loans.

The most important item which is likely to be omitted from the revenue account of a Trading Department is a share of the general expense of the local authority. This refers in particular to the legal services of the Town Clerk and his assistants on the one hand, and to the financial services of the Borough Treasurer and his department on the other. The smaller the Trading Department is, the more work is likely to be done in the general offices at the Town Hall. The allocation of general expenses amongst different departments is a difficult matter in the case of large companies, but as the shareholders look only to the combined results of the various departments, it merely affects the departments *inter se* and the shareholders are not prejudiced by it. In the case of municipal undertakings, where each department stands on its own footing and the results of its trading are published separately for the information of the ratepayers and in order to show the profits gained or losses incurred, the allocation of general expenses becomes much more important. A few examples of the practice adopted in various towns may be given. The proportion of general, legal and establishment charges of the Councils paid in 1905-6 by the Liverpool Water Department was £6727, by the Liverpool Electricity and Tramway Departments £2000, by the Liverpool Markets Department £1000, by the Nottingham Gas Department £1137, by the Nottingham Electricity Department £290, by the Nottingham Tramways Department £595, by the Bradford Water Department £1800, by the Bradford Gas Department £1700, by the Bradford Electricity Department £850, by the Bradford Tramway Department £750, and by the Bradford Market Department £225. In Manchester, Birmingham, Leeds, Sheffield and Leicester, on the other hand, the Trading

Departments made no contribution to the general, legal and establishment charges of the Councils.[1]

Another possible omission of a similar character from amongst the working expenditure is rent in respect of rooms devoted to the Department in the Town Hall or other public building. Another point about which it is well to make sure is whether a proper amount has been debited to the revenue or capital accounts of a Trading Department in respect of its share of the cost of obtaining any supplementary powers which may be included in an Act obtained by the Corporation to authorise various undertakings.

§ 4. The second question concerning the expenditure of Municipal Trading Departments which calls for special consideration is the provision made out of revenue for the wear and tear of fixed assets, or in other words for depreciation. All buildings, plant and machinery employed in a business will necessarily suffer from wear and tear, and if it is desired that the business shall be carried on permanently it is necessary to make provision for their maintenance. This will involve regular repairs, periodic renewals, and ultimate replacement. The cost of maintenance must be provided out of revenue if living on capital is to be avoided. The cost of small repairs and renewals will fluctuate from year to year within limits, but it should be possible to meet those payments without difficulty from current revenue. To attempt to meet the whole cost of maintenance out of current revenue will not generally prove satisfactory, as the need for big renewals and replacements occurs only irregularly, and may then require much larger sums than can conveniently be charged to current revenue.

In order to secure a fairly stable net revenue, some provision must be made each year in anticipation of the cost of future renewals and replacements. This may be done either by gradually writing down the value of the assets in the books, to correspond with the deterioration of their intrinsic value, or by crediting a suitable sum to a depreciation account. The latter method has the advantage that it is easier to see how much provision has been made

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), parts i., ii., iii., v.

for depreciation and the ratio it bears to the original value of the assets. The rate at which depreciation should be allowed for, depends entirely upon the estimated life of each particular asset, which in its turn depends a great deal upon the sum annually spent on repairs and small renewals. But no amount of expenditure out of current revenue on repairs and small renewals can do away with the ultimate need for replacement. It can only be postponed, and a day will come when entirely new buildings, plant, or machinery must be substituted for the existing ones, and the expenditure thus necessitated should be a charge, not on the revenue of the particular year in which the replacement has to be effected, but on the revenue during the whole period during which the assets to be replaced were used. This distribution of the burden over the whole period can be effected only by writing down the value of assets or by accumulating a depreciation fund.

The estimated life of an undertaking is not always a sound basis to adopt in order to calculate the sum to be set aside for depreciation. In some cases plant or machinery is likely to become obsolete before it is worn out. This should be provided for, either by allowing for the depreciation of such assets at an extra high rate, or by accumulating a special reserve to cover loss by obsolescence.[1] There is probably no industry in which the danger of plant and machinery becoming obsolete before it is worn out is greater than in the electrical industry; many improvements of a radical kind have been made in it during the past, and are likely to continue to be made in the future, as the industry is still a comparatively new one in course of development. In any trade in which much capital is invested in the form of machinery a large provision for depreciation is necessary, as machinery tends to wear out much more rapidly than plant or buildings. Consequently in an electrical undertaking in which much machinery is employed and the likelihood of obsolescence is considerable, very ample provision for depreciation should be made. In the case of electric tramways it is in connection with the permanent way that the

[1] Further reference to the subject of obsolescence is made below, p. 159, after the question of the repayment of loans has been discussed.

cost of renewals will be heaviest, and it is essential that this should be provided for by a depreciation fund, as the expenditure in connection with it is likely to be very unevenly distributed throughout a period of years. The cost of renewing overhead equipment is considerably diminished by the fact that the copper wire retains much of its value in spite of exposure and wear and tear. As far as gas and water undertakings are concerned, although it is possible to make most repairs and renewals out of current revenue as the need for them occurs, without rendering the net incomes of the undertakings very unstable, when an occasion arises to relay mains or replace existing buildings, the desirability of providing for depreciation will be realised. In the light of these general considerations we may pass on to consider the policies actually adopted by the various municipal water, gas, electricity and tramway undertakings with regard to depreciation.

§ 5. The policies adopted by different local authorities with respect to the provision made for the depreciation of their trading undertakings vary enormously, both with regard to the amount provided for the purpose and to the method by which the amount is determined. At the one extreme we find trading departments which make no provision whatever for depreciation, and which rely presumably on maintaining the undertaking in an efficient state out of current revenue, and at the other extreme we find trading departments which set aside each year in respect of every kind of fixed asset a sum based upon the estimated life of each particular asset. Other methods adopted are to place the whole of the "net surplus revenue" to a depreciation fund, to place a certain fixed percentage of the "net surplus revenue" to a depreciation fund, or to place a sum determined on no fixed basis to a depreciation fund.

(i.) The departments which most frequently make no provision for depreciation are those which carry on water undertakings, the idea being that the works can be fully maintained out of revenue. This appears to be the case, for example, in Manchester, Plymouth, Bath and Coventry. As far as gas works are concerned, no provision is made for depreciation at Rotherham and Wigan, and the same applies

to the electricity works at Gloucester, Swansea and Derby, whilst in Grimsby a contribution was even made in aid of the rates in 1908-9, although no provision was made for depreciation. The tramway undertakings of Rochdale, Gloucester, Blackburn and Plymouth make no provision for depreciation, although in the last town a contribution was made in 1908-9 in aid of the rates.[1]

(ii.) The policy of setting aside each year a sum for depreciation based upon the estimated life of the various assets appears to be more frequently adopted, at least in so far as this country is concerned, in the case of tramway undertakings than in the case of electricity, gas, or water undertakings. Some illustrations from the different industries may be given. In the case of tramway undertakings we find that in Manchester the annual contributions to the depreciation fund are made on the following basis: Permanent way, £400 per mile of single track; overhead equipment, £50 per mile of single track; electric cars, 5 per cent on prime cost; machinery, 7½ per cent on prime cost.[2] In Wolverhampton it is assumed that rails will last twelve years and will cost £1 per yard to relay, and one-twelfth of such estimated cost is set aside each year. The cars are assumed to last ten years, and one-tenth of the estimated cost of renewing them is set aside each year. The renewals fund in regard to track equipment and car equipment is based upon the estimate of the electrical engineer.[3] In Glasgow the annual contribution to the permanent way renewal fund is £500 per mile of single track. The provision for depreciation in respect of electrical equipment of the line is 3.06 per cent; in respect of buildings and fixtures, 2.5 per cent; in respect of power stations and sub-stations, 5 per cent; in respect of workshops, tools and

[1] All these statements concerning the provision made for depreciation are based on the *Annual Local Taxation Returns for 1908-9*, part v. pp. 42-59. In the case of every town mentioned no payments to reserve, depreciation, or insurance funds were made during 1908-9, nor did any sums stand to the credit of such funds at the end of the year.

[2] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 35. In 1908-9 the amount appropriated for Reserve, Renewals and Depreciation Fund was equivalent to 1.063d. per car mile, in 1909-10 to .979d. per car mile (*Annual Report of the General Manager of the Manchester Corporation Tramways*, 1909-10, p. 14).

[3] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part iii. p. 101.

sundry plant, cars, electrical equipment of cars, and office furniture, 7½ per cent; and in respect of other rolling stock 10.5 per cent.[1] In Cologne the provision for depreciation is ¾ per cent on buildings, 6 per cent on permanent way, 3 per cent on overhead equipment, 5 per cent on cars, and 10 per cent on instruments, tools, machinery, etc.[2] In Düsseldorf the corresponding rates are 2 per cent for buildings, 10 per cent for permanent way, 7½ per cent for overhead equipment and accumulators, 10 per cent for cars, and 10 per cent for machinery, instruments and lighting equipment.[3]

With regard to electricity works, in Glasgow amounts are written off the capital assets annually out of revenue according to the following rates: 1 per cent on land and buildings, 5 to 7½ per cent on plant and accumulators, 2½ per cent on mains, 6 per cent on meters, 5 per cent on electrical instruments, and 5 per cent on office furniture.[4] In Aberdeen depreciation is charged to the revenue account annually at the following rates: buildings, 1 per cent; mains and services, 1½ per cent; electrical instruments and tools, 2½ per cent; machinery, accumulators and meters, 5 per cent.[5] In Düsseldorf depreciation is charged to the revenue account at the following rates: 3 per cent on buildings; 10 per cent on boilers, machinery apparatus and accumulators; 3 per cent on mains; and 15 per cent on meters.[6]

In the case of gas, Glasgow is the only British municipality, as far as can be ascertained, which writes amounts off the capital assets out of revenue, according to the estimated life of the several assets. The bases are as follows: on land, buildings, machinery and plant, 2½ per cent; on pipes, 2½ per cent; on meters, 6 per cent; on stoves, 10 per cent.[7] In Germany this system of providing for depreciation appears to be much more generally adopted. In Heidelberg the rates allowed are 1 per cent on land, 2 per cent on buildings,

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part vi. p. 31.

[2] *Bericht über die Verwaltung der städtischen Bahnen zu Cöln für den Zeitraum 1908-9*, p. 5.

[3] *Geschäftsbericht über das Betriebsjahr 1909-10 der Strassenbahnen der Stadt Düsseldorf*, p. 21.

[4] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part vi. p. 28.

[5] *Ibid.* p. 72.

[6] *Betriebs-Abschluss des städtischen Elektrizitätswerkes zu Dusseldorf für das Geschaftsjahr 1908*, p. 66.

[7] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part vi. p. 25.

10 per cent on retorts, 5 per cent on gasometers, 6 per cent on water-gas plant, 10 per cent on apparatus and machinery, 10 per cent on meters, and 5 per cent on mains, street lamps, tools and furniture.[1] In Düsseldorf the corresponding rates are buildings, 3 per cent; gasometers, 6 per cent; retorts, 10 per cent; apparatus, 10 per cent; mains, 4 per cent; and meters, 12½ per cent.[2]

The only British corporation which appears to provide for depreciation of its water undertaking according to the estimated life of the various assets is Salford, which annually pays into a depreciation fund sums equivalent to 1 per cent on mains and services, 1 per cent on reservoirs, and 10 per cent on meters.[3] Two further examples may be selected from German towns. In Bonn the provision made for the depreciation of the water works is 2 per cent on buildings, 2 per cent on springs, 10 per cent on boilers and filtration plant, 8 per cent on machinery, 1½ per cent on reservoirs, 2½ per cent on mains, and 10 per cent on meters, furniture and tools.[4] The depreciation rates of the Mannheim water undertaking are 1 per cent on land and buildings, 3 per cent on mains, 5 per cent on springs, machinery, pumps, boilers and apparatus, and 10 per cent on meters, furniture and tools.[5]

In certain cases modifications of the above-described depreciation policy are adopted where a certain fixed percentage of the total capital outlay is carried to a depreciation fund. Thus in the case of Huddersfield Tramway undertaking an amount equal to 3 per cent of the capital outlay is annually carried to a depreciation fund, which is available for renewals of the permanent way and replacements of machinery and plant.[6] In the case of the Huddersfield Gas Works an amount equal to 2 per cent of the capital outlay is annually carried to the depreciation fund,[7] whilst in the case of the

[1] *Bericht über den Beirieb der städtischen Gas-, Wasser- und Elektrizitätswerke Heidelberg im Jahre 1908*, p. 14.

[2] *Betriebs-Abschluss des städtischen Gaswerkes zu Düsseldorf für das Geschäftsjahr 1908*, p. 17.

[3] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 49.

[4] *Betriebsbericht des Wasserwerks der Stadt Bonn für die Zeit vom 1. iv. 1909 bis 31. iii. 1910*, p. 77.

[5] Moericke, "Die Gemeindebetriebe Mannheims," *Schriften des Vereins für Socialpolitik*, vol. 129, part iv. p. 58.

[6] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part i. p. 97.

[7] *Ibid.* part i. p. 91.

Blackpool Gas Works an amount equal to 1 per cent of the total capital outlay is annually carried to the depreciation fund.[1] Another modification is where the amount of the statutory loan repayments is deducted from the sums set aside for depreciation, these sums being calculated on the basis of the estimated life of the various assets. Thus in the Bolton electricity accounts, contributions to depreciation are made at the rate of 6 per cent in respect of machinery and plant, and 10 per cent in respect of meters and motors. From the sums rendered available in this way the sinking fund contributions are deducted and the difference is credited to the depreciation fund account.[2] A similar policy is adopted in respect of the Bristol Electricity Works[3] and the East Ham Tramways.[4] A third modification is where the sinking fund contribution is deducted from the amount provided for depreciation which is calculated as a fixed percentage of the total capital outlay. For example, the revenue of the Sunderland Tramways is charged with a combined contribution to reserve fund, renewals fund and sinking fund calculated at 5 per cent on the capital cost of the undertaking plus 3 per cent interest on accumulations.[5]

(iii.) The method of placing the whole of the "net surplus revenue" to the reserve or depreciation fund is one of those most commonly adopted in this country. By "net surplus revenue" is meant everything that remains after paying out of gross revenue all running expenses, interest on capital and sinking fund contributions. It implies that no provision is made for depreciation and that nothing is paid in aid of the rates. This method, like the two which remain to be described, is essentially unscientific. The sums contributed in this way may or may not be adequate. It is impossible to form an accurate opinion on the subject, as no information is available as to the original value of the different kinds of assets. The most that can be done is to compare the net surplus revenue with the total capital outlay. Thus in the case of the Sunderland Electricity Works, £1429 was carried to a renewals fund in 1905-6,[6] or something

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 217.
[2] *Ibid.* part ii. p. 78.
[3] *Ibid.* part v. p. 3.
[4] *Ibid.* part iii. p. 143.
[5] *Ibid.* part v. p. 102.
[6] *Ibid.* part v. pp. 96, 98.

less than ½ per cent of the capital value of the undertaking, which appears quite inadequate. In Norwich a sum of £5640 was credited to the depreciation account of the Electricity undertaking in 1905-6, which is at the rate of about 2 per cent on the capital value.[1] The Leicester Tramway undertaking in the same year paid £13,110 into a depreciation fund which represents not quite 2 per cent on the capital outlay.[2] In Birkenhead the Tramway undertaking in 1905-6 placed £898 to the credit of the renewals fund, which is equivalent to ¼ per cent on the capital value of the undertaking.[3] In all these cases the sums transferred to depreciation funds represented the balance on the year's working.

(iv.) The method of paying a certain fixed percentage of the "net surplus revenue" to a depreciation fund is adopted by the Liverpool Tramways and Electricity undertakings. Thus in the case of the tramways, there is a statutory obligation that two-thirds of each year's "surplus" shall be contributed to the reserve, renewals and depreciation funds,[4] whereas in the case of the electricity works two-fifths of any "surplus" which remains after contributing a sum equal to 1 per cent of the capital expenditure to the reserve fund is placed to the credit of the renewals fund. In 1905-6 the sum contributed to the reserve, renewals and depreciation funds in respect of the tramways system was £56,834 or 2⅔ per cent on the capital value of the undertaking, and in respect of electricity works £32,657 or 1¾ per cent on the capital value of the undertaking.[5]

(v.) The method of providing for depreciation on no fixed basis is not very satisfactory, as it generally consists of crediting to a renewals fund that portion of the "net surplus revenue" which remains after paying a sum in aid of the rates. The amount of such contribution to the rates may be determined by the trading committee as that which they can afford to pay, if proper provision is to be made for depreciation; or it may, on the other hand, be determined by the temporary financial requirements of the Municipality

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part iii. pp. 115, 116.
[2] *Ibid.* part iii. pp. 52, 63.
[3] *Ibid.* part ii. pp. 149, 160.
[4] Liverpool Corporation Act, 1902, sec. 55.
[5] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. pp. 1, 7, 10.

and the desire of the Council to avoid raising the rates as far as possible, in which case the need of an adequate contribution to the depreciation fund is likely to be ignored. As far as this country is concerned, this method of providing for depreciation appears to be as usual as, if not more usual than, the method of contributing the whole of the "net surplus revenue" to a renewals fund. One illustration for which full information is available will suffice to show how thoroughly unsatisfactory this method of providing for depreciation on no fixed basis can be. The Salford Tramway undertaking is the case in point. The Committee hold that there is no necessity to provide for the depreciation of anything except the rails, as the buildings and rolling stock are kept in a thorough state of efficiency.[1] In 1906 they instructed the General Manager to report on the position of the depreciation and renewals fund and also upon the arrangements which it was desirable to make in the future to provide adequately for the expenditure which would be entailed in a few years' time in the reconstruction and renewal of the tramway track.[2] The General Manager made careful inquiries concerning the probable life of rails and the probable cost of renewals. He estimated the cost of relaying a mile of single track would be £4000, and that the lines over which the traffic was fairly light would last fifteen years and the lines where the service was more frequent would last ten years. He placed 18 miles of the Salford track in the latter class, and $36\frac{3}{4}$ miles in the former class. In respect of these $54\frac{3}{4}$ miles the annual depreciation contribution should be £17,012.[3] Corresponding calculations were made for the previous years, and it was ascertained that on March 31, 1906, the sums which had been credited to the depreciation fund were £20,000 less than the sums which should have been contributed. The General Manager recommended that these arrears in the contribution should be made up, and that the annual contribution to the

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 58. This, of course, overlooks the facts that it is not possible to go on repairing buildings and cars indefinitely, and that they will have to be renewed at some time in the future.

[2] *Report of the General Manager of the Salford Corporation Tramways with regard to the Depreciation and Renewals Fund*, August 1906, p. 3.

[3] *Ibid.* pp. 4-7.

renewals and depreciation fund should be £17,000, to be increased *pro rata* as the length of track operated increased.[1] By 1909, when the length of track had increased to 75 miles,[2] the provision for depreciation should have been some £22,400, on the assumption that the traffic on all the new track was fairly light and that the rails would last fifteen years. As a matter of fact the Committee did not accept the sound advice of their manager; they preferred to continue to make provision for depreciation on no fixed basis, and we can compare the sums they have placed to the depreciations and renewals fund with the sums suggested by the manager and at the same time note the contributions made by the Committee in relief of the rates.

TABLE showing the Provision made for Depreciation in certain Years by the Salford Corporation Tramway Department.[3]

Year.	Placed to Depreciation and Renewals Fund.	Contributed in Relief of Rates.	Provision which should have been made for Depreciation in Accordance with General Manager's Report of August 1906.
1906	£9,302	£13,000	£17,000
1907	14,890	13,000	18,800
1908	10,806	18,000	20,600
1909	264	17,000	22,400
1910	2,172	17,000	24,200

A glance at this table will suffice to show that in 1908-9 and 1909-10 there were really deficits, as the sums contributed in relief of the rates would not have sufficed to render adequate the provision for depreciation. If the finances of the undertaking had been conducted on sound lines, not merely should nothing have been contributed in relief of the rates in either of these years, but some £5000 should have been made good to the undertaking from the rates, or a deficit should have been carried forward.

It would be a mistake to think that all municipal trading

[1] *Report of the General Manager of the Salford Corporation Tramways with regard to the Depreciation and Renewals Fund*, August 1906, pp. 7, 8.

[2] *Annual Report of the General Manager of the Salford Corporation Tramways for the Year ending March 31, 1909*, p. 11.

[3] *Annual Reports of the General Manager.*

undertakings which provide for depreciation on no fixed basis make such inadequate provision as the Salford Tramway undertaking appears to make, but if no definite method of allocating sums for renewals is adopted, there will always be a great danger that unduly large contributions in relief of the rates will be forced out of trading committees by their Town Councils, at the expense of the provision which should be made for depreciation.

§ 6. There still remains to be considered the attitude of the central authorities in this country towards the provision of sums out of the revenue of municipal trading undertakings to be set aside to meet future renewals and replacements. As a general rule the central authorities do not insist upon any provision being made for depreciation, but there are certain exceptions. Thus by statute[1] the Aberdeen Tramway Department is obliged to write off not less than 3 per cent annually on the first cost of machinery and plant in respect of depreciation, and the Dundee Tramway Department is under the same obligation.[2] In the case of the Liverpool tramways the Committee is obliged to contribute to a depreciation fund two-thirds of each year's surplus.[3] An obligation to create a depreciation fund has been imposed upon the Salford Water Works,[4] and a sum not exceeding 3 per cent per annum upon the capital is to be set aside as a depreciation fund to be applied in making replacement and repairs. An exactly similar obligation exists in respect of the Salford Gas Works.[5] In connection with the borrowing of money by the metropolitan borough of Woolwich for the purpose of its electricity undertaking, the London County Council has required the Borough Council either to set up a reserve fund or to charge the cost of all renewals to revenue account.[6] The latter course appears to have been mostly pursued, and has necessitated considerable contributions from the rates.

§ 7. Until an adequate sum has been charged to revenue

[1] Aberdeen Corporation Tramways Act, 1898.

[2] Dundee Corporation Tramways Act, 1898.

[3] Liverpool Corporation Act, 1902, section 55.

[4] Salford Improvement Act, 1862, section 412.

[5] Salford Improvement Act, 1862, section 413.

[6] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part iv. p. 212.

in respect of depreciation, there can be no question of profits in the ordinary business sense of a surplus which is available for the payment of dividends. The provision for depreciation is made to meet losses which, it is almost certain, will occur in the future owing to the wasting of fixed assets, and this should be paid from gross revenue as a business expense or working charge, and not from net revenue as though it represented a portion of the profits. In the same way it is desirable in every business to make provision for contingencies, which may occur and involve the undertaking in considerable expense. Municipal trading enterprises may meet with accidents or breakdowns, as, for example, an explosion at a gas works or the bursting of a water main. The risk involved by these contingencies is of a similar nature to that involved by fire. The risks involved by fire can be covered by insurance, and the premiums are then regarded as a working expense. It is more difficult to insure against other business contingencies, so that these risks should be met by annually setting aside from gross revenue a suitable sum to a contingency fund or contingency reserve account. It is quite possible that many trading committees make provision for contingencies, but few appear to have established a special fund for the purpose. One or two cases where provision is made may be mentioned. The Sheffield Tramways undertaking[1] and the Brighton Water undertaking[2] have created contingency funds, which, in the former case, is in addition to a renewals fund. In the case of the Dundee Gas undertaking, the Gas Commissioners are authorised[3] to set apart annually a sum not exceeding 2½ per cent of the gross annual revenue to form a contingent fund against risks and losses by fire, explosions, and destructions of works, other than ordinary wear and tear, and for permanent additions and improvements.

§ 8. Quite apart from depreciation or contingency funds there is another fund which experience shows it is generally well to establish in connection with a business, namely, a reserve fund which is accumulated out of the net revenue to

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part i. p. 31.

[2] *Ibid.* part iii. p. 172.

[3] Dundee Gas Act, 1872, section 16.

provide for the extension of a business, or for the equalisation of dividends, or for generally increasing the resources of a business. It is very important to distinguish carefully between reserves and a reserve fund. A reserve may be defined as a provision charged against revenue, with a view to covering an expected loss. Reserves may be made to cover losses arising from depreciation, bad and doubtful debts, disputed claims, contingent liabilities, etc. A reserve fund is a sum set aside out of divisible profits, and retained in hand for the purpose of strengthening the financial position of the undertaking. It differs from a reserve in that it is impossible to create a reserve fund save out of divisible profits, whereas a reserve may be provided during periods when a loss has been sustained.[1]

The need for clearly distinguishing reserves on the one hand, and reserve funds on the other, continually arises when dealing with the finances of municipal trading. The central authority frequently permits a trading undertaking to accumulate a *reserve fund* up to a certain amount. Various local authorities appear to assume that this refers to depreciation funds, with very unfortunate results, if the limit imposed is a low one. On the other hand, where no express permission to form a *reserve fund* is given, trading committees sometimes assume that they have no right to provide for depreciation, which is even more unsatisfactory. An Electric Lighting Order, issued under the Electric Lighting Acts, 1882 and 1888, by the Board of Trade to a local authority, practically always embodies a sub-section authorising the local authority, if it thinks fit, to set aside such money as it considers reasonable to provide a *reserve fund*, and to accumulate it at compound interest until the fund amounts to one-tenth of the aggregate capital expenditure. As has already been pointed out, Liverpool is accumulating such a reserve fund from surplus, and, in addition, is placing two-fifths of the remaining surplus to a renewals fund.[2] In the case of Manchester there is both a reserve fund and a renewals suspense account.[3] In Glasgow depreciation is

[1] See Lawrence R. Dicksee, *Depreciation, Reserves, and Reserve Funds*, London, 1907, especially pp. 47 and 51.

[2] See p. 140, above.

[3] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 31.

provided for by annually writing amounts off the capital assets out of revenue; in addition, a reserve fund is being accumulated.[1] The policy adopted by these three large electrical undertakings in clearly distinguishing between depreciation funds, or reserves, and reserve funds does not appear to be that adopted by the majority of municipal undertakings, which carry on business under electric lighting orders, embodying the identical provisions with regard to reserve funds. An official statement made by the Croydon Electricity Works states that its Order authorises the creation of a reserve fund amounting to 10 per cent on the total capital outlay, and that such sums as were deemed by the Committee to be sufficient to meet any likely demands for renewals have been contributed to the fund.[2] In Hampstead we learn that in March 1906, in view of the near approach of the reserve fund to the 10 per cent of the aggregate capital outlay allowed by the provisional order, a round sum of £7000 was transferred to the reserve fund instead of the whole surplus profits, as had previously been the case. The withdrawals from the fund were chiefly for replacement of plant and writing off obsolete plant.[3] In these cases the confusion between depreciation funds and reserve funds is quite clear, and the same thing appears to be the case in many other towns, including Birmingham[4] and Nottingham.[5]

Certain municipal undertakings, other than electrical, have special powers to form reserve funds. Thus the Birmingham Gas Department is authorised to provide a reserve fund of £100,000.[6] An obligation to create a reserve fund not exceeding £5000 is imposed on the Burnley Water Works and the Burnley Gas Works.[7] The Leicester Water Works Committee is authorised to create a reserve fund not exceeding £5000.[8] Authority was given to the Edinburgh and Leith Corporations Gas Commissioners in 1888 to accumulate a reserve fund up to a maximum of £100,000.[9]

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part vi. p. 28.

[2] *Ibid.* part iii. p. 154.

[3] *Ibid.* part iv. p. 93.

[4] *Ibid.* part iii. p. 13.

[5] *Ibid.* part iii. p. 40.

[6] Birmingham Corporation Gas Act, 1875.

[7] Burnley Borough Improvement Act, 1871, section 244.

[8] Leicester Corporation Gas and Water Transfer Act, 1878, section 37.

[9] Edinburgh and Leith Corporations Gas Act, 1888, section 86.

In 1902 this limit was increased to £150,000, and an obligation imposed to carry annually to the reserve ¼ per cent of the amount borrowed under the order of 1902.[1] The Birmingham Corporation Tramway undertaking is authorised to accumulate a reserve fund to the extent of one-fifth of the aggregate capital for the time being.[2]

Most of these local authorities seem to treat their statutory reserve funds as depreciation funds. Some trading committees have created reserve funds, as distinct from depreciation funds, without special statutory powers, as, for example, the Manchester Gas undertaking. Thus, in the general balance sheet of the Manchester Corporation Gas Works appear as items a renewals account, a reserve fund account, and profits applied to extension of works, which is really reserve fund that has been invested in the undertaking for the purpose of extensions.[3] A much more usual arrangement is for a trading department to create a so-called "reserve fund," which is really a depreciation fund. Equally common is the case of a trading department which establishes a "depreciation and reserve fund." The number of genuine reserve funds created by local authorities appears to be comparatively small.

In view of the practical working of restrictions on reserve funds imposed by legislation or provisional orders, such restrictions must be examined carefully. The subsection of every Electric Lighting Order, which authorises a local authority to accumulate a reserve fund not exceeding one-tenth of the aggregate capital of the undertaking, calls for especial attention. A regulation, which lends itself to be misinterpreted to mean that a depreciation fund provided in connection with an electrical undertaking must not exceed 10 per cent of the total capital outlay, as appears to be so commonly the case, must be condemned.[4] The question to

[1] Edinburgh and Leith Corporations Gas Order, 1902, section 9.

[2] Birmingham Corporation Act, 1903, section 52 (1).

[3] *Manchester Corporation Gas Works, Abstract of Accounts for the Year ending March 31, 1911*, p. 22.

[4] The provisions relating to reserve funds incorporated in every Electric Lighting Order made by the Board of Trade after October 1, 1899, under the Electric Lighting (Clauses) Act, 1899, Schedule § 7 (1), and usually contained in orders previously made, are as follows:—

"Where a local authority are the Undertakers the following provisions shall have effect:

be considered is, whether an extension of the regulation making it quite clear that the restriction applies only to reserve funds proper and not to depreciation funds, would meet the requirements of the case, or whether it would be better to abolish the restriction entirely. It is necessary to try to understand the motive of the central authority in imposing the restriction. It is apparently imposed with the object of checking high prices, in the same way as another regulation embodied in electric lighting orders, which requires prices to be reduced if in any year the annual surplus exceeds 5 per cent of the capital outlay. Temporarily, of course, the accumulation of a reserve fund might lead to the

All moneys received by the Undertakers in respect of the undertaking, except (*a*) borrowed money, (*b*) money arising from the disposal of lands acquired for the purposes of the Special Order, and (*c*) other capital money received by them in respect of the undertaking, shall be applied by them as follows:

(*a*) In payment of the working and establishment expenses and cost of maintenance of the undertaking, including all costs, expenses, penalties, and damages incurred or payable by the Undertakers consequent upon any proceedings by or against the Undertakers, their officers or servants, in relation to the undertaking;

(*b*) In payment of the interest or dividend on any mortgages, stock, or other securities granted and issued by the Undertakers in respect of money borrowed for electricity purposes;

(*c*) In providing any instalments or sinking fund required to be provided in respect of moneys borrowed for electricity purposes;

(*d*) In payment of all other their expenses of executing the Special Order not being expenses properly chargeable to capital;

(*e*) In providing a reserve fund, if they think fit, by setting aside such money as they think reasonable, and investing the money and the resulting income thereof in Government securities, or in any other securities in which trustees are by law for the time being authorised to invest other than stock or securities of the Undertakers, and accumulating it at compound interest until the fund so formed amounts to one-tenth of the aggregate capital expenditure on the undertaking.

The reserve fund shall be applicable to answer any deficiency at any time happening in the income of the Undertakers from the undertaking, or to meet any extraordinary claim or demand at any time arising against the Undertakers in respect of the undertaking, and so that if that fund is at any time reduced it may thereafter be again restored to the prescribed limit, and so on as often as the reduction happens."

The fact that the last paragraph governing the application of reserve funds is somewhat vague, in conjunction with the fact that there is no direct reference in the earlier part of the clause to provision for renewals and replacements, appears to be sufficient to account for some local authorities relying on their reserve funds to meet depreciation.

maintenance of higher prices than the actual cost of production required, assuming that competition did not force down the level of prices; but in the long run a strong reserve fund invested in the business would enable current to be sold more cheaply than would ever have been possible had the whole surplus each year been used to effect immediate reductions of prices. A strong reserve fund is characteristic of most well-managed businesses, and to prevent such municipal electrical enterprises as may wish to pursue a sound financial policy from doing so is undesirable. The same thing applies to undertakings which are limited in the matter of their reserve funds by their special Acts of Parliament. The central authority should give the local authorities every encouragement to provide adequate depreciation funds and to accumulate reserve funds. The central authority should make it clear to every local authority engaging in trading enterprises of any kind, not merely that they may accumulate depreciation funds and reserve funds, but that, so far as depreciation is concerned, it is their duty to provide such a fund or to write down their assets. The likelihood of any industrial enterprise accumulating an over-large reserve fund invested outside the business, thereby rendering the concern into a sort of investment company, is very small in the case of a private firm, and is practically a negligible quantity in the case of a municipal enterprise; consequently a restriction imposed on reserve funds will, in all probability, effect no good, and may quite easily do a lot of harm, and is best avoided.

§ 9. The question whether the provision actually made for depreciation by many municipal trading enterprises is adequate is discussed later in this chapter. Here it may be noted that where the provision is inadequate, it is probably due partly to the belief of many local authorities that they can maintain their undertakings in a state of efficiency entirely from current revenue; partly to the policy of the central authority with regard to reserve funds, or to the misunderstanding of this policy, as has been explained above; partly to the statutory obligation to make heavy provision for the repayment of loan debts which not infrequently leaves insufficient revenue available for depreciation purposes,

and partly to the confusion which exists in the minds of many municipal administrators with regard to the functions of a depreciation fund and the functions of a sinking fund.

§ 10. When a national or local government incurs expenditure, for example, on a war or on the erection of a school, which it is unable or unwilling to pay for entirely out of current revenue, it obtains the necessary money by means of a loan. Every loan contracted imposes an annual charge in respect of interest upon the future revenues of the authority which borrows; it amounts to mortgaging the future for the sake of the present. If the occasions which necessitate borrowing become frequent, the burden of the debt will continue to grow, and will ultimately become unbearable unless some steps are taken to reduce the debt. Although the objects with which the loans are contracted may benefit future taxpayers and ratepayers as much as the present, it is most undesirable to create a perpetual charge on the revenues of the State, as the financial resources of the central or local authority concerned will thereby be permanently reduced, to the prejudice of future generations, who will probably require as much money as they can obtain to deal with problems of their own.[1] As a matter of fact most loans are contracted for purposes the benefits of which are of a more or less temporary character, so that there are even stronger reasons for paying off the debts.

Practically all governments realise the necessity of reducing the burdens of their debts, and in this country the burden of the national debt has been reduced from time to time by conversion schemes and by the sale of terminable annuities, and annually by allotting a definite sum to the National Debt Commissioners for the purchase of consols, and also by handing over to them for the same purpose any surplus which may be realised at the end of any financial

[1] The Select Committee on the Repayment of Loans by Local Authorities, 1902, express themselves as follows in their *Report* (§ 36): "Future ratepayers will have duties of their own to deal with for which they in their turn will have to borrow money, and to the extent to which the financial engagements now entered into at their expense prove to exceed the advantages received by them in respect of those engagements will be hampered in the discharge of their duties."

"The Committee, in view of the increase of local debt, consider that the only sound system is that which makes each generation pay to a considerable extent its own way."

year. Although the provision for debt reduction by the central government varies from year to year, and has occasionally been suspended on account of temporary financial requirements, local authorities are compelled to provide systematically for debt reduction, as the consent of the central authority to loans by local authorities has only been granted, for many years now, subject to adequate provision being made for the repayment of loans.[1]

The three principal methods of repayment of local debts are as follows:—

1. By equal annual instalments of principal, together with interest on the sum remaining unpaid (the instalment system).

2. By equal annual instalments of principal and interest combined, *i.e.* by a terminable annuity (the annuity system).

3. By setting apart and accumulating at compound interest a sinking fund (the sinking fund system).[2]

The instalment system involves a much smaller total payment in respect of capital and interest than either of the others, but the burden imposed by it in the earlier years of repayment is heavier.[3] The sinking fund system of repayment was that commonly adopted in respect of debts incurred by local authorities on behalf of trading departments in former years, but more recently the instalment system has been frequently adopted. The undertakings are then financed by means of loans effected by the municipalities for short periods, or subject to notice, instead of by the issue of Corporation Stock. The rate of interest paid will probably be slightly higher in the case of temporary loans than in the case of stock, and there is a risk that loans may have to be renewed at higher rates before the whole cost of the undertaking has been paid off. On the other hand, all the trouble connected with the accumulation of a sinking fund, the

[1] In the *Report from the Select Committee on Repayment of Loans by Local Authorities, 1902*, this statement is made (§ 2):—

"It appears from the evidence . . . collected that it has been, with one unimportant exception, the policy of Parliament for many years to require that local loans should be repaid within a limited number of years and to prevent the establishment by any local authority of a permanent debt."

[2] *Report from the Select Committee on the Repayment of Loans by Local Authorities, 1902*, § 19.

[3] *Ibid.* Some numerical illustrations are given in §§ 19, 20, and 21.

difficulties about the investment of the monies in suitable securities, and the danger that the securities may have depreciated when the time comes for them to be realised in order to pay off the debt, are removed. In most cases it is probably in order to avoid the troubles of a sinking fund, rather than to reduce the burden of the debt towards the end of the loan period and to minimise the total payment in respect of capital and interest, that the instalment system of repayment is now not uncommonly adopted, but whatever the reasons for its more extended use may be, it can be regarded only with approval.

§ 11. The period for repayment, fixed by the central authority, next calls for consideration. If a loan is sanctioned for an undertaking the utility of which is likely to be exhausted after a limited number of years, the central authority naturally fixes the period for repayment at something less than the estimated life of the undertaking in order to allow a "margin of safety" so that the whole burden of the expenditure shall fall upon the generation which alone is likely to benefit by the expenditure.[1] Thus if money is borrowed to lay new sewers, which it is estimated will last for twenty-five or thirty years, the period of the loan will be fixed at twenty-five years at the most, and probably less, so as to be on the safe side. In the case of loans for buildings, it is often necessary to take into account not only the estimated life of the undertaking, but very frequently the question as to whether the buildings will be adequate and suitable for the purposes for which they were erected after a much shorter period of years. Hence thirty years is not uncommonly

[1] Cf. the *Report from the Select Committee on Repayment of Loans by Local Authorities, 1902*, § 33: "It appears to the committee that it is the duty of a department, in deciding the question of the period for repayment, as apart from the question of whether any local loan should be permitted, to consider more closely the durability than the desirability of the works or purposes for which the loan is required, and to use very considerable caution in fixing such period. In deciding upon the probable duration of the useful life of any work, the officers of a department have to deal with many points which are purely matters of prophecy; they are not empowered to superintend the carrying out of the plans placed before them, and have no adequate means of ascertaining or controlling the amount of attention given to the maintenance of the works when completed. The shifting of population, the alteration of accepted standards of efficiency, the variation of boundaries, the progress of science and discovery, exceptionally violent storms and a variety of other causes may upset calculations based upon even the widest experience."

fixed as the period for the repayment of loans for building purposes, whereas the life of a building is likely to be considerably longer. The case of loans for undertakings of a more or less permanent character is different. The widening of a street or the provision of a park is likely to be of public benefit for all time, but that cannot justify the creation of a permanent charge on the revenues of a local authority, as has already been pointed out. The central authority would not be acting fairly by future generations if it allowed the present ratepayers to spend the money of future ratepayers for unlimited periods. In fixing the period for repayment the central authority must try to harmonise the interest of the present ratepayers, who desire that the repayment period shall be as long as possible, and the interests of future ratepayers and of economy, which require that the burden of an expensive loan shall be removed as soon as possible. In practice, sixty years is almost always regarded as an outside period for the repayment of local loans, however long the estimated life of the undertaking may be.[1]

The question of what constitutes the proper period for the repayment of a loan made for the purpose of a trading undertaking requires special consideration. If attention is given to the particular purpose for which the loan is to be used, say for installing a new dynamo or for laying new tram lines, the estimated life of the dynamo or the tram lines will roughly indicate the period of the loan. If, on the other hand, the undertaking is regarded as a whole, it may be treated as of more or less permanent utility, provided all repairs, renewals, and replacements are made from current

[1] There are a few water-works undertakings the Acts of which sanction repayment periods exceeding sixty years, *e.g.* Sheffield Water Act, 1887, Bury Water Act, 1889, and the Derwent Valley Joint Water Board Acts of 1899 and 1901. By the Housing of the Working Classes Act, 1903, sec. 1 (i.), the period for which money may be borrowed by a local authority for the purposes of the Housing of the Working Classes Act, 1890, or any Act amending it, is eighty years. The repayment period was thus extended from sixty to eighty years as the result of the recommendation of the Select Committee on the Repayment of Loans by Local Authorities, 1902 (§ 68), that the maximum period for the repayment of loans for actual re-housing operations under Parts I. and II. of the Housing of the Working Classes Act, 1890, should be eighty years, and (§ 80) that subject to the adoption of the instalment system of repayment the maximum period for the repayment of loans for land under Part III. of the Housing of the Working Classes Act, 1890, should be extended to eighty years.

revenue or funds accumulated out of revenue. The particular object for which the money borrowed is spent is immaterial, and the period of repayment may be determined in the same way as that for a loan incurred for a permanent improvement, such as the provision of a park. If the trading enterprise is regarded as a permanent undertaking there is a further point to be borne in mind: the undertaking will presumably yield an adequate revenue in perpetuity for the payment of the interest, and consequently the question arises whether there is any need to pay off the debt at all. The answer is undoubtedly "yes." Even though a perpetual debt in respect of a trading undertaking may constitute no charge on the rates, it weakens the financial position of the local authority when other money has to be borrowed, as it is the local authority as such, and not the trading department, which contracts the loan and is responsible for it. Further, the perpetual utility of any undertaking is uncertain; people's requirements change, and the way in which their requirements are satisfied changes even more. Lastly, there is no guarantee that an undertaking will be fully maintained out of revenue, which is the very essence of the assumption of the permanent utility of a trading undertaking. Consequently not only is a perpetual debt undesirable, but the granting of a moderately long period for repayment is fraught with the danger that it may be necessary to borrow money to replace parts of the undertaking, owing to inadequate provision for depreciation, before the old debt has been paid off, and that in this way the undertaking may be saddled with a double debt.

In Germany the period for which the central authorities generally authorise loans for trading purposes is from forty to fifty-five years.[1] In this country the central authority looks to the estimated life of each part of a trading undertaking separately, in accordance with which it fixes various loan periods, although an average may be taken and an equated period fixed. Thus the first loan authorised by the Board of Trade for the purpose of the Manchester Corporation Electric Tramway is for an equated period of twenty-five

[1] T. Kütter, "Erneuerungsfonds bei gemeindlichen gewerblichen Betrieben," *Schriften des Vereins für Socialpolitik*, vol. 130, p. 86.

years. Possibly the central authorities in London anticipate that adequate provision for renewals and replacements will not be made, and insist upon a large sinking fund to compensate for a small depreciation fund, but by requiring large provision for repayment of debt, the central authority makes it difficult in many cases to provide adequately for depreciation out of revenue. There are many undertakings which, however efficiently they may be managed, are so situated that it is practically impossible after meeting all working charges, after making adequate provision for depreciation, and after paying a moderate rate of interest on the capital invested, to show a surplus sufficient to make a large sinking fund contribution equal perhaps to 3 or 4 per cent on the capital outlay. This can frequently only be done by making a call on the rates or by providing the sinking fund at the expense of the depreciation fund. The result of this latter policy will be that when the loan has been paid off and the plant, etc., is largely worn out, the provision out of revenue for depreciation will not be sufficient, and some new capital will have to be borrowed to pay for replacement. If the new capital is less than the old, the new sum to provide for repayment of debt will be less than the old sum, and it will be possible to make more adequate provision for depreciation, and gradually the undertaking should be freed from debt. A similar result could have been secured with more certainty, and much more in accordance with sound financial principles, if depreciation had been adequately provided for from the commencement and the period for the repayment of loans had been made so long that the annual amount of the contribution to the sinking fund was not in excess of the financial capacity of the undertaking. If such a policy were adopted by the central authority it would be absolutely necessary to make adequate provision for depreciation compulsory, for the reason that many municipal administrators appear to think that where a sinking fund exists there is no necessity for depreciation, in any case where contributions to sinking fund are based on the estimated life of the undertaking.

§ 12. The idea that a sinking fund, on whatever basis it may be calculated, is a substitute for a depreciation fund, is

absolutely fallacious. The object of the two funds is quite different; a sinking fund is to provide for the repayment of loans; a depreciation fund is to provide out of revenue for maintenance of an undertaking at its full value so as to prevent living on capital. The latter is a working expense, the former is of the nature of an allocation of profits. If depreciation is not provided for, the whole object of establishing a sinking fund, namely, the repayment of debt, is defeated, for no sooner is the debt repaid than it will be necessary to borrow the money again to replace the worn-out buildings, plant, and machinery. In these circumstances the sinking fund merely serves the purpose of a depreciation fund, and the debt on the undertaking instead of being gradually paid off practically becomes permanent. The undesirability of permanent local debts has already been discussed and need not be entered into again here.

To say that the revenues of an undertaking are not sufficient to provide for both sinking fund and depreciation fund is quite different from saying that a depreciation fund is not necessary, where a sinking fund exists based on the estimated life of the undertaking. If the surplus is not sufficient, the sinking fund may be made to serve the purpose of a depreciation fund, in which case it becomes for all practical purposes partially or entirely a depreciation fund, and the sinking fund, as such, is partially or entirely wiped out; that is, little or no real provision for debt redemption is made. If, on the other hand, a depreciation fund is not necessary, it is immaterial whether funds for its provision are available or not. The difference between the two policies of not accumulating an adequate depreciation fund because it is held to be unnecessary, and of not accumulating an adequate depreciation fund because the surplus is insufficient after providing for sinking fund, is clearly brought out in connection with contributions to the rates. If anything remains after paying all working expenses, interest on borrowed capital, and the sinking fund contribution, administrators who do not believe in the necessity of depreciation would hold themselves free to pay over what remained in aid of the rates; on the other hand, administrators who are anxious to provide for depreciation, if the

revenue is sufficient, will use the whole of what remains for depreciation purposes, unless it is more than adequate, in which case part of the surplus would be available in aid of the rates.

§ 13. Although it is impossible to approve of an arrangement by which the cost of renewals and replacements is paid out of capital, instead of out of a depreciation fund accumulated out of revenue, the fact that many local authorities do appear to rely on this method of making good wear and tear, renders it necessary to inquire whether all the debt in respect of an undertaking, or such part of it as will have to be renewed, is likely to have been paid off when occasion arises to borrow more money to cover the cost of replacements. It is by no means certain that the debt will have been paid off with sufficient rapidity. Unless the period for repayment was fixed at something considerably less than the estimated life of the undertaking, it might become obsolete, or contingencies might occur which would render it useless, before it was free from debt. Further, the actual life of any plant or machinery depends upon the use made of it and the state of repair in which it is kept. The central authority in estimating the probable life of plant or machinery can take average conditions only into consideration, and in some cases at least is likely to overestimate the life. This will most easily occur in the case of newly developed industries, such as electricity works and electric tramways, where the engineers and other experts of the central authority have, or in any case had, very little information on which to base their estimates. There is evidence to show that such overestimates of the life of plant and machinery have actually occurred, the effects of which either have been felt or will be felt very shortly. The Select Committee on the Repayment of Loans by Local Authorities were supplied by the Local Government Board with particulars of twenty-nine cases which came before the Board between April 8 and May 13, 1902, or during a period of only five weeks, in which works, or some portions of them, failed to last for the period allowed for repayment.[1] During the financial year 1905-6, the Bristol City Council

[1] *Report*, § 33.

were advised as to the provision necessary for depreciation on their electricity undertaking, and on the advice received a fund was created to meet the difference between the statutory sinking fund and the rate of depreciation advised;[1] in other words, it was anticipated that the value of the works would be exhausted before the whole debt had been repaid. The probability is that many other electricity undertakings are in the same position. With regard to tramways the position is equally serious. The Board of Trade have always allowed thirty years for the repayment of loans incurred in respect of the permanent way.[2] It is doubtful if the permanent way of a horse-tram undertaking would last thirty years;[3] it appears to be certain that the permanent way of an Electric Tramway undertaking will last only about fifteen years if the traffic is light, and about ten years if the traffic is heavy.[4] Consequently it will have to be renewed twice or three times before the original debt in respect of it is repaid. The cost of relaying is about two-thirds of the cost of the original laying, provided it is not necessary to reconstruct the concrete bed. In some cases this has actually been found desirable and under these circumstances the cost of relaying is practically equal to the cost of the original laying. The number of tramway undertakings which have provided a depreciation fund sufficient to pay for the whole cost of renewals is probably very small; on the other hand there are a good many which have not provided even enough to make good the difference between the debt repaid and the new capital which will have to be borrowed to pay for the replacements. Under these circumstances the outstanding capital of the undertakings will be increased, thereby involving increased charges for interest and repayment of debt, without any corresponding increase

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 3.

[2] *Report from the Select Committee on the Repayment of Loans by Local Authorities, 1902*, § 30.

[3] *Ibid.* § 30.

[4] See the opinions collected from various tramway undertakings on this subject, published as an appendix to the *Report of the General Manager of the Salford Corporation Tramways with Regard to the Depreciation and Renewals Fund.* In Manchester, where the first lines were laid in 1901, it was found desirable to renew a good deal of track in the central parts of the city before even ten years had elapsed.

in earning capacity, and enterprises which were already in a bad position financially will be in a worse position. The result must ultimately be that a very serious burden will be imposed upon the rates.

§ 14. The relationship of the provision for the repayment of loans to the method of dealing with obsolescence calls for brief attention. It has already been pointed out that where there is a probability of plant becoming obsolete, provision should be made for this contingency in anticipation,[1] so that it may be written down to nothing in the books, or its full value may be accumulated in depreciation and contingency funds before it becomes obsolete, in a similar manner to which works which are worn out should be provided for entirely by sums set aside for depreciation. There is, however, one important difference between plant wearing out and plant becoming obsolete. The plant must, generally speaking, be used whilst the former process is occurring, which gives an opportunity for setting aside the sums requisite to pay for the ultimate renewals. Where obsolescence occurs there may be little or even no time in which to provide for the contingency. When an enterprise is purchased by a local authority as a going concern it may be necessary to take over plant which has immediately to be scrapped, as happens in many cases where local authorities purchase horse-tram undertakings from companies and proceed at once to electrify them. Any sums ultimately obtained by the sale of the horses, tramcars, stables, etc., when realised by the municipality, should be deducted from the sum paid for the transfer of the undertaking, and what remains is dead capital, to which there is no corresponding asset. This must be written off as soon as possible out of current revenue in exactly the same way in which the preliminary expenses of a limited company, which figure on early balance sheets as assets, should be written off. The capital borrowed in respect of this obsolete plant, from which the local authority has derived no benefit, will have to be paid off, in any case, out of revenue or otherwise to comply with the requirements of the central authority concerning all loans. There can be no question of reborrowing this loan at a later date, as

[1] See p. 134, above.

money was immediately borrowed to pay for the reconstruction of the plant; so that it seems sufficient if the loans in respect of such obsolete works, which the local authority has never been able to use, should be repaid on the sinking fund or instalment system, without any additional provision being made out of revenue. Thus in the balance sheet of the Manchester Corporation Tramways there is an item amongst the assets of nearly £300,000 in respect of the cost of the Carriage Company's undertaking.[1] Most of this represents dead capital; it is not being written off, but as the loan contracted to purchase the Company's undertaking has to be repaid in twenty-five years, at the end of that period no liability will exist in respect of this paper asset, although the asset will presumably continue to appear in the balance sheet for all time.

Where works have been used by the local authority for a short time after they were purchased, and have since become obsolete, the statutory repayment of debt may fairly be relied upon to some extent to eliminate the liability incurred; but some assistance should be forthcoming from depreciation and contingency funds. A case in point is that of the London County Council Tramway undertaking. The Council acquired the first horse trams in 1895, and in all have purchased horse trams to the length of about a hundred street miles.[2] The total capital expenditure up to March 31, 1910, in connection with the horse tramway undertaking was £2,591,338. Of this, £450,252 had been transferred to the Electric Tramway account in respect of reconstructed lines, and £1,708,912 was described as obsolete capital.[3] Of this sum £676,466 had been provided for by the statutory contributions towards debt repayment and by the sales of horses, etc. When the balance of £432,174, which is still charged to the horse tramway account, has been transferred to the electric traction account and to the obsolete capital account, the latter will probably exceed £2,000,000, of which nearly

[1] *Annual Report of the Manchester Corporation Tramways for the Year ending March 31, 1910*, p. 19.

[2] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part iv. p. 4.

[3] *Report of the Highway Committee of the London County Council for the Year ending March 31, 1910*, p. 5.

half will be unprovided for in 1914. It is hoped to arrange for the repayment of this in fifteen years from March 31, 1914.[1] The point to which special attention must be drawn is that none of the liability in respect of these obsolete works has been met out of a depreciation or contingency fund, accumulated out of revenue. The small sum of £29,051, set aside out of the surpluses of the horse tramway undertaking up to March 31, 1903, stood to the credit of the Renewals Reserve Fund on March 31, 1907,[2] but was probably required to meet renewals in connection with that part of the horse tramway undertaking which still existed. On the other hand, on six occasions sums amounting to £293,592 were applied out of the earnings of the horse-traction system in relief of the rates, which sums ought undoubtedly to have been reserved towards meeting the loss in connection with the obsolescence of so much of the plant.[3]

In the two cases discussed so far, the assumption has been that a local authority purchases an undertaking as a going concern and that certain works have to be scrapped immediately or very shortly on account of obsolescence; then the statutory contribution for debt repayment may be relied upon entirely or partially to eliminate the liability in respect of the paper assets, though it is undesirable that the period for loan repayment should be a very long one under these circumstances. If, on the other hand, the plant which becomes obsolete has been installed and used exclusively by the local authority, the whole of its value should be provided for out of sums specially set aside out of revenue to pay for renewals and replacements, however the need for these may arise, and the statutory contributions towards the repayment of debt should not be taken into account at all, otherwise the same result will be brought about as if no provision out of revenue were made to make good wear and tear, namely, a permanent debt.

§ 15. Before proceeding any further to discuss the "profits" of municipal trading undertakings, it will be well to consider for a moment what provision trading departments

[1] *Report of the Highway Committee of the London County Council for the Year ending March 31, 1910*, p. 5.

[2] *Report on the London County Council's Tramways*, by W. B. Peat and F. W. Pixley, p. 8.

[3] *Ibid.* pp. 6, 7.

of local authorities are actually making for depreciation. For this purpose the figures relating to the tramway, water, gas and electricity undertakings of English and Welsh county and non-county boroughs have been tabulated, and are given below, together with the amounts of the loans outstanding in respect of the different undertakings. These last figures throw some light upon the size of the depreciation funds, but they do not afford sufficient information for it to be definitely stated that the provision made for renewals and replacements is inadequate, though appearances point that way, in any case so far as tramway and electricity undertakings are concerned, where the maintenance of the enterprises in a full state of efficiency out of current revenue is practically impossible, and where consequently a depreciation fund is an absolute necessity.[1] Fortunately in the case of one industry, viz., tramways, it is possible to obtain sufficient information on which to base a reliable opinion concerning

TABLE showing the Provision made for Depreciation, etc., by County Boroughs of England and Wales in Respect of their Trading Enterprises during the Year 1908-9.[2]

Service.	Payments to Reserve, Depreciation, or Insurance Funds during 1908-9.	Sums remaining in Reserve, Depreciation, and Insurance Funds at end of 1908-9.	Loans outstanding at end of 1908-9.
Tramway and Light Railways . .	£349,921	£1,808,222	£20,133,923
Water Supply .	108,644	550,710	50,722,534
Gas Supply . .	89,672	688,698	15,088,531
Electricity Supply .	180,427	888,247	17,002,201
All the above .	£728,664	£3,935,877	£102,947,189

[1] It is sometimes suggested that the adequacy of municipal depreciation funds may be ascertained by comparing the provision made for depreciation by municipal undertakings with the provision made by private undertakings in the corresponding industries. This method of dealing with the problem, however, is unfruitful, as it would be necessary to show how far the depreciation funds of the private undertakings were adequate. The mere fact that undertakings are managed privately is no proof that they are providing adequately for depreciation.

[2] Compiled from the *Annual Local Taxation Returns*, 1908-9, part v. pp. 45-59.

TABLE showing the Provision made for Depreciation, etc., by the Non-county Boroughs of England and Wales in Respect of their Trading Enterprises during the Year 1908-9.[1]

Service.	Payments to Reserve, Depreciation, or Insurance Funds during 1908-9.	Sums remaining in Reserve, Depreciation, and Insurance Funds at end of 1908-9.	Loans outstanding at end of 1908-9.
Tramways and Light Railways. .	£11,217	£27,901	£2,215,527
Water Supply .	4,188	76,003	10,682,588
Gas Supply . .	16,759	149,123	4,196,356
Electricity Supply .	24,544	101,990	4,210,616
All the above .	£56,708	£355,017	£21,305,087

the adequacy of the depreciation funds. The wear and tear on a tramway system depends practically entirely upon the number of miles run by cars.[2] The carefully calculated depreciation rates in Manchester work out at the equivalent of about one penny per car mile run.[3] In London the County Council has been advised by its officers that at least one penny per car mile should be provided for the Renewals Reserve Fund.[4] If we accept one penny per car mile run as a proper basis for a depreciation allowance, we find that the provision which should have been made for renewals and replacements in respect of all the tramway undertakings of English and Welsh local authorities in 1908-9 was £735,833,[5] whereas the sum actually placed

[1] Compiled from the *Annual Local Taxation Returns*, 1908-9, part v. pp. 177-215.

[2] This applies in any case to the depreciation of the permanent way, the overhead equipment, and the rolling stock which are the chief things exposed to wear and tear.

[3] To be exact 1.063d. per car mile in 1908-9, and .979d. per car mile in 1909-10 (*Annual Report of the Manchester Corporation Tramways for 1909-10*, p. 14).

[4] *Report on the London County Council's Tramways*, by W. B. Peat and F. W. Pixley, p. 8. The rate actually approved by the London County Council is only two-thirds of a penny per car mile run (*Report on the London County Council's Tramways for 1909-10*, p. 7), which meant that in 1909-10, £55,000 less was provided for depreciation than should have been the case, if the undertaking was to be conducted on sound financial lines as laid down by the expert advisers.

[5] *Return of Street and Road Tramways and Light Railways for the Year 1908-9.* The number of miles run by cars was 176,686,312.

to reserve and renewals funds was only £429,180.[1] The corresponding figures for the tramway undertakings of all local authorities in the United Kingdom were £865,494 and £680,204[2] respectively. In other words, English and Welsh local authorities provided 58.3 per cent of the sum which they should have provided for depreciation in respect of their tramway undertakings, and all British local authorities 78.7 per cent of the proper sum. The fact that the latter percentage is so much higher than the former, is due to the very large provision for reserves and depreciation made by Glasgow, which was equivalent to 2.44d.[3] per car mile run. It can therefore be stated without any hesitation that the provision made for renewals and replacements by many municipal tramway undertakings in this country is inadequate.[4]

§ 16. We are now in a position to deal more closely with the question of what constitute the "profits" of a municipal trading enterprise. As a preliminary to this part of our inquiry it will be well to consider what constitute the profits of a trading company. A company first deducts from its gross revenue all the working expenses, for example, the cost of the raw materials used and the sums paid as wages, and carries the balance of net trading profits to the credit of a profit and loss account. To this are debited amongst other items any legal expenses, leasehold accounts, debenture interest, bankers' and other interest, and the sums transferred to depreciation fund. The balance available for appropriation constitutes the net profits of the company. From it a sum should be placed to a reserve fund to strengthen the financial position of the company, and something may be contributed to a sinking fund formed to pay off the deben-

[1] *Return of Street and Road Tramways and Light Railways for the Year 1908-9.*

[2] *Ibid.*

[3] *Ibid.*

[4] It is satisfactory to be able to note that in 1909-10 better provision was made for depreciation than in the previous year. On the basis of 1d. per car mile run, the sum set aside by all English and Welsh local authorities should have been £754,469, and was actually £524,833, or 69.6 per cent. of the proper sum; whilst the sum set aside by all local authorities in the United Kingdom should have been £884,786, and was actually £761,646, or 86.1 per cent. of the proper sum. The United Kingdom figures are largely influenced by the sums set aside by Glasgow, which were equivalent in 1909-10 to 2.21d. per car mile run. (All the figures are taken from the *Return of Street and Road Tramways and Light Railways for the Year 1909-10.*)

tures issued by the company. The surplus is available for the payment of dividends on the share capital. The financial statement issued by a municipal trading department generally includes a revenue account, which is credited with all receipts and debited with the working expenses; also a net revenue or profit and loss account, to the credit of which is placed the balance, *i.e.* excess of income over expenditure, or net trading profit brought forward from the revenue account. Against this are charged, or should be charged, amongst other items, legal and parliamentary expenses, rent of leased lines, leaseholds, interest on loans, and provision for depreciation. The balance of net profit is carried to an appropriation account, to which there is debited, or should be debited, payments to sinking funds and loan instalments, contributions in aid of the rates, and sums applied in extension of works or placed to a reserve fund to strengthen the financial position of the undertaking.

There are at least two respects in which the accounts of local authorities are sometimes presented differently from what is indicated in the preceding paragraph. The sum allocated for the repayment of debt is sometimes debited to the net revenue account instead of to the appropriation account, thereby making the balance of net profit appear smaller than it really is. This is done, for example, in the tramway accounts of the London County Council for 1909-1910. Another arrangement which appears to be much commoner is to charge the provision for depreciation to the appropriation account instead of to the net revenue account.[1] In this way the net profits are made to appear much larger than they really are. The provision for depreciation is essentially an element in the cost of the year's trading, which should not be determined or affected by the result of such trading. It should form a charge in the net revenue account of each year before the balance of net profit is arrived at, and ought not to be treated as an appropriation of any balance of net profit available.[2]

If it is desired to institute a comparison between the

[1] This is done, for example, in the tramway accounts of London, Manchester, Belfast and Bradford.

[2] Cf. W. B. Peat and F. W. Pixley in their *Report on the London County Council Tramways*, § 26.

trading results of a company and of a municipal department, the net trading profits ascertained by deducting all working expenses from gross revenue may fairly be compared, but not the net profits, which are the balances of net revenue available for appropriation, as the size of these depends very largely upon the source from which the capital has been obtained. A company has far fewer loans than a municipality, and consequently the interest to be debited to the net revenue or profit and loss account is much smaller in the case of a company than of a municipality. When people talk vaguely about the "profits" of municipal trading, they probably do not mean what have been described above as the net profits, but the sum available for making payments in relief of the rates, which is only what remains of the net profit after provision for repayment of loans has been made.[1]

Two things greatly influence the "profits" or net surplus available in relief of the rates, viz., the amount of interest on loans which has to be paid and the sums which have to be set aside for the repayment of debt. If the annuity or the sinking fund system of debt repayment is adopted, both these items will remain constant until the end of the repayment period, when both will disappear, and then the "profits" will suddenly be greatly increased. If the instalment system of debt repayment is adopted, the sum allotted to debt repayment will remain constant until the end of the period, but the interest item will diminish steadily, and each year the net profits and also the net surplus, or "profits" available in relief of the rates, will increase. Whatever the method of loan repayment adopted, a trading department of a local authority should be in a very strong financial position at the end of the loan repayment period, either to reduce prices or to make large contributions in relief of the rates, or to do both these things, provided adequate provision has been made out of revenue to pay for all renewals and replacements, so that no new loans have to be contracted for this purpose. In looking into all trading accounts of municipalities the adequacy of the provision made for depreciation must be carefully

[1] It is assumed here that the net profits have been properly ascertained, and that adequate provision for depreciation has been debited to the net revenue account.

examined before any opinion can be expressed about the "profits," but the other points referred to in the earlier part of this chapter, such as the overcharging or undercharging of other municipal departments and the payment of a proper share of the general, legal and establishment expenses, must also be borne in mind.

§ 17. Regarding contributions to the rates made from net surplus, it is impossible to generalise. It is almost necessary to examine every kind of industry separately, and in some cases it is desirable to consider the conditions under which individual undertakings are administered. In the first place, we must distinguish between competitive and monopolistic municipal industries. (*a*) If the municipal enterprise competes directly with private enterprises, the maximum amount of the net surplus will be limited, as the prices charged by the local authority cannot well exceed those charged by private firms for similar commodities or services. The problem under these circumstances really is whether a local authority is justified in not securing the maximum net revenue compatible with charging competitive prices, or, in other words, is it fair that it should undersell private firms? The general question of local authorities engaging in competitive industries has already been discussed. Here we need only note that sometimes one of the objects of doing so is to bring about a fall in prices which are considered to be unreasonable. Under such circumstances it is absolutely essential that the local authority should charge less than the current prices. On the other hand it does not seem just that the local authority should fix a price which will not yield a fair profit to private firms. If prices are so arranged that the municipal undertaking just pays its way and no net surplus is yielded, this may still allow a private undertaking to pay a normal return on its share capital in view of the fact that the local authority has to provide for the repayment of debt out of the revenue of the undertaking, which a company has not to do. If earning no net surplus will lead to such low prices as to involve competitive undertakings in a loss, which is likely to happen if the municipal undertaking is free from debt, then the local authority should raise its charges to a level which will enable private enter-

prises to earn a reasonable profit, and in consequence the local authority would realise a net surplus. If a normal price is charged and the prices charged by private undertakings are forced down to a reasonable level, then the whole body of consumers benefit, although only a few buy from the local authority. Another objection to charging abnormally low prices, and yet only satisfying part of the demand, is that a small and limited body of consumers alone benefit, so that the policy adopted has not even the justification of being for the general welfare. Thus if a municipality builds a certain number of working-class houses on land which it has received as a gift, and is consequently able to make the undertaking self-supporting,[1] whilst charging rents below the normal, normal rents ought nevertheless to be charged. Not to do so would, on the one hand, harm ratepayers who might be owners of property, and would, on the other hand, be making a present of the difference between the actual low rent and the normal rent to a small privileged class of tenants.

(*b*) The case of monopolistic municipal industries has now to be considered. Where the public health or sanitation is closely affected it is generally best that no net surplus should be realised, but that such prices should be charged as will just enable the undertaking to be self-supporting. The supply of water is a case in point. It is very essential that the price charged for domestic purposes should not be so high as seriously to limit the consumption; to keep up the price, therefore, merely to realise a considerable net surplus—it may be necessary if the total supplies are inadequate and cannot momentarily be increased—is undesirable as a general thing. If the charge made for water for domestic purposes does not depend upon the quantity consumed, the objection that a high charge will unduly restrict consumption does not apply. This is the case if a water rate is levied on domestic consumers. Very likely the tariff may be complicated, involving different methods of charging owners of house property, occupiers of house

[1] Interest on the value of the gift should be charged and paid over to the local authority as the owner of that amount of capital, but no sinking fund contribution would be necessary in respect of this capital.

property, and occupiers of works, offices and shops, and it is then very difficult to say at whose expense a net surplus might be secured, and whether the general body of ratepayers would be better or worse off if any sum contributed in relief of the rates had been raised instead by increasing the rates. Under these circumstances, which exist in Manchester and other towns, it is probably right that no contributions should be made in aid of the rates. This seems to be the safest rule to adopt with regard to the finance of all water undertakings, although exceptional circumstances may exist under which the realisation of a net surplus may be justified, as, for example, if a large supply of water is available at little cost, there seems no reason why a moderate charge should not be made to industrial undertakings, offices and shops, even if domestic consumers, on sanitary grounds, are given a supply free of charge, and in this way a net surplus might be available in relief of the rates.

The policies actually adopted by local authorities with regard to contributions to the rates from their water undertakings differ considerably. In some cases water departments are forbidden by statute from paying sums in relief of the rates; in other cases they voluntarily adopt the same policy. Under these circumstances small surpluses or deficits are carried forward from year to year, and if the credit or debit balances become too large, the water rates or prices charged for water are altered, so as to bring about an equilibrium between revenue and expenditure. There are other local authorities which realise surpluses on their water undertakings and make contributions in relief of the rates.[1]

(*c*) In the case of municipal monopolies which do not directly affect the public health, the position is different. Such monopolies can be divided into two classes, those in which, roughly, all ratepayers participate as consumers, and those the consumers of which only form a small part of the ratepayers. In both cases some of the consumers may not be ratepayers at all. Gas and tramway undertakings

[1] The financial aspect of contributions to, and aid from, the rates is discussed in Chapter VIII.

belong to the first class. One reason why many local authorities are anxious to obtain sums in relief of the rates from such undertakings is that the great bulk of the revenue of a local authority has to be obtained by direct taxation, namely, by rates levied on the rent paid for buildings and land; consequently, if some revenue can be obtained from what amounts to indirect taxation, the burden of taxation is not felt quite so severely. If people pay a slightly higher price for their gas or travel a somewhat shorter distance by tram for a penny, they do not feel it in the same way as if they had to pay higher rates. To rely largely on indirect taxation is certainly very undesirable, as it is almost impossible to obtain an equitable distribution of the burdens of taxation, and there is a danger that people will not realise sufficiently what they are contributing to the upkeep of the State or of the local area. It may be an ideal arrangement for a central or local authority to raise the whole of its revenue by direct taxation, but if the amount to be raised is considerable, the burden on taxpayers will be heavy. As a practical policy, a judicious combination of direct and indirect taxation is certainly best for a central government, and it is not astonishing that a local government should strive to adopt a similar policy when the possession of a local monopoly offers it an opportunity. Another reason which may influence a local authority in striving to secure a net surplus from its gas and tramway undertakings is that as the ratepayers as a whole guarantee the capital, the ratepayers as a whole should obtain some advantage from the undertakings.

If these reasons for securing a net surplus from gas and tramway undertakings be accepted, certain important considerations in fixing prices, and consequently the surplus, must not be lost sight of. In the first place, all ratepayers do not use gas or trams, and amongst those in this position will be, on the one hand, many wealthy ratepayers, who make use of electricity and motor cars, and, on the other hand, so far as trams are concerned, all companies which are occupiers of land and buildings. In the second place, people who are not ratepayers may use the gas or trams, and if they have little choice in the matter may feel a grievance

that they should be unduly taxed by a local authority in whose area they do not live. On account of both these considerations it is undesirable to secure a very large net surplus from gas and tramway undertakings, but it is not easy to define what constitutes an unduly large net surplus, but probably a sum equal to 5 per cent on the aggregate capital expenditure should be regarded as a maximum under ordinary circumstances. This in any case is the figure embodied in electric lighting orders issued to local authorities,[1] and may presumably be regarded as embodying the opinion of Parliament on the subject.

Quite recently, however, a Committee of the House of Lords under the chairmanship of Lord Donoughmore desired to introduce quite a new principle in the matter of the restriction on profits or net surplus. A private bill promoted by the Salford Corporation in 1909, in connection with their gas undertaking, was considered by Lord Donoughmore's Committee, which recommended that the profits of the Salford Gas Department should be restricted to *1 per cent on the outstanding capital.* This restriction, which was recommended as a result of the opposition to the bill by certain out-townships, which are supplied with gas from the Salford gas works, appears to be neither sound nor reasonable. On the one hand, it is unsound to base whatever percentage of profit a trading department is entitled to earn on the outstanding capital, as this implies that the amount of the net surplus which may be earned shall diminish as additional instalments of debt are repaid, until finally, when the whole debt is liquidated, the local authority shall be entitled to realise no net surplus at all. If a trading department is permitted to make profits in relief of the rates, and it is desired to fix a maximum percentage of profits, this should undoubtedly be based on the total capital outlay which is the best measure of the size of the undertaking and of the financial interests involved. On the other hand, a net surplus of 1 per cent, even on the aggregate capital expenditure, is a very small return for the risks and responsibilities assumed by the ratepayers of the trading authority.

[1] See Electric Lighting (Clauses) Act, 1899, sec. 7; further reference is made to this below, p. 174.

If 5 per cent is a reasonable maximum profit in the case of electricity undertakings, something less should suffice in the case of gas works, which involve fewer risks, but 1 per cent certainly appears to be too little to fix as a maximum. Under any circumstances, in calculating the net surplus, interest should be charged against gross revenue *on all capital employed*, whether it is borrowed or provided by the community. The latter will be the case when some or all of the loans have been repaid out of the earnings of the undertaking concerned or from the rates. The interest on this capital belonging to the community should be available in relief of the rates, in addition to any net surplus which may be realised.[1] As the sums required to provide for the sinking fund or for the annual instalments allocated for the repayment of debt diminished or ceased entirely, a charge on the revenue amounting originally to some 2 or 3 per cent on the aggregrate capital expenditure would be set free and the realisation of larger net surpluses, not exceeding the maximum rate allowed, or reductions in prices, or both, would be facilitated.

The outcome of the decision of Lord Donoughmore's Committee, to limit the profits of the Salford Gas Department to 1 per cent on the capital outstanding, was that the Corporation withdrew the bill. They felt that it was inequitable that they should be restricted in this way, in view of the law with regard to the profits of municipal electrical undertakings. The average annual profits earned by the Salford Gas Department during the last ten years have amounted to about 2½ per cent on the aggregate capital expenditure, interest being charged against gross revenue in respect of outstanding loans only. The out-townships which opposed the Corporation bill in 1909 still feel that they

[1] An illustration may help to make this point clear. Suppose a municipality twenty years ago borrowed £100,000 at 3½ per cent for the purpose of erecting a gas works, which has since been maintained in a state of complete efficiency out of revenue, so that it may be regarded as being worth £100,000 to-day. During the course of the twenty years £60,000 of the loan have been repaid out of revenue, so that whereas the capital invested is still £100,000, the outstanding debt is only £40,000. If 3 per cent be accepted as the proper limit for profits or net surplus available for relief of the rates in the case of a gas works, the maximum sum which the municipality could dispose of would be the interest at 3½ per cent on £60,000 and profits at the rate of 3 per cent on £100,000, or £5100 in all.

have a grievance, as the profits are partly made at their expense.[1] Their protests having been in vain and negotiations with the Salford Corporation having proved unsuccessful, they are promoting a bill in Parliament to secure the restriction on the Salford gas profits recommended by Lord Donoughmore's Committee.[2]

It is not suggested for a moment that all trading departments should aim at securing the maximum profits permitted by law, where such limitations exist, whether they be 5 per cent on the aggregate capital expenditure or less. Assuming they are in a position to earn a net surplus at all, they should carefully consider the conditions under which they operate with special reference to the question from whom the surplus would be obtained, before deciding upon any particular policy. As a matter of fact in connection both with gas and with tramway undertakings, especially the latter, the local authority will be considerably restricted in the price it charges by indirect competition, so that the chances of many gas or tramway undertakings really realising a large net surplus are not very great, until a time comes when some or all of the loans have been repaid. Then, if interest is charged in respect of the capital provided by the community out of the earnings of the undertakings, there is a good deal to be said for not seeking to secure the maximum rate of profits allowed. On the other hand, if interest is not charged in respect of such capital, or

[1] As a matter of fact the residents in two of the out-townships concerned (Eccles and Swinton and Pendlebury) are charged the same amount for gas as the Salford ratepayers. In the third out-township (Worsley) the price is 2d. higher per 1000 cubic feet than in Salford (County Borough of Salford Gas Department, Price of gas from October 1, 1911). The reasons for charging higher prices outside the boundaries of the trading authorities are considered below on pp. 181-184. Assuming that the cost of delivering gas is no greater in Eccles and Swinton and Pendlebury than in Salford, the consumers in these out-townships contribute their share towards the Salford profits of 2½ per cent on aggregate capital expenditure, which does not seem unreasonable, seeing that they take no financial risks or responsibilities.

[2] See reports of the meetings of the Salford Town Council on December 6 and 13, 1911 (*Manchester Guardian*, December 7 and 14, 1911). Mr. W. W. Woodward, Salford Borough Gas Engineer, kindly informed me of the facts that Lord Donoughmore's Committee recommended the restriction of the profits to 1 per cent on the capital outstanding, that in consequence the Corporation withdrew their bill, and that the annual average profits of the Department for the last ten years were about 2½ per cent of the aggregate capital expenditure.

if the capital provided by the community has been accumulated from the rates and not at the expense of the consumers, the same hesitation about seeking to secure the maximum profit allowed by the law need not be felt.

Where the number of ratepayers who avail themselves of the products or services provided by a municipal monopolistic undertaking is comparatively small, or where the consumers are largely non-ratepayers, a new problem has to be faced. An opportunity is afforded to the local authority of affecting a redistribution of the burdens of taxation. Contributions to the rates from gas and tramway undertakings principally enable a certain amount of indirect taxation to be substituted for direct taxation, though in some measure one class of ratepayers will probably be relieved at the expense of another class, but that is not a primary object of such contributions. In the case of an article like electricity a deliberate attempt might be made to obtain relief for the rates at the expense of the limited number of current customers. Within reasonable limits it could be justified on the ground that the community guarantees the capital and is entitled to some compensation. As the electricity business is a fairly risky one, a net surplus equal to 5 per cent on the total capital outlay does not seem unfair. This is the limit fixed by the central authority in this country as a protection to consumers. If the revenue exceeds this amount, prices must be reduced. In practice this limit does not appear to have exercised much influence on prices, as competition has tended to keep prices at levels which afford little or no net surplus. If the monopolistic undertaking is engaged in providing services or commodities which are clearly luxuries, there seems to be no reason for limiting the net surplus to be realised by the local authority. If the consumers be wealthy people who are not ratepayers, the case for securing the maximum monopoly revenue seems even stronger under such circumstances than if the consumers were all ratepayers. The effect on the community of diminishing the number of consumers by raising prices must, however, be borne in mind. For example, the Doncaster race-course belongs to the Corporation. It is justified in obtaining as large a revenue

as possible from the undertaking, provided a material decrease in the number of visitors is not brought about, as that would prove detrimental to the Municipal Tramway undertaking and to the catering and other trades of the town, so that the town would not really benefit by the increased revenue obtained from the race-course. Again, although the town of Harrogate, which owns and manages the various institutions connected with the use of the local natural mineral waters, would probably be justified in securing a considerable net surplus from the undertaking, it would thereby restrict the use made of the waters, in consequence of which the various hotels, boarding-houses, shops, etc., all of which depend for their livelihood upon the visitors, would be harmed.

There is still one other aspect of a municipal monopoly of which only comparatively few ratepayers are able to avail themselves. If a net surplus is not made, a small class of especially privileged people may be created. Thus, in the case of a market undertaking, if all surplus is used to diminish the rents, they may become less than what is paid for adjacent land or shops, in which case an interested class will be created, and efforts will be made to get tenancies transferred to relatives or friends.[1]

§ 18. Most municipalities are anxious to receive contributions in aid of the rates from their gas, electricity, and tramway undertakings, although as a matter of fact many of these are unable to give any financial assistance, and may even require to receive it, and others give it when they do not appear to be in a position really to do so. This last point is dealt with in the concluding chapter, and statistics relating to the contributions made to and received from the rates by trading undertakings will be found in the chapter on the Results of Municipal Trading. Here it may still be noted that many Scotch local authorities are forbidden by law to devote any part of the net surplus of their trading undertakings in relief of the rates.[2] It is sometimes argued

[1] See the evidence of the late Sir (then Mr.) James W. Southern, Chairman of the Parliamentary Committee of the Manchester Corporation, before the Committee on Municipal Trading, 1900, Q. 2431.

[2] This, for example, is so in the case of the Aberdeen Gas and Tramway undertakings and of the Dundee Gas undertaking. See the evidence of

that this must discourage the efficiency of the management by removing the incentive to show good trading results; but this does not necessarily follow, as the net surplus realised is by no means the only visible test of the efficiency of the management of the municipal trading undertakings; the service provided and the price at which it is rendered are other bases on which the success of an enterprise can be judged. Nevertheless, as has been indicated above, there appears to be no harm in allowing gas, electricity and tramway undertakings to make reasonable contributions in aid of the rates, provided they are really paid out of net surpluses and not out of funds which should properly be devoted to other purposes, such as the adequate provision for renewals and replacements.

§ 19. In view of the complicated character of municipal trading finance, it is not astonishing that a good deal of public attention has been devoted to the question of the keeping of municipal accounts and the method of auditing these accounts.[1] At present the accounts of municipal corporations in England and Wales, with a few exceptions, are audited only by one auditor nominated by the Mayor and by two others elected by the ratepayers. The former must be and the latter may not be members of the Town Council.[2] The audit thus provided is neither complete nor effective.[3] In a few cases, for example in Manchester, chartered accountants are appointed in addition to the Mayor's auditor and the elective auditors,[4] and in one or two cases, for example in Bournemouth, the Local Government Board system of audit is adopted.[5] This system applies to all County Councils, the London Borough Councils and the Urban District Councils. The auditors certify the figures

Mr. Emile Garcké before the Committee on Municipal Trading, 1900, QQ. 1163, 1164. On the general question of the allocation of trading profits by Scotch local authorities, see the evidence of Mr. S. Chisholm before the same Committee, QQ. 2858, 2859; also Appendix C to the Report of the same Committee, pp. 444-451.

[1] A Joint Select Committee of the House of Lords and the House of Commons took a good deal of evidence dealing with these subjects and prepared a short report on them in 1903.

[2] *Report of the Joint Committee on Municipal Trading*, 1903, § 12.

[3] *Ibid.* § 13.

[4] Evidence of Sir (then Mr.) S. B. Provis, Permanent Secretary to the Local Government Board, before the Committee on Municipal Trading, 1900, QQ. 1097, 1098.

[5] *Report of the Joint Committee on Municipal Trading*, 1903, § 14.

and note illegal items of expenditure, which they can disallow and surcharge to the members of the councils who are responsible.[1] Most municipal corporations would strongly object if they were subjected to the Local Government Board auditors,[2] and the Select Committee which investigated the matter held that, in view of the fact that these auditors were not accountants, they were unfitted as a class for the continuous and complicated task of auditing the accounts of what are really great commerical businesses.[3]

The Joint Select Committee on Municipal Trading in 1903 made various recommendations of which the principal may be stated here. They were made after a good deal of evidence from different quarters had been heard, and after a considerable amount of statistical information of one kind and another had been collected, and they merited more attention than they appear to have received. The Committee recommended that the existing systems of audit applicable to Corporations County Councils and Urban District Councils in England and Wales be abolished, and that instead auditors, being members of the Institute of Chartered Accountants or of the Incorporated Society of Accountants and Auditors, should be appointed by these three classes of local authorities. In every case the appointment should be subjected to the approval of the Local Government Board.[4] The duties of those entrusted with the audit of local accounts should not be confined to mere certification of figures. The auditor should have the right of access to all necessary papers, books, etc., and be entitled to require from officers of the authority such information and explanation as he might need, so that he could certify (i.) that he had found the accounts in order,

[1] *Report of the Joint Committee on Municipal Trading*, 1903, § 14, and evidence before the Committee of Sir S. B. Provis, Permanent Secretary to the Local Government Board, Q. 21.

[2] The grounds on which they would object have been briefly stated to be four: (i.) the delay which would be occasioned in the issue of the accounts; (ii.) the difficulty the auditor might have in the case of large boroughs in mastering the numerous local acts relating to the borough; (iii.) the irritation which would be caused by the power of the auditor to make disallowances and surcharges; and (iv.) that expenditure in itself reasonable might be disallowed, or would be disallowed, because it was technically illegal. (Evidence of Sir S. B. Provis before the Joint Committee on Municipal Trading, 1903, Q. 21.) Although it may be possible to make a good answer to these objections, the opposition of the municipalities would probably not be affected.

[3] *Report of the Joint Committee on Municipal Trading*, 1903, § 15.

[4] *Ibid.* § 16 (*a*), (*b*), and (*c*).

or otherwise, as the case might be; (ii.) that separate accounts of all trading undertakings had been kept, and that every charge which each ought to bear had been duly debited; (iii.) that in his opinion the accounts issued presented a true and correct view of the transactions and results of trading (if any) for the period under investigation, and (iv.) that due provision had been made out of revenue for the repayment of loans, and that all items of receipt and expenditure and all known liabilities had been brought into account and that the value of all assets had in all cases been fairly stated.[1] Further, auditors should be required to express an opinion upon the necessity of reserve funds and of amounts set aside to meet depreciation and obsolescence of plant, in addition to the statutory sinking funds, and upon the adequacy of such amounts.[2] On the other hand, the auditors' powers of disallowance and surcharge should be dispensed with entirely in the case of the major local authorities, as these powers apply only to illegal expenditure and not to unwise undertakings and enterprises, and consequently afford no real safeguard to the ratepayers whose interests are affected.[3] With a continuous, vigilant and thoroughly efficient system of inspection and audit, the surest guarantee to the ratepayers against extravagance would be found in the deterrent effect of public exposure, in addition to the existing legal remedies.[4]

If the recommendations made by this Select Committee were adopted, many of the uncertainties which exist about the accuracy of municipal trading accounts would be removed, but it is doubtful whether the system contemplates a method of presenting accounts which would rectify, or even draw attention to, the amount by which revenue had been modified by a department undercharging or overcharging other municipal departments, or the amount by which expenditure had been modified by a department being undercharged or overcharged by another trading department. Some of these things, as has been pointed out above, would be very difficult to check accurately even if the auditor had the requisite technical knowledge, but a man who can require information from the various officials of local authorities and

[1] *Report of the Joint Committee on Municipal Trading*, 1903, § 17.
[2] *Ibid.* § 18.
[3] *Ibid.* §§ 22, 23, 24.
[4] *Ibid.* § 25.

who can obtain such expert advice as may be necessary, should be able to point out all cases where undercharging or overcharging has occurred to more than a small extent and be able to give some estimate of the amount of such under- or overcharging. The difficulty associated with the obtaining of accurate and complete information about the financial aspects of Municipal Trading is one of the greatest obstacles with which an investigator of this subject has to contend, and the introduction of a new system of auditing municipal accounts, such as was suggested by the Joint Select Committee on Municipal Trading, 1903, would greatly facilitate all future inquiries.

CHAPTER VI

THE SELLING POLICIES OF MUNICIPAL TRADES

§ 1. THE problems which are dealt with in this chapter are of a somewhat complex character. This is due partly to the nature of the industries with which we are especially concerned —water, gas, electricity and tramways—and partly to the mixing of social and of economic considerations in fixing prices, which easily occurs when a municipality undertakes to sell a commodity or service. Local authorities are usually anxious, on the one hand, to make as many concessions as possible to the general welfare, or to the welfare of certain classes of the community who are held to be in need of assistance, and on the other hand, to conduct their trading undertakings on such lines that, if possible, they may produce surpluses which can be devoted to the relief of the rates. It is not at all unlikely that the social and the economic considerations will clash; and it is frequently possible to distinguish between the policy advocated by town councillors in October immediately before the municipal elections, and the policy advocated in April when the estimates for the new financial year are being made up. The October policy, it need hardly be said, favours concessions to the general public, the April policy advocates large contributions from the trading departments in aid of the rates, which would be impossible if the concessions were numerous. The selling policies actually adopted often represent more or less happy compromises between these conflicting considerations.

§ 2. Before examining the selling policies adopted by the various kinds of trading undertakings, certain common characteristics may be noted. (*a*) The most usual way of selling

a commodity is to charge in proportion to the quantity consumed; thus, gas may be sold at so much per thousand cubic feet, water at so much per thousand gallons, and coke at so much per ton. But there are two other ways in which a commodity may be sold; an unlimited supply or service may be given for a fixed sum, based more or less upon an estimate of the probable consumption, or the charge may consist of a fixed sum independent of the real consumption plus a variable sum depending upon the amount actually consumed. The former policy occurs in connection with the supply of water and with the tramway service, the latter policy in connection with the supply of electric current. As the reasons for adopting these policies are partly social and partly economic and differ in the case of each industry, they will be considered in detail in the sections of this chapter devoted to the separate undertakings.

(*b*) A special feature of water, gas and electricity is that they are very frequently sold at different prices, according to the purposes for which they are to be used. The distinctions most commonly made in tariffs are between the use of water for domestic and industrial purposes, between the use of gas for lighting, heating and power purposes, and between the use of current for lighting and power purposes; but many tariffs go much further in the distinctions made. The grounds for adopting this policy are somewhat different in each industry and are best discussed in connection with the particular undertakings.

(*c*) A policy which calls for special attention is that not uncommonly adopted of charging higher prices outside than inside the municipal boundaries. Where such a policy is pursued, it is clearly shown in the water, gas and electricity tariffs. In the case of tramways, the fares may be established with a view to favouring residents within the municipal area, but this is generally not easy to ascertain. Probably the most common argument in favour of making higher charges outside than inside the municipal boundaries is that the municipality provides the capital and takes all the risks involved, and is consequently entitled to compensation in the form of higher prices from people living outside the local area who do not share in the risks. Another reason put forward is

that to supply people living in outside areas is likely to be more costly than to supply the inhabitants of the town itself. The farther the consumers are from the distributing centres —gas works, generating stations, or service reservoirs—the longer the length of mains to be laid and the greater the expense entailed. Further, the longer the mains, the more leakage and loss there will be. This is particularly true of electricity, if it is distributed long distances at low voltage, and also of gas. If the distance from the distributing centre were to be taken systematically into consideration it would be necessary to have a whole series of prices not merely outside the boundaries but within them. This would hardly be desirable as far as ratepayers were concerned, as the local area should be regarded as a single whole, but in what concerns outside areas, such a policy was adopted by the Manchester gas undertaking prior to 1900, and is still adopted by the Stockton-on-Tees Corporation. The Manchester tariff distinguished consumers in the city, in the near out-townships, and in the remote out-townships, the second being charged sixpence, and the last one shilling more per 1000 cubic feet than the first.[1] Another consideration which may influence a local authority in charging more outside than inside the boundary in the case of gas is, that the out-townships should pay something for the advantage of being saved the smell of gas works, an advantage of some importance in the case of a residential suburb. Further, higher prices may be charged as an inducement to neighbouring areas to seek amalgamation with the local authority which supplies them, in order to secure the benefit of the lower prices charged within the boundaries. Lastly, the trading authority may feel that the outside areas are securing water, gas, or electricity, as the case may be, at lower charges than they could supply themselves, and that it is not unreasonable that they should pay something for the benefit which they thus receive. This consideration shows more clearly than any of

[1] See *Statistics of the Manchester Corporation Gas Works for the year ending March 31, 1908*, pp. 28, 29. From 1865 to 1872, the remote out-townships paid 10d. more per 1000 cubic feet than the near out-townships, from 1873 to 1877, 8d. more, and from 1878 to 1899, 6d. more, as indicated above. During the whole of this period the near out-townships paid 6d. more than the city. Since 1900 consumers in out-townships pay 3d. more per 1000 cubic feet than city consumers.

the others that when a local authority sells outside its own area it is liable to be largely dominated by the same motive which inspires a company, namely, the pursuit of profit. Unless a trading authority makes reasonable charges and accords fair treatment to any outside areas which it may supply, the outside areas may be worse off than under a company.

The restrictions imposed by the central authorities on local authorities trading outside their own areas appear to be either very strict or somewhat lax; they either require exactly the same terms to be granted outside as inside the municipal boundaries, without making any allowance for the risks the trading authority has to bear, and the possible higher cost of providing the service, or they leave the local authority free from any control, except possibly that maximum charges are fixed; the inadequate nature of such control has already been mentioned in connection with the conditions imposed on public utility companies by their leases, and is also referred to below.[1] That outside areas, which are charged more for their gas than the area where the gas is manufactured, may feel that the conditions imposed upon them are unreasonable, is by no means unlikely. Under these circumstances, one remedy is to agitate with a view to influencing public opinion, and ultimately the town council concerned, in their favour. In the "nineties," the out-townships supplied with gas by the Manchester undertaking became very dissatisfied, and finding their agitations in vain, appealed to the Board of Trade. It is very doubtful if the Board of Trade could have done anything directly to help them, but as a matter of fact the Corporation made considerable voluntary concessions to the outside areas shortly after the appeal to the Board, so that their grievances were largely, if not entirely, removed. Outside areas which are granted even the same terms as the trading authority may also become dissatisfied if they think that the prices charged enable the trading authority to earn an unduly high rate of profit.[2] As a last resort, where an outside area cannot obtain satisfactory terms from a trading authority, it must presumably seek parliamentary

[1] See pp. 190-192. [2] See footnote (1), p. 173.

powers, to restrict the prices charged, or to establish an undertaking of its own.

Some illustrations of the policy of charging higher prices outside than inside the municipal boundaries will be found in the sections of this chapter which deal more specifically with water and gas.[1]

(*d*) Another policy which is frequently adopted by municipal water, gas and electricity undertakings, is to offer more favourable terms to larger than smaller consumers. In doing so the local authorities merely adopt a very ordinary commercial practice based on the experience that big quantities of commodities can be produced and handled comparatively more cheaply than small quantities. From a business point of view the policy is probably quite sound in the case of water and gas undertakings, but care must be taken how it is applied to electricity, as a large consumption does not necessarily imply a low cost of production.[2] On the other hand, if such policy is regarded from a social point of view, in so far as domestic consumption is concerned it is difficult to approve of it, as it implies that small consumers who can presumably least afford it, will have to pay the highest price. It is more satisfactory if uniform charges are made, however great the purchase for domestic purposes may be. Where water, gas and electricity are sold for industrial purposes, the transactions are purely business arrangements, and no question of social expediency arises; consequently there can be no objection to municipalities pursuing the ordinary business practice of granting special terms to large industrial consumers.

The manner in which concessions to large consumers are made calls for some attention. These are effected either by granting discounts varying in amount according to the sum of money due, or by charging lower prices the greater the quantity consumed in a specified period. If care is not taken with regard to the way in which the scale of discounts or the scale of prices is fixed and applied, it may be possible to obtain larger quantities of the commodities, not merely at lower rates, but actually for smaller sums

[1] See pp. 199, 200, 213, 214, below.

[2] This has to do with the question of the load factor and will be discussed more fully below.

than smaller quantities of the commodities, which is both unfair and wasteful. This will be so if the lower price or higher discount relates to the whole consumption. Thus, if the ordinary price of gas is 2s. 6d. per 1000 cubic feet, but only 2s. is charged if the quarterly consumption exceeds 100,000 cubic feet, a customer using 99,000 cubic feet would pay 99×2s. 6d. = £12 : 7 : 6, whereas a customer using 101,000 cubic feet would pay 101×2s. = £10 : 2 : 0. It would be exactly the same if a discount of 20 per cent was allowed on quarterly accounts exceeding £12 : 10 : 0. The consumer who used 99,000 cubic feet would pay 99 ×2s. 6d. = £12 : 7 : 6, whereas the consumer who used 101,000 cubic feet would pay 101×2s. 6d. = £12 : 12 : 6, on which he would be entitled to 20 per cent discount, so that the net payment would only be £10 : 2 : 0. In the same way a whole scale of prices or discounts can be established, each price or discount relating to the whole consumption. The charge for water by meter in Salford may be quoted as an example :— [1]

A supply of	1,000	to	250,000	gallons	is charged	11d.	per	1,000	gallons.
„	„	1,000	to	500,000	„	„	„	10d.	„	„	„
„	„	1,000	to	1,000,000	„	„	„	9d.	„	„	„
„	„	above		1,000,000	„	„	„	8d.	„	„	„

Under this scale a customer who uses 240,000 gallons is charged 240×11d. = £11, whereas a man who uses 20,000 gallons more is charged 260×10d. = £10 : 16 : 8. Likewise, 490,000 gallons cost 490×10d. = £20 : 8 : 4 and 510,000 gallons only cost 510×9d. = £19 : 2 : 6. In the same way for 990,000 gallons 990×9d. = £37 : 2 : 6 have to be paid, whilst for 1,010,000 gallons the sum to be paid is only 1010×8d. = £33 : 13 : 4. As soon as the consumption approaches one of the limits it is to the financial interest of the consumer to waste water in order to secure the benefit of the lower price. Such scales of prices or discounts, which may perhaps best be described as sliding scales of prices or discounts, are clearly anti-social in their character. In contrast to these sliding scales of prices or discounts, are others in which the lower prices or higher

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 50.

discounts, relate to particular parts only of the consumption or of the sum due; these may be described as zone scales of prices or discounts. For example, the ordinary price of gas may be 2s. 6d. per 1,000 cubic feet, but only 2s. for all gas consumed quarterly in excess of 100,000 cubic feet. A man who consumed 99,000 cubic feet would pay 99 × 2s. 6d. = £12 : 7 : 6, and a man who consumed 101,000 cubic feet would pay 100 × 2s. 6d. + 1 × 2s. = £12 : 12 : 0. Or a discount of 20 per cent might be given on the amount of the quarterly gas bill in excess of £12 : 10 : 0. In that case the man who used 101,000 cubic feet and whose bill consequently was £12 : 12 : 6 would be entitled to deduct 20 per cent of 2s. 6d. the amount by which the bill exceeds £12 : 10 : 0, in other words he would pay £12 : 12 : 0. Most zone scales of prices or discounts are much more complex than the illustrations given, but the principle is the same and a large consumer can never obtain his supply for less than a smaller consumer. As a practical illustration, the zone scale of prices established by the Cologne municipal gas works for gas sold for lighting purposes may be quoted:—[1]

All annual consumption below	2,500 cbm.	16 pf.	per cbm.
All annual consumption between	2,501 cbm. and 10,000 cbm.	15 ,,	,,
,, ,, ,,	10,001 cbm. and 25,000 cbm.	14 ,,	,,
,, ,, ,,	over 25,000 cbm.	13 ,,	,,

A man consuming 24,900 cubic meters in a year would pay 2500 × 16 pf. + 7500 × 15 pf. + 14,900 × 14 pf. = 3621 marks, whereas a man who consumes 25,100 cbm. in a year would pay, 2500 × 16 pf. + 7500 × 15 pf. + 15,000 × 14 pf. + 100 × 13 pf. = 3638 marks.

When it comes to preparing bills for customers, zone scales involve more trouble than sliding scales, especially if the number of zones is numerous, but this should not be allowed to stand in the way of the introduction of zone scales, which are greatly to be preferred to sliding scales.[2]

(*e*) There is one form of discount that is fairly common amongst municipal undertakings which is based, not upon the size of the consumption, but upon prompt payment of

[1] *Bedingungen für die Abgabe von Gas aus den Gaswerken der Stadt Cöln*, § 8.

[2] For further illustrations of zone scales, see footnotes on pp. 232, 234, 235, below.

accounts. Such a discount, provided the period during which it may be deducted is not unreasonably short, seems a perfectly fair and business-like arrangement, to which no exception can be taken.

(*f*) Another selling policy, which tends to favour large consumers as against small consumers, is the system of charging meter rents for the meters by which a customer's consumption of water, gas, or electric current is measured. Where meter rents exist there is nearly always a scale of charges which varies with the size of the meter, but this does not prevent the burden of the meter rent being much heavier per unit of consumption in the case of small than of large consumers. A small gas consumer may pay 1s. a quarter for his gas meter which represents, on a modest quarterly consumption of 6000 cubic feet, 2d. per 1000 cubic feet, whereas a large gas consumer may pay 5s. per quarter, which only represents $\frac{2}{5}$d. per 1000 cubic feet on a quarterly consumption of 90,000 cubic feet. From a business point of view it is perfectly sound that an expense incurred on behalf of a particular customer should be borne by that customer, and in the case of electric current and of gas and water supplied for trade purposes there seems no reason why meter rents should not be charged. On the other hand, in the case of water and of gas supplied for domestic purposes the abolition of meter rents may be urged on social grounds. This will necessitate a slight raising of the price of water and of gas, which will be somewhat to the advantage of small consumers and to the disadvantage of large consumers. As a matter of fact, many municipalities adopt this policy with regard to gas. In the case of water for domestic purposes the question hardly arises in this country, as a meter is not generally employed.

(*g*) A policy somewhat closely related to that discussed immediately above, is that of making different charges to different classes of the population. This applies especially to the tramway undertakings, which not infrequently distinguish between ordinary passenger, workpeople, children and school-children. In connection with swimming baths, different charges are often made to first-class bathers, second-class bathers and school children. The supply of

gas through prepayment meters may possibly be associated with class distinctions. The reasons for these distinctions are essentially social, and will be considered in connection with the separate undertakings.

§ 3. Generally speaking, local authorities are not entirely free in fixing the charges to be made for the service or products sold by their trading undertakings, as very frequently the Acts of Parliament or Provisional Orders under which the enterprises are conducted, fix the maximum prices which may be charged. (*a*) In what concerns water, the usual arrangement appears to be for maximum prices to be fixed where it is supplied for domestic, but not where it is supplied for trade purposes. Thus the domestic water rate in Salford may not exceed 5 per cent per annum on the rack-rent,[1] in Hull 7 per cent per annum on the net annual value,[2] and in Swansea 5½ per cent per annum on the net rateable value[3] of the premises supplied. In Huddersfield the domestic water rate may not exceed 10 per cent on the annual rental, and the charge for a supply by meter for business purposes is limited to 2s. per 1000 gallons.[4] Two towns in which there are no maximum charges for water, whether for domestic or trade purposes, are Manchester[5] and Southampton.[6]

(*b*) Maximum prices are fixed in connection with most gas undertakings in England, Wales and Ireland, but in Scotland this is not generally done.[7] Amongst the English towns which are free from restrictions in the matter of charges are Manchester, Nottingham and Carlisle.[8] Generally a uniform maximum rate is imposed, such as 4s. 6d. per 1000 cubic feet in Oldham,[9] 5s. per 1000 cubic feet in

[1] Salford Improvement Act, 1862, sec. 46.

[2] Kingston-upon-Hull Corporation Act, 1897, sec. 85.

[3] Swansea Corporation Water Act, 1884, sec. 26.

[4] Huddersfield Water Act, 1869, Third Schedule, and Huddersfield Corporation Act, 1902, sec. 16.

[5] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 25. There is a legal maximum to the domestic water rate beyond the city (Manchester Corporation Water Works Act, 1847, sec. 93) and to the charge for additional water-closets both within and beyond the city (Manchester Corporation Water Works Act, 1858, sec. 3).

[6] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 142.

[7] See *Returns relating to Authorised Gas Undertakings in the United Kingdom belonging to Local Authorities.*

[8] *Ibid.*

[9] Oldham Borough Improvement Act, 1865, sec. 100.

Blackburn,[1] 4s. per 1000 cubic feet in Birmingham,[2] and 4s. 7d. per 1000 cubic feet in Glasgow;[3] but there are a good many cases where local authorities which supply outside areas may charge higher rates there than within their boundaries. Thus the maximum prices which may be charged by the Stockton-on-Tees undertaking are 5s. per 1000 cubic feet within the borough, and 6s. per 1000 cubic feet beyond the borough.[4] At Bolton the maximum charge is 4s. per 1000 cubic feet within the borough or within two miles of the town hall, and 4s. 6d. beyond that radius.[5]

(*c*) In the case of municipal electric supply undertakings in this country maximum prices always appear to be fixed. The most ordinary limit is 13s. 4d. for any quantity up to 20 units per quarter, and 8d. for each unit over 20 units. This applies, for example, in Manchester,[6] Bolton,[7] Blackburn,[8] Birmingham,[9] Nottingham[10] and Battersea.[11] Other limits which occur much less commonly are 11s. 8d. for any amount up to 20 units per quarter, and 7d. for each unit over 20 units; and £3: 10s. per quarter for any amount up to 100 units per quarter, and 7d. for each unit over 100 units; the former exists at Hampstead[12] and Islington,[13] the latter at Bradford[14] and Brighton.[15] In Aberdeen the maximum price is as high as 9d. per unit,[16] and where the Liverpool undertaking supplies current outside the city the minimum price is 16s. 8d. per unit up to 20 units per quarter, and 10d. per unit for each unit above 20 units.[17]

[1] Blackburn Improvement Act, 1882, sec. 148.

[2] Birmingham Corporation (Consolidation) Act, 1883, secs. 158 and 167.

[3] Glasgow Corporation Gas Act, 1869, sec. 67.

[4] Stockton Gas Act, 1857, sec. 77.

[5] Bolton Corporation Act, 1872, sec. 82, and Bolton, Turton, and Westhoughton Extension Act, 1898, sec. 98.

[6] Manchester Electric Lighting Order, 1890, 4th schedule.

[7] Bolton Electric Lighting Order, 1891, 4th schedule.

[8] Blackburn Electric Lighting Order, 1890, 4th schedule.

[9] Birmingham Electric Lighting Order, 1894, 4th schedule.

[10] Nottingham Electric Lighting Order, 1890, 4th schedule.

[11] Battersea Electric Lighting Order, 1896, 4th schedule.

[12] Hampstead Electric Lighting Order, 1892, 4th schedule.

[13] Islington Electric Lighting Order, 1893, 4th schedule.

[14] Bradford Electric Lighting Order, 1883, clause 45 and schedule C.

[15] Brighton Electric Lighting Order, 1883, clause 45 and schedule C.

[16] Aberdeen Electric Lighting Order, 1890, 4th schedule.

[17] Allerton, Woolton, Childwall, and Garston Electric Lighting Order, 1896, arts. 30 and 52.

(*d*) The general practice of Parliament with regard to tramways is to impose a maximum fare for ordinary passengers of 1d. per mile, or part of a mile, as for example, in Birmingham,[1] Salford[2] and Stockport,[3] but very often there is a further condition that no fare less than 2d. need be taken, as in Manchester,[4] Burnley[5] and East Ham,[6] or that no fare less than 3d. need be taken, as in Oldham,[7] Blackburn[8] and Sunderland.[9] Occasionally there is no specific limit to the fares which may be charged, as for example, in Liverpool, where the corporation are authorised to take "reasonable tolls for the use of their cars."[10]

In addition to the legal limit imposed upon the fares charged to ordinary passengers, special provisions are generally inserted in Tramway Acts and Provisional Orders with regard to workmen's fares. As the whole subject of workpeople's fares is discussed at some length towards the end of this chapter, the statutory regulation of these fares may best be considered in the same place.[11]

§ 4. It is difficult to say exactly what the effect is of fixing maximum prices by statute. As far as gas and electricity are concerned, it is very doubtful if it exercises any influence at all, in any case at the present time, though it may have done so when they were first established. To-day the maximum charges are generally greatly in excess of anything that can be described as reasonable prices, and local authorities sell their gas and current on much more favourable terms than those at which they are compelled to sell. Even from a purely business point of view, it is probably in their interest to do so. An electrical undertaking which charged 8d. per unit would cause very many, if not all, large consumers to generate their own current, and even the sale

[1] Birmingham Corporation Act, 1903, secs. 31 and 38.

[2] Salford Corporation Act, 1899, secs. 33, 37, and 38.

[3] Stockport Corporation Tramways Act, 1900, secs. 21, 22, 23.

[4] Manchester Corporation Tramways Act, 1899, sec. 23.

[5] Burnley Corporation (Tramways, etc.) Act, 1898, sec. 8.

[6] East Ham Urban Council Tramways Order, 1898, art. 28.

[7] Oldham Borough Tramways Order, 1878, sec. 20.

[8] Blackburn Improvement Act, 1882, sec. 78.

[9] Sunderland Corporation Act, 1899, sec. 33.

[10] Liverpool Corporation Tramways Act, 1897, sec. 19.

[11] See pp. 265-271, below.

of gas would be seriously restricted if the price in a large town were 4s. 6d. or 5s. per 1000 cubic feet.

In the case of water undertakings the position is different. Where a large capital outlay has had to be incurred in order to provide an adequate supply of water, it is quite likely that the levying of the statutory maximum domestic water rate will not produce sufficient revenue to defray the total annual expenditure, and that local authorities will then be compelled to make good the deficiency from the borough, general district, or other rates. The consequence will be that some of the burden involved by making provision for future generations will be borne by the ratepayers as a whole, to the partial relief of the present water consumers. Thus, for example, in Swansea, where large additional works were authorised in 1898 on which over £500,000 have been spent,[1] the maximum domestic water rate of 5½ per cent per annum on the rateable value of the premises supplied is charged, and a subsidy from the rates is required which is almost equal to the total receipts from the sale of water for domestic and trade purposes.[2] On the other hand, in some cases local authorities grant subsidies from the rates to their water undertakings where the statutory maximum charges are not being made to consumers. This, for example, is so in Birmingham[3] and Huddersfield.[4] Thus municipalities which are limited in the charges they can make for water may in consequence be compelled to subsidise their water undertakings from the rates, but judging by the cases of Birmingham and Huddersfield they can subsidise these undertakings, if they wish, without charging the maximum prices. Where no limit is imposed on the domestic water rate, it is doubtful if a local authority can subsidise its water undertakings from the borough or general district rates. That at least appears to be the position in Manchester.[5]

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 170.

[2] In 1908-9 the total receipts from the sale of water were £31,979, whereas the subsidy from the rates was £26,381 (*Annual Local Taxation Returns*, 1908-9, part v. p. 48).

[3] *Parliamentary Returns on Municipal Trading* (*United Kingdom*), part iii. pp. 3, 4.

[4] *Ibid.* part i. pp. 88, 89.

[5] Under the Manchester Corporation Waterworks Act, 1847 (10 and 11 Vic. cap. 203), sec. 111, domestic and public water rates are to be levied each

With regard to tram fares, the statutory provision that these must not exceed 1d. per mile or fraction of a mile for ordinary passengers, has probably little or no effect upon the fare policy of municipal tramways. The fact that part of a mile is deemed one mile makes the limit a very easy one to comply with, as far as shorter distances are concerned, and it is with these distances that tramway undertakings are chiefly concerned. The average tram fare on most municipal undertakings works out at less than 1d. per mile,[1] and in many cases at very considerably less. On the other hand, the limit concerning workmen's fares compels various towns to modify their charges, and has therefore a direct influence on the fare policy of the undertakings, as will be shown more fully when the whole question of workmen's fares comes up for discussion.

Water Undertakings.[2]

§ 5. Two principal selling policies can be distinguished in connection with municipal water undertakings, the one is to charge in direct proportion to the actual consumption, the other is to charge a sum based upon a more or less rough estimate of the probable consumption. The former policy is in accordance with ordinary commercial practice, the latter policy is largely adopted as a social and sanitary expedient in order not to restrict an adequate consumption of water. As the price paid does not depend upon the actual consumption, no one is under any restraint to limit the quantity of water used and there is a danger that a good deal of water may be wasted. Statistics show that the consumption per head of the population in towns where the charge for water is based on the actual consumption is generally lower than in towns where the charge for water does not depend on the actual con-

year in order to raise a sum of money sufficient to defray the costs, charges and expenses of supplying the borough with water.

[1] See appendix to *Report by General Manager of the Manchester Corporation Tramways in regard to the proposed extension of time during which workpeople's fares are in operation*, April 1911.

[2] Throughout this and the subsequent sections of the chapter, where reference is made to prices and methods of charging in German towns, without any indication of the source of information being given, use has been made of the *Kommunales Jahrbuch*, 1910.

sumption, but there is no means of ascertaining whether all the water consumed in such towns is properly used. As a sort of compromise between discouraging the use of water by charging for every gallon consumed, and encouraging waste by giving an unlimited supply at a fixed price, many towns which charge according to the actual consumption, fix a minimum quantity which must be paid for each month, quarter, or year, as the case may be, so that a consumer stands to gain nothing by using less. If the minimum quantity fixed is reasonable, and adapted as far as possible to the sanitary requirements of different households, the objections on the ground of public health to the sale of water by meter for domestic purposes are very considerably diminished. Where a charge not based on actual consumption is made, this applies only to water supplied for domestic purposes and possibly to water supplied to offices and shops. Water sold for trade purposes is practically always paid for according to actual consumption. Consequently in the water tariffs of many towns the two methods of charging exist side by side, the one applying to the domestic the other to the industrial consumption of water.

§ 6. The policy of charging by meter for water supplied for domestic purposes appears to be very uncommon amongst the water undertakings managed by the larger British local authorities.[1] Amongst German municipalities, on the other hand, it appears to predominate.[2] In its simplest form there is a uniform charge of so much per cubic meter for water, without any minimum or any reduction for large consumers. Thus Wiesbaden charges 30 pf. per cubic

[1] There is no annual official publication relating to water undertakings in this country, and the *Municipal Year Book* gives no information with regard to the prices charged. None of the municipal water undertakings tabulated in the *Parliamentary Return on Municipal Trading in the United Kingdom*, 1902-6, charged by meter for water supplied for domestic purposes, and this return embraces most of the principal towns of the country (for list of towns see p. 389).

[2] This statement is based on the inquiry made on behalf of the town of Carlsruhe by Dr. Wimpfheimer who investigated the tariffs of sixty-three larger German towns and ascertained that thirty-six of them charged by meter for water for domestic purposes (quoted in Mombert, "Die Gemeindebetriebe in Deutschland," *Schriften des Vereins für Socialpolitik*, vol. 128, p. 23); and on an examination of the tariffs of 403 water undertakings of local authorities enumerated in the *Kommunales Jahrbuch*, 1910, pp. xliii to lxii.

meter, Osnabrück 20 pf. per cubic meter, Mayence 25 pf. per cubic meter. In many cases the minimum sum to be paid, or the minimum quantity to be paid for monthly, quarterly, or annually is fixed. Sometimes there is a single minimum, as for example 6 marks per quarter, the price of 40 cubic meters, in Aix-la-Chapelle, or 20 cubic meters per annum (value 4 marks) in Mülhausen. More frequently the minimum is a variable quantity based upon the number of rooms occupied,[1] upon the size of the house,[2] upon the size of the house and the number of inhabitants,[3] upon the value of the house for insurance purposes,[4] upon the building tax,[5] or upon the rent.[6] Another modification of a uniform meter tariff which appears to be fairly common in German towns is a reduction of price,[7] or the granting of a discount, to large domestic consumers.[8]

In some cases where water is sold by meter for domestic purposes, the tariff is so drawn up as to favour the poorer classes, but this appears to be very exceptional. In Messina houses on which the annual taxes exceeded 50 lire, were charged 50 centesimi per cubic meter for water, whilst houses on which the annual taxes were less than 50 lire were only charged 30 centisimi.[9] In Milan, houses with small tenements consisting of not more than three rooms each are charged 10 centesimi per cubic meter for water, whereas the ordinary charge varies from 20 to 15 centesimi,[10] according to the consumption.

Not infrequently there is a common tariff for domestic and industrial purposes in which case the reductions in price or the discounts generally only take effect when such quantities are consumed as are never likely to be used for

[1] *E.g.* 1 mark per room in Dresden.

[2] *E.g.* from 8 to 35 marks, according to the size of the house, in Giessen.

[3] *E.g.* in Biebrich.

[4] *E.g.* in Oldenburg. M. 1.20 per month for houses with a fire insurance value of less than M. 7000; M. 2 per month for houses of a greater value.

[5] *E.g.* in Eberswalde, 50 per cent of the building tax.

[6] *E.g.* in Halle a/S., 2 per cent of the rent.

[7] *E.g.* in Lüneburg, 20 pf. per cubic meter for quantities below 100 cubic meters per annum, the price then falling by zones, all consumption above 1000 cubic meter per annum being charged 10 pf. per cubic meter.

[8] *E.g.* in Neisse, 10 pf. per cubic meter, for quantities below 500 cubic meter per annum, then a discount of 5 per cent, rising to 25 per cent, when the annual consumption exceeds 3000 cbm.

[9] G. Michels-Lindner, "Geschichte der modernen Gemeindebetriebe in Italien," *Schriften des Vereins für Socialpolitik*, vol. 130, part ii. p. 158.

[10] *Ibid.* p. 161.

household purposes, so that the concessions really only apply to industrial consumers. Thus, for example, in Dresden and Düsseldorf discounts are only granted where the annual consumption of water exceeds 5000 cubic meters (approximately 1,100,000 gallons). In some towns where all water is charged for by meter, different charges are made for domestic and trade purposes,[1] but this appears to be an uncommon arrangement. Generally where different charges are made for domestic and trade purposes this is effected by charging on two different methods based on the probable and the actual consumption.

In this country practically all water for trade purposes is sold by meter; the most usual arrangement appears to be for the prices to vary according to the consumption, large consumers obtaining their supplies at lower rates than small consumers. For example, in Cardiff the price falls from 1s. 6d. per 1000 gallons for a quarterly consumption of less than 10,000 gallons to 6d. per 1000 gallons when the quarterly consumption exceeds 1,000,000 gallons;[2] in Nottingham the price is 10d. per 1000 gallons up to 10,000 gallons and slides to 6d. per 1000 gallons at 2,000,000 gallons.[3] In some cases water is supplied by meter for trade purposes at a uniform charge, whatever the consumption may be. Thus in Liverpool[4] and in Edinburgh[5] the charge is 6d. per 1000 gallons.

An exceptional feature in connection with water tariffs, which is nevertheless deserving of mention, is the practice of charging higher prices in summer, when water is presumably scarce, than in winter when water is presumably plentiful. Thus in Homburg the price of water is 40 pf. per cubic meter in summer and only 20 pf. per cubic meter in winter. In Frankfort-on-the-Main water for trade purposes is charged 25 pf. per cubic meter from April till September and 15 pf. per cubic meter from October to March.

§ 7. Where water is not charged for by meter, the amount to be paid is either assessed by the water authorities according

[1] *E.g.* in Neusalz, 27 pf. per cubic meter for domestic and 20 pf. per cubic meter for trade purposes.

[2] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 81.

[3] *Ibid.* part iii. p. 35.

[4] *Ibid.* part ii. p. 4.

[5] *Ibid.* part vi. p. 3.

to the estimated consumption or is calculated upon some particular basis which gives a more or less rough indication of the probable consumption. The former occurs amongst some of the smaller German local authorities,[1] the latter is very common in this country and also in Germany. The basis most commonly adopted is the rent of the house, which seems more likely to indicate the capacity to pay than the probable consumption. The increase in the consumption is not likely to grow in proportion to the increase in the rent, but at a slower rate and in some towns this fact is taken into consideration and houses with low rentals are charged at a higher rate than houses with high rentals. Thus in Plymouth[2] a house is charged 10s. if the rent is between £10 and £12, 28s. if the rent is between £40 and £50 and 40s. if the rent exceeds £80. In Preston,[3] if the annual rateable value is less than £20 the charge is 6 per cent on the annual rateable value; if it is between £40 and £80, 5 per cent; if it exceeds £160, 4 per cent. On the other hand, in some towns water is charged for at a uniform rate, which tends to bring it about that smaller householders obtain their water to some extent at the expense of larger householders. Thus in Blackburn[4] private dwelling-houses pay 8 per cent per annum on the rateable value and in Swansea[5] 5½ per cent. The small householders are still further relieved in those towns where, in addition to a domestic water rate on dwelling-houses payable by the occupiers, there is also a public water rate on all property payable by the owner. Thus in Glasgow[6] and Dundee[7] there are public water rates of 1d. per £ on the annual value of all property, and in Manchester[8] of 3d. per £ on the rateable value of all property. In Manchester the sum produced by the public water rate at 3d. in the £ is very little less than that produced by the domestic water rate at 9d. in the £,[9] so

[1] *E.g.* Feuerbach, Heidenheim, Leichlingen.

[2] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 123.

[3] *Ibid.* part ii. p. 136.

[4] *Ibid.* part ii. p. 118.

[5] *Ibid.* part v. p. 169.

[6] *Ibid.* part vi. p. 23.

[7] *Ibid.* part vi. p. 48.

[8] This is taken from the scale of charges published by the Corporation. It was only 1d. in 1905-6, the last year to which the Parliamentary Return refers.

[9] In 1908-9 the public water rate yielded £47,866 and the domestic water rate £54,563 (*Annual Report of the Waterworks Committee*, 1908-9, p. 11).

that the actual consumers of water for domestic purposes pay but little more than half of what they would have to pay, but for the relief afforded to them by the public water rate, which is paid by the owners. Occupiers are also relieved of part of the cost of obtaining their supply of water, though not to the same extent as above, if the public water rate, levied on all property irrespective of any water supply, is payable half by the occupier and half by the owner as is the case in Liverpool,[1] or if the domestic water rate is collected partly from the owners and partly from the occupiers, as is the case in Aberdeen.[2]

The system of charging for water by means of a water rate applies not only to dwelling-houses but generally to combined houses and shops, and sometimes to public-houses and to lock-up shops, but often there are special rates in these cases, shops being charged at lower and public-houses at higher rates than ordinary houses. Thus in Salford dwelling-houses used in part as retail shops pay 8d. in the £ on the gross estimated rental and public-houses 11d. in the £, whereas dwelling-houses of £20 rent and upwards pay 9d.[3] In Blackburn lock-up shops are charged $3\frac{1}{3}$ per cent per annum on the rateable value, public-houses and beer-houses $9\frac{1}{2}$ per cent, and dwelling-houses 8 per cent.[4] In Manchester on the other hand, shops in connection with dwelling-houses are charged the domestic rate upon the whole premises, except under special circumstances.[5]

In some German towns the rent is taken as the basis of the charge made for water for domestic purposes; as in Frankfort-on-the-Main, where the charge is 4 per cent of the rent, and in Carlsruhe and in Offenburg, where the charge is $2\frac{1}{2}$ per cent of the rent. In a few cases other bases are taken which are even more remote indications of the probable consumption than the rent, for example, the state buildings tax assessment[6] or the income tax assessment.[7] On the other hand, in many cases bases for levying water charges are

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 4.

[2] *Ibid.* part vi. p. 67.

[3] *Ibid.* part ii. p. 50.

[4] *Ibid.* part ii. p. 118.

[5] *Manchester Corporation Water Works, Scale of Charges.*

[6] *E.g.* in Kosten.

[7] *E.g.* in Holzminden, 50 pf. per person and $\frac{1}{2}$ per cent of taxable income (all above M. 900), no one to pay on more income than M. 6000 per annum.

adopted which are likely to be much more accurate indications of the probable consumption than the rent. Thus the charge may depend upon the number of rooms, as in Tübingen, where M. 1.50 is charged for each room and M. 4 for a kitchen; in Crefeld, where M. 2.50 is charged for each room with an area exceeding 8 square metres, M. 10 for each bathroom and M. 12 for each water-closet, and in Heidelberg, where the charges are M. 5 for each kitchen, bedroom, and sitting-room, M. 5 for each water-closet, and M. 10 for each bath. Occasionally the area of each floor of the house is taken as the basis.[1]

Wherever water for domestic purposes is provided for a fixed charge, based on the rent or otherwise, it is very common to find that special charges are made for certain uses of water, such as water-closets and baths. In some cases the water rate includes the cost of supply to one bath and one water-closet, and each additional bath or water-closet is charged extra.[2] In other cases the cost of one water-closet but no bath is included in the water rate.[3] Sometimes the supply of water for each bath or water-closet is charged extra.[4] In other towns no extra charges are made for supplies of water to water-closets and private baths.[5] Where special charges for baths and water-closets are levied, they may be at a uniform rate,[6] or at a higher rate for the first and a lower rate for each additional one,[7] or at a variable rate based upon the rateable value of the house.[8]

Other cases in which domestic consumers of water are

[1] *E.g.* in Calbe a. S.

[2] *E.g.* in Halifax. *Parliamentary Return on Municipal Trading* (*United Kingdom*), part i. p. 72. In Manchester no extra charge is made for additional baths, but only for extra water-closets.

[3] *E.g.* Huddersfield (*ibid.* part i. p. 89).

[4] *E.g.* Bradford (*ibid.* part i. p. 45), Sheffield (*ibid.* part i. p. 25), Nottingham (*ibid.* part iii. p. 35).

[5] *E.g.* Cardiff (*ibid.* part v. p. 81), Oldham (*ibid.* part ii. p. 96).

[6] *E.g.* in Manchester, 4s. for each water-closet beyond the first (*ibid.* part ii. p. 25).

[7] *E.g.* in Huddersfield, 10s. for the first bath and 5s. for each extra bath (*ibid.* part i. p. 89).

[8] *E.g.* in Nottingham (*ibid.* part iii. p. 35):—

Annual Rent.	Annual Charge for each W.C. or Bath.
£10	4s.
20	6s.
40	8s.
80	10s.
Over 80	12s.

often affected by special charges based on the probable consumption arise in connection with gardens, carriages and horses. Thus, for example, in Manchester[1] tubes for watering gardens and greenhouses are charged 10s. per annum for the first 800 square yards or under, and 5s. for each additional 800 square yards or part thereof. Four-wheeled vehicles are charged 5s. per annum each and two-wheeled vehicles 3s. per annum each. For one horse the charge is 10s. per annum, for two or more 7s. each per annum. In Düsseldorf[2] the annual cost of a supply of water for greenhouses is 25 pf. per square metre of area; for gardens, 3 pf. per square metre of area; for carriages, 3 marks each; for horses, 3 marks each.

Enough has been said to show the application of the two methods of charging for water, according as the actual consumption constitutes, or does not constitute, the basis of the charge. The latter method may take various forms, in some of which there is little attempt to ascertain the probable consumption. In some cases it appears to be the deliberate policy of municipalities not only to encourage the consumption of water by supplying it at a fixed charge, but to provide smaller householders with water partly at the cost of the larger householders and, where there is a public water rate in addition to a domestic water rate, partly at the cost of property owners. In these cases this method of charging for water is made the means of carrying out the social ideals of particular municipalities. In other cases where gardens, carriages, and horses are concerned it is a purely business expedient to avoid the cost of installing meters where comparatively small quantities are concerned.

§ 8. The general policy of municipalities supplying outside areas and charging higher prices in them has already been discussed.[3] This practice is adopted by many municipal water undertakings, and applies both to water sold by meter and to water supplied in return for a fixed charge based upon the rent. For example, in Burnley the charge for a supply of water for domestic purposes within the borough is 5 per cent per annum on the gross estimated rental, and

[1] Manchester Corporation Water Works, Scale of Charges.

[2] *Bedingungen über den Bezug von Wasser aus dem städtischen Wasserwerk zu Düsseldorf*, p. 11.

[3] See p. 181, above.

outside the borough 7½ per cent per annum on the gross estimated rental.[1] In Dundee the charge for water by meter within the compulsory area is 6d. per 1000 gallons with a minimum charge of £2 : 10s., without the compulsory area 7d. and 8d. per 1000 gallons with minimum charges of £2 : 18 : 6 and £3 : 6 : 8 respectively.[2]

The policy of charging special rates to other undertakings of a local authority has been dealt with above,[3] and further illustrations need not be given here.

Gas Undertakings

§ 9. The simplest method of charging for gas is to establish a uniform price, without taking into consideration in any way the purpose for which the gas is used, as is done, for example, in Hamburg, where the price is 14 pf. per cubic metre, and in Dundee, where the price is 2s. 3d. per 1000 cubic feet with a discount of 5 per cent. This method, however, appears to be exceptional. It is much more common to find two or more rates of charging according as the gas is used for lighting, power, heating, or cooking purposes, is supplied by ordinary or by prepayment meters, is sold inside or outside the town boundaries, is consumed in small or in large quantities, or is purchased by undertakings of the local authority or by private consumers. In some cases the charge is based on the estimated and not on the actual consumption.

There are several reasons for selling gas for power, heating and cooking purposes at lower rates than for lighting purposes. (*a*) As far as power is concerned it is desirable not to place any difficulty in the way of local industries, upon which the welfare of many inhabitants of the town itself may largely depend ; consequently it is probably well not to attempt to make profit on gas supplied for power purposes, but to sell it at little more than cost price. (*b*) If the use of gas for power, heating and cooking purposes can be encouraged by preferential treatment, the consumption of

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 178.

[2] *Ibid.* part vi. p. 48.

[3] See p. 127, above.

coal in a town should be reduced and the smoke nuisance abated, which in many towns is a consideration of considerable importance. These two reasons are both connected with the promotion of the general welfare, those which remain are of a more technical character.

(*c*) The next reason is concerned with the better utilisation of the plant. Where gas is sold almost exclusively for lighting purposes, the consumption of gas throughout the twenty-four hours of the day is very uneven and occurs principally in the evening. This necessitates a large provision for storage, not merely for the purpose of providing a reserve of gas as a precaution, but because the hourly capacity of the plant is less than the highest hourly consumption, and gas must be accumulated during hours of low consumption to supplement the supply of gas actually produced at hours of high consumption. Consequently, it is likely to prove more economical if the daytime consumption can be increased by selling as much gas as possible for power, cooking and heating purposes, for, although this may necessitate an increase in this plant, the proportion of the total gas produced, which will have to be stored, will be diminished. Much more serious is the great difference in the consumption of gas for lighting purposes in winter and summer, in consequence of which a good deal of plant is idle in summer, as storing summer production for winter consumption is too costly to be contemplated. On the other hand, the consumption of gas for power and cooking purposes should not be affected by the season of the year,[1] and consequently enables a better utilisation of the plant in summer than if lighting consumers alone are supplied.

[1] Some interesting information on this point is supplied in the *Verwaltungsbericht des Stadtrats der Grossh. Badischen Hauptstadt Mannheim für 1908*. Of the total consumption of the Mannheim gas works from October 1, 1907, to October 1, 1908, 35.81 per cent was consumed for lighting purposes during the winter half-year and 16.41 per cent during the summer half-year; 23.93 per cent was consumed for cooking and heating purposes during the winter half-year and 21.29 per cent during the summer half-year; 1.27 per cent was consumed for power during the winter half-year and 1.29 per cent during the summer half-year. Thus, whereas the summer consumption of gas for lighting purposes was less than half the winter consumption for lighting purposes, the cooking and heating consumption was only one-tenth less in summer than in winter, and the power consumption practically the same.

To encourage the use of gas for cooking and power purposes, lower rates are frequently established.[1]

To show the effect which the encouragement of the use of gas for cooking purposes may have upon increasing the consumption of gas during the daytime, a table is given below showing the hourly consumption of gas in Manchester during the year 1902-3, immediately previous to the adoption of the loaning of gas cookers free of charge by the Corporation, and during the year 1910-11, the most recent for which information is available. The great increase in the consumption between seven and nine o'clock in the morning, and between eleven and two o'clock in the middle of the day, two periods during which meals are presumably being cooked, is very noticeable. Of the total increase in the consumption in 1910-11, as compared with 1902-3, 77 per cent occurred between 5 A.M. and 5 P.M., and only 23

[1] To give the reader some idea of the great difference in consumption at different hours and at different times of the year, figures relating to three large German municipal gas works may be quoted from their official reports:—

Dusseldorf, 1908-9.

(Of the total gas consumed, 47.70 per cent was employed for power, cooking and heating purposes.)

Average daily consumption	82,300 cbm.
Highest ,, ,,	151,200 ,,
Lowest ,, ,,	42,200 ,,
Consumption in June	1,638,800 ,,
Consumption in December	3,578,600 ,,

Mayence, 1908-9.

(Of the total gas consumed, 43.66 per cent was employed for power, cooking and heating purposes.)

Average daily consumption	27,123 cbm.
Highest ,, ,,	43,080 ,,
Lowest ,, ,,	15,540 ,,
Consumption in June	602,560 ,,
Consumption in December	1,123,350 ,,
Highest hourly consumption	4,340 ,,
Lowest ,, ,,	70 ,,

Leipzig, 1908-9.

(Of the total gas consumed, 30.3 per cent was employed for power, cooking and heating purposes.)

Average daily consumption	111,057 cbm.
Highest ,, ,,	204,600 ,,
Lowest ,, ,,	42,040 ,,
Consumption in June	1,857,940 ,,
Consumption in December	5,406,360 ,,

per cent during the other twelve hours, so it is quite clear that the bulk of the additional gas used cannot have been for lighting purposes.

TABLE showing the hourly consumption of gas in Manchester in 1902-3, immediately previous to the adoption of free gas cookers, and in 1910-11.[1]

Hours.	1902-3.	1910-11.	Increase.	
	1000 Cubic Ft.	1000 Cubic Ft.	1000 Cubic Ft.	Per Cent.
12 P.M. to 1 A.M.	138,293	138,806	513	0.4
1 A.M. „ 2	87,075	92,573	5,498	6.3
2 „ 3	76,450	83,104	6,654	8.7
3 „ 4	70,412	79,172	8,760	12.4
4 „ 5	69,500	81,935	12,435	17.9
5 „ 6	79,904	102,523	22,619	28.3
6 „ 7	128,540	153,662	25,122	19.5
7 „ 8	157,805	221,315	63,510	40.2
8 „ 9	156,406	211,503	55,097	35.2
9 „ 10	161,354	205,571	44,217	27.4
10 „ 11	159,100	212,718	53,618	33.7
11 „ 12	163,003	234,500	71,497	43.9
12 „ 1 P.M.	162,865	253,623	90,758	55.7
1 P.M. „ 2	118,136	175,850	57,714	48.9
2 „ 3	130,664	171,004	40,340	30.9
3 „ 4	148,449	184,584	36,135	24.3
4 „ 5	220,078	248,312	28,234	12.8
5 „ 6	305,489	335,742	30,253	9.9
6 „ 7	349,135	367,138	18,003	5.2
7 „ 8	384,240	403,866	19,626	5.1
8 „ 9	418,176	429,879	11,703	2.8
9 „ 10	430,346	451,404	21,058	4.9
10 „ 11	374,493	395,042	20,549	5.5
11 „ 12	244,483	266,458	21,975	9.0
	4,734,396	5,500,284	765,888	16.2

(*d*) Another consideration which may influence the policy of a gas committee is that the more gas they can sell, the more chances there are of reducing the cost of production, and consequently of strengthening the position of the

[1] The figures in this table have been kindly supplied by Mr. Fredk. A. Price, Superintendent of the Manchester Corporation Gas Department.

undertaking. The use of gas for purposes of power, cooking and heating affords an excellent opportunity for extending the sale of gas, as it does not in any way prejudice the sale of gas for lighting purposes, and, as far as cooking and domestic heating are concerned, has no strong competition to face. The demand for coal amongst gas consumers will be diminished, but, on the other hand, this will be compensated for by the increased demand for coal by gas undertakings, so that the coal producers should not oppose the extended use of gas. Special efforts will be required to draw the attention of householders to the advantage of gas for cooking and heating purposes, and to overcome the difficulty involved by the expense of installing the necessary appliances. Probably the easiest way to overcome this difficulty is for the Gas Committee to loan the appliances free of charge and to take the cost of doing so into consideration in fixing prices. As far as the consumption of gas for power purposes is concerned, the competition of other forms of power—steam, electricity, water, suction gas —has to be met. Under these circumstances the use of coal-gas for driving gas engines is likely to prove somewhat limited, unless the gas can be sold at very low prices.[1]

(*e*) In determining the selling policy with regard to gas, there must be borne in mind a further point which of recent years has probably become the most crucial of all, namely, the effect of the introduction of the incandescent mantle and above all of electricity upon the consumption of gas for lighting purposes. By employing incandescent mantles a better light can be obtained with a smaller consumption of gas, which tends to diminish the consumption of gas for lighting purposes by existing customers; though, as the cost of obtaining a given quantity of light is diminished, an

[1] The actual experience of two towns in respect of the use of gas for power purposes may be quoted. In 1898-9 Cologne sold for power purposes 2,893,000 cbm. or 10.98 per cent of the total consumption. In 1903-4 the respective figures were 3,464,000 cbm. or 9.60 per cent, and in 1908-9, 3,064,000 cbm. or 6.84 per cent. In 1898 Mannheim sold for power purposes 940,000 cbm. or 13.32 per cent of the actual consumption. In 1903 the respective figures were 581,000 cbm. or 6.24 per cent, and in 1908, 311,000 cbm. or 2.56 per cent. (The figures are quoted from, or based on, the *Reports* of the Municipal Gas Undertakings of Cologne and Mannheim.)

ultimate increase in the number of consumers should compensate for the diminished consumption of each consumer. The effect of the introduction of electricity is much more serious, because many customers may be lost entirely to the gas undertakings as far as consumption of gas for lighting purposes is concerned. It is a great mistake to consider that the choice between the use of gas and of electricity is entirely or even largely one of price. Electricity possesses certain advantages over gas for lighting purposes of which many people will desire to avail themselves, quite apart from considerations of cost. Electric lighting does not vitiate or use up the air, it hardly affects the temperature of the rooms in which it is used, it is essentially clean and does not blacken ceilings, wall-papers, etc. The way in which it can be switched on and off is extremely convenient, it lends itself excellently for decorative purposes, and it can be brought close to inflammable materials without danger. One or more of these, or of other advantages which electricity may possess, makes its use almost necessary in hotels, restaurants, theatres, public halls and many shops, and is likely to lead to its installation too in offices and in the private houses of many of the wealthier citizens. The extension of electricity for lighting purposes amongst people of moderate means depends to a considerable extent upon the price of current and the cost of "wiring" a house and purchasing the necessary fittings. If, as new houses are built, these are wired for electric light instead of being provided with piping for gas, the use of electricity will naturally be increased. The recent introduction of the metallic filament lamp, by diminishing very considerably the consumption of current required to obtain a given amount of light, will undoubtedly gain consumers for electricity undertakings amongst householders of moderate means. The situation then, as far as gas undertakings are concerned, is that they have lost a considerable number of former large light consumers, and will probably lose a good many moderate light consumers in the future, and that no reduction in the cost of gas is likely to check the movement very much if the cost of electric current is reasonable, because the use of electric light, up to the

present at least, is not due to the fact that it is cheaper than gas, but to the various advantages it possesses over gas. The best way in which gas undertakings can meet the competition of electricity is to extend the use of gas for cooking and heating purposes, as in this way it is possible to build up a demand for gas which is likely to be but little, if at all, affected by electricity. If gas undertakings are to continue to prosper and to grow in the future as they have done in the past, it will not be by making financial concessions to retain business, which they are ultimately almost certain to lose at whatever price gas may be sold, but by finding new outlets for their product, and this is realised by very many gas committees. They are doing their utmost to encourage the use of gas for other than lighting purposes, and frequently find it desirable to charge lower prices where gas is so used.

§ 10. The growing importance to gas works of the sale of gas for heating and cooking purposes may be illustrated by some figures relating to the municipal gas works of Cologne and Mayence which are given below. It will be noted that in Cologne during the ten years 1898 to 1908 the gas sold to private consumers for lighting purposes increased by some 34 per cent, whilst the gas sold to private consumers for cooking and heating purposes increased by some 289 per cent. In Mayence in 1885 the consumption of gas by private consumers for lighting purposes was roughly 1,526,000 cbm., and for cooking and heating purposes 301,000 cbm. In 1908 the respective consumptions were 2,914,000 cbm. and 3,977,000 cbm., the former having increased some 91 per cent and the latter some 1221 per cent.

[TABLE

SALE OF GAS TO PRIVATE CONSUMERS IN COLOGNE[1]

Year.	Gas sold for Lighting Purposes.		Gas sold for Cooking and Heating Purposes.	
	Cbm.	Percentage of Total Output.	Cbm.	Percentage of Total Output.
1898-9	14,322,197	54.35	3,703,560	14.05
1903-4	17,102,222	44.81	8,544,903	23.68
1908-9	19,353,016	43.16	14,466,845	32.26

SALE OF GAS TO PRIVATE CONSUMERS IN MAYENCE[2]

Year.	Total Output of Gas. Cbm.	Percentage of Output sold for Lighting Purposes.	Percentage of Output sold for Heating and Cooking Purposes.
1885-6	2,619,452	58.27	11.48
1890-1	3,770,612	52.44	15.53
1895-6	4,790,540	46.43	28.71
1900-1	5,948,846	37.04	41.56
1905-6	8,117,406	34.08	43.68
1908-9	9,107,350	32.06	43.66

Whilst recognising the desirability of extending the sale of gas for power, cooking and lighting purposes, many towns are inclined to the view that it is best to charge a uniform price for lighting, cooking and heating purposes, if not for power. There are various grounds for adopting this policy. In the first place, as the consumption of gas for other than lighting purposes becomes considerable, the financial position of the undertakings may be seriously affected if preferential rates are granted. Thus in Düsseldorf and Mannheim, for example, the consumption of gas for cooking and heating purposes represents more than half the total consumption of gas by private customers; so that it is hardly astonishing that in 1910 these undertakings should have changed their tariffs

[1] *Geschäftsberichte der Gas-, Elektrizitäts- und Wasserwerke der Stadt Cöln für die Jahre 1907-1908, 1908-1909.*

[2] *Rechenschaftsbericht der städtischen Gaswerke zu Mainz für das Rechnungsjahr 1908*, p. 46.

to do away with the preferential rate for gas for cooking and heating purposes.[1] In the second place, once the use of gas for cooking and heating purposes is fairly well established, a small rise in price is not likely to diminish this type of gas consumption very much, whereas it may enable the price of gas for lighting purposes to be lowered which will strengthen the position of gas undertakings in their competition with electricity in those cases, where the cost of light is a factor of importance. In the third place, the establishment of a uniform tariff does away with the need of domestic consumers having two meters, which saves expense in the matter of capital outlay and in the matter of administrative costs, as there will be fewer meters to be read, less book-keeping to be done, and not so many bills to be sent out and collected.

§ 11. We may now consider the various policies adopted by different municipalities in respect of the sale of gas for lighting, heating, cooking and power purposes. One very common arrangement is to distinguish between the use of gas for lighting purposes and for all other purposes. Thus in Leipzig the price of gas for lighting is 18 pf. per cbm.; whereas if it is used for engines, for machines or appliances to carry out industrial or scientific work, for the industrial production of goods, for heating or for cooking, the charge is 12 pf. per cbm. A discount is granted in respect of gas used for lighting purposes where the annual consumption exceeds 5000 cbm.[2] Sometimes no reduction in price is made, whatever the consumption may be, as in Bonn, where

[1] Formerly the charges in Düsseldorf for lighting purposes were from 16 to 12½ pf. per cbm. according to the annual consumption, for cooking and heating purposes 10 pf. per cbm., and for power purposes 8 pf. per cbm. The prices are now 13 pf. per cbm. for lighting, cooking and heating purposes, and 8 pf. per cbm. for power purposes. In Mannheim the charges were formerly from 18 to 14 pf. per cbm. for lighting purposes, according to the annual consumption, and 12 pf. per cbm. for all other purposes. Now there is a uniform charge of 14 pf. per cbm. for all gas supplied through ordinary meters. (The figures are taken from the annual reports and the scale of charges of the two undertakings.)

[2] *Städtische Gasanstalten in Leipzig. Bedingungen für die Abgabe von Gas*, pp. 3, 4. The discounts are as follows:

For an annual consumption between			5,000 and 10,000 cbm.	2	per cent.
,,	,,	,,	10,000 and 20,000	3	,,
,,	,,	,,	20,000 and 30,000	4	,,
,,	,,	over	30,000	5	,,

the price of gas for lighting purposes is 16 pf., and for cooking, heating and power purposes 10 pf. per cbm. In other cases large consumers obtain reductions, whether the gas be used for lighting or for other purposes, as for example in Cologne, where the base price for lighting purposes is 16 pf. per cbm., and for heating, cooking, power and other technical purposes 10 pf. per cbm.[1] A much more exceptional arrangement, where gas for cooking, heating and power purposes is charged at lower rates, is to grant discount solely in respect of such low-priced gas. Thus in Brandenburg gas for lighting pays 17 pf. per cbm., gas for other purposes pays from 13 to 11 pf. per cbm. according to the consumption.[2]

In this country the distinction between gas used for lighting and for all other purposes also exists, but does not appear to be nearly as common as in Germany. In Huddersfield, for example, the price for lighting purposes is 2s. per 1000 cubic feet, whilst the price for heating and cooking purposes and motive power is 1s. 6d. per 1000 cubic feet, with 5 per cent discount. In Rochdale the price for lighting purposes is 2s. 8d. per 1000 cubic feet with discount from 2d. to 5d. according to consumption, whilst for purposes other than lighting the price is from 1s. 6d. to 2s. per 1000 cubic feet. In some cases lower rates are granted for cooking and power purposes only.[3]

As far as the use of gas for lighting, heating, cooking and power is concerned, one of the most common arrangements amongst municipal gas undertakings in this country is to distinguish between power and other consumers only. At the same time reductions may be given to large consumers. Thus in the city of Manchester the ordinary price of gas is 2s. 3d. per 1000 cubic feet,[4]

[1] Gas for lighting purposes is charged 16 pf. per cbm. for the first 2500 cbm., and then less by zones until the annual consumption reaches 30,000 cbm., all in excess of this being charged 13 pf. per c m. Gas for other purposes is charged 10 pf. per cbm. for the first 5000 cbm., and then less by zones until the annual consumption exceeds 250,000 cbm., when the excess is charged 5 pf. per cbm.

[2] A zone scale varying from 13 pf. per cbm. for the first 5000 cbm. per annum to 11 pf. per cbm. in respect of all annual consumption in excess of 50,000 cbm.

[3] *E.g.* Buxton: cooking and power 2s. per 1000 cubic feet, other purposes 2s. 3d. net per 1000 cubic feet.

[4] From June 25, 1911, the price of gas used within the city for manufacturing purposes only was reduced

but gas used for motive purposes is charged only 1s. 9d. per 1000 cubic feet. In Birmingham the prices of gas for ordinary purposes are from 1s. 9d. to 2s. 4d. per 1000 cubic feet according to the consumption, whilst the prices for motive purposes are 1s. 6d. and 1s. 9d. per 1000 cubic feet according to the consumption. Another common arrangement is to establish a base price and to make reductions for large consumers without distinguishing in any way the purpose for which the gas is used. Thus, for example, in Oldham the net prices are from 1s. 9d. to 2s. 2d. net according to the consumption. Occasionally, as in Stockport, whilst there is a single price, reductions in favour of large consumers are granted in respect of the gas used for trade purposes only.[1]

One or two special points may be noted here. In some cases where gas for power purposes is sold at lower prices than for lighting purposes, gas used for generating electric light is not charged at the low rates. Thus in Bonn, gas used for generating electricity for lighting purposes is charged at the same price as for light (16 pf. per cbm.), and not at the heating, cooking and power price (10 pf. per cbm.).[2] In Heidelberg the price of gas for lighting purposes is 20 pf. per cbm., for other purposes 12 pf. per cbm., except that gas used for generating electric current for lighting purposes is charged 16 pf. per cbm.[3]

Where higher charges are made for gas for lighting than for other purposes, one or two flames situated in the rooms in which gas is used for cooking or power purposes are, nevertheless, not uncommonly supplied at the lower rates.[4]

from 2s. 3d. to 2s. per 1000 cubic feet providing the annual consumption is not less than 500,000 cubic feet (*Annual Report of the Manchester Corporation Gas Works*, 1910-11, p. 5).

[1] The various prices in this paragraph and the previous one are quoted from the *Return relating to all Authorised Gas Undertakings of Local Authorities*, 1909-10.

[2] *Bedingungen für die Abgabe von Gas aus dem Gaswerke der Stadt Bonn*, § 6.

[3] *Vertragsbedingungen unter denen seitens des stadt. Gaswerks zu Heidelberg Gas an Privat-Konsumenten geliefert, und die erforderliche Einrichtung beschafft wird*, § 13.

[4] *E.g.* in Heidelberg, in a kitchen which is supplied with gas for cooking purposes, one light may be supplied from the same source. (Vertragsbedingungen, etc., § 13.)

In Dresden where gas is sold for cooking purposes, two flames in the kitchen, or one in the kitchen and one in the hall; where it is sold for heating water, one flame in the bath-room; where it is sold for power purposes, two flames in the engine-room may

In some cases lower prices are charged in summer than in winter. This is done to encourage the consumption of gas in summer, but it is very doubtful if the result is satisfactory as people are not likely to use much more light or to do much more cooking or heating in summer than they would if prices remained unchanged, and unless the consumption is considerably increased the total receipts will be diminished. Amongst the towns which have a summer and a winter tariff are Kiel,[1] Cassel[2] and Heilbronn.[3]

§ 12. The supply of gas by prepayment or automatic meters has already been mentioned. The object is to facilitate the use of gas by people of small means who would frequently find it difficult to provide the money to pay quarterly or even monthly accounts, but who may be quite willing to pay for gas in small quantities, as they require it, by placing a coin in a slot in the meter. The annual interest on the capital outlay caused by the provision of the meter and the making of the connection, and the annual allowance for the depreciation of the meter, together with the cost of collection, must be added on to the price of the gas supplied. As the consumption will be comparatively small, the interest and depreciation and collection charge per unit of gas supplied will be comparatively large, and if prepayment consumers are to be placed on the same footing as ordinary consumers, the former will have to pay a higher price than the latter. Where ordinary consumers pay no meter rents the ordinary price already includes an allowance for interest and depreciation in respect of meters, but not as much per unit as is necessary in the case of prepayment meters. In many cases it is very difficult to say whether the extra charge for gas purchased through prepayment meters is more than adequate, just adequate, or less than adequate to meet the interest and depreciation charge, or in other words, whether prepayment consumers are really paying more than, the same as, or less than ordinary consumers for the actual gas. In Berlin, for

be supplied from the meter which measures gas for cooking, heating and power purposes. (*Bedingungen für den Bezug von Gas aus den Gaswerken der Stadt Dresden*, § 8.)

[1] Summer, 13 pf.; winter, 16 pf. per cbm.

[2] Summer, 14 pf.; winter, 16 pf. (power 12 pf.) per cbm.

[3] Summer, 14 pf.; winter, 16.5 pf. per cbm.

example, it is clearly stated in the conditions that the users of prepayment meters shall pay the ordinary price of gas plus a certain sum per cubic meter of gas consumed as rent for the installation[1] (approximately 8d. per 1000 cubic feet). On the other hand, in Bolton where the ordinary consumers pay 2s. 4d. net per 1000 cubic feet and no meter rents are charged, prepayment consumers pay 3s. 4d., or 1s. more per 1000 cubic feet, which should more than cover the rent for the installation and the cost of collection. In most municipal gas undertakings in this country the extra charge to prepayment consumers is more moderate; in fact, so far as the information is forthcoming, it often appears to be insufficient to meet the extra costs. Thus in Manchester, the cost of distribution, management, repairs and maintenance, renewals, interest charges, salaries and wages is 5.20d. per 1000 cubic feet in the case of ordinary meters, while as regards automatic meters it is 13.02d. or 7.82d. more per 1000 cubic feet,[2] whereas the extra charge made is only 3d.[3] so that the automatic meter-user gets an advantage of nearly 5d. per 1000 cubic feet as compared with the ordinary consumer. In Salford the cost of supplying gas by prepayment meters is 10.6d. per 1000 cubic feet dearer than that supplied by ordinary meter. The cost of collectors alone is 2d. per 1000 cubic feet with this class of meter. The extra charge made is 6.33d. per 1000 cubic feet, so that the committee nets 4.27d. less per 1000 cubic feet than in the case of gas sold through ordinary meters.[4]

Where the extra charge for supplying gas by prepayment meters is insufficient to meet the extra cost of providing the gas by this system, the municipality is really giving

[1] The ordinary price of gas is 12.35 pf. per cbm., the rent for the installation is 2.46 pf. per cbm., consequently the prepayment meter supplies 675 litres of gas for 10 pf., or at the rate of 14.81 pf. per cbm. (*Bedingungen für die Gasentnahme durch Automatgasmesser aus den städtischen Gaswerken*, § 7).

[2] See report of statement by Alderman Gibson, Chairman of the Manchester Gas Committee, in the *Manchester Guardian*, December 16, 1910.

[3] Formerly the quantity of gas supplied to automatic meters for 1d. was 30 cubic feet; since September 30, 1911, it is 33 cubic feet, which is equivalent to a reduction in the price from 2s. 9d. to 2s. 6d. per 1000 cubic feet. The price to ordinary consumers is 2s. 3d. (*Annual Report of the Manchester Corporation Gas Works, 1910-19 11*, p. 5).

[4] See the speech by Alderman Phillips, Chairman of the Salford Gas Committee, at the Salford Town Council meeting, June 1, 1910, reported in the *Manchester Guardian*, June 2, 1910.

more favourable terms to the small consumers, who use prepayment meters, than to the larger consumers who use ordinary meters. It is not sound business, but may be justifiable on the grounds of social expediency. This policy of favouring small consumers is seen more clearly where the charge for gas by prepayment meter is the same as by ordinary meter, and still more so where the charge by prepayment meter is less than by ordinary meter. In these last two cases some limitations with regard to the quantity of gas to be supplied by prepayment meters, the value of the tenements in which they may be installed, or the total cost of the installation, must be imposed, otherwise the system might easily be abused. In Wiesbaden, for example, the ordinary price of gas is 16 pf. per cbm., and the same charge is made for gas supplied through automatic meters, provided the annual rent of the dwelling does not exceed 400 marks. If the rent is between 400 and 700 marks the price by prepayment meter is 17 pf. per cbm.[1] The fact that there are two prices according to the rent clearly shows the social character of the terms granted. Towns in which the charge for gas by prepayment meters is less than by ordinary meters are Nürnberg, Fürth and Hanau.[2]

§ 13. The general principles concerning the charging of higher prices outside the municipal boundaries than within them have already been discussed.[3] Here we need only notice that the policy is pretty commonly adopted in the case of gas undertakings of local authorities in this country. Thus in Manchester, corresponding to the three prices of gas supplied in the town for ordinary purposes and power purposes, and by

[1] *Gaswerk der Stadt Wiesbaden. Bestimmungen über die Abgabe von Gas zum Privatgebrauche*, § 8. *Bestimmungen über die Abgabe von Gas mittels Automaten*, §§ 3, 4, 13.

The installation of prepayment meters is allowed in dwellings of an annual value not exceeding 700 marks; in shops, workshops, offices and warehouses, without dwellings attached, of an annual value not exceeding 950 marks, or, with dwellings attached, of an annual value not exceeding 1200 marks. The total cost of the installation may not exceed 75 marks.

[2] Nürnberg: Gas for lighting, by ordinary meter 18 pf. per cbm., by prepayment meter 14 pf. per cbm.

Fürth: Gas for lighting, by ordinary meter 18 pf. per cbm., by prepayment meter 16 pf. per cbm.

Hanau: Gas for lighting, by ordinary meter 19 pf. per cbm., by prepayment meter 15 pf. per cbm.

See *Kommunales Jahrbuch*, 1910, pp. xix-xxiii, also Mombert, "Die Gemeindebetriebe in Deutschland," *Schriften des Vereins für Socialpolitik*, vol. 128, p. 45.

[3] See p. 181, above.

prepayment meters, are three higher prices for gas supplied outside the boundaries.[1] In other cases, where various prices are charged outside the boundaries, they depend roughly upon the distance from the gas works, and not upon the use to which the gas is put or the kind of meter by which it is measured, as for example, in Stockton-on-Tees.[2] Sometimes, although different charges may be made within the area of local authority, a uniform higher charge is made outside.[3]

In connection with a good many municipal gas undertakings where gas for the purpose of street lighting is not provided free, it is supplied at specially low rates, and sometimes the public buildings also receive preferential treatment. Thus in Birmingham gas used for the public street lamps is charged 1s. per 1000 cubic feet and a discount of 5 per cent is allowed, whereas the ordinary prices for lighting purposes vary from 1s. 9d. to 2s. 4d., according to the consumption. In Leipzig, where the price of gas to private consumers for lighting purposes is 18 pf. per cbm., a reduced price of 7 pf. is charged for gas used in public buildings, and a reduced price of 10 pf. is charged for gas used in semi-public buildings, such as the theatres and the market hall.[4] As far as street lighting is concerned, it is very common for the gas to be charged not according to the actual consumption measured by meters, but according to the probable consumption based upon the number of hours which it is estimated that the lamps will burn. For example, in Burnley the annual charge is £2 : 10s. per lamp, including lighting, cleaning and repairing. In Kingston-upon-Hull the annual charges per lamp are for full lights, £3 : 5s; for half lights, £2 ; for Lambeth lamps, £9; for Victoria lamps, £7. In exceptional cases, where it is

[1] The prices are 2s. 3d. per 1000 cubic feet for ordinary purposes, 1s. 9d. for power, and 2s. 6d. by prepayment meter within the boundaries, and 2s. 6d., 2s., and 2s. 9d. respectively without the boundaries.

[2] Price of gas in Stockton-on-Tees 2s. 6d. per 1000 cubic feet. *Beyond*, Thornaby, 2s. 8d. ; Norton, 3s. 4d. ; Billingham, 3s. 10d. ; Wolviston, 4s. All the prices are subject to a 10 per cent discount.

[3] *E.g.* in Blackpool, gas for ordinary purposes, 2s. 2d. per 1000 cubic feet, for power 1s. 10d., by prepayment meters 2s. 11d. Outside the borough 3s.

[4] See Weigel, "Die Gemeindebetriebe der Stadt Leipzig," *Schriften des Vereins für Socialpolitik*, vol. 129, part vii. p. 69.

difficult to fix a meter, private consumers pay in proportion to the estimated instead of to the actual consumption.[1]

§ 14. There remains to be considered the selling policy of municipal gas undertakings with regard to the by-products. The principal by-products associated with the production of coal gas are coke, tar and ammoniacal liquor, and their sale plays a most important part in gas finance, as the better the prices which can be realised for them, the lower the net cost of producing gas, and consequently the more cheaply the gas can be sold. (*a*) The most important of the by-products is coke. The quantity produced depends chiefly upon the quality of the coal employed, the kind of retorts used and the completeness of the carbonisation process, and consequently varies considerably from one works to another. Generally speaking, the quantity of coke made is between 12 and 14 hundredweights per ton of coal carbonised; in other words, the weight of the coke produced is between 60 and 70 per cent of that of the coal used.[2] Some of this coke is employed at the gas works for firing the boilers, heating the retorts and making water gas, if that is produced in addition to coal gas. The rest, which generally represents between two-thirds and four-fifths of the total production, has to be disposed of outside the works.

Various difficulties are associated with the sale of coke. It is very bulky to store, and in any case cannot be kept very long without its tending to break up into breeze, which involves a considerable diminution in value. Further, gas works cannot check the output of coke in response to a fall in price, as the supply of coke depends entirely upon the demand for gas. Consequently it may easily happen that large supplies of coke have to be offered for sale at times when market conditions are entirely unfavourable; it practically amounts to forced sales, and the prices obtained are likely to be unduly low. Thus, as far as the conditions on the side of supply are concerned, gas works are not in a

[1] *E.g.* there is a provision in the Berlin regulations that where gas is provided without being measured, the consumption shall be estimated according to the size of the burners and the time during which it is used. About one half per cent of all the gas consumed is sold in this way.

[2] See Field, *Analysis of Gas Accounts*, and table quoted in Weis, "Die Verwertung der Gasnebenprodukte in den städtischen Gasanstalten," *Schriften des Vereins für Socialpolitik*, vol. 128, pp. 322, 323.

strong position when selling coke. Conditions on the side of demand are also peculiar. In proportion to the value, coke is a bulky article, and consequently cannot stand much transport by rail. If water transport is available and a good outside market can be reached, the position is somewhat better, but the cost of freight will, of course, diminish the sum received for the coke. In all cases works must look first to the local market. The quality of this varies enormously. The local demand may be for trade purposes, or domestic purposes, or both. As far as the demand for trade purposes is concerned this will depend, in the first place, upon the character of the local industries, in the second place, upon the competition of concerns owning coke-ovens which produce coke for industrial purposes, and in the third place, upon the competition of coal. In any town in which, for example, metal-working or cement-making industries are situated, there is generally a good demand for coke. If the price of coal is high, as in the south of England, coke may be used in some industries to replace coal for firing boilers. The competition of private firms owning coke-ovens is, of course, restricted to certain districts; the gas works which probably fare the worst in this respect are those situated in and immediately around the Ruhr district of Germany. The local demand for coke for domestic purposes depends largely upon the habits and customs of the people and upon the price of coal. In Germany, where stoves are used instead of open fire-places, there is a far better chance of inducing householders to use coke than in this country. In the north of Germany, where lignite is comparatively cheap, far less coke is used for domestic purposes than in the south of Germany, where lignite and coal are dear.

Coke may be sold either through dealers or direct to the consumers; the former policy has the advantage of disposing of the coke more quickly and with less trouble and expense, but many municipalities, especially in South Germany, adopt the latter policy to some extent, as it removes the danger of poor prices being obtained for coke owing to a ring amongst the dealers and large consumers. Some of the coke is broken up into suitable sizes and then sold direct to householders, and the rest to dealers and large consumers at

reduced prices or with discounts. In some cases, for example in Cologne, the gas undertaking offers especially favourable prices, and possibly free delivery or delivery at reduced rates, to householders who undertake to purchase regular supplies throughout the year, the quantities, one for summer months and a higher one for winter months, being stipulated beforehand, the coke to be paid for on delivery.[1]

In this country the demand for coke in general does not appear to be so good as in Germany, as the demand for domestic purposes is very much smaller, and almost everything depends upon the demand for industrial purposes. Thus in Birmingham, thanks largely to the presence of the metal trades, the gas works are able to obtain a good 2s. more per ton for coke than the Manchester gas works.[2] In any one town, the price of coke varies roughly in proportion to the price of coal, the prices generally rising and falling together, though not necessarily in the same proportion. As between different towns, the cost of coal is not a good indication of the price which will be obtained for coke, as in some towns the price of coke approaches or even exceeds the price of coal, and in others falls a long way below it. Thus in Birmingham in 1905 the coal cost 10s. ½d. per ton, whilst the coke sold for 9s. 2.31d, or 91.5 per cent of the price of the coal, whereas in Manchester the coal cost 11s. 3d. per ton, but the coke sold for only 7s. 0.57d., or 62.6 per cent of the price of the coal.[3] In this country it appears to be exceptional for the price obtained by the sale of coke to exceed the price paid for the coal, but in Germany it is quite common. Statistics concerning forty-three German municipal gas works in 1906-7 show that the price of coke exceeded that of the coal in twenty-eight cases, and was below it only in fourteen cases. In one case the two prices were equal.[4]

The efforts amongst German gas works to obtain better prices for their coke led in 1904 to the formation of an

[1] Weis, "Die Verwertung der Gasnebenprodukte in den städtischen Gasanstalten," *Schriften des Vereins für Socialpolitik*, vol. 128, pp. 314, 315.

[2] Field, *Analysis of Gas Accounts.*

[3] *Report of the National Civic Federation Commission on Public Ownership*, part ii. vol. ii. p. 223.

[4] See table given by Weis, *loc. cit.* pp. 322, 323.

Association of Gas Works known as the "Wirtschaftliche Vereinigung deutscher Gaswerke, Aktien-Gesellschaft," with its head office in Cologne.[1] The object of the association is to secure the most favourable terms for the sale of the coke and other by-products of the works which are members, and also to assist members in the purchase of apparatus and material.[2] Up to the present the principal work of the association has been to facilitate the sale of coke. Each works is responsible for the sale of its coke in its own local area, and all dealers who purchase from it must undertake not to resell the coke outside the local area.[3] The association undertakes to dispose of all surplus coke outside the local area to wholesale dealers, and imposes upon them the condition that none of the coke shall be sold within the local areas of any of the works which are members of the association.[4] In order to facilitate the sale of coke by the association, the probable surpluses for the year, and the times at which they will be available for delivery, must be notified to the association before February 1.[5] On the basis of this information standard prices are fixed for each district.[6] The association undertakes to sell any extra supplies of coke of which it receives notification after February 1, but in respect of these extra supplies it is not under the obligation to make good the respective standard prices. Any losses, as compared with the standard prices, incurred on the sale of the extra supplies are divided equally amongst the extra supplies disposed of during a business year. Any profits, as compared with the standard prices, realised on the extra supplies belong to the association. Any profit realised on supplies notified by February 1 belong to the gas works which delivered the particular coke. Any loss incurred in respect of duly notified supplies is borne by the association.[7] The general administrative expenses of the association are met by an annual levy from the members, based on the quantity

[1] See the Gesellschaftsvertrag der wirtschaftlichen Vereinigung deutscher Gaswerke, Aktiengesellschaft zu Cöln a. Rh., Satzungen, § 1.

[2] Satzungen, § 2.

[3] *Ibid.* § 10.

[4] *Ibid.* § 10.

[5] *Ibid.* § 10.

[6] *Ibid.* § 12. The districts are West, South, North, and Middle Germany.

[7] Satzungen, § 11.

of gas produced during the previous year; the expenses incurred in connection with the sale of coke, including any sums which the association may have to contribute to make good the standard prices, are met by an annual levy from the members, based on the quantity of the surplus coke sold for them by the association.[1]

The principal object of the association is to protect gas works from outside competition in the sale of coke in their own markets. The association is anxious to sell as little coke as possible, greatly preferring that each works should sell its own in the local area. This is generally the case in South Germany, away from coal-fields and coke works. In Westphalia, on the other hand, much of the coke has to be disposed of by the association. In 1910 there were 163 members of the association, most of which were municipal undertakings. Seventy belonged to the West German group, the largest amongst them, according to production, being Cologne,[2] Düsseldorf,[2] Elberfeld,[2] Barmen,[2] Aix-la-Chapelle, Essen-Ruhr[2] and Bonn;[2] forty-five belonged to the South German group, which included Frankfort-on-the Main, Stuttgart,[2] Strassburg, Carlsruhe,[2] Mannheim,[2] Wiesbaden[2] and Mayence;[2] the North German group contained Hanover, Dortmund, Bielefeld,[2] Osnabrück[2] and twenty-two smaller towns; amongst the twenty-two towns of the Middle German group were Magdeburg,[2] Erfurt and Göttingen.[2] During the year 1908-9 there were 144 members. These works produced 1,200,000 tons of coke, of which 294,000 tons, or something less than 25 per cent, were notified to the association for disposal outside the local areas. The average price obtained by the association was 18.35 marks per ton.

In 1909-10 there were 146 members; their production of coke was 1,241,000 tons, of which 314,000 tons were placed at the disposal of the association. The average price obtained by the association was 17.32 marks per ton. The estimates for 1910-11 showed that the association would have some 360,000 tons to dispose of, out of a total production by members amounting to 1,300,000 tons. It is interesting to notice the great difference in the local

[1] Satzungen, § 17.

[2] The gas works is a municipal undertaking.

consumption of coke: Stuttgart expected to dispose locally of the whole of its production (63,000 tons), and the same was true of Pforzheim (17,000 tons). Magdeburg asked the association to dispose of 1000 tons out of a total production of 39,000 tons. On the other hand, Cologne placed 40,000 out of 97,500 tons, Elberfeld 20,000 out of 39,000 tons, and Düsseldorf 29,700 out of 72,800 tons at the disposal of the association for sale outside the local area.[1]

(*b*) The financial importance of the two remaining principal by-products, ammoniacal liquor and tar, varies from works to works. In some works tar, and in other ammoniacal liquor yields the largest revenue. The quantity and quality of the tar obtained, and consequently the sum for which it can be sold, depend largely upon the quality of the coal and upon the carbonising retorts. The conditions affecting the sale of these by-products are quite different from those affecting the sale of coke. The local markets play little or no part in the determination of prices, and price fluctuations are independent of the cost of coal. Until quite recently all tar had to be disposed of to tar distillers, as no gas works produces enough tar to make it worth while distilling its own tar. The prices offered by tar distillers depend upon the prices which can be realised by the products obtained from tar, and indirectly, therefore, to a considerable extent upon the price of aniline dyes; upon the quantities of tar which are being offered in the market, the supplies from the coke works being the determining factor; and upon understandings which may exist among the limited number of tar purchasers. During the last few years there has been a greatly increased demand for tar for treating roads to check dust, and if this use of tar grows, gas works should become much less dependent upon the tar distillers than they are at present. Most gas works sell their tar by tender, but there are exceptions. In Manchester the corporation has a contract with a tar-distilling firm, under which the tar is sold according to a sliding scale based upon the selling price of the five principal products of tar—naphtha, light oils, creosote, anthracine and pitch. A certain sum,

[1] Wirtschaftliche Vereinigung deutscher Gaswerke A. G., *Geschäftsbericht für das Geschäftsjahr 1909-10.*

fixed by agreement with the distiller, is allowed to the firm to cover the costs of manufacturing, and this is deducted from the market value of the estimated amount of the products which the tar will yield. Whether the corporation really secures better terms in this way than it would under a system of sale by tender, influenced by possible understandings amongst purchasers, is doubtful. A comparison of the average price obtained for tar in Manchester and in other large English municipalities, in one recent year at least, was entirely unfavourable to Manchester.[1]

In Germany several of the gas works which belong to the "Wirtschaftliche Vereinigung deutscher Gaswerke" sell their tar through the association. In 1905-6 the quantity handled was only 596 tons; in 1906-7 it was 8302 tons; in 1907-8, 27,953 tons; in 1908-9, 58,884 tons; in 1909-10, 65,748 tons. The average price obtained during this last year was 21.92 marks per ton.[2]

(*c*) The ammoniacal liquor produced by gas works is an extremely bulky article in proportion to its value, and is consequently very costly to transport. To obtain a satisfactory price for it, a works must utilise it for manufacturing purposes to some extent at least. The two things most commonly done with it are to produce concentrated ammonia or sulphate of ammonia. The latter involves a larger element of manufacture, but enjoys a wider market, as it is much used at home and abroad as manure. On this account many municipalities prefer to make it rather than concentrated ammonia, for which there is only a limited market. Gas works generally sell their own ammonia products, though some German works dispose of them through the "Wirtschaftliche Vereinigung deutscher Gaswerke" which sold 11,219 tons of ammonia products in 1909-10, worth 1,040,000 marks.[3] A few municipal gas undertakings, for example Bonn, Bochum and Bielefeld, sell

[1] See Field, *Analysis of Gas Accounts for the Year ending March 31, 1908*. The average price obtained for tar per gallon was 1.55d. in Nottingham, 1.48d. in Bolton, 1.36d. in Bradford, 1.35d. in Salford, 1.24d. in Leeds, 1.21d. in Leicester and Oldham, 1.20d. in Birmingham, 1.15d. in Carlisle and 1.11d. in Manchester.

[2] Wirtschaftliche Vereinigung deutscher Gaswerke, A.G., *Geschäftsbericht für das Geschäftsjahr 1909-10.*

[3] *Geschaftsbericht für das Geschäftsjahr 1909-10.*

their ammonia products through the "Bochumer Ammoniakverkaufsvereinigung," which is an association composed chiefly of coke works.[1]

Electricity Undertakings[2]

§ 15. The selling policies adopted by municipalities with regard to electric current differ materially from those adopted with regard to gas. In the first place, it is almost impossible to store electric current cheaply, which practically necessitates the installation of sufficient generating plant to meet the maximum demand for current, which will occur at one particular hour in the year, probably between five and six o'clock in the evening on some day in December. Actually the capacity of the plant must be something greater than the maximum demand, to allow of a margin being held in reserve. In the case of gas, the heavy evening demand in winter can be met from supplies accumulated in gasometers during the early morning and the daytime. In the second place, the cost of supplying current is generally not closely related to the quantity of current supplied. In the third place, social considerations play a smaller part in determining the selling policy of electricity than in the case of gas or water.

§ 16. The various selling policies adopted represent different methods of attempting to adjust the charges to the cost of production. The conditions in the electricity industry are similar to those in some other industries, for example railways, in that the special expenses or prime costs are much smaller than the general expenses or supplementary costs. The general or fixed expenses are independent of the utilisation of the undertaking; they consist of the interest and sinking fund charges in respect of capital invested, rates and taxes, office expenses, salaries of officials, the larger part of the wages bill, some of the cost of wear and tear and all that is provided against obsolescence. The special or variable expenses, which depend upon the quantity of current produced, consist of the cost of coal and of oil,

[1] Weis, "Die Verwertung der Gasnebenprodukte," *loc. cit.* p. 328.

[2] In writing this section I have made considerable use of Gustav Siegel, *Die Preisstellung beim Verkaufe elektrischer Energie*, and to some extent of Fritz Hoppe, *Die Elektrizitätswerkbetriebe im Lichte der Statistik.*

of most of the provision for repairs, maintenance, and renewals, and of the smaller part of the wages bill. The fixed expenses, which depend upon the maximum demand for current from the generating station, generally represent some 70 per cent of the total cost of production where current is generated by steam power. No current should be sold for less than the special cost of generating it, as that implies a dead loss to the undertaking. Assuming, then, that every unit of current sold is to bear its proper share of the special or variable expenses, this constitutes a minimum charge, and the problem is to distribute the general or fixed expenses amongst the consumers. The simplest would undoubtedly be to divide them equally amongst the units sold and to charge a uniform price. Under most circumstances this would be neither a sound nor a fair policy, as the fixed expenses are but remotely connected with the quantity of current consumed. Perhaps the easiest way of representing the position is to regard a definite amount of plant as allotted to every consumer, somewhat in proportion to his demand; each consumer is responsible for the fixed charges in respect of his share of the plant, and the more current he consumes the smaller the cost of the fixed charges per unit consumed will be. The more intensively a man uses his installation the more he is entitled to lower charges. There is, however, a further consideration, namely the time at which the current is used. Every evening the load on a generating station rises, that is the proportion of the quantity of current demanded to the maximum amount of current which the station is able to supply; the higher this load, which will reach its peak points every evening about five or six o'clock, the greater the amount of plant which will have to be installed. Any consumer who does not require current at the time when the load is near its peak is entitled to specially favourable treatment, as comparatively few fixed charges are incurred on his account.

Most electricity tariffs take these three factors, the size of demand, the intensity of consumption, and the time of consumption, into consideration, though the extent to which and the way in which this is done vary

from undertaking to undertaking. Sometimes the total amount of each connection is taken as a basis, at other times the maximum amount of energy demanded at the same time. In almost all cases the use to which the current is put is considered and a distinction made between light and power. The demand for power purposes is likely to be more favourable from the point of view of electrical undertakings, both in respect of duration and time, and consequently lower prices are charged to power consumers. Further, in drafting all electric tariffs the capacity and willingness of the consumers to pay has to be borne in mind. This principle of charging what the traffic will bear is not so effectively carried out in the case of drawing up the charges for electric current as in establishing railway rates, but it is nevertheless an important factor in the situation. Its influence is most clearly seen in the extremely low rates which are frequently quoted to large power consumers. The competition of other forms of power renders such low rates necessary, but it is by no means certain that such large power consumers are any real advantage to an electricity undertaking, as it is very probable that they will demand energy at the time of the peak load, in which case extra plant will have to be installed for their benefit. The fixed charges in respect of such extra plant should be borne by these consumers, but in some cases at least, it is doubtful if this happens, and under these circumstances the burden of light consumers will be increased, and not diminished, as should be the case, by the sale of current for power purposes.

§ 17. For the sake of simplicity, the consideration of the distinctions made between the use of current for light and power, and by large and small consumers, may be postponed as far as possible and the principal ways in which electric current is charged for may be examined. (i.) In those cases where the special or variable expenses are very small, as is likely to happen where electricity is generated by water power, the charge for current frequently depends upon the estimated consumption, based on the size of the connection,[1]

[1] *E.g.* in Arosa the price used to be 80 centimes per candle per annum (Siegel, *loc. cit.* p. 137).

or on the size of the connection and the probable duration of the consumption.[1] Under special circumstances this method may be employed where current is generated by steam power, as for example, where electricity is used to light the public passages and stairways of tenement houses or buildings containing flats, but the great bulk of the current must be sold in some other way, based upon the quantity consumed as measured by meter.

(ii.) A second method of selling current is to charge a uniform price per unit sold, or a flat rate as it is generally called. In this case a distinction is always made between light and power consumers, and frequently between large and small consumers. This is probably the commonest method of charging for current, for although it is technically the least sound, it possesses the great advantages of being simple and easily comprehensible to the ordinary lay mind. For example, the charge for lighting purposes is $3\frac{3}{4}$d. per unit[2] in Manchester, 4d. per unit in Portsmouth and 4d. per unit in Sheffield; the charge for power purposes is 1d. a unit in Stepney, 1d. per unit in West Ham and $1\frac{1}{2}$d. per unit in Willesden.[3]

(iii.) A third way of charging for electricity is to take the size of the connection and the quantity of current consumed as bases. The sum to be paid is then composed of two parts, a fixed amount dependent on the size of the connection and a variable amount dependent upon the number of units consumed. The objection may be made to this system that the size of the connection is not a fair basis for distributing the fixed charges, because the capacity of the generators and dynamos installed does not correspond to the total connections, and because consumers do not use

[1] *E.g.* in Chemitz the annual charge for a 16 c.p. lamp used to depend upon the time it was used daily:

Hours	2	2.5	3	4	5	6	7	8
Marks	20	24	28	33	38	43	47	51

and for each additional hour 3 marks (Siegel, *loc. cit.* p. 139; Hoppe, *loc. cit.* p. 236).

[2] A Board of Trade unit is the same as a kilowatt hour, which is equal approximately to $1\frac{1}{3}$ electric horse power for an hour or the consumption of 16 ordinary 16 c.p. glow lamps for an hour.

[3] These prices, as well as others quoted later in this section, are taken from the *Municipal Year Book*, 1911.

the power station in proportion to their connections. There is the further objection that consumers may be led to believe that they are being charged twice over for the same current. This method of charging was once pretty common, but is now somewhat exceptional. It still exists in Manchester as an alternative to a flat rate at the option of the consumer. For lighting there is a fixed charge of £7 per annum per kilowatt of demand (= 2s. 4d. per ordinary 16 c.p. lamp per quarter), plus 1½d. per unit metered; for power a fixed charge of £1 : 5s. per horse power demanded per quarter, plus ⅓d. per unit metered. In Poplar, for power purposes, there is a fixed charge of £4 per annum per kilowatt of demand, plus ½d. per unit metered.

(iv.) A fourth method of charging is to take the duration of consumption as a basis. To calculate this, either the total connection, or the maximum demand at any one time, must be employed, generally the latter, which is measured by meter. Then, in view of the fact that the fixed costs per unit are less, the longer the consumer uses his installation, two prices are charged, a high one for a certain period of consumption, and a low one for all additional consumption. The most usual arrangement is to charge a high price for one hour per day of consumption at the maximum rate[1] and a low price for the rest of the daily consumption. One objection to this system is that it involves the use of an expensive and very complicated meter. Another is that a single high demand may burden the price of light for a whole year. It is likely to check the size of installations, as consumers will be anxious to avoid the possibility of an abnormally high demand on some particular occasion. The limitation of the size of connections is undesirable from the point of view of the undertaking, as it tends to prevent the better utilisation of the plant. This method of charging,

[1] *E.g.* if the most light a customer ever burnt at once was 12 ordinary 16 c.p. lamps, which is equivalent to a demand of some 750 watts, this would be the customer's maximum demand, and every day he would be charged for the current consumed by 12 ordinary 16 c.p. lamps in one hour or 750 watt hours, or ¾ unit, at a high rate and all additional consumption at a low rate. If on any particular day he burnt only 6 of his 16 c.p. lamps instead of the usual 12, it would require two hours of consumption at this rate before the ¾ unit charged at the high price was consumed.

commonly known as the maximum demand system, is largely employed in this country, though generally as an alternative to a flat rate at the option of the consumer. Thus in Hull, for lighting purposes the maximum demand rate is 5d. per unit for 1 hour and 1½d. per unit for all additional daily consumption, the flat rate being 4d. per unit. In Cardiff, for power purposes the maximum demand rate is 4d. per unit for 1 hour, and 1d. per unit for all additional daily consumption, the flat rate being 1½d. per unit. In some cases there is no alternative to the maximum demand system, as in Nottingham for lighting purposes and Belfast for power purposes. In some places the period of consumption at the maximum rate is more than 1 hour per day, as for example in Ealing, where it is 1½ hours, and in Glasgow where it is 2 hours for lighting purposes; in other places the period of consumption at the maximum rate is less in summer than in winter, as, for example, in Birkenhead and St. Anne's-on-Sea (½ hour and 1½ hours respectively). In a few cases the system is based on a quarterly instead of a daily consumption. Thus in Southwark the charge is 6d. per unit for the first 125 hours'[1] consumption per quarter, and a 1d. per unit for all after that. Occasionally the system is based on three prices instead of two. Thus in Southport, the charge for light on the maximum demand system is 6d. per unit for the first hour, 4d. per unit for the second, and 2d. per unit for all additional daily consumption.

The maximum demand system is not the only method of charging which takes the duration of consumption into account. Long-hour consumers may receive preferential treatment in the form of a specially low flat rate or in the form of a discount based upon the number of hours during which the connection is used. Two illustrations of the former arrangement may be given. In Birmingham ordinary light consumers are charged 6d. or 4d. per unit, according to the quarterly consumption and long-hour light consumers 3d. or 2d., according to the quarterly consumption.[2] In Sheffield, long-hour factory lighting, when combined with

[1] 150 hours in the winter quarters.

[2] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part iii. p. 14.

bulk supply, is charged 1d. per unit, as compared with the ordinary price of 4d.[1] Illustrations of the latter arrangement will be found below, where the general question of discounts is discussed.[2]

(v.) A fifth method of charging for current is based on the time at which the consumption occurs, more being charged when the load is high than when the load is low. Hours are fixed, varying generally according to the time of the year, during which higher prices are charged. The object of this method of charging is to bring about a more equal consumption of current throughout the 24 hours, and consequently a better utilisation of the plant and a reduced burden of fixed expenses per unit sold. It is somewhat doubtful how far this method of charging can achieve these ends. As far as lighting is concerned, the consumption of current during the day-time and the later part of the night will hardly be raised; that during the earlier part of the night, as soon as the low price comes into force, may be encouraged. If people burn gas when prices are high and electricity when prices are low, the peak load will be reduced, but this involves a double installation, the expense and unsightliness of which most people will be unwilling to incur, though it is undoubtedly to be found in a good many restaurants. In so far as shops and offices purchase practically all their current at high prices and domestic consumers obtain a good deal at low prices, provided these begin at 8 or 9 P.M. and not at 11 P.M., as happens in some towns, this method of charging takes into consideration, to some extent at least, the capacity of the consumer to pay. As far as power is concerned, there are certain classes of consumers who can avoid using current at the time of the peak load if they so arrange their businesses. These are customers who use power for a short time only every day, such as bakers, butchers and coffee roasters, and also people who employ electrical pumps.[3] In these cases this

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part i. p. 29.

[2] See pp. 231-233.

[3] In Cologne in 1908-9, the amount of the power connection for these purposes was 3710 horse power as compared with a total power connection of 9841 horse power. In Bonn in 1909-10 the amount of the power connection of bakers, butchers and coffee roasters was 311 horse-power as compared with a total connection of 637 horse power (*Geschäftsbericht der Gas-*

method of charging seems very desirable, as the use of current at the time of the peak load is discouraged and a better utilisation of the plant can be brought about. On the other hand, there are many power consumers who must run their machines throughout the working day, and who consequently in winter cannot avoid using current at the time of the peak load. In these cases this method of charging will lead to no better utilisation of the plant, and will make consumers feel that they have a grievance by being charged high prices for part of their current. The objection that a very expensive complicated meter is necessary applies to this system as well as to the maximum demand system.

This method of charging is very common in Germany, and one or two illustrations from that country may be given.[1] Thus in Frankfort-on-the-Main the current for power purposes is charged 15 pf. per unit except from 5 to 9 P.M. during the nine months from August to April, when the price is 25 pf. per unit. In Mayence, as alternative to two flat rates, current for lighting and power purposes is charged 55 pf. per unit during evening hours and 20 pf. during the rest of the day. The evening hours during which the high price is charged are as follows:—

January, 4.30 to 10 P.M.	August, 7.45 to 10 P.M.
February, 5.30 to 10 P.M.	September, 6.30 to 10 P.M.
March, 6.30 to 10 P.M.	October, 5 to 10 P.M.
April, 7.30 to 10 P.M.	November, 4.30 to 10 P.M.
May, 8.15 to 10 P.M.	December, 4.15 to 10 P.M.

In June and July all current consumed is charged at the lower rate. In Düsseldorf, where this system of charging is compulsory for all small-power consumers (connection under 75 kilowatts) and optional for all other power consumers, high prices are charged until 11 P.M. In Leipzig, where the system may be chosen by any consumer, low prices begin as early as 8 P.M., this being the hour when all shops are compelled to close, and consequently the time when

Elektrizitäts- und Wasserwerke der Stadt Cöln für das Jahr 1908-9, and *Betriebs-Bericht der Gas- Elektrizitäts- und Wasserwerke der Stadt Bonn für das Jahr 1909-10*).

[1] The information is taken from the scales of charges of the particular towns.

a considerable diminution of the load on the power station may be expected. In both these cases, too, no high prices are charged in June and July.

A modification of this method of charging exists, in accordance with which, instead of charging high prices during certain stipulated hours, when the load of the power station is high, no current at all is supplied during such hours. Thus a "restricted hour supply" for power, heating and cooking purposes has been established by the Bradford Corporation Electricity Department, a charge of $\frac{3}{4}$d. per unit being made, provided no current is taken from the mains between 4 P.M. and 6 P.M. during the months of October, November, December, January and February. A special time switch is used in connection with this supply.[1]

(vi.) A sixth method of charging, in which the capacity of the consumer to pay is taken into consideration, is that known as the "rateable value system," or "Norwich system" as it was first introduced by the Norwich Corporation. The system applies to private houses. The charge made for a current falls into two parts, the one a fixed payment independent of the consumption, intended to cover the consumer's share of the general expenses, and the other a variable payment based upon the quantity of current consumed. The fixed sum to be paid is based upon the net assessment or rateable value of the house supplied. Amongst the advantages claimed for the system are that it gives a considerable reduction to private houses where electric light is used throughout, as compared with an ordinary flat rate, and that it facilitates the use of electric cooking and heating appliances, as no separate wiring or separate meters are required, which is the case wherever different prices are charged for current for lighting and power purposes. In Norwich, where the system is an alternative at the option of a domestic consumer to a flat rate of $4\frac{1}{2}$d. per unit, the fixed charge is 12 per cent per annum on the rateable value of the house, and all current used is charged at the rate of 1d. per unit; no extra charge

[1] City of Bradford Corporation Electricity Department. *Scale of Charges for Power, Heating and Cooking Purposes, July 1910.*

is made for the use of the meter. The total fixed charge of 12 per cent is payable in four parts, 4 per cent in each winter quarter and 2 per cent in each summer quarter.[1] There are about 5000 electricity consumers in Norwich, of whom over 3000 are domestic consumers; of these more than half have adopted the system.[2]

The same system has been adopted in Bradford, and private residences have the option of selecting it, instead of a flat rate of 4d. per unit or a maximum demand rate of 7d. and 1d. A fixed charge is made of 15 per cent per annum of the rateable value of the property occupied, plus one half-penny per unit for all energy consumed, as registered by meter. The energy supplied at this rate may be used for all domestic purposes. The fixed charge covers and includes meter rent.[3] The rateable value system is proving very popular in Bradford, and the number of applications for a supply to private residences has increased since the rate came into force. There has also been a rapid growth in the number of heating and cooking utensils connected to the supply. The effect of the introduction of the system on the finances of the department is said to be favourable.[4]

§ 18. The reductions in charges made to large consumers may be based, on the one hand, on the number of units consumed or the total amount of the account owing, or on the other hand, on the number of hours during which the connection is used. The latter is technically more sound than the former, as a large consumption may occur entirely at the time of the peak load, when the cost of rendering the service is highest. In some cases both the number of units used and the hours of consumption are taken into consideration. The forms in which the preferential treatment is granted may be discounts or reductions in prices. For example, in Frankfort-on-the-Main the price of current for lighting purposes is 50 pf. per unit for the first 3000 units per annum, and 40 pf.

[1] *The Householders' Guide to Electric Lighting in Norwich*, published by the Corporation Electricity Committee.

[2] This statement is based on information kindly supplied in May 1911 by Mr. F. M. Long, A.M.I.C.E., the Norwich City Electrical Engineer.

[3] City of Bradford Corporation Electricity Department. *Scale of Charges for Lighting, Heating and Cooking Purposes*, July 1910.

[4] These statements are based on information kindly supplied by Mr. Thomas Roles, Bradford City Electrical Engineer.

per unit for all additional units.[1] In Wiesbaden the price for lighting purposes is 60 pf. per unit, but discounts are allowed on a zone scale from 5 to 58⅓ per cent if the total account exceeds 500 marks.[2] In Osnabrück the price of current for power purposes is 25 pf. per unit, but all current used each year in excess of an amount equal to 400 hours' consumption by the whole of the connection is charged only 10 pf. per unit.[3] In Manchester there is a sliding scale of charges for current for motors, varying from 1¼d. per unit for units below 300 per horse power per quarter year to $\frac{7}{10}$d. per unit for units amounting to 600 or more per horse power per quarter year.[4] This latter condition represents an annual consumption of some 3200 hours or more. In Mannheim the reductions in the price of current for power purposes are based both on the quantity consumed and on the duration of consumption. There is a zone scale of prices, all annual consumption below 10,000 units being charged 20 pf. per unit and all annual consumption above 200,000 units, 9 pf. per unit.[5] In addition there is a sliding scale of discounts varying from 5

[1] This and the subsequent illustrations in this paragraph are taken from the scales of charges of the towns concerned.

[2] The zone scale of discounts is as follows :—

On all accounts the amounts between	500 and	1000 marks are entitled to	5	p. c.	dis.
,, ,,	1000 and	2000 ,,	10	,,	
,, ,,	2000 and	3000 ,,	20	,,	
,, ,,	3000 and	4000 ,,	30	,,	
,, ,,	4000 and	5000 ,,	40	,,	
,, ,,	5000 and	12,000 ,,	45	,,	
,, ,,	12,000 and	20,000 ,,	50	,,	
,, ,,	over 20,000	,,	58⅓	,,	

A customer whose annual account was 2500 marks would pay 500 m. + (500 m. − 5 per cent) + (1000 m. − 10 per cent) + (500 m. − 20 per cent) = 2250 m.

[3] *E.g.* if a customer has a 5 horse-power motor representing a connection of 4.4 kilowatts, the first (4.4 × 400) = 1760 kilowatt hours or units of consumption will be charged at the rate of 25 pf. per unit, and all additional annual consumption at the rate of 10 pf. per unit.

[4] The intermediate steps in the scale are 1d. per unit for units amounting to 300 or more per horse power per quarter year, $\frac{9}{10}$d. per unit for units amounting to 400 or more per horse power per quarter year, $\frac{8}{10}$d. per unit for units amounting to 500 or more per horse power per quarter year.

[5] The full scale is as follows :—

The first	10,000 units per annum	20 pf.	per unit.
The next	10,000 units per annum	(10,001-20,000) 17 pf.	per unit.
,,	10,000 ,,	(20,001-30,000) 14	,,
,,	20,000 ,,	(30,001-50,000) 12	,,
,,	50,000 ,,	(50,001-100,000) 11	,,
,,	100,000 ,,	(100,001-200,000) 10	,,

All further consumption per annum 9 pf. per unit.

to 30 per cent, as the annual consumption rises from 300 to 1800 hours.[1]

§ 19. The distinction between the use of current for lighting and power purposes is almost universal, and very frequently a more detailed classification of the different uses to which current is put is made. In most cases the duration of consumption, and to some extent the time of consumption, are considered. Thus electric tramways may be charged more for their current than ordinary power consumers[2] because they do not help to utilise the plant as well, or in other words, because their load factor is lower. On the other hand, street lighting can be supplied more cheaply than private lighting[2] because the duration of consumption is much longer and the load factor consequently higher.[3] Where, as is generally the case, special prices are fixed for current for traction purposes and for street lighting, flat rates are nearly always charged. Other consumers who sometimes receive special treatment are public houses and people who use hoists. The former are offered rates below the ordinary lighting rates, presumably because they use current during long hours.[4] The latter are charged more than the ordinary power rates owing to the very fluctuating character of the demand for current.[5] In some cases a distinction is

[1] The full scale of discounts is as follows :—

5	per cent	if the annual	consumption exceeds	300 hours.
10	,,	,,	,,	600 ,,
15	,,	,,	,,	900 ,,
20	,,	,,	,,	1200 ,,
25	,,	,,	,,	1500 ,,
30	,,	,,	,,	1800 ,,

The annual hours of consumption are ascertained by dividing the total number of units (kilowatt hours) consumed by the number of kilowatts installed, 1 horse power being treated as the equivalent of 0.8 kilowatts.

[2] What is said here may be read in conjunction with what is said on p. 128, above, with regard to over and undercharging.

[3] In Manchester, during 1908-9, the load factors for private lighting, power, traction and street lighting, calculated on the maximum demands, were as follows :—

Private lighting	average 12 per cent	Traction lighting	average 33 per cent
Power	,, 51 ,,	Street lighting	,, 35 ,,

(Manchester Corporation Electricity Department. *Statistics for the Year ending March 31, 1909*, p. 40).

[4] *E.g.* in Wolverhampton public houses are charged 2½d. per unit, the ordinary flat rate being 4d. *Parliamentary Return on Municipal Trading* (*United Kingdom*), part iii. p. 99.

[5] *E.g.* in Manchester hoists are charged according to a sliding scale from 1⅞d. to 1d. per unit, whereas ordinary power consumers are charged according to a sliding scale from 1½d. to 0.7d. per unit.

made between small and large power consumers, each being charged on a different method.[1] In many towns current for light is charged in one way and for power another way,[2] and not uncommonly alternative methods of charging for current for one purpose exist side by side.[3] Where the same method of charging is applied to current for light and for power, the actual charges are nearly always different.[4]

In exceptional cases no distinction is made between light and power consumers, and both are charged the same prices under the same system. Such is the case in Cologne.[5] The system employed is that based on the time of consumption. The two base prices for current are 50 pf. and 16 pf. per unit, the former being charged in the evening, the latter during the rest of the day and night.[6] The prices fall by means of two zone scales as the consumption of current increases, the prices for evening consumption varying from 50 to 12½ pf. per unit, and for consumption at remaining times from 16 to 4 pf. per unit.[7] Further,

[1] *E.g.* in Düsseldorf and Bradford.

[2] *E.g.* in Nottingham current for light is sold on the maximum demand system, for power by flat rate.

[3] *E.g.* in Glasgow current for light is sold either on the maximum demand or on the flat rate system.

[4] *E.g.* in Cardiff current for light 3½d. per unit, for power 1½d. per unit.

[5] See *Bedingungen für den Bezug von elektrischer Energie aus den Elektrizitätswerken der Stadt Coln.*

[6] The hours during which the higher prices are charged are as follows:—

January, 4.30 to 9 P.M.	August, 7.30 to 9 P.M.
February, 5.30 to 9 P.M.	September, 6.30 to 9 P.M.
March, 6.30 to 9 P.M.	October, 5.30 to 9 P.M.
April, 7.30 to 9 P.M.	November, 4.30 to 9 P.M.
May, 7.30 to 9 P.M.	December, 4 to 9 P.M.

In June and July all current is charged at the low rate.

[7] The full zone scales are as follows:—

CURRENT AT LOW PRICES

Annual consumption not exceeding 5000 units; per unit 16 pf.

5001-	10,000	units,	first 5000	units	cost 800	m.	and each additional unit	14	pf.
10,001-	20,000	,,	10,000	,,	1500	,,	,,	12	,,
20,001-	30,000	,,	20,000	,,	2700	,,	,,	10	,,
30,001-	40,000	,,	30,000	,,	3700	,,	,,	8	,,
40,001-	75,000	,,	40,000	,,	4500	,,	,,	7	,,
75,001-	150,000	,,	75,000	,,	6950	,,	,,	6	,,
150,001-	300,000	,,	150,000	,,	11,450	,,	,,	5	,,
300,001-	500,000	,,	300,000	,,	18,950	,,	,,	4·75	,,
500,001-	750,000	,,	500,000	,,	28,450	,,	,,	4·5	,,
750,001-1,000,000		,,	750,000	,,	39,700	,,	,,	4·25	,,
over 1,000,000		,,	1,000,000	,,	50,325	,,	,,	4	,,

those consumers who take only 10 per cent or less of their total supply of current during evening hours obtain a special discount on all current charged at high prices.[1] There is an additional discount in favour of long-hour consumers.[2] The somewhat lengthy details are given in the footnotes, so that any reader who cares can compare this arrangement with the ordinary one which distinguishes between current used for light and for power purposes.

The system of charging higher prices outside than inside the boundaries of a local authority which engages in a trading enterprise, appears to be much less common in the case of electric current than in the case of gas or water. This is probably due to the fact that the small outside areas are in a stronger position in the case of current than where gas or water is concerned; it is comparatively easy to commence operations on their own account, or to obtain a supply in bulk from a power and supply company, or if they are willing, to allow the undertaking to be entirely in the hands of a company. Consequently a large town desirous of supplying outside areas with current will generally have to offer terms as favourable as it gives to its own ratepayers. This is not always so, and in Liverpool[3] and

CURRENT AT HIGH PRICES

Annual consumption not exceeding 1000 units, per unit 50 pf.

1001-	2000 units, the first	1000	units	500 m. and each additional unit			45	pf.
2001-	5000	,,	2000	,,	950	,,	,,	40	,,
5001-	10,000	,,	5000	,,	2150	,,	,,	35	,,
10,001-	20,000	,,	10,000	,,	3900	,,	,,	30	,,
20,001-	30,000	,,	20,000	,,	6900	,,	,,	25	,,
30,001-	40,000	,,	30,000	,,	9400	,,	,,	20	,,
40,001-	75,000	,,	40,000	,,	11,400	,,	,,	17.5	,,
75,001-	150,000	,,	75,000	,,	17,525	,,	,,	15	,,
over	150,000	,,	150,000	,,	28,775	,,	,,	12.5	,,

[1] Customers who purchase 10 per cent or less of total current at high prices obtain 20 per cent reduction on the high prices.

Customers who purchase 8 per cent or less of total current at high prices obtain 30 per cent reduction on the high prices.

Customers who purchase 6 per cent or less of total current at high prices obtain 40 per cent reduction on the high prices.

Customers who purchase 4 per cent or less of total current at high prices obtain 50 per cent reduction on the high prices.

[2] Connections used 1001-2000 hours annually receive 10 per cent discount.

,,		2001-2500	,,	15	,,
,,	over	2500	,,	20	,,

The hours of consumption are to be obtained by dividing the number of units (kilowatt hours) consumed by the number of kilowatts connected.

[3] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 8.

Salford,[1] for example, higher prices are charged outside than inside the boundaries.

Tramway Undertakings

§ 20. There are two principles upon which tram fares may be based, either the length of the journeys may be taken into consideration or it may be ignored. The former policy implies a scale of fares based roughly on the distances travelled; the latter policy implies a uniform fare. The tariffs of many tramway systems are based partly on the one principle and partly on the other, some classes of passengers being charged in the one way and some in the other. The two policies may first be considered in relation to the ordinary fare-paying passengers. The method of charging roughly in accordance with the distance travelled, or in proportion to the service rendered, seems the most natural, and special reasons must be given for adopting the other method.

§ 21. The chief advantage of the uniform fare policy lies in its simplicity; there is no need for the whole system to be divided into stages, nor for some particular ticket to be specially punched by the conductor according to the points between which a passenger wishes to travel. The fares can be collected much more quickly, and a passenger runs no risk of paying too much, owing to his ignorance of the exact points at which fare stages begin and end. Before such a method of charging can be recommended, two important questions must be answered. Can such a policy enable a tramway system to be managed on a remunerative basis? If so, how high must the uniform fare be? It is essential to know this in order to express an opinion on the social aspect of the policy.

What uniform fare, if any, will enable a tramway undertaking to pay its way, depends upon the extent of the system and upon local conditions generally. In a moderate-sized town, if the system is fairly compact, a universal fare of a reasonable amount may be feasible; but if the system is at all spread out—if it contains one or two long routes—it is very doubtful if a uniform charge will prove

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part ii. p. 56.

remunerative. In a big town there is not so much financial risk in carrying passengers a long distance for a comparatively low uniform fare, as this will be compensated for by the large short-distance traffic, though the desirability of assisting long-distance traffic in this way at the expense of short-distance traffic may be questioned. It is frequently suggested that it helps to relieve the congestion in the centres of big towns, but this does not appear necessarily to follow. In the first place, a long journey by tram requires much time, which many people would be unwilling to sacrifice, even if the fare were merely nominal; in the second place, to make the undertaking remunerative it may be necessary to fix the uniform fare so high as to discourage a considerable number of people from using trams at all, and thus people will be compelled to live close to their work. Where a large system is concerned, it may be desirable to encourage medium-length journeys, which can best be done by a specially established scale of fares.

The effect of a uniform fare policy upon the development of a tramway system merits some consideration; there is always a danger that it will tend to check extensions. This is particularly likely to be the case if the business centre of the town does not lie in the middle of the area served by the system. Under these circumstances, the distance to the boundary from the business centre is much further in some directions than in others, and it might be possible to serve some parts of the town only at a loss if a uniform fare to the boundary were charged, in consequence of which the management would be very loath to extend in those directions. In some cases it may be desirable to run trams at a loss to some parts of a town, but the district or districts to be favoured should be chosen deliberately out of social considerations and not left entirely to chance.

Where the different routes are of fairly equal length and not too long to render a universal penny fare unremunerative, the method of charging a uniform fare may prove to be the best,[1] but on the clear understanding that should conditions change and one of the routes be extended, it might require some modification. On the other hand, where the routes,

[1] The question of halfpenny fares is discussed below.

although fairly equal, are too long to admit of a universal fare of less than 1½d. or even 2d., or where the routes are very unequal in length, the charging of a uniform fare may easily prove contrary to the best social interests of the town. So far as British and German municipal tramways are concerned, the method of charging a uniform fare appears to be exceptional. In Hull, where the average length of each route is 2¾ miles, the universal penny fare has been adopted, and has proved very successful, but this may be due to a large extent to the fact that the system is compact, and small in proportion to the population served.[1] In Sheffield a journey from the centre of the city to any tram terminus within the boundary used to cost one penny, but on recently extended routes the charge is three-halfpence in four cases, and twopence in one case where the terminus is well outside the boundary.[2]

§ 22. In carrying out the policy of charging roughly in proportion to the distance travelled, it is necessary to divide each route into stages or sections. In England the method generally adopted is to take each route separately, and to publish a list of fares showing the charges from the starting-point to the terminus and to certain intermediate points, and also the charges from various intermediate points to more distant intermediate points and to the terminus. In this way there may be a large number of overlapping stages. If A and H represent the starting-point and terminus respectively, and B, C, D, E, F, G six intermediate points on a tram route,

A B C D E F G H

the published scale of fares may be as follows:—[3]

A to D	1d.	B to H	2d.
A „ E	1½d.	C „ F	1d.
A „ G	2d.	D „ G	1d.
A „ H	2½d.	D „ H	1½d.
B „ E	1d.	E „ H	1d.
B „ G	1½d.		

[1] The length of street route is something less than 16 miles, whereas the population served is some 280,000. Since July 1908, the fare between 5 and 9 A.M. is only one halfpenny, so it is not quite accurate to talk of a universal penny fare.

[2] The fare is 1½d. from the centre of the city to the Darnall, Ecclesall, Firth Park and Malim Bridge termini, and 2d. to the Handsworth terminus.

[3] The illustration is based on the fares charged on one of the Manchester tram routes.

The longer the route happens to be, the more elaborate the scale of fares becomes.

The system generally adopted in Germany is to divide all routes into sections, and to say how many sections can be travelled for different sums. The route given as illustration might be split up into five sections—AB, BD, DE, EG, and GH,

A	B	D	E	G	H
	1	2	3	4	5

and the charges might be as follows:—

Two sections, 1d. Each additional section, ½d.

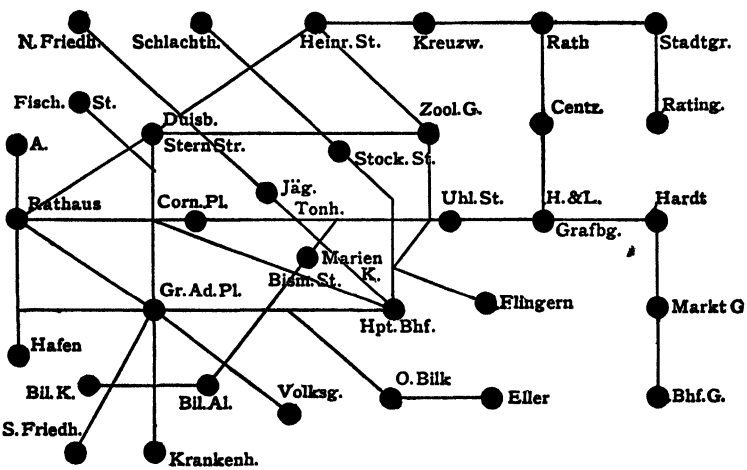
These charges would be the same on all other routes, so that it would not be necessary to draw special attention to them. All that has to be indicated is the fare stages, or the dividing points of the sections. This method practically does away with the need for elaborate scales of charges to be hung up in every tram according to the particular route on which it is running; a small chart or plan will give the information for the whole system. On the following page will be found a reproduction of such a chart or plan; each black dot indicates a fare stage, and the journey along a line from one stage to the next stage constitutes a section, whether it involves changing cars or not.[1] Thus, commencing from the stage marked "S. Friedh." in the bottom left-hand corner of the plan, there are four sections—one to "Bil. K.," one to "Gr. Ad. Pl.," one to "Bil. Al.," and one to "Krankenh." As the first and last of these stages represent termini, it is only the other two which are of much practical use. This small plan is reproduced on every tram ticket, and the conductor punches two holes to show between what fare stages a passenger is travelling.

A disadvantage of charging roughly according to the distance travelled appears to be that it penalises people who commence or end their journey in the middle of a stage or section. This can be overcome to some extent by making the sections smaller and allowing more sections to be travelled for the fare paid. Under the English method this difficulty can be met by overlapping stages being intro-

[1] This point is referred to more specifically below on pp. 256-260.

duced, such as CF in the illustration given above. The only way of giving everybody his money's worth, wherever he happens to get on a tram, is to adopt or even extend the system employed in Frankfort-on-the-Main, where a passenger is entitled to travel 4 kilometers for 10 pf., the distance to be measured from the point where the passenger enters the car, if this is a fare stage, otherwise from the last fare stage.

PLAN OF DÜSSELDORF TRAMWAY SYSTEM SHOWING THE FARE STAGES [1]



The fare stages are close together in the centre of the town, though somewhat wider apart farther out.[2] Such a system is not without its drawbacks, especially if the fare stages are very numerous, and if through tickets are issued from one route to another. The conductors have frequently to refer to elaborate tables showing the distance from every fare stage to practically every other point on the system, in consequence of which delays will often occur in collecting the fares, and a new fare stage may easily be reached

[1] The following instructions are printed on each ticket:—

Fare for	2 sections	= 10 Pf.	
,,	3 or 4	,,	= 15 ,,
,,	5	,,	= 20 ,,
,,	6	,,	= 25 ,,
,,	7 or 8	,,	= 30 ,,

Only one change of cars allowed with a 10 pf. ticket.

The fare stage Corneliusplatz is not counted on journeys from Rathaus to Grafenberg and beyond.

[2] There is a fare stage every 300 or 400 meters in the town, and farther out they are about double that distance apart.

before all the fares have been collected. This system is known in this country as the "fair fare" system, and is adopted on the lines of the British Electric Traction Company. The routes are divided into short sections, and fares are charged according to the number of sections travelled. The routes on which it is applied are presumably not very crowded. From a social point of view, it is doubtful if it is a desirable policy to adopt, as it does away with the possibility of encouraging journeys of particular lengths by offering specially favourable terms.

§ 23. Regarding the distance which may be travelled for different fares, three different policies may be distinguished: the charge per mile may increase, remain constant, or decrease, as the journey becomes longer. The first and the last policies are much more common than the second policy. One of the few towns which adopts the second policy is Frankfort-on-the-Main, where 10 pf. are charged for the first 4 kilometers, and 5 for each additional 2 kilometers. In Dresden 10 pf. are charged for the first four sections, and 5 pf. for every additional two sections. Another town where the rate is constant is Glasgow, where the average fare charged per mile is .45d. on the 1d., 1½d., 2d., 2½d., 3d., 3½d. and 4d. stages. In this country a common arrangement appears to be to increase the charge per mile as the fare rises above a penny, the object being apparently to favour the passengers who travel two miles or so, rather than the long-distance passengers. Thus in Manchester and Liverpool the average fares charged per mile are :—[1]

MANCHESTER.			LIVERPOOL.		
.452d.	on the	1d. stage.	.413d.	on the	1d. stage.
.482d.	„	1½d. „	.452d.	„	2d. „
.495d.	„	2d. „	.471d.	„	3d. „
.511d.	„	2½d. „	.478d.	„	4d. „
.527d.	„	3d. „			
.531d.	„	3½d. „			
.518d.	„	4d. „			

[1] The average fares charged on different British systems are taken from the *Report by the General Manager of the Manchester Corporation Tramways re Proposed Extension of the Time during which Workpeople's Fares are in Operation, April 1911.*

The reverse policy of lowering the rate of charge with the increase in the distance is also pursued, though it is difficult to find cases where it is carried out quite consistently. For example, in Leyton and Bolton the average fares charged per mile are:—

Leyton.			Bolton.		
.582d.	on the	1d. stage.	.681d.	on the	1d. stage.
.592d.	,,	1½d. ,,	.631d.	,,	1½d. ,,
.546d.	,,	2d. ,,	.608d.	,,	2d. ,,
.541d.	,,	2½d. ,,	.623d.	,,	2½d. ,,
.527d.	,,	3d. ,,	.615d.	,,	3d. ,,
.517d.	,,	3½d. ,,	.713d.	,,	3½d. ,,
.543d.	,,	4d. ,,	.622d.	,,	4d. ,,

Many tramway undertakings appear to be actuated by no clearly-marked policy in the matter of the rate of charge, the fares being selected according to the situation of the more important street crossings, or of the centre points of suburban areas, or of public-houses, without special reference to the distances. In some towns the penny stages commencing from the centre are longer than the penny stages on other parts of the system, with a view to assisting people to live well away from the centre at the lowest possible cost. This, for example, is the case in Manchester.

In Germany the most usual arrangement appears to be to charge lower rates the longer the journey, which tends to encourage long journeys without discouraging short ones in the way in which a uniform fare must do. In Cologne, for example, 3 sections may be travelled for 10 pf., 6 sections for 15 pf., and 9 sections for 20 pf. In Düsseldorf, 2 sections may be travelled for 10 pf., 4 for 15 pf., 5 for 20 pf., 6 for 25 pf., and 8 for 30 pf. In Mayence, the charges are 10 pf. for 3 sections, 15 pf. for 5 sections, 20 pf. for 7 sections, and 25 pf. for 9 sections. On the joint system of Mannheim-Ludwigshafen a/R., 3 sections cost 10 pf., 5 sections 15 pf., 8 sections 20 pf., and 12 sections 25 pf.[1]

§ 24. One of the most debatable questions in connection with the fixing of tramway charges is the desirability of

[1] The information concerning the German towns is quoted from the tariffs published by the municipalities concerned.

introducing halfpenny fares.[1] The great majority of tramway experts appear to be opposed to them; the general public is usually keen on securing their introduction, and, once they have been obtained, is desirous that the distance which may be travelled for a halfpenny should be increased. Where the halfpenny fare is introduced it is presumably with the object of creating a new traffic without disturbing the receipts from penny-fare passengers.[2] This may be possible if the distance which can be travelled for a halfpenny is quite short, say half a mile, and if the whole tramway traffic is distributed fairly evenly throughout the day. The importance of this latter consideration cannot be exaggerated. In some towns there is a very large inward traffic in the morning between eight and nine, and a very large outward traffic in the afternoon between five and seven, and the cars are likely to be so crowded at these hours that halfpenny passengers could only be carried by displacing more remunerative passengers who pay larger fares. Quite likely it would be impossible to put on any more cars owing to the congestion of traffic in the centre of the town, but even if it were possible, it would never pay to do it in towns where people work in the centre, and mostly dwell away from the centre, as in this case comparatively few people wish to enter a car after it has left the centre. Under these circumstances the cars would probably be half empty before they had completed a third or a quarter of their journey. In a town where the population is very dense, and where dwellings and also works are fairly well distributed throughout the town, people will be anxious to enter as well as to leave cars the whole length of the routes, so that the cars are likely to remain fairly well filled throughout their

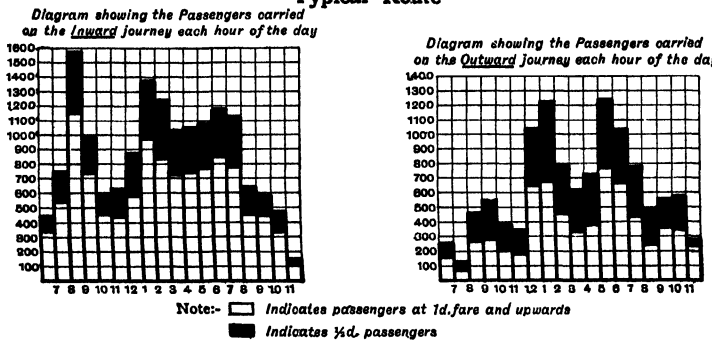
[1] The best information on this subject is contained in the *Report of the General Manager of the Manchester Corporation Tramways in Regard to Halfpenny Stages*, issued in 1909, and in a report of the General Manager of the Croydon Corporation Tramways, *Information respecting Halfpenny Fares*, February 1911. There is also a *Report of the Tramways Committee to the Salford Council upon the Subject of the Introduction of Halfpenny Stages on the Tramways Undertaking*, issued in 1906. All these publications contain information concerning numerous municipalities. The various special reports of the General Manager of the Glasgow Corporation Tramways refer almost exclusively to the halfpenny fare movement in that city. See footnote (1) on p. 247.

[2] Cf. *Report of General Manager of the Glasgow Tramways on Halfpenny Fares*, August 1903, p. 2.

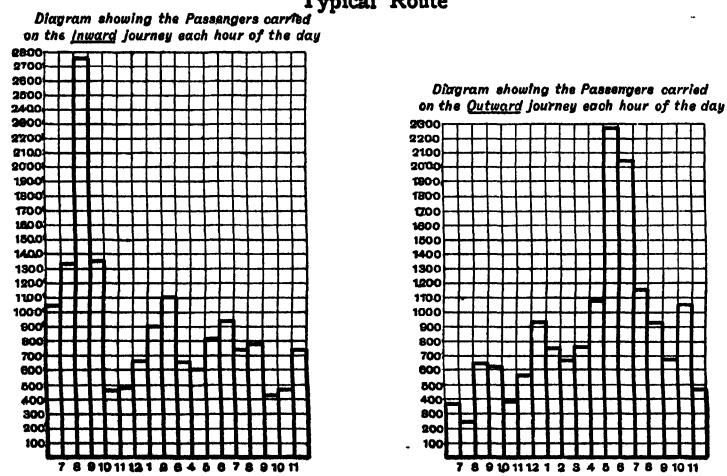
journey if halfpenny fares are introduced. The great difference which exists in the character of the tramway

TRAMWAY PASSENGER TRAFFIC DIAGRAMS

GLASGOW CORPORATION TRAMWAYS
Typical Route



MANCHESTER CORPORATION TRAMWAYS
Typical Route



traffic of different towns is clearly brought out by the accompanying diagrams, which show the passenger traffic at different hours of the day on a typical Glasgow and on a typical Manchester route.[1] The great "peak" loads in the

[1] The figures on which these diagrams are based were very kindly supplied to me by Mr. J. M. M'Elroy, General Manager of the Manchester Corporation Tramways, and they will be found printed in Appendix C, p. 396.

Manchester traffic at rush hours into town in the morning and out of town in the evening are very conspicuous. It will be noticed with regard to Glasgow, where the average length of the halfpenny stage was 1020 yards when the information concerning the number of passengers carried was obtained, that the halfpenny passengers do not tend to bring about a more even distribution of the traffic during the various hours of the day.

Before halfpenny fares can be introduced the financial aspect of the problem must be very carefully considered; above all, the effect upon the penny passengers must be borne in mind. In most towns the penny passenger is the mainstay of the tramway system, and it is difficult to see how halfpenny fares can be introduced without seriously diminishing the number of penny passengers. In Manchester, for example, the penny passengers represent some two-thirds of all the passengers carried, and the receipts from them some 56 per cent of the total revenue. The average length of the penny stage is 2 miles, 372 yards; careful inquiries have been made with regard to the distance travelled by the various penny passengers, and it has been ascertained that 35 per cent of them travel only a mile or less. If halfpenny stages averaging one mile in length were adopted, a large number of those who now pay a penny and travel a mile to a mile and a half would probably walk to the halfpenny stage, and thus be transferred to the halfpenny class. In this way some 50 per cent of the penny passengers would be transferred to the halfpenny class, involving a loss of revenue of £107,000 per annum. The introduction of the halfpenny fare would probably lead to an increase in the number of passengers carried, but to compensate for this loss of revenue it would be necessary to carry 51 million additional halfpenny passengers. This could not be done without greatly increasing the number of cars, and consequently the working expenses and the fixed charges, so that there would be a serious loss even if this very large number of additional passengers were secured. The same inquiry showed that some 20 per cent of the penny passengers travel only three-quarters of a mile or less. If a halfpenny stage of this length were adopted,

probably half of those who travel from three-quarters of a mile to a mile, 15 per cent of the total, would avail themselves of the halfpenny fare. In this way some 27½ per cent of the penny passengers would be transferred to the halfpenny class, involving a loss of revenue of some £59,000 per annum. If half-mile halfpenny stages were adopted, the 10 per cent of the penny passengers who travel half a mile only, and about half of those who travel between one half and three-quarters of a mile, or 15 per cent in all, would pay a halfpenny only, which would reduce the revenue by £32,000 per annum. Another factor which would tend to increase the loss would be the impossibility of properly collecting short-distance halfpenny fares at rush hours on large cars which carry eighty passengers.[1] If detailed investigations concerning the probable effects of the introduction of halfpenny fares were made in other towns, similar conclusions to those come to in Manchester would probably be reached.

The history of the halfpenny fare movement in Glasgow throws considerable light on the question of halfpenny fares generally, and is consequently deserving of special notice. The halfpenny fare was introduced in Glasgow when the Corporation took over the horse tramways in 1894. The penny stage then averaged rather over a mile, and for a halfpenny, half that distance could be travelled.[2] In 1896 the penny stage was extended to cover three consecutive halfpenny stages, and again in 1902 to cover four consecutive halfpenny stages.[3] During the year following the last change 32.05 per cent of the passengers paid a halfpenny fare, and 60.97 per cent paid a penny fare, 18.11 per cent of the total revenue being obtained from the former and 68.91 per cent from the latter source.[4] Since 1903 an agitation in favour of lengthening the halfpenny stage has been carried on almost continuously, and on various occasions the Tramways Committee have instructed their General

[1] All the information concerning the probable effects of the introduction of halfpenny fares in Manchester is taken from the *Report of the General Manager of the Manchester Corporation Tramways in Regard to Halfpenny Fares.*

[2] *Report on Halfpenny Fares*, by Mr. John Young, General Manager of the Glasgow Corporation Tramways, August 1903, p. 1.

[3] *Ibid.* p. 2.

[4] *Ibid.* p. 2.

Manager to report on the subject.[1] In 1903, in 1906, and again in 1910 the suggestion was made to extend the average length of the halfpenny stage from a little over half a mile[2] to three-quarters of a mile. On each occasion the General Manager pointed out that the proposal would involve not merely a serious financial loss owing to the transfer of many penny fare-paying passengers to the halfpenny class, but also a very large rearrangement of the halfpenny stages, so that three instead of four should go to make up a penny stage. In consequence of such rearrangement many important crossings, which then constituted the starting-points of fare stages, would be ignored, to the great inconvenience of the general public. A further practical difficulty would arise in connection with the number of three-quarter-mile halfpenny stages which could be travelled for 1½d. and 2½d., as the system of fixing fares then in vogue would allow four and a half halfpenny stages to be travelled for 1½d., and seven and a half for 2½d.[3]

Another form which the suggested concessions to short-distance passengers took was the adoption of a coupon system by which two halfpenny (half-mile) stages could be travelled for three farthings. Quite apart from the financial aspect of the problem, a coupon system was considered objectionable on account of the abuses to which it might easily lead,[4] whereas a cash fare of three farthings would have led to an inundation of the town with farthings, which would have been very inconvenient, to say the least of it. The General Manager pointed out the fall in the revenue which would be likely to occur, and expressed himself as strongly of the opinion that when the time came for a concession to be given in the shape of reduced fares, it should be given in such a way that the whole body of the citizens should get the full advantage, and not merely the short-distance passengers, as would be the case in connection

[1] Reports, Notes, or Memoranda on the subject were issued in August 1903, December 1903, April 1907, November 1910, March 1911, and November 1911.

[2] The average length of the halfpenny stage was 1020 yards or .58 of a mile.

[3] See the General Manager's *Reports* of August and December 1903, April 1907, and November 1910.

[4] This point is referred to on p. 261, in connection with the subject of discount tickets.

with the proposed concession.[1] The members of the Corporation, however, had apparently made up their minds to give some concession of the kind suggested, and a modification of the proposal, in the form of the two-stage fare, was introduced in January 1911 by way of experiment. Under this system a passenger could travel two halfpenny (half-mile) stages on each of two separate cars for three halfpence. The first two stages had to be travelled on the car on which the ticket was purchased, the second two stages on any other car, on any route, and at any time. This practically amounted to allowing people to travel two halfpenny (half-mile) stages for three farthings. In operation the two-stage ticket was somewhat of a nuisance; on the one hand the passenger required to ask for this particular ticket, and on the other hand, the ticket, after being used and cancelled by the punch, had always a money value.

The effect of the introduction of the two-stage fare can best be seen from the accompanying table, which shows the number of passengers carried at different fares for the first forty-four weeks during which the system was in force,[2] as compared with the corresponding weeks for the previous year. During this period some thirteen and a half million two-stage (1½d.) tickets were issued, and with them some twenty-six and three-quarter million journeys were made. On the other hand nearly fourteen million fewer penny passengers were carried than in the previous year. If the penny passengers had continued to constitute about the same proportion of the total passengers as previously, or, what would have had approximately the same result, if each journey made with a two-stage ticket had cost a penny instead of three farthings,[3] the number of penny passengers would have increased by nearly thirteen millions, and the

[1] Glasgow Corporation Tramways, *Notes by the General Manager on Proposals for the Alterations of Fares and Stages*, November 1910, p. 2.

[2] The system was actually in force forty-seven weeks, from January 15 to December 9, 1911, but the statistical information tabulated above was prepared at the end of November, when a modification of the system was being considered by the Glasgow Tramway authorities.

[3] During the forty-four weeks in 1910 the penny passengers represented 59.364 per cent of the total. During the corresponding period in 1911 the penny passengers represented 47.159 per cent, and the two-stage passengers 12.509 per cent, or together 59.668 per cent of the total.

TABLE showing the Number of Passengers carried at Different Fares on the Glasgow Corporation Tramways from January 15 to November 18, 1910, and from January 15 to November 18, 1911.[1]

Fares.	Passengers carried from January 15 to November 18, 1910.		Passengers carried from January 15 to November 18, 1911.		Increase (+) or Decrease (−) in 1911 as compared with 1910.	
	Number.	Percentage of Total.	Number.	Percentage of Total.	Number.	Percentage.
½d.	53,662,082	27.749	59,634,070	27.881	+ 5,971,988	+ 11.129
Two-stage Issued.	...	...	13,513,714	6.318	+ 26,756,393	...
Two-stage Returned.	...	...	13,242,679	6.191		
1d.	114,801,182	59.364	100,866,192	47.159	− 13,934,990	− 12.138
1½d.	15,834,739	8.188	17,079,439	7.985	+ 1,244,700	+ 7.861
2d.	4,890,554	2.529	5,209,201	2.436	+ 318,647	+ 6.516
2½d.	2,081,869	1.077	2,220,010	1.038	+ 138,141	+ 6.635
3d.	1,069,729	.553	1,098,833	.514	+ 29,104	+ 2.721
3½d.	905,440	.468	890,611	.416	− 14,829	− 1.638
4d.	138,313	.072	133,147	.062	− 5,166	− 3.735
	193,383,908	100.000	213,887,896	100.000	+ 20,503,988	+ 10.603

[1] Table prepared from information kindly supplied by Mr. J. Dalrymple, General Manager of the Glasgow Corporation Tramways.

receipts would have been some £27,000 more than they actually were during the forty-four weeks.

This sum, then, may be regarded as representing the cost of the experiment during the period, and it is at the rate of about £32,000 per annum. This is considerably less than the loss estimated by the General Manager, which was at the rate of £70,000 per annum;[1] fewer people availed themselves of the two-stage ticket than was anticipated, but this is probably explained to a considerable extent by the fact that these tickets were not issued automatically by the conductors to people who wished to travel two stages on any one route, but only to such passengers as expressly asked for them. The proportion of the total passengers availing themselves of the two-stage tickets would undoubtedly have increased as people became more accustomed to the system. Even during the ten months that the two-stage fare was in force, a growing proportion of passengers availed themselves of it.[2]

In December 1911 the Glasgow Corporation decided to make a further concession by way of experiment for three months; the two-stage fare was abolished and passengers were to be entitled to travel two of the original (half-mile) halfpenny stages for a halfpenny, or in other words, the distance which might be travelled for a halfpenny was doubled. In 1907 it had been estimated by the General Manager that half the penny passengers would become halfpenny passengers in consequence of such a change in the fares, as inquiries had shown that, roughly, half the penny passengers travelled only about a mile or less.[3] At that time this represented an annual loss of revenue of £130,000, though the natural growth in the number of passengers, together with such increase as would have been

[1] Glasgow Corporation Tramways, *Notes by the General Manager on Proposals for the Alteration of Fares and Stages*, November 1910, p. 2.

[2] During the first week that the two-stage fare was in force, viz. that ending January 21, 1911, 454,744 passengers, or 10.04 per cent of the total, travelled with these tickets, during the eighth week 550,612 or 11.70 per cent of the total passengers travelled with these tickets, and during the forty-seventh and last week 767,140 or 15.22 per cent of the total passengers travelled with these tickets.

[3] Glasgow Corporation Tramways, *Report by the General Manager on the Question of the Extension of the Halfpenny Stage*, April 1907, p. 8.

occasioned by the reduction of the fare, would have minimised this loss to some extent. No further information was available in the autumn of 1911, and the General Manager in a memorandum summarised the position thus: if no more passengers are carried, the revenue of the department must suffer severely; and if there is a large increase in the number of passengers carried, our present stock of cars will be quite inadequate.[1]

TABLE showing the Number of Passengers carried at Different Fares on the Glasgow Corporation Tramways during the five Weeks ending January 14, 1911, and January 13, 1912.[2]

Fares.	Passengers carried during five Weeks ending January 14, 1911.		Passengers carried during five Weeks ending January 13, 1912 (first five Weeks of Double Halfpenny Stage).		Increase (+) or Decrease (−) in five Weeks ending January 13, 1912, as compared with Corresponding Period for Previous Year.	
	Number.	Percentage of Total.	Number.	Percentage of Total.	Number.	Percentage.
½d.	6,632,980	28.49	16,872,504	59·41	+10,239,524	+154·44
1d.	13,751,153	59.07	8,585,243	30·23	−5,165,910	−37·57
1½d.	1,921,870	8·25	1,929,200	6·80	+7,330	+ ·38
2d.	550,616	2·36	561,866	1·98	+11,250	+2·04
2½d.	211,273	·91	229,570	·81	+18,297	+8·67
3d.	111,729	·48	113,524	·40	+1,795	+1·61
3½d.	87,333	·38	90,119	·32	+2,786	+3·20
4d.	13,131	·06	13,390	·05	+258	+1·97
	23,280,086	100·00	28,395,416	100·00	+5,115,330	+21·97

The new system came into force on December 10, 1911. During the first week there was an increase of 461,175 in the number of passengers carried, as compared with the previous week, and a fall of £1275 in the receipts. If a comparison is instituted between the first five weeks during which the new system has been at work and the corresponding period of the previous year, it will be seen that the number of passengers carried has increased by some five millions, though it is impossible to say how many of these additional passengers have been induced

[1] Glasgow Corporation Tramways, *Memorandum by General Manager re Halfpenny Fares*, November 1911.

[2] The table is based on information kindly supplied by Mr. J. Dalrymple, General Manager of the Glasgow Corporation Tramways.

to travel by the lengthening of the distance which can be travelled for a halfpenny. As far as the takings are concerned, these have remained practically unchanged. The penny passengers, who formerly constituted about 60 per cent of the total passengers, constitute about 30 per cent under the new system, and the halfpenny passengers, who formerly constituted about 30 per cent of the total passengers, now constitute about 60 per cent. Roughly, half the increase in the number of halfpenny passengers was due to the transfer of five millions from the penny class; the other half was accounted for by some five million persons riding short distances who had previously walked. The detailed figures relating to the first five weeks during which the new halfpenny fares were in force are given above, together with the corresponding figures of a year ago, for purposes of comparison. The receipts during the first five weeks of the new halfpenny fare were £92,892, the number of passengers per car mile were 15.11, and the revenue per passenger was .78d., the figures for the corresponding weeks a year ago being £92,805, 10.60, and .96d. respectively.

No information is available to show the increase in the running and fixed expenses of the department, which must be very considerable in view of the large additional traffic which has to be handled. Until this is available the exact cost of making the experiment will not be known. Mr. J. Dalrymple, the General Manager, speaking on the basis of the traffic returns for the first three days of the new fare system, estimated that the loss per annum, as compared with the previous years, would be between £60,000 and £70,000.[1]

Two practical results of the lengthening of the halfpenny stage in Glasgow are deserving of notice; in the first place, there has been a great increase in the "peak" loads in the morning, at the dinner hour and in the evening; and in the second place, the work of the conductors has been rendered exceedingly difficult, especially in view of the fact that the great increase of passengers

[1] Report of a lecture in Govan by Mr. J. Dalrymple on the Glasgow Tramway System, *Glasgow Herald*, December 14, 1911.

has come chiefly during certain hours and that it is largely confined to the central portions of the system.[1] The overcrowding of the cars is a serious drawback from the point of view of the general public; the difficulty in collecting fares entails a financial loss on the Tramway Department. Both these troubles may be overcome, to some extent at least, by the employment of more cars, as soon as they can be built,[2] but the remedy, it goes without saying, will considerably increase the expenses of the department.

Whilst the Glasgow experiments in halfpenny fares are undoubtedly very interesting, it would be a great mistake to seek to secure the general adoption of one mile, or even half-mile halfpenny stages in all towns. Quite apart from the great difference in tramway traffic conditions in various towns, which has already been emphasised, two social aspects of the halfpenny fare must be borne in mind. In the first place, it tends to check the decentralisation of the population and to counteract the good effects of the long penny stage in this matter. In the second place, the people who are likely to benefit most by it are those who stand least in need of relief, namely, the business people moving about the centre of the towns.[3] Another aspect of the halfpenny fare, which is intimately related to the one which has just been mentioned, is the possibility, if not the probability, that every halfpenny passenger is carried at

[1] These statements are based on information kindly given to me by Mr. Dalrymple.

[2] Fifty new cars are being built at the present time (January 1912).

[3] That this has been the experience of Glasgow is brought out in the *General Manager's Report on the Extension of the Halfpenny Fare*, April 1907, p. 4: "It is a fallacy to suppose that the wage-earning class forms the bulk of the halfpenny passengers. It has been ascertained that on the early cars specially provided for this class one passenger in five takes a halfpenny ticket, whilst the average all over is one passenger in three. From a census of passengers travelling on early morning cars the percentage at the different fares was found to be as under :—

½d.	passengers	20.4	per cent	[29.35]
1d.	,,	72.3	,,	[60.10]
1½d.	,,	6.2	,,	[7.00]
2d.	,,	0.94	,,	[1.99]
2½d.	,,	0.06	,,	[.65]

It will therefore be seen that the people who use the halfpenny stage most are those who are moving frequently about the city, and of course if an extension of the halfpenny distance were given, this class would benefit most from the change."

For purpose of comparison I have put the percentages of all passengers carried in 1906 in brackets behind those relating to passengers on early cars. Of the total passengers, .91 per cent paid a fare of 3d. and upwards.

a dead loss, or, in other words, that the short-distance passenger may be subsidised at the expense of the long-distance passengers, which does not appear to be either socially or financially desirable. Information on this point is not available with regard to many towns, but the experience of Glasgow and Manchester in this connection may be quoted. In 1907 the General Manager of the Glasgow Corporation Tramways stated that almost the whole of the fare received from the halfpenny passenger was expended in the fixed charges, and indeed for that year he calculated that the halfpenny passenger would contribute nothing towards the actual running of the car, or that, in other words, the whole of the running costs and profits would be derived from the passengers paying one penny and upwards.[1] In Manchester halfpenny fares have been adopted on the circular and cross routes only, and not on the main routes. The average length of the stage is 1431 yards. The service is very popular, and on the circular-route cars 33 per cent more passengers per mile are carried than on the other routes, yet the *income does not cover the expenditure*.[2] Thus in Manchester as well as in Glasgow halfpenny passengers are carried at a loss.

A brief reference may be made to the experience of some other towns in the matter of halfpenny fares. The chief officer of the London County Council Tramways has expressed the opinion that on large tramway systems the halfpenny fare is a valuable asset if short stages are adopted, but the tendency nowadays is gradually to lengthen these stages, and they are becoming unprofitable by encroaching on the reasonable penny stage. On small systems it is a great source of danger, and should be avoided.[3] In London in 1909-10 a quarter of all the passengers carried paid a halfpenny fare, the average length of the halfpenny stage being 1072 yards. The General Manager of the Sheffield Corporation Tramways reports that passengers paying half-

[1] Glasgow Corporation Tramways, *General Manager's Report on the Extension of the Halfpenny Fare*, April 1907, p. 8.

[2] *Report of the General Manager of the Manchester Corporation Tramways in regard to Halfpenny Fares*, April 1909, p. 4.

[3] Presidential Address to the Municipal Tramways Association, September 1909. Quoted in the *Croydon Report*, p. 1.

penny fares in Sheffield are now 20 per cent of the whole, and if kept to the limit of half a mile for a halfpenny are probably profitable.[1] At the beginning of 1911 information respecting halfpenny fares was collected concerning eighty-seven municipal tramway undertakings.[2] On eighteen of these systems halfpenny fares had been entirely adopted, on nine they had been partially adopted, and on sixty they had not been adopted.[3] The fact that halfpenny fares have been adopted on a system does not prove that the manager concerned believes in them, as several tramway managers on whose systems they have been introduced hold unfavourable opinions about them.[4] The managers of all the more important municipal tramway undertakings, where halfpenny fares have not been adopted, express themselves as strongly opposed to them.[5]

§ 25. A problem closely connected with the fixing of ordinary fares is the issue of through tickets from one route to another, or the granting of permission to passengers to

[1] Quoted in the *Manchester Report, on Halfpenny Fares*, p. 17.

[2] Croydon Corporation Tramways, *Information respecting Halfpenny Fares*, February 1911.

[3] For list of towns, see Appendix B, p. 394.

[4] The following are the opinions of some managers on whose systems halfpenny fares are entirely adopted :—

Ashton-under-Lyne : "Halfpenny fares are a mistake, and altogether unprofitable to a tramway system."

Dundee : "From a revenue-producing point of view my opinion is not in favour of halfpenny fares."

Leyton : "My opinion is that halfpenny fares, except under special conditions, are a mistake."

Rotherham : "Consider that halfpenny fares are very undesirable."

The following are the opinions of some managers on whose systems halfpenny fares are partially adopted :—

Ilkeston : "We have only one short route here over which halfpenny fares are in use. This route is not a profitable one. I do not agree with the halfpenny fares in general, and at holiday times they are a great nuisance."

Plymouth : "My view is that halfpenny fares are a perfect nuisance and greatly interfere with the long-distance passengers. Frequently I find at the 'rush' hours of the day, halfpenny passengers are inside the cars keeping out the penny and three-halfpenny passengers."

These opinions are quoted from the *Croydon Report*.

[5] The General Manager at Belfast writes : "I tried the experiment for the Committee for three weeks. Our traffic went down 28 per cent."

The General Manager at Birmingham, who formerly had experience of halfpenny fares when chief officer of the London County Council Tramways, "is strongly of the opinion that it would be fatal to adopt halfpenny fares in Birmingham."

The General Manager at Nottingham "objects very strongly to the adoption of halfpenny fares on their system. The matter was before the Council recently, and in view of the loss likely to be entailed by the adoption of halfpenny fares, it decided against them."

These opinions are quoted from the *Croydon Report*.

change or transfer from one tram to another without buying a new ticket. Various points call for consideration in connection with the transfer system.[1] In the first place, it is liable to have a serious effect upon the finances of a tramway undertaking. On all tramway undertakings many passengers do not travel the full journey to which they are entitled for a penny, and if those who wish are allowed to complete their journey in other cars without extra payment, the receipts will be diminished accordingly. The introduction of the transfer system really amounts to reducing the average fare per passenger, and the reduction may become quite alarming if abuses of the system become common. This is a second important consideration. There are various possibilities of abuse, depending somewhat upon the regulations concerning the issue of transfers. The regulations frequently require that a journey shall be completed by the next available car;[2] but it is very difficult, if not impossible, to enforce this rule. Even if the utmost precautions are taken and the ticket is punched with the date and hour, and a rigorous inspection is maintained, passengers often succeed in allowing one or two cars to pass in order to give themselves time to transact some business or to make a purchase. In some cases the transfer ticket is available any time on the day of issue.[3] Under these circumstances delay in using a ticket is no longer a breach of regulations, but another possibility of abuse is considerably increased, namely, a traffic in transfers, by which they are passed from people who are entitled to use them to those who are not. To check their use on a wrong day, the transfers are generally numbered, lettered, or coloured differently according to the day of the week. Another source of abuse of transfers is that they may make peculation on the part of conductors easier. This will be most likely to occur if exchange tickets are issued in return for transfers; when a cash fare is tendered a conductor may then issue an exchange ticket and place in his bag one of a

[1] The chief source of information on the subject is contained in the *Report of the General Manager of the Glasgow Corporation Tramways on Transfers*, July 1910.

[2] *E.g.* Burnley, Hull, Northampton, Southampton, Frankfort-on-the-Main, Cologne, Düsseldorf.

[3] *E.g.* Cardiff, Croydon, Dover.

batch of transfer tickets which have been thrown away by passengers who did not require them. A third drawback to transfers is that an adequate system of checking their use requires that the tickets shall be punched to show the date, the time and the journey to be travelled, for which the conductor has hardly time at "rush" hours where graded fares exist, especially if halfpenny fares have been adopted. The result is likely to be that a good many passengers will escape payment of the fare. In the fourth place, the introduction of the transfer system would considerably increase the cost of inspection if abuses were to be checked, which would increase the working expenses.

Where the tramway system radiates from the centre of a town in various directions like the spokes of a wheel, as is generally the case in this country, the need for transfers hardly exists. On the other hand, in towns where the lines largely cross each other like on a chess-board, there is more need for granting facilities for changing. If several routes at one end have a short distance in common, it may be more economical to issue transfers than to run all the cars over this section, though the difficulty might also be met by adopting a halfpenny fare on this particular section. The table which follows shows to what extent the transfer system has been introduced on British Tramway undertakings; it has been adopted either wholly or partially on some 40 per cent of the municipal undertakings for which returns were obtained, but with the exception of the London County Council undertaking, on which the system is partially adopted, it is on the smaller rather than on the larger undertakings that transfers are to be found.[1] The average length of street route is about 12 miles on the undertakings where the transfer system is entirely adopted, about 8½ miles excluding, or 15 miles including, the London County Council, on the undertakings where the system is partially adopted, and about 20 miles on the undertakings where the system is not adopted. In some cases the distance which can be travelled on a transfer is less than can be travelled for the same fare on a one-car journey,[2] but in other cases it is exactly the same.[3]

[1] See list of towns in Appendix B, p. 395.

[2] *E.g.* Burnley, Halifax.

[3] *E.g.* Dover, Hull, Northampton.

TABLE showing the Use of the Transfer System on British Tramway Undertakings.[1]

	Municipal Tramway Undertakings.	Company Tramway Undertakings.	All Tramway Undertakings.
Tramways on which Transfers are issued on the Whole System .	17[2]	7	24
Tramways on which Transfers are issued on Certain Sections .	16[2]	11	27
Tramways on which Transfers were issued but have been discontinued	3[2]	2	5
Tramways on which no Transfers are issued	49[2]	58	107
Tramways to which Returns relate	85	78	163

In German towns the transfer system is commonly adopted, though the right to change cars without paying a new fare is not always given to a passenger paying a 10 pf. fare. Thus in Cologne, only passengers who pay 15 pf. or more are entitled to one free change, and the same rule applies in Dresden. In Frankfort-on-the-Main all fares entitle a passenger to two free changes if necessary. The regulation in Bonn is the same. The Düsseldorf passengers paying 10 pf. may change once, and those paying 15 pf. or more as often as is necessary to reach their destination.

In both this country and Germany the tramway authorities suffer to some extent from the abuse of the transfer system through delay in continuing the journey, where the regulations require that the next available car shall be used, and also through a certain number of transfers falling into the hands of, and being used by, persons who did not commence the journey.[3] The original home of the transfer system, and the country in which the abuses have grown to

[1] Compiled from the *Report of the General Manager of the Glasgow Corporation Tramways on Transfers*. The Glasgow undertaking which is excluded in the *Report* is included in the above table.

[2] For list of these towns see Appendix B, p. 395.

[3] The experience of British tramways is recorded in the *Glasgow Report*; that of German tramways I gathered from interviews I had with various tramway managers in Germany.

an alarming extent, is the United States. To illustrate the possibilities of the transfer system a few facts relating to the Chicago tramways may be quoted. During 1908-9 a crusade was conducted against the misuse of transfers, and over one thousand arrests were made within a year. During the year 373,000,000 passengers were carried, of whom 153,000,000 rode on transfers. At the time when the crusade was started the sale of transfers at junction points and in stores was quite general. At one point there were a dozen newspaper boys who solicited transfers from passengers and sold them to others. Testimony given in court showed that at this crossing alone each of the boys derived a revenue of one dollar to three dollars a day from this source. There were other corners where the unlawful sale of transfer slips was almost as extensive. But the greatest injury to the company's business was done at points where hundreds of transfers were not sold but thrown down, picked up, or traded daily. At one place where three important lines connected, it is estimated that several hundred transfers were presented daily by people who had not received them from a conductor.[1] On some lines in the United States the average revenue per passenger has been brought from 5 cents to the neighbourhood of 3 cents by the rapid spread of the legitimate use of transfers, accompanied by an even more rapid increase in the illegitimate use of the privilege.[2] Amongst the undertakings which find themselves in this position are those in New York City and in Baltimore.[3]

The introduction of transfers was recently suggested in Glasgow, and after very careful inquiries Mr. Dalrymple, the General Manager of the Corporation Tramways, expressed his opinion on the subject as follows: "It is certain that no amount of checking can prevent the transfer system from being abused. The margin of profit which most tramway

[1] Statement made by Joseph V. Sullivan, General Supervisor, Chicago Railways Company, *Electric Railway Journal*, October 8, 1909. Quoted in the *Glasgow Report*, p. 106.

[2] Editorial, *Electric Railway Journal*, May 8, 1909. Quoted in the *Glasgow Report*, p. 104.

[3] Extracts from the *Report of the Committee of the Metropolitan Street Railway, New York*, and from the *Annual Report of the United Railways and Electric Company of Baltimore*, quoted in the *Glasgow Report*, pp. 103, 105.

undertakings have to work on is small, and the result of our inquiries convinces me that it is our duty strenuously to oppose the introduction of the transfer system, particularly when the halfpenny fare has been adopted."[1]

It must be remembered that on many of the undertakings where the transfer system exists, it was introduced when comparatively high uniform fares or scales of fares were charged, in the days of horse trams, when the distances travelled were only short. When the lines were electrified, either no reduction of fares was made, or new scales of fares were established on the basis of the existence of the transfer system: in other words, the effect of transfers on revenue was taken into account in fixing fares. In this country, when tramway undertakings were electrified, the transfer system generally did not exist, and fares were often fixed at the lowest points compatible with financial stability. The subsequent adoption of a policy which tends to diminish the net revenue by an uncertain and possibly growing amount, seems very undesirable; if the undertaking has a surplus to dispose of, it would seem a much more satisfactory arrangement to make a general reduction of fares, by which all tram passengers would benefit instead of only that section which could make use of the transfers.

§ 26. Up to this point the issue of single tickets to ordinary fare-paying passengers has been considered. There are, however, various special facilities which may be granted to such passengers as make considerable use of the tramway system. (*a*) The simplest facility, though that which appears to be least often adopted, is to issue return tickets at reduced fares. This is done to some extent on the Sheffield Corporation Tramways. On three routes the single fare is three halfpence and the return fare twopence,[2] on one route the single fare is three halfpence and the return fare twopence halfpenny,[3] and on one route the single fare is twopence and the return fare threepence.[4] These return fares were first introduced when the system was extended, and the old arrangement, by which one penny was charged from the centre of the city to any terminus, had to be abandoned.

[1] Corporation of Glasgow Tramways Department, *Report on Transfers*, p. 6.

[2] Ecclesall, Malim Bridge and Darnall routes.

[3] Firth Park route.

[4] Handsworth route.

On these routes where the twopenny return fare exists, the receipts are very little larger than if the three halfpenny single fare had never been established, so that the Tramway Department only just gains enough by the raising of the single fare to justify its continuation.[1] Another system on which ordinary return tickets exist is that of the London County Council. They are in operation on certain tram routes north of the river Thames, but their introduction on to the routes south of the Thames is strongly opposed by the committee, who prefer cheap ordinary single fares. Return tickets are very easily abused and involve much extra checking. Their introduction also diminishes the revenue of an undertaking and may necessitate the adjustment of other fares.[2] Other cases of cheap return tickets occur in connection with workmen's tickets, to which reference is made below.

(*b*) Another facility is the issue of books of tickets or coupons at reduced rates. These discount tickets, as they are generally called, are not issued on many systems, and they must not be confused with prepaid tickets or tokens issued at face value, which are fairly common on account of the convenience they constitute to employers of labour, tradesmen and others. An investigation made in the autumn of 1909 concerning seventy-one British Municipal Tramway undertakings showed that nine issued discount tickets to the general public.[3] The extent of the concession made varies considerably from town to town; in Blackpool a 25 per cent reduction is accorded to purchasers of discount tickets. In Burnley an allowance of twopence in the shilling is made. In Doncaster penny tickets are sold fourteen for a shilling, in Portsmouth ten for ninepence, in Darlington thirteen for a shilling.[4] Discount tickets are

[1] Information kindly supplied by the General Manager of the Sheffield Corporation Tramways.

[2] London County Council, *Adjourned Report of the Highways Committee* (No. 2), 11th and 18th May 1911, p. 48.

[3] See Reading Corporation Tramways, *Summary of Information from Various Tramway Undertakings respecting Books of Discount Tickets*, October 1909. The towns which issued these tickets were Blackpool, Bournemouth, Burnley, Darlington, Doncaster, Erith, Leyton, Portsmouth, Swindon. One or two others issued them to scholars and workmen.

[4] Where an ordinary passenger pays 1d. a discount ticket-holder pays ¾d. in Blackpool, ⅞ths of a penny in Burn-

also issued in certain German towns. Thus, on the Mannheim-Ludwigshafen Tramway system a book of ten 9 pf. tickets costs 0.90 m. and a book of ten 13 pf. tickets costs 1.30 m. The 9 pf. ticket entitles the passenger to travel a 10 pf. journey, the 13 pf. ticket entitles the passenger to travel a 15 pf. journey. The unused tickets are transferable, and are valid without the cover.[1] When one of these tickets is offered instead of a cash fare it is punched by the conductor so as to show to what point it is available. A 20 pf. journey can be paid for with two 9 pf. tickets, a 25 pf. journey with one 9 pf. and one 13 pf. ticket. In Mayence books of twelve coupons are issued for 50 pf. A 10 pf. journey is paid for with two coupons, a 15 pf. journey with three coupons, a 20 pf. journey with four coupons, etc. The coupons are transferable, and may be used by several persons at the same time.[2]

There is probably more than one reason why the issue of books of discount tickets is not common. In the first place, they handicap poorer people who cannot afford to pay for them in advance, which is contrary to the general trend of tramway policy, at least as far as this country is concerned. In the second place, where fares have been fixed with a view to giving as long a ride as possible for the money paid, the management could not afford the loss of revenue involved in the issue of these tickets. In the third place, there is a serious danger of abuse and fraud, as it is practically impossible to prevent conductors from securing these tickets, putting them into the money-bags, and in return abstracting their face value in coin, thus securing the advantage of the discount for themselves.

(*c*) Much more common than either return tickets or books of tickets at reduced prices are contract or season tickets. These exist on most German municipal tramways, but are very exceptional in the United Kingdom. A return published in 1909, which related to seventy-two British municipal tramway undertakings,[3] showed that on three

ley, $\frac{6}{10}$ths of a penny in Doncaster, $\frac{7}{10}$ths of a penny in Portsmouth, and $\frac{11}{12}$ths of a penny in Darlington.

[1] *Tarif der städtischen Strassenbahn Mannheim-Ludwigshafen a/R.*, pp. 4 and 5.

[2] *Tarif der städtischen Strassenbahn Mainz*, p. 3.

[3] Reading Corporation Tramways, *Summary of Information from Various Tramways Undertakings respecting Season Tickets*, October 1909.

systems only were season tickets issued to adults, namely, in Aberdeen, Blackpool and Southport. In Aberdeen the annual cost is 7s. 6d. for the first 700 yards and 6d. for every additional 100 yards. Many of the tickets average only a halfpenny a day. In Blackpool, where the length of the street route is some nine and a half miles, a ticket for twelve months, available over the whole system, costs three pounds, the charge for juveniles being half that amount. It will be noted that in the one case the distance travelled forms the basis of the price of the contract, and in the other it does not. Similarly, in Germany two kinds of contracts are issued. The one is available either for the whole system, or for such part of the system as is within the municipal boundaries; the other is available for a specified journey which may involve the use of only one route, or of two or more routes. The contracts are issued in all cases monthly, but in some cases in addition quarterly, half-yearly, or annual contracts are issued at lower rates.

Some illustrations may be given to show the various ways in which this method is put into practice. In Cologne a contract for the whole system costs 13.40 marks a month; a contract for a specified journey not exceeding 3 sections, 5.10 marks; not exceeding 4 sections, 7.20 marks; not exceeding 5 sections, 8.20 marks per month.[1] In Frankfort-on-the-Main a monthly contract for the town system costs 15 marks. A monthly contract for a specified journey not exceeding 3 kilometers costs 6.25 marks, not exceeding 4 kilometers, 7 marks, and so on, the price rising 75 pf. for each additional kilometer.[2] In Düsseldorf the monthly charge for a contract available on the whole system within the boundary is 10.50 marks. For each section outside the town 1.50 marks extra is charged. A monthly contract available *on one line* for a specified journey not exceeding three sections in length costs 6 marks. The cost of a monthly contract for a specified journey not exceeding 2 sections is 6 marks; not exceeding 3 sections, 7.50 marks; not exceeding 4 sections,

[1] The ordinary tariff is 10 pf. for a journey not exceeding 3 sections, and 15 pf. for a journey not exceeding 6 sections. The price of the contracts includes the ticket tax.

[2] The ordinary fare is 10 pf. for a journey not exceeding 4 km., and 5 pf. more for each additional 2 km.

9 marks.[1] In Dresden, contracts are issued for one, three, six, nine and twelve months; the cost of contracts available over the whole municipal system is according to the duration, 20, 56, 108, 156, and 200 marks respectively. The cost of a contract for a specified journey on one line not exceeding 4 sections is 6 marks per month and 60 marks per annum; for a specified journey on one or two lines not exceeding 6 sections, 7.50 marks and 75 marks respectively; not exceeding 8 sections, 9 marks and 90 marks respectively; exceeding 8 sections, 10 marks and 100 marks respectively.[2] Contracts for the whole system within certain zones are also issued.[3]

In some cases transferable contracts are issued, as for example, in Düsseldorf, where they cost double as much as the ordinary contracts, but the ordinary contracts are strictly non-transferable, and there is always a danger that they will be abused. It is impossible to have the systematic inspections which occur on suburban railways, when on a particular day every train is stopped specially for the purpose and all contracts are examined. Nor can the tramway officials get to know the contract-holders largely by name, as occurs at the local stations. The tramway undertakings try to protect themselves by requiring a contractor to place his signature or photograph upon the contract. The latter is much more satisfactory than the former, but cannot always be employed in connection with monthly tickets. On the German railways, contractors show their tickets every time they pass a station barrier, and consequently contractors on tramways feel no grievance when asked to show their tickets every time they ride on a tram. In this country, where the inspection of railway contracts is the exception rather than the rule, where contractors generally escape the trouble with a nod or by muttering "contract" or "season," ticket-holders might easily raise difficulties about showing their tickets every

[1] The ordinary fare is 10 pf. for a journey not exceeding two sections, and 15 pf. for a journey not exceeding 4 sections.

[2] The ordinary fare is 10 pf. for 4 sections, and 5 pf. extra for each additional two sections.

[3] All the information concerning German tramway contracts is quoted from the *Tramway Regulations* of Cologne, Frankfort, Düsseldorf and Dresden.

journey, in which case there would be a large sphere for abuse. On this ground, if not on others, a large number of British tramway managers are strongly opposed to the introduction of season tickets ;[1] in Germany, where conditions are different, there appears to be little complaint about them, and the system is largely adopted.

§ 27. The provision of special tramway facilities for particular classes now calls for attention. The principal classes affected are workpeople, scholars, and children. (*a*) The case of workpeople[2] may be considered first. As far as this country is concerned, most modern Tramway Acts contain a clause that workpeople's fares shall not exceed a halfpenny per mile, or fraction of that distance, with one penny as the minimum. The clause relating to the Manchester system may be quoted as an example :—

"The Corporation at all times after the opening of the tramways for public traffic shall, and they are hereby required to run a proper and sufficient service of carriages for artisans, mechanics and daily labourers each way every morning and every evening (Sundays, Christmas Day and Good Friday always excepted), at such hours not being later than eight in the morning or earlier than five in the evening respectively, as may be most convenient for such workmen going to and returning from their work, at fares not exceeding one halfpenny for every mile or fraction of that distance. On Saturdays the Corporation, in lieu of running such carriages after five o'clock in the evening, shall run the same at such hours between noon and two o'clock in the afternoon as may be most convenient for the said purposes."[3]

The introduction of workmen's fares may easily become a serious problem in tramway finance. Once a system of preferential treatment is begun, the difficulty is to know how to fix the limits, with regard to the time during which the special facilities are afforded, the classes to which they

[1] Reading Corporation Tramways, *Summary of Information from Various Tramway Undertakings respecting Season Tickets.*

[2] A large amount of information on this subject is contained in two *Reports of the General Manager of the Manchester Corporation Tramways in Regard to the Extension of the Time during which Workpeople's Fares are in Operation*, issued in April 1909 and April 1911.

[3] Manchester Corporation Act, 1901, sec. 14 (1).

apply, and the length of the journeys which may be travelled for the reduced fares. Further, every increase in the facilities granted checks the possibility of lowering the ordinary fares, if it does not necessitate their increase, as workpeople are generally carried at cost price or very little above it, and not infrequently at a loss. A recent report of the Highway Committee of the London County Council estimates that the loss involved by running the workmen's car service is £65,932 per annum.[1] The ordinary traffic by tramway in London may be sufficient to enable this loss to be borne,[2] but in many towns which are predominantly working class, the issue of workpeople's tickets on very generous terms can only result in the undertaking as a whole becoming unremunerative.

A tramway system is for the benefit of the citizens as a whole; it should be the object of the management to provide reasonable facilities for all, and not to penalise some for the benefit of others, which is the case if workpeople are carried at a loss. It is difficult to see why artisans, mechanics and day labourers who travel in the early morning should receive facilities which men and women serving in shops, clerks, and others who are no better off financially, do not enjoy. This is rectified to some extent by allowing all who travel before a specified hour to enjoy the same facilities; but the majority of shop assistants and clerks do not commence their journey before 8 o'clock, or even 8.30 A.M. To extend the time for the reduced fares to 8.30 A.M. in a town which has to meet a very heavy "peak" load between eight and nine o'clock is courting financial difficulties. Thus in Salford the experiment was tried from September 1908 to September 1909 of advancing the hour during which cheap return tickets could be obtained, from 7 A.M. to 8 A.M. At the end of a year it was ascertained that the income per car mile had fallen from 10.44d. to 9.84d., equivalent to a decrease in the total receipts of £14,463 per annum. The General Manager expressed the opinion that the greater portion of it was

[1] London County Council, *Adjourned Report of the Highways Committee* (No. 2), 11th and 18th May 1911. Submitted to the Council on May 30, 1911.

[2] It is very doubtful if adequate provision is being made for depreciation. See footnote (4), p. 163.

due to the extension of the time during which cheap return tickets could be obtained from 7 to 8 o'clock, and that had the extension been made to 8.30 A.M., as had been suggested, the result would have been even more disastrous.[1] He further expressed the view that the hopes that are held out and the prophecies that are so frequently made in speaking of tramway systems—that if you only cheapen your fares you are sure to be repaid by an equivalent increase of passengers — were not fulfilled. In a town such as Salford there is and must be a limit to the number of people who desire from necessity or otherwise to travel on the cars. There are day by day a steady load of passengers desirous of being conveyed from the outskirts to the centre, in the morning and back home again in the evening, and this load varies but little. Consequently, having to deal with regular passengers, the granting of additional concessions only results in extra benefit to the passengers, but does not bring to the undertaking any additional number of passengers except to a slight extent.[2] In a recent report, the General Manager of the Manchester Corporation Tramways estimates that the extension of the time during which workpeople's fares are in operation,[3] from 7 A.M. to 8.30 A.M., would cost the undertaking £25,000 per annum.[4] There are towns where the facilities are granted till 8.30, but if this is done without a loss, either the character of their traffic is different, being more evenly distributed throughout the day than is the case in Manchester or Salford, or they are according comparatively small facilities.

In view of the difficulties in which the management becomes involved by a system of workpeople's fares, and the unequal way in which the benefits of any facilities are distributed, workpeople living within an ordinary penny stage of their work and the majority of shop assistants and clerks being very largely excluded, many people incline to the view that it is better to avoid preferential treatment

[1] See letter of Mr. G. W. Holford, the General Manager of the Salford Corporation Tramways, quoted in *Manchester Report on Workpeople's Fares*, April 1911, p. 5.

[2] *Ibid.* pp. 5 and 6.

[3] At present every one commencing a journey before 7 A.M. is entitled to travel at the reduced workmen's fares.

[4] *Ibid.* p. 5.

of all kinds, and instead to use any available surplus funds to reduce the ordinary fares as low as possible. Only those towns, however, whose fares do not exceed one halfpenny for every mile, or fraction of that distance, escape the legal obligation to introduce workpeople's fares. Some of these towns, such as Glasgow, Liverpool, Sheffield, Leicester, Aberdeen and Ilkeston, make no special provision for workpeople, but other of these towns do so, though not obliged to by law, one reason probably being the unwillingness of the Councils to resist the pressure brought to bear by some sections of the general public.

The provisions actually made for working people vary considerably from town to town. The most ordinary arrangement, as far as this country is concerned, is to issue cheap single tickets or cheap return tickets to workpeople, or in some cases to all passengers commencing a journey before a specified hour, generally 7, 7.30, or 8 A.M. Occasionally weekly tickets are issued. A few examples may be given to illustrate the various types of regulations. In Rotherham, workmen's weekly tickets, available for one journey each way for six days, cost 8d. for a penny stage, 1s. for a threehalfpenny stage, and 1s. 4d. for a twopenny stage. In Burton-on-Trent a charge of 10d. is made for twelve workmen's tickets, which are available only during the week of issue and during certain hours. On the London County Council system the fares by workmen's cars on the routes to Central London are generally one penny for a single journey for any distance beyond the usual halfpenny stages, and twopence for two-journey tickets available for another journey, on any route, on any car, at any time on the day of issue. In this way journeys up to eight miles can be made for a penny. On the outlying routes the fares are somewhat higher.[1] The last workmen's cars each morning leave the suburban termini in time to enable them to reach the London termini by 8 A.M. Workmen's fares are issued on these cars on their return journey to the suburban termini, which in the case of the longer routes may not be reached until

[1] London County Council. *Quarterly Return of Workmen's Trams*, February 1911.

9 A.M. or later.[1] The average length of the workpeople's penny stage is some six miles.[2] In Manchester all cars in service up to 7 A.M. are considered workpeople's cars. The original arrangement was that the 1½d. and 2d. fares were reduced to 1d., the 2½d. and 3d. fares to 1½d., and the 3½d. and 4d. fares to 2d., and that these fares were available only in the morning. In October 1907 a further concession was granted, under which all travellers travelling by the early morning car up to 7 o'clock can purchase return tickets which enable them to make the return journey at any time during the day at the cheap rates. This concession cost the undertaking some £5000 per annum. In the autumn of 1909 the stages by ordinary fare other than the penny stage were somewhat lengthened, so that the preferential treatment in favour of early travellers is comparatively less than it was. The distances which can be travelled by ordinary passengers and workpeople at present are as follows:—[3]

Fare.	Average Length of Stage.			
	Workpeople.		Ordinary.	
	Miles.	Yards.	Miles.	Yards.
1d.	3	996	2	372
1½d.	4	786	3	193
2d.	5	1239	4	57

In Burnley workmen's discount tickets are issued, the prices being 12 tickets for 9d., 1s. 2d., and 1s. 6d., according to the distance.[4] In Bradford workpeople who commence their journey before 8 A.M. pay a penny without reference to distance. The average length of the workpeople's stage is 4.13 miles, as compared with 1.61 miles

[1] London County Council, *Adjourned Report of the Highways Committee* (No. 2), 11th and 18th May 1911.

[2] Table of workpeople's fares in the *Report of the General Manager of the Manchester Corporation Tramways in Regard to Workmen's Fares*, April 1909. The average length of the ordinary penny stage is just under two miles.

[3] All the facts are from the *Manchester Reports on Workpeople's Fares.*

[4] Information kindly supplied by the General Manager of the Burnley Corporation Tramways.

for the ordinary penny stage.[1] In Belfast any person whose fare is paid before 9 o'clock has struck is able to ride any distance for one penny, or is able to purchase for twopence a return ticket enabling the holder to ride any distance on any car in the morning, and to enjoy the same privilege on his return later in the day.[2]

In Germany the special facilities granted to workpeople generally take the form of weekly tickets at reduced rates. For example, in Frankfort-on-the-Main weekly tickets are issued to workpeople for use between their home and their place of work. For a single journey each morning before 7.30 A.M. the price is 30 pf. a week if the distance does not exceed 3 kilometers, and 5 pf. extra per week for each additional kilometer;[3] for a ticket entitling the holder to two journeys daily, an outward before 7.30 and a return journey after 2 P.M., the charge is exactly double. Monthly tickets for workpeople are also issued, and in these cases no restrictions are imposed with regard to the number of journeys or the times of such journeys. The price is 5 marks per month for a distance not exceeding 3 kilometers, and 75 pf. per month extra for each additional kilometer. No workpeople's tickets are available on Sundays or on legal holidays. In Düsseldorf weekly tickets are issued which allow two journeys per day. The charge for such a ticket, where the distance does not exceed 3 sections, is 60 pf.; where the distance does not exceed 4 sections, 75 pf., and where the distance does not exceed 8 sections, 90 pf.[4] A supplementary ticket entitling the holder to two additional journeys each day between 11 A.M. and 2 P.M. can be

[1] Bradford City Tramways, *General Manager's Annual Report for the Year ended March 31, 1911*, p. 30.

[2] The time before which the fare must be paid was formerly 8 A.M., then it was extended to 9 A.M. for females, and in May 1911 it was extended to 9 A.M. for males too (*Annual Report of the Belfast City Tramways for the Year ended March 31, 1910*, and information kindly supplied by the General Manager). It may be noted that there are no routes on which more than 2d. is charged, and that in 1909-1910 only 8.14 per cent of the total number of passengers carried paid a fare exceeding 1d.; but even this allows scope for a considerable loss in connection with the extension of the facilities, and it remains to be seen what effect the last concession will have on the finances of the undertaking.

[3] The ordinary charge is 10 pf. for a journey not exceeding 4 km. and 5 pf. for each additional 2 km.

[4] The average length of a section is 1920 meters. The ordinary charge is 10 pf. for 2 sections, 15 pf. for 3 or 4 sections, and 30 pf. for 8 sections.

obtained at the same price as the first ticket. Workpeople's tickets are valid from Monday morning until Sunday at 2 P.M. In Dresden workpeople's weekly tickets are issued at the price of 60 pf. for a distance not exceeding 4 sections, and 10 pf. extra for each additional two sections. A ticket allows a holder to make two journeys each week-day; the outward journey must be commenced before 7 A.M., and the return journey not before 6 P.M. in summer and before 8 A.M. and 5 P.M. respectively in winter (October 1 to March 31).[1] In Cologne cheap weekly tickets costing 30 pf. are issued, available for use by any person commencing a journey before 7.30 A.M. A ticket entitles the holder to one ride on each week-day; he can travel any distance he chooses by any one car. These tickets are transferable. In Mannheim books of tickets are issued to workpeople. According to the length of the journey for which they are available, they cost 2 marks for 40 tickets, 2 marks for 25 tickets, or 2 marks for 12 tickets.[2]

(*b*) Most tramway undertakings give preferential treatment to children, young ones who do not occupy a seat being allowed free, and older ones being allowed to travel at reduced fares. Perhaps the most ordinary arrangement in this country is that children under three, not occupying a seat, are free and children under twelve pay half fare. In a good many towns children under five are carried free.[3] In German towns there appears to be less uniformity. In Frankfort-on-the-Main and in Düsseldorf, for example, there are no reduced fares for children, but in the former town those under five, in the latter town those under six, who do not occupy a seat are free. In Mayence, children under four who do not occupy a seat are free; those under ten are charged 5 pf. for a 10 pf. journey, 10 pf. for a 15 pf. or 20 pf. journey, and 15 pf. for a 25 pf. or 30 pf. journey. In Mannheim, children under six who do not occupy a seat are free; those under twelve are charged 5

[1] The ordinary fares are 4 sections for 10 pf., and 5 pf. for each additional 2 sections.

[2] All the information concerning workmen's tickets in Germany is taken from the Tramway Regulations of the towns to which reference is made.

[3] See *Report of General Manager of the Manchester Corporation Tramways on Children's Fares*, April 1909, p. 10; and Glasgow Corporation Tramways, *Notes by the General Manager on Proposals for the Alteration of the Fares and Stages*, November 1910, pp. 4-7.

pf. for a 10 pf. or 15 pf. journey, 10 pf. for a 20 pf. or 25 pf. journey, and 15 pf. for a 30 pf. journey. In Dresden, children under four who do not occupy a seat are free, those under fourteen pay 5 pf. less than a grown-up person, with a minimum of 10 pf. for a simple and 15 pf. for a transfer ticket. In Cologne, children's tickets, which do not entitle to a transfer, cost 5 pf., without reference to the distance.

(*c*) In many towns, scholars proceeding to or from school are carried at reduced rates. This privilege is conceded in various ways. On the Manchester Tramway system, for example, scholars up to fifteen years of age proceeding to and from school pay half fare. In Bradford school children under the age of sixteen are allowed to ride at half the adult fare at certain times during the day when going to and from school. In Belfast, scholars under fourteen years of age travel with halfpenny school tickets which are available from any of the terminal points into the centre of the city (a 2d. journey) or *vice versa*, or for a penny cross-town stage. In Northampton, season tickets are issued to school children, the charge being 15s. for six months. In Sheffield reduced tickets costing three farthings, available for a penny stage, are issued to scholars. In Cologne, scholars pay, without reference to the distance, 5 pf. for a ticket which does not entitle to a transfer. In Mannheim, scholars of the compulsory school age can buy books of tickets, either 40 for 2 marks, each ticket being available for a 10 pf. journey, or 24 for 1.80 marks, each ticket being available for a 15 pf. journey. These tickets are transferable. In Mayence, scholars up to sixteen years of age can purchase for 2 marks scholars' tickets provided with 100 divisions. For a 10 pf. journey two, for a 15 pf. journey three, and for a 20 pf. journey four of these divisions are cancelled. In Dresden, scholars can purchase contract tickets for specified journeys at reduced prices. Those of the compulsory school age obtain them at half price, those who are fourteen years of age and over pay two-thirds of the ordinary rates. In Frankfort-on-the-Main there are special monthly tickets for scholars; the distance is not taken into consideration, only the use which is made of the tickets. A ticket available to travel between home and school and back costs 3 marks a

month; if in addition it is available to travel to coaching lessons (Nachhilfestunden) or to the swimming baths, it costs 4 marks a month; if it is available for both these additional objects, it costs 4.50 marks a month. No age limit is imposed except for tickets of still another kind which are available for travelling to a school of art, a school of music, a continuation school, or other special school. These cost 5 marks monthly, and are issued to young people only who earn nothing and who are under twenty years of age.

(*d*) Mention has now been made of the principal cases of preferential treatment on tramways, but there are still one or two minor cases. In Hull the Postmaster-General is charged only three-fifths of a penny for each official's journey.[1] In Düsseldorf, for example, books of tickets at reduced prices are issued to small independent producers or dealers, officials and clerks who live inside the town, and whose income, subject to taxation, does not exceed £104 per annum. The price of these tickets is 4.50 marks for a book of sixty, each available for a journey of any length by any one car. In certain towns some classes of passengers are carried free. Thus in Bradford blind passengers pay no fare, and in 1909-10, 43,852 and in 1910-11, 82,589 were carried free of charge.[2] In Sheffield the Tramways Committee grants free tram tickets to local Nursing Associations to be used in connection with their work. For the year 1909-10 the value of such tickets was £178 : 13 : 9. The number of passengers carried with free tickets was 52,000, which represented .07 per cent of the total number of passengers carried during the year.[3] A somewhat different kind of special treatment is that involved in distinguishing between first and second-class passengers on tramways. In October 1908 a service of first-class cars was introduced in Liverpool. The inside lower deck of these cars is elaborately upholstered and the fares are higher than on the ordinary cars. The upper deck is available for passengers at the ordinary fares. This class of

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 47.

[2] *Annual Reports* of the General Manager for these years.

[3] *Annual Reports* of the General Manager for 1908-9 and 1909-10.

car has proved a great success.[1] The distinction between first- and second-class passengers is made on the systems of several French Tramway Companies, *e.g.* in Amiens and Lyons. The accommodation provided is practically the same in both classes; first-class passengers pay 5 centimes more than those who travel second class, and their part of the car is generally less crowded.

§ 28. The extent to which the various facilities described —books of tickets or coupons at reduced rates, contracts, workpeople's tickets, scholars' tickets, etc.—are used, and the financial aspects of their use, may be briefly considered. The table which follows has been compiled from the *Annual*

TABLE showing for certain Municipal Tramway Undertakings the Number of People benefiting by Special Rates.[2]

	Frankfort-on-the-Main.	Dresden.	Düsseldorf.	Mayence.
Year	1908-9	1908-9	1909-10	1908-9
Total Number of Passengers carried . . .	80,332,559	89,895,040	47,416,908	9,304,173
Passengers carried with Contracts and Cheap Tickets	22,520,832	14,314,159	17,554,499	4,783,648[3]
Percentage of Total Passengers. . . .	28 per cent	16 per cent	37 per cent	51 per cent
Total Revenue from Passengers. . . .	7,571,713 m.	9,370,126 m.	4,094,998 m.	864,275 m.
Revenue from Contracts and Cheap Tickets . .	1,449,066 m.	840,065 m.	667,775 m.	385,812 m.
Percentage of Total Revenue	19 per cent	9 per cent	16 per cent	45 per cent
Average Receipts from each Journey by an Ordinary Fare-paying Passenger .	10.59 pf.	11.28 pf.	11.47 pf.	10.57 pf.
Average Receipts from each Journey by a Contractor, or Cheap Ticket-holder .	6.43 pf.	5.87 pf.	3.80 pf.	8.00 pf.

Reports of the tramway undertakings concerned. It shows that in Mayence more than half, in Düsseldorf more than one-third, in Frankfort-on-the-Main more than one quarter and in Dresden about one-sixth of all the passengers

[1] Information kindly supplied by Mr. C. W. Mallins, General Manager of the Liverpool Corporation Tramways.

[2] Scholars but not children are included.

[3] The majority of these (3,890,000) were passengers using books of coupons issued at reduced rates.

carried enjoy preferential treatment. In Düsseldorf their average payment per journey is only one-third of that of the ordinary passenger, in Dresden it is one-half, in Frankfort it is three-fifths and in Mayence it is three-quarters. The most striking case of the four quoted is undoubtedly Düsseldorf, where the number of people enjoying a large measure of preference is very considerable. It is quite evident that the ordinary fare-paying passenger must be charged distinctly more than would be necessary but for the special terms granted to so many people. The margin of surplus on tram fares is generally very small, and the profit of such an undertaking can easily be converted into a loss if many passengers are carried at cost price, and still more easily if many are carried at less than cost price. The only way to maintain a profit under these circumstances is to keep up the charges made to ordinary passengers. In the case of the four towns which are dealt with in the table, none appears to make any contribution in relief of the rates, which suggests that the concessions have not been made entirely at the expense of the ordinary fare-paying passengers, but partly at the expense of the profits.

Up to a certain point the granting of increased facilities on tramways will probably lead to growth of traffic sufficient to compensate for the reduction of the average fares, but whether the granting of preferential treatment can ever have a beneficial effect on the finances of tramway undertakings is doubtful. If too many general concessions are made the result will be a decrease in the net revenue. If much preferential treatment is granted, the net revenue will be diminished, or the ordinary fares will have to be raised to prevent this from happening. A system of preferential facilities must always be extremely arbitrary in its application; people who stand most in need of assistance may easily be excluded, and others who require none may be helped. Continual efforts will be made by the general public to secure the extension of the system, so that it may be made to include classes who feel that they are hardly treated, and as a consequence the financial stability of the undertakings will quickly be in danger. In the spring of 1911 the management of two of the largest municipal

tramway undertakings in the country, namely, those owned by the London County Council and the Manchester Corporation, were engaged in resisting proposals to extend facilities of various kinds[1] which were being advocated without any thought for the financial results they would be likely to involve, and this is doubtless only typical of what is happening on many tramway systems. Tramways exist for the benefit of the general public; the object of the management should be to provide an efficient and cheap service, so that everybody may enjoy the maximum facilities compatible with the financial stability of the undertaking and with the earning of a reasonable profit, if that is thought desirable. The more preferential treatment is accorded to some sections of the population, the more the granting of general facilities will be checked, to the detriment of the common good. The adoption by a tramway undertaking of the policy of treating all alike, with certain exceptions in favour of children, certainly appears to afford the best means of removing grounds for grievance by giving everybody fair treatment and a good service at a low price, and at the same time it greatly facilitates the conducting of the undertaking on sound financial lines. This policy is pursued on certain tramway systems, and the management of other systems would do well to consider the advisability of introducing it.

[1] See London County Council, *Adjourned Report of the Highways Committee* (No. 2), May 1911 (this relates to proposals for extending the time for running workmen's cars, for issuing tickets at special rates to working women, for introducing special fares for children, and for issuing return tickets on the southern tramways), and *Report of the General Manager of the Manchester Corporation Tramways in regard to the proposed extension of the time during which workpeople's fares are in operation*, April 1911.

CHAPTER VII

THE LABOUR POLICY OF MUNICIPAL TRADES

§ 1. ONE important effect of the increase in the functions of local authorities of recent years has been the great growth in the number of municipal employees. In 1906, after the municipalities had become the local education authorities, and after the movement in favour of municipal tramways and municipal electricity works had been largely carried to a successful conclusion, the total number of persons employed by the London County Council, the Metropolitan Boroughs and the County Boroughs in England and Wales slightly exceeded a quarter of a million.[1] Information relating to the ten County Boroughs which employed more than five thousand persons in 1906 is given in the table on page 278; in the second column will be found the total number of municipal employees in each of the boroughs, in the third column those numbers expressed as percentages of the number of inhabitants. It will be noted that Bristol and Sheffield have comparatively fewer municipal employees than the other eight towns. This is accounted for very largely, if not entirely, by the fact that in Bristol the water, gas and tramway undertakings, and in Sheffield the gas works, are managed by companies. That 2.2 or 2.4 per cent of the population of a town are employed by the local authority does not seem very much, but when it is remembered that these employees represent some 11 or 12 per cent of the

[1] *Parliamentary Return*, "showing the number of persons in the employ of the London County Council and the Council of each Metropolitan Borough and of each County Borough in England and Wales at any time during the week ended Saturday, the 3rd day of November, 1906." Reprinted in the *Municipal Year Book, 1911*, pp. 922-924.

number of ratepayers, the importance of the problem is seen in its true proportions. Many of the municipal employees

TABLE showing the Total Number of Persons employed by certain County Boroughs in November 1906.[1]

Place.	Total Number employed.	Percentage of Population employed.
Birmingham	11,485	2.2
Bradford	6,044	2.1
Bristol	5,963	1.7
Leeds	9,898	2.3
Leicester	5,180	2.4
Liverpool	16,366	2.3
Manchester	18,384	2.7
Nottingham	5,731	2.3
Salford	5,200	2.3
Sheffield	8,237	1.9

TABLE showing the Total Number of Persons employed by certain Municipal Trading Departments, April 1, 1905.[2]

Town.	Water.	Gas.	Electricity.	Tramways.
Birmingham[3]	513	2312	134	64
Bradford	219	1099	293	900
Bristol[4]	...	...	174	...
Leeds	223	969	212	1444
Leicester	187	1189	85	638
Liverpool	622	...	451	2315
Manchester	462	1944	632	3611
Nottingham	208	1227	124	436
Salford[5]	23	594	154	889
Sheffield	251	...	136	1343

[1] The number employed are those given in the *Parliamentary Return* for November 1906. To calculate the figures in the last column, the approximate population of the different boroughs in 1906 has been taken as the arithmetic mean between the populations in 1901 and in 1911.

[2] Compiled from the *Parliamentary Return on Municipal Trading* (*United Kingdom*), 1902-6.

[3] At this time the municipal tramway was only two miles in length, in addition to which the Corporation had running powers over four miles of route belonging to a company.

[4] The municipal dock undertaking found employment for 782.

[5] Salford purchases its water in bulk from Manchester.

do not possess the borough vote in the towns where they are employed, either because they live outside the boundary, or because they are not householders, although living in the town area. If we eliminate one half of the municipal employees on this account, the remaining half may be regarded as municipal voters, and they may quite easily constitute 5 to 6 per cent of the total number of voters on the register.

In the second table on the opposite page the number of persons employed in April 1905 in the principal trading departments of these same ten towns is given. It will be seen that gas works and tramway undertakings afford far more employment than water or electricity works. The average number employed in the 7 gas works was 1222, in the 8 tramway undertakings (excluding Birmingham) 1447, in the 8 water works (excluding Salford) 336, and in the 10 electricity works 239.

Another way to gauge the importance of local authorities as employers of labour is to examine the sums spent by a local municipality for salaries and wages during a year. For this purpose the figures relating to Manchester are quoted in the table which follows :—

[TABLE

STATEMENT showing the Amounts paid by the City of Manchester for Salaries and Wages for the Year ending March 31, 1908.[1]

Committee.	Salaries.	Wages.	Total.
Baths and Wash-houses	£329	£9,057	£9,386
Cleansing	1,748	121,302	123,050
Libraries	2,985	7,775	10,760
Parks and Cemeteries	980	20,903	21,883
Paving, Sewering, and Highways	2,900	79,950	82,850
Rivers	2,044	13,834 11,735	15,878 11,735
Sanitary	5,083	26,047	31,130
Town Hall	18,904	22,168	41,072
Watch	4,740	115,231	119,972
Withington (Highways, Cleansing, etc.)	1,471	17,263	18,734
Education	372,683	40,866	413,549
Electricity	8,307	57,485	65,792
Gas	21,211	167,872	189,083
Markets	2,299	14,505	16,804
Tramways	6,603	286,101	292,704
Water Works	12,428	41,664	54,092
Miscellaneous	11,146	8,218	19,364
Total	£475,861	£1,061,976	£1,537,837

As far as salaries are concerned, the Education Committee pays far more than any other committee, but in the matter of wages the four principal trading departments, water, gas, electricity and tramways, spent some £550,000 on wages, or more than all the other departments put together. Of this £550,000 the Tramway Committee was responsible for a little more than one-half and the Gas Committee for nearly one-third.

§ 2. Having briefly surveyed the extent of the problem with which we are concerned, we may now turn to consider its various aspects. In the first place the method of paying wages calls for attention. The great bulk of the persons employed by municipal trading departments are paid time-

[1] City of Manchester, *Abstract of the Treasurer's Accounts for the Year ending March 31, 1908*, pp. 707-712.

wages. This is conclusively shown by the *Board of Trade Enquiry into the Earnings and Hours of Labour of Workpeople in the United Kingdom in 1906*. The volume which deals with the Public Utility services[1] embodies returns from nearly all the local authorities directly employing labour, and from most of the private companies of importance.[2] Unfortunately from the point of view of the present investigation, the returns from local authorities and from companies have not been tabulated separately; but for our immediate purpose this does not make very much difference, as neither companies nor municipalities employ piece-workers to any appreciable extent in the case of electricity, water and tramways, and only to a slight extent in the case of gas undertakings. This is shown quite clearly in the table given below. Occasional cases of piece-wages may occur outside these four principal trading undertakings, as for example, in a municipal dock undertaking such as that at

TABLE showing Number and Percentage Proportion of Workpeople returned as Time-workers and Piece-workers respectively in certain Public Utility Services in an Ordinary Week[3] of 1906.[4]

Service.	Time-workers.		Piece-workers.		All Workpeople.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Gas Supply . .	64,240	94.1	3,994	5.9	68,234	100
Electricity Supply .	13,316	99.8	31	0.2	13,347	100
Water Supply . .	14,074	99.9	19	0.1	14,093	100
Tramway and Omnibus	46,427	99.4	275	0.6	46,702	100
All the above .	138,057	96.9	4,319	3.1	142,376	100

Bristol, where the grain-men are paid piece-rate.[5]

In the case of a good many of the municipal employees who are paid time-wages, bonuses are offered in addition to

[1] Cd. 5196.

[2] P. iii.

[3] For water supply and tramway and omnibus services particulars were returned for the last pay-week of September 1906; for gas supply and electricity supply particulars were returned for an ordinary winter week in 1906.

[4] Compiled from the *Board of Trade Report on Public Utility Services* (*Earnings and Hours Enquiry*), 1906, Cd. 5196, pp. 10, 11.

[5] *Parliamentary Return of Municipal Trading* (*United Kingdom*), 1902-1906, part v. p. 17.

the ordinary wages. There are two kinds of bonuses, the one paid on account of the excellence or efficiency with which work is done, the other paid on account of the amount of work done. Bonuses of both these types exist in connection with municipal tramway undertakings, but the former appear more common than the latter.[1] Freedom from accidents, good conduct, punctual attendance, and economy in the use of current are some of the bases of the bonuses paid to tramwaymen. Thus in Belfast a motorman receives £1 per annum for freedom from accidents, in Glasgow £1 : 6s. for freedom from accidents for twenty-six clear weeks, in Birmingham £1 per quarter for freedom from blamable accidents. In Birkenhead motormen and conductors receive £1 per annum for regular and punctual attendance, in Ilford they receive 10s. per quarter for good conduct and freedom from accident. Amongst the towns which offer bonuses to motormen for saving current are Blackburn, Gloucester, Ipswich and Warrington. The regulation in Blackburn is that if the current consumption is reduced from 1.9 to 1.85 units per car mile during any one week, each motorman receives 1s. as bonus; if reduced to 1.75 units per car mile during any one week, each motorman receives 2s. as bonus. In Ipswich motormen are given 25 per cent of the saving in power, taking 1.15 units[2] per car mile as the standard and charging at 1.5d. per unit. A form of efficiency which applies exclusively to conductors is freedom from uncollected fares. In South Shields conductors receive a bonus of 2s. 6d. per month for freedom from uncollected fares and regularity in turning up for work.

The other type of bonus, given according to the amount of work done, is based, so far as tramwaymen are concerned, in some way upon the number of passengers carried. For example, in Darlington motormen and conductors can earn a bonus, not exceeding 1s. 6d. per week, based on the traffic receipts. In Lincoln a bonus of 2s. 6d. is given every seven weeks to the conductor selling the largest

[1] See return of tramwaymen's wages and hours of labour, prepared for the Municipal Tramways Association by Mr. Alfred Baker, printed in the *Municipal Year Book, 1911*, pp. 925-933.

[2] In contrasting this figure with that for Blackburn it must be remembered that Blackburn is very hilly.

number of tickets. In West Ham a bonus of 5s. per quarter is paid to each conductor whose fare receipts are over the average in his particular group, and who is not reported for bad timekeeping on the road. On many municipal tramway systems, merit stripes or badges, carrying extra pay, are awarded to motormen and conductors with good records.

§ 3. From the methods of paying wages we may turn to the rates of pay.[1] These, of course, differ very considerably from town to town, somewhat according to the cost of living. So far as skilled labour is concerned the general practice appears to be to pay the local trade union rates. For unskilled labour there are usually no recognised standard rates, and the local authorities appear to take as their model the rates paid by the best private employers in the neighbourhood; consequently the wages of general labourers in the employ of a municipality are above the average wages paid in the locality. No objection can be taken to this, provided the efficiency of the municipal labourers is correspondingly greater than that of the average labourer in the neighbourhood. Local authorities often adopt the principle of a minimum wage, and it is then essential that no one should be employed who is not worth that wage, otherwise the system constitutes a distinct abuse, a small favoured class of workpeople is created which is subsidised at the expense of the general body of ratepayers. 'It is both right and desirable that municipalities should be good employers, but it is neither fair nor reasonable that they should be over-generous employers.

In addition to their money wages municipal employees

[1] *The Earnings and Hours Enquiry*, iv., *Public Utility Services in 1906* (Cd. 5196), gives a general indication of the earnings of men employed in the water, gas, electricity and tramway services, but does not distinguish between municipal departments and private companies. The *Parliamentary Return on Municipal Trading* (*United Kingdom*), 1902-6, gives the wages paid by a large number of municipal trading departments to different classes of workpeople during the years 1902-3 to 1905-6. *The Report of the Board of Trade Enquiry into the Cost of Living in German Towns* gives the predominant wages of some classes of municipal workmen in the principal German industrial towns in October 1905. The return prepared by Mr. Alfred Baker for the Municipal Tramways Association, printed in the *Municipal Year-Book*, *1911*, gives the wages and hours of labour of tramwaymen. Information concerning wages is published in the annual reports of some municipal trading departments, *e.g.* Sheffield Tramways.

not infrequently receive uniforms, and sometimes dwelling-house accommodation; further, they may be entitled to sick pay and to holidays with wages, and the local authorities may contribute to superannuation schemes on their behalf. All these things, of course, must be taken into account in considering the amount of wages paid. The service in which uniforms are most usually provided by the local authorities is that of the tramways. The provision of house accommodation is exceptional; a few employees, especially foremen, are sometimes housed on the sites of gas works or of water works, so as to be immediately available in case of emergency. Amongst the municipal undertakings which have regulations concerning sick pay are the East Ham, Lincoln and Manchester Tramway Departments.[1] In East Ham all men of at least one year's service are allowed two weeks' sick pay at full rate and two weeks' half pay. This is quite apart from accident pay, for which they receive full pay for the first three weeks, and half pay thereafter. In Lincoln, in case of sickness, the motormen and conductors receive no pay for the first three days, and afterwards half pay for a fortnight. In Manchester, after six months' service, all men are entitled to half pay for one month,[2] sick pay allowance not to exceed two months in any one year. Sheffield, Halifax and Preston may be quoted as illustrations of towns which give holidays with pay to their tramwaymen. In Sheffield all employees of the Tramway Department are granted one week's annual holiday with pay.[3] In Halifax motormen and conductors receive six days' annual holiday with pay; in Preston they receive one day, with pay for each year of active service, with a maximum of six days. The number of superannuation schemes supported by town councils is comparatively few. In Newcastle-upon-Tyne the Corporation contributes annually to the superannuation fund a sum equal in amount to that contributed thereto by each officer and servant. The scale

[1] Return prepared for the Municipal Tramways Association by Mr. Alfred Baker, *Municipal Year-Book, 1911*, pp. 925-33.

[2] The grant of half pay to sick workmen involved a total payment of £2276 in 1910-11 (*Annual Report of the Department*, 1910-11).

[3] *Annual Report of the General Manager of the Sheffield Corporation Tramways for the Year ending March 25, 1910*, p. 19.

of contributions for officers and servants is from 2 per cent to 4 per cent of the salary and wage, according to the Newcastle-upon-Tyne Corporation Act, 1904.[1] In Croydon workmen contribute 2½ per cent of their wages to a superannuation fund, and the Corporation adds a like amount. Pensions and endowments are payable at the age of sixty-five.[2] In Birmingham certain non-contributory pensions are payable to municipal workmen.[3]

Another problem concerning wages is the rate of pay for work on Sundays, on holidays and for overtime. The only municipal service for which information on these points has been systematically collected and published is the tramway service.[4] As this department is the one which in most towns occupies more workmen than any other municipal department, the conditions ascertained may be briefly considered. Of seventy-six municipal tramway undertakings which had a Sunday service in December 1910, twenty-four paid their motormen and twenty-two their conductors at higher rates for Sunday work, or in other words, something less than one-third of the undertakings distinguished in the matter of pay between Sunday and week-day services. The higher Sunday pay generally takes the form of time rate and a quarter, as for example, in Birmingham, Derby, Huddersfield and Sheffield, but sometimes it is as high as time rate and a half, which is the case in Cardiff and Leith. As far as holidays are concerned, the majority of municipal tramway undertakings pay the ordinary rates, one or two pay time and a quarter,[5] a few pay time and a half,[6] and several give as much as double pay on Christmas day,[7] and one or two on Good Friday as well.[8] The only town which is recorded as paying its traffic men at higher rates for overtime is Manchester, the rule being that the motormen and conductors are allowed time and a quarter for time worked over nine hours per day or fifty-four hours per week.

[1] *Parliamentary Return on Municipal Trading* (*United Kingdom*), part v. p. 23.

[2] *Ibid.* part iii. p. 153.

[3] *Ibid.* part iii. p. 4.

[4] Return prepared for the Municipal Tramway Association by Mr. Alfred Baker.

[5] *E.g.* Belfast.

[6] *E.g.* East Ham, Wigan.

[7] *E.g.* Halifax, Leeds and Northampton.

[8] *E.g.* Chester, Doncaster.

TABLE showing the Hours of Labour (exclusive of Meal-times and Overtime) in certain Public Utility Services in an Ordinary Week of 1906[1]

Service.	Number and Percentage Proportion of Workpeople returned whose Hours of Labour for a Full Ordinary Week of 1906 (exclusive of Meal-times and Overtime) were :—									Total Number of Work-people.	Average Hours in a Full Week.
	Under 48.	48 and under 50.	50 and under 52.	52 and under 54.	54 and under 56.	56 and under 58.	58 and under 60.	60 and under 62.	62 and above.		
	NUMBERS.										
Gas Supply	7,940	18,448	3,212	8,874	10,727	3,415	689	822	5,656	59,787	52.6
Electricity Supply	1,081	2,848	1,126	2,493	2,917	1,020	124	144	179	11,932	51.9
Water Supply	543	649	1,607	1,054	3,310	1,601	355	735	1,285	11,139	55.1
Tramway and Omnibus	36	315	1,377	2,818	10,595	3,697	2,154	15,779	7,215	43,986	58.7
	PERCENTAGES.										
Gas Supply	13.2	30.9	5.4	14.8	17.9	5.7	1.2	1.4	9.5	100	...
Electricity Supply	9.1	23.9	9.4	20.9	24.4	8.6	1.0	1.2	1.5	100	...
Water Supply	4.9	5.8	14.4	9.5	29.7	14.4	3.2	6.6	11.5	100	...
Tramway and Omnibus	0.1	0.7	3.1	6.4	24.1	8.4	4.9	35.9	16.4	100	...

[1] *Earnings and Hours Enquiry*, vol. iv., *Public Utility Services*, p. 12.

§ 4. The most complete information concerning the hours of labour in public utility services is contained in the report of the Board of Trade in connection with the Earnings and Hours Enquiry. The figures relating to gas, electricity, water and tramway and omnibus undertakings are given on the opposite page; they embody the returns from private as well as from municipal undertakings. So far as the gas, electricity and water services are concerned the hours of labour of the great majority of workers are fewer than fifty-six hours per week. This does not seem excessive, and in the absence of any special grounds for believing that municipal workers in these services are employed for fewer hours than employees of private companies, these figures may be accepted as typical. So far as tramways are concerned there appears to be a fairly general impression that shorter hours are worked in municipal than in private undertakings; further, hours in excess of sixty per week seem sufficiently long to call for curtailment by municipalities, which at first sight might incline people to believe that the longer hours refer to companies only. The information published by the Municipal Tramways' Association[1] does not confirm this view. The returns from 83 municipal tramway undertakings were tabulated. In 47 of these the hours of the motormen are given as 60 per week, in 10 of them as being 62 per week or more, and in 26 of them as being less than 60 per week. The hours worked by the conductors are practically the same as those worked by the motormen. This return only confirms the result of the Earnings and Hours Enquiry,[2] that the predominant hours for tramwaymen are from 54 to 60 per week.[3]

[1] Quoted above, footnote (1), p. 282.

[2] The very high proportion (16.4 per cent) of tramway and omnibus men working 62 hours and above is largely accounted for by a considerable number of men in the London District and in Ireland working between 68 and 72 hours per week (*Earnings and Hours Enquiry*, vol. iv. p. 180). As the hours on all the principal undertakings of local authorities in the London District and in Ireland appear to have been fewer than 64 per week, it seems safe to assume that these long hours relate to the undertakings of certain companies. This is confirmed by the investigations of the National Civic Federation in London and Dublin. Consequently the hours above 64 per week may be ignored for our purpose as not relating, to any considerable extent at least, to municipal undertakings.

[3] Other sources of information concerning hours of labour in municipal undertakings will be found in the same publications as deal with wages, which are referred to in the footnote on p. 283.

In the two trading services which employ the largest number of workers, namely, the tramway and the gas undertakings, it is necessary to organise a good deal of the labour on the shift system. In the case of tramways this probably applies to the bulk of the workers. In the case of gas undertakings the majority of the men are employed on ordinary day work, to judge by the returns of the Board of Trade Earnings and Hours Enquiry,[1] but a large minority are engaged in shift work. These are engaged in the actual carbonising process, which is continuous, and has to be carried on day and night seven days a week. This really raises two problems, firstly, the arrangement in relays of such workers as are necessary to carry on those parts of the work which are of a continuous character, and, secondly, the introduction of a scheme by which the shift men can secure periodically a full day's rest. The first problem is solved by adopting three eight-hour or two twelve-hour shifts. In neither case is there any regular break for meals, but actually, of course, certain intervals in the work must occur, and for the purpose of the Earnings and Hours Enquiry an eight-hour shift is regarded as representing a seven-hours day and a twelve-hour shift as representing a ten and a half hours day.[2] Formerly the latter system was almost universal, but at the present time the eight-hour shift is more commonly adopted. The table given opposite indicates for all those municipal and private gas works which made a return in 1906, the system which was in

[1] Information was obtained concerning 59,787 men employed in gas undertakings in the United Kingdom; of these 36,666, or, roughly, 60 per cent, were employed on ordinary day work and 23,121, or, roughly, 40 per cent, were shift workers; see *Report*, pp. 134-137.

[2] *Earnings and Hours Enquiry*, vol. iv. pp. 134, 135. Mr. F. Popplewell, in his paper on "Seasonal Fluctuations in Employment in the Gas Industry" in the *Journal of the Royal Statistical Society*, 1911, refers to the twelve- and eight-hours shifts as follows (p. 699): These are the nominal lengths of shift. In actual practice they are shorter. On the twelve-hour system the men charge a set of retorts every two hours, but the actual work occupies only about an hour, and in the last charge of the shift the men hurry themselves and get it finished in three-quarters of an hour. They are then at liberty to go, and the men on the new shift only come in when the charge is ready to withdraw. There is thus an interval of an hour and a quarter between the shifts, and the actual length of shift is 10¾ hours. On the eight-hour system charging takes place every hour, and occupies half an hour. The actual length of shift is, in this case, 7½ hours.

vogue. It will be noticed that the proportion of eight-hour and of twelve-hour shift workers varies for the different occupations, the proportion for all occupations being 76 per cent

TABLE showing the Number of Men engaged in Gas Supply returned as working Eight Hours and Twelve Hours per shift respectively, and the Numbers of Shifts worked in an Ordinary Winter Week in 1906.[1]

Occupation.	Number of Men returned as working Eight Hours per Shift.	Number of Men returned as working Twelve Hours per Shift.	Average Number of Shifts worked in Ordinary Winter Week.
Foremen	484	332	6.4
Coal Porters	420	34	6.5 [2] 6.3 [3]
Coal Wheelers	809	170	6.7 [2] 6.6 [3]
Coke Spreaders and Wheelers	2,440	152	6.8 [2] 6.5 [3]
Firemen	1,436	175	6.8
Gas Stokers	8,423	3,036	6.8
Retort Cleaners	459	93	6.8
Pipe Cleaners	576	188	6.7
Retort Labourers	298	286	6.5
Sulphate House Men	99	262	6.6
Purifier Men	257	163	6.2 [2] 6.3 [3]
Coke Trimmers	328	266	6.4 [2] 6.1 [3]
Engine Drivers	644	236	6.8 [2] 6.0 [3]
Boiler Attendants	643	162	6.8
Valve Men	253	57	6.9
All foregoing Occupations	17,509	5,612	

eight-hour and 24 per cent twelve-hour shift workers. The last column of this table shows to what extent a periodic day of rest is provided. The most numerous classes, the stokers, firemen and coke spreaders and wheelers, worked

[1] *Earnings and Hours Enquiry*, vol. iv. pp. 136, 137, 138.

[2] Pieceworkers.

[3] Timeworkers.

on an average 6.8 shifts per week, which represents one free day every five weeks. This, of course, applies to the winter months only, when the work is carried on at high pressure. In summer it is comparatively easy to free men for whole days, as at that time there will probably be a more than adequate reserve of workers.

A numerical example will illustrate best what is implied by men working 6.8 shifts per week instead of 6 shifts a week. Assuming 102 shift workers are required to carry on the work of each shift, then, in order that no man might work more than 6.8 shifts per week, it would be necessary to employ 105 men, so that three might be free each day in turn.[1] If it were desired that the men should not work more than six shifts per week it would be necessary to employ 119 men in respect of each shift so that seventeen might be free each day in turn.[2] This would entail a serious increase of the number of men employed in winter, which would greatly aggravate the problem of providing regular employment for the men in summer, when the demand for gas is considerably reduced and production is conducted on a smaller scale. This point is referred to below;[3] here, however, the importance of limiting the size of the winter staff as far as possible in order to minimise unemployment in summer must be emphasised. Consequently it seems necessary to approve of an arrangement by which certain classes of gas workers do not obtain a weekly day of rest in winter, but only a day every four or five weeks, and instead have extra days free during the summer months. The absence of a weekly day of rest in winter is much less serious where the eight-hour shift system is in force and every man has sixteen out of the twenty-four hours of the day at his disposal, than where the twelve-hour shift system exists and every man has only twelve hours off duty each day.

The problem of the shift system in connection with tramways is quite different from that in connection with the supply of gas. There is no question of a continuous process; it is considered desirable and expedient to provide

[1] $\frac{6.8}{7} \times 105 = 102$.

[2] $\frac{6}{7} \times 119 = 102$.

[3] See pp. 393-396.

a service from early morning till late evening,[1] and it is, of course, physically impossible that such service should be maintained by one set of workers. In many towns two special difficulties have to be contended with; firstly, the service required is much greater at some hours of the day than at others, and secondly, the service required is much greater on some days of the week than on others. Further, at holiday times a special strain may be put upon tramway undertakings. To provide for the unequal service required throughout the day, it is necessary to make some of the shifts overlap, so that more men are working at one period than at another, and also to divide into two parts the periods during which a good many of the men work with a longish interval between, so that they may be on duty during the morning and the evening rush hours. The arrangements adopted in Sheffield may be given as an illustration. The service begins at 4.40 A.M. and finishes about 12.40 A.M. This period of twenty hours is divided into two parts: one set of men works from 4.40 A.M. to 2 P.M., and another set from 2 P.M. to 12.40 A.M. Each man is relieved once during his spell of duty to allow him to have a meal, the length of the interval being about fifty minutes, which is the average length of time occupied for a car to journey from the centre of the city to a terminus and back. The men who work morning shift one week, work afternoon and evening shift the following week, and vice versa. To provide the extra service during the morning and evening rush hours, some men work what are known as "split turns." They are on duty from about half-past five to nine o'clock in the morning, and again from about half-past four to eight o'clock in the evening.

In most towns a service of trams is maintained on Sundays for the convenience of the general public. In some cases the traffic will be much lighter than on week-days, but in others, particularly on the Continent, the traffic is likely to be considerably heavier. Where the former condition exists, the service can be so organised that enough

[1] So far as the writer is aware the London County Council Tramway undertaking is the only one in this country which provides an all-night service, and for the purpose of the present argument it can be left out of consideration.

extra men are employed to allow all to have a free day periodically once a week, or less often as may be desired. Where the latter condition exists, and many additional men are required one day in the week, other arrangements have to be made, as a few permanent extra men who six days out of seven replace other men, will not answer the purpose.[1] It will be necessary to provide a special reserve of men to supplement the permanent staff on Sundays. One way of doing this is to train such men to act as reserves as are employed on week-days only in the car sheds, for example, in connection with the repairing and building of cars. If these workmen are to some extent mechanics, they may be taught to act as motormen, otherwise as conductors. In Frankfort-on-the-Main a special department was established for the making of tramwaymen's uniforms, so that an extra reserve of men might be available to facilitate the provision of an additional service when required. Another way of temporarily increasing the staff of motormen and conductors is to engage people from outside the service, men who are accustomed to handling money and who are willing to supplement their incomes, to serve as conductors, whilst the ordinary conductors act as motormen. Those towns which have organised their service to deal with a heavy Saturday afternoon or Sunday traffic[2] are well prepared to deal

[1] Suppose the service required that 30 motormen and 30 conductors should be on duty at one time, week-days and Sundays. The employment of 10 surplus men in connection with each shift of 60 would enable all 70 men to enjoy a weekly day of rest (including one Sunday every 7 weeks). If instead of 60, 90 men were required simultaneously to provide the Sunday service and 90 men were permanently engaged, it being arranged that they should all work on Sundays, on the 6 week-days there would be employment for 60 men, and there would be 90 men to do the work, which would provide full employment for each man on four week-days only. This would necessitate either that each man did five days' work only, and received five days' pay only each week, or that some other system should be adopted by which a reserve of men should be available for Sunday service. In this case 72 men might be permanently employed in connection with each shift by the tramway department. All would work on Sundays, and they would take turns at providing 60 men per shift on week-days, which would give each man one week-day free every week. It would then be necessary to provide a special reserve of 18 men in respect of each Sunday shift to make up the numbers from 72 to 90.

[2] Two illustrations of extra Sunday traffic in German towns may be given. In Dresden in 1907 the ordinary week-day service was maintained by 605 cars (including 205 trailers) and 1005 motormen and conductors. To maintain the Sunday service 745 cars (including 278 trailers) and 1212 men

with heavy holiday traffic. Other towns may have to make special arrangements to secure the services of the necessary additional men at these times. To meet an abnormal demand of short duration for extra tramway facilities, as for example, in connection with a football match, it is always possible to draw on the morning shift in the afternoon, and vice versa, if the spare men and reserves are not numerous enough to suffice.

With regard to the number of days of rest accorded to tramway and omnibus men, the Earnings and Hours Enquiry shows that on those municipal and company undertakings for which returns were made,[1] the average number of days worked in the last week of September 1906 by those motor men and conductors who worked full time was 6.2.[2] In other words, on an average they enjoy four days of rest every five weeks. The way in which the labour was actually organised probably provided that some men should be free one day in seven, and others one day in fourteen. It is difficult to say whether in this respect municipalities are better employers than companies, but there appears to be no special reason, as in the case of the supply of gas, why the work should not be so organised that as a general rule every tramway man should enjoy a weekly day of rest. The fact that a weekly day of rest is not accorded on all undertakings is probably due, in part at least, to the men, who are anxious to earn extra money by working thirteen out of fourteen days, instead of only six out of seven.

§ 5. Some reference has already been made to the seasonal fluctuations in trade in the gas industry. For this purpose it makes no difference whether the undertakings are organised on a municipal or a company basis. The conditions which

were necessary, or 207 men more per shift than were required for the week-day service (*Verwaltungsbericht der städtischen Strassenbahn in Dresden auf das Jahr 1908*). In Mayence, during 1907, 18.22 per cent of the takings from the sale of tickets were received on Sundays, 14.77 per cent on Mondays, 14.47 per cent on Tuesdays, 12.35 per cent on Wednesdays, 12.49 per cent on Thursdays, 14.24 per cent on Fridays, and 13.46 per cent on Saturdays. It is in Mayence that on a fine Sunday afternoon in summer on one route it is necessary to maintain a service of 32 cars (including 16 trailers) instead of the usual four cars which provide the week-day service.

[1] They relate to 46,702 work-people, including 10,009 tram-car drivers and motormen and 13,051 conductors.

[2] *Earnings and Hours Enquiry*, vol. iv. p. 181.

TABLE showing the Total Number of Workpeople receiving Wages in the last Pay-week or other Ordinary Week in each Month in 1906 from Local Authorities and Companies furnishing Returns.[1]

Month.	Gas Supply.	Electricity Supply.	Water Supply.	Tramway and Omnibus Services.
January . . .	69,863	13,607	14,097	44,110
February . . .	67,510	13,633	13,865	44,517
March	64,085	13,796	14,052	45,099
April	61,507	13,595	13,936	45,641
May	60,500	13,664	14,074	46,538
June	59,691	13,872	14,330	47,197
July	60,033	13,860	14,177	47,240
August	60,647	14,112	13,985	47,358
September . . .	63,130	14,212	13,874	47,073
October . . .	66,304	14,271	13,719	46,812
November . . .	69,880	14,066	13,775	46,646
December . . .	71,854	13,761	13,608	46,567
Average Weekly Number	64,584	13,871	13,958	46,233

PERCENTAGES of Average Weekly Numbers

January . . .	108.2	98.1	101.0	95.4
February . . .	104.5	98.3	99.3	96.3
March	99.2	99.5	100.7	97.5
April	95.2	98.0	99.8	98.7
May	93.7	98.5	100.8	100.7
June	92.4	100.0	102.7	102.1
July	93.0	99.9	101.6	102.2
August	93.9	101.7	100.2	102.4
September . . .	97.7	102.5	99.4	101.8
October . . .	102.7	102.9	98.3	101.3
November . . .	108.2	101.4	98.7	100.9
December . . .	111.3	99.2	97.5	100.7
Average Weekly Number	100.0	100.0	100.0	100.0

[1] *Earnings and Hours Enquiry*, vol. iv. p. 2.

lead to the fluctuations in employment have nothing to do with the form of management. Consequently the figures published in the *Board of Trade Report on the Earnings and Hours Enquiry* can be accepted, subject to a restriction mentioned below, as typical of the experience of municipalities in this respect. The first part of the table given opposite shows us the number of workpeople employed in such gas, electricity, water and tramway and omnibus undertakings as made returns in one particular ordinary pay-week of each month during 1906. In the case of gas undertakings, for example, in a week in June only 59,691 workpeople were employed, whereas in December 71,854 were employed.[1] In the second part of the table, the number employed in a particular week of each month is expressed as a percentage of the average weekly numbers employed. Thus the average weekly number employed in the gas industry was 64,584. This is treated as equal to 100 ; the number employed in June was 92.4 per cent of the average, and in December 111.3 per cent of the average. In the case of gas, the variations in the number employed were from 7.6 per cent below the average to 11.3 per cent above the average ; the corresponding figures in the case of electricity were 2 per cent and 2.9 per cent, in the case of water 2.5 per cent and 2.7 per cent, and in the case of tramways 4.6 per cent and 2.4 per cent. With regard to tramways, however, there is reason for believing that some of the under-

[1] Seasonal unemployment in the gas industry is not evenly distributed amongst all classes of workers, but is restricted to certain classes, chiefly to those directly connected with the actual carbonisation process, or the "retort-house men," who include the stokers and most of those mentioned in the table on p. 289 above. Amongst the "yardmen," or those engaged in and about gas works in connection with purification, the manufacture of by-products and the repair and upkeep of the plant, there is a slight seasonal fluctuation in employment, which is somewhat greater in summer than in winter, owing to the fact that the summer months are utilised as far as possible for the renewal of broken retorts, the overhauling of purifiers and by-product plant, and for effecting any necessary extensions to the works. Amongst the "outside men," who are employed exclusively in connection with the distributive side of the undertaking, and who work for the most part outside the works, employment is practically regular throughout the year. The whole burden of summer unemployment in the gas industry falls upon the "retort-house men," and it is estimated that the number of these employed in June is only about half of that employed in December (see F. Popplewell, "Seasonal Fluctuations in Employment in the Gas Industry," *Journal of the Royal Statistical Society*, 1911, especially pp. 698-702).

takings which made returns opened extensions during the year which would lead to an increase in the number of men employed; on no other assumption does it seem possible to explain the considerable difference between the numbers employed in January and in December 1906.[1] In the case of water and of tramways more people were employed in summer than in winter; in the case of electricity, in autumn than in spring; in the case of gas, in winter than in summer.[2] The closer relationship between the number of workpeople and the output in the case of the gas industry than in the case of the electricity industry may account, to some extent at least, for the greater seasonal fluctuations in employment in the former than in the latter industry. Further, the falling off in the demand for current for lighting purposes in summer is partially counteracted by the increased demand for current for tramway purposes.

§ 6. One important labour aspect of municipal trading remains to be considered, namely, the pressure of one kind or another which may be brought to bear on local authorities with regard either to the making of appointments or to the conditions of service. (*a*) So far as appointments are concerned, there is a danger that men will be appointed on the recommendation of councillors, without due regard being paid to their fitness for the positions into which they are placed. If once this system is established, local politicians may come to regard vacant positions in the municipal service as suitable rewards for their supporters, and the efficiency of the local administration will be entirely undermined. The only safe rule to adopt appears to be to leave the selection of workmen entirely in the hands of the head of the department concerned, as he and his assistants are in the best position to judge the qualifications of applicants. The rule adopted by the Manchester Corporation Tramways Committee, instructing their manager not only not to pay attention to letters from councillors but to give preference to

[1] The total length of tramways in the United Kingdom at the end of 1905 was 2117 miles, and at the end of 1906, 2240 miles (*Statistical Abstract for the United Kingdom*, 1894-1908, p. 319).

[2] Compare what is said about the difference in gas production in summer and winter, pp. 201-202 above.

applicants who have no such recommendations,[1] is entirely to be commended. Amongst other things which may check undesirable influence in making municipal appointments are the systematic investigations by the Town Councils concerned of all accusations of undue favouritism, the strongly marked disapproval of the general public, as voiced in the press, at local meetings of one kind and another and at election times, and the introduction of minimum wages, for if the wage can no longer be lowered to adapt it to some extent to the capacity of incompetent workmen, it is probable that the less efficient applicants will not be engaged.[2]

(*b*) Regarding the conditions of service under local authorities, it is impossible to ignore that one reason that municipal trading is advocated by many people is to improve the conditions of labour.[3] Consequently it is not astonishing to find that various efforts are made to secure higher wages and shorter hours for municipal employees. One direction from which pressure may come is from the workmen in the service of local authorities; an organisation exists, known as the Municipal Employees' Association, which consists mainly of persons employed by municipalities, county, urban, rural and parish councils, poor law, education, and other local authorities in the United Kingdom. Its members include all grades of workers except skilled artisans working at their trade. The membership amounts to some 20,000.[4] The position of the Municipal Employees' Association is somewhat peculiar. It is a registered trade union, but in September 1910, it was refused affiliation to the Trades Union Congress. The difficulty first arose at the Liverpool Congress in 1906, when the following resolution was passed: "That any method of organisation which seeks to divide workmen employed by public authorities or private employers from their fellows in the same occupations employed by private firms is detrimental to the best interests

[1] Professor John R. Commons, "Labour and Politics," in the *National Civic Federation Report on Municipal and Private Operation of Public Utilities*, vol. i. p. 99.

[2] Cf. Commons, *loc. cit.* p. 99. He states that the adoption of the minimum wage policy in Glasgow has stopped the practice of councillors unloading and pensioning their old employees on the municipal pay roll.

[3] See p. 92 above.

[4] See statement concerning the Municipal Employees' Association in the *Municipal Year Book, 1911*, amongst the list of municipal societies.

of Trade Unionism, and that the Parliamentary Committee use its best endeavours to prevent the spread of such methods of organisation."[1] During 1907, the Parliamentary Committee endeavoured to secure such alterations in the constitutions of the organisations concerned as would bring them into line with *bona fide* trade unionism. The progress made was slow, and in March 1908 the Joint Board of the Trades Union Congress, of the General Federation of Trade Unions, and of the Labour Party expressed its opinion by resolution that by the first day of May 1910 all the unions of publicly employed workpeople should be assimilated in national unions, and recommended that after that date no recognition should be given to any sectional union then in existence. This was endorsed by the Congress held in Nottingham in 1908.[2]

Under this resolution the Municipal Employees' Association was refused affiliation to the Trades Union Congress in 1910. From the Report of the Parliamentary Committee, and from the discussion on that Report, it remains uncertain whether the Association is to be indefinitely refused recognition, or whether, by enlarging the scope of its rules to include employees of private firms, the objections made to it will cease.[3] The chief opponents of the Association are the unions which appear to suffer most from its competition for new members—the gasworkers and the general labourers—and it is doubtful whether the widening of the scope of the Association would meet their difficulty satisfactorily. The Association, if it genuinely widened its scope, would considerably change its character, and in considering whether it is prepared to do so it will probably seek to estimate carefully how far it will lose in strength by the withdrawal of the support of the regular trade unions. On the other hand, the regular trade unions have a good deal to lose if the present policy of refusing recognition is continued, as the Association will be free to canvass the members of other unions, which is particularly serious in view of the fact that the payments it takes from its members are lower than those of ordinary unions, on account of the

[1] *Annual Report of the Trades Union Congress*, 1910, p. 83.

[2] *Ibid.* p. 84.

[3] *Ibid.* pp. 84, 111, 112, 113.

fewer benefits it has to pay. So far as an outsider can judge, the ordinary trade unions stand to lose more than the Association by its exclusion.

(*c*) Another direction from which pressure may be exerted upon local authorities in the matter of labour conditions is from those trade unions, some of whose members are engaged in municipal departments. One such trade union is the Amalgamated Association of Tramway and Vehicle Workers, which recently sought to obtain a reduction of the tramwaymen's hours in Manchester from nine to eight per day, and from fifty-four to forty-eight per week, without reduction of pay, principally on the ground that the work was more strenuous than formerly, and that the health of the men and the safety of the public rendered shorter hours desirable. The General Manager, replying on behalf of the Tramways Committee, summarised the Committee's point of view as follows:—

1. They have from time to time in the past increased wages and granted concessions equal in the aggregate to 65 per cent in the case of guards and 45 per cent in the case of drivers. These concessions are costing the department £55,000 per annum.

2. The wages now paid in Manchester are equal to the highest paid elsewhere.

3. The present working hours are as low as in any other municipal tramway undertaking, and are much lower than in 82 per cent of such undertakings.

4. The Committee are now asked to grant an eight-hours' day, which really amounts to an application for an increase of wages per hour, such increase being equal to 12½ per cent on the present rate, and to concede this would cost the ratepayers £23,000 per annum.

(*d*) The Union asked that the question whether the men were entitled to an eight-hours' day should be submitted to arbitration. The Committee protested against Manchester being singled out as the one city in the Kingdom where an eight-hours' day should be adopted, but in order to maintain the existing friendly relations with their workpeople, consented to refer to an arbitrator, to be appointed by the Board of Trade, the question as to whether or not the

Manchester tramway employees (motormen, conductors, time-keepers, inspectors, trolley boys, car washers, greasers, controller cleaners and brakesmen) were reasonably entitled to have their working hours reduced from fifty-four to forty-eight per week, without any diminution in the weekly wages then paid, or the curtailment of any of the other privileges which the men then enjoyed, regard to be given by the arbitrator

(1) To all the concessions granted by the Committee in the past;

(2) To the existing wages and working conditions in Manchester as compared with the wages and working conditions in other tramway undertakings; and

(3) To such other facts and arguments as might be submitted by either party in support of or against the proposal.

After some demur at the conditions imposed by the Committee, the trade union consented to the basis of the arbitration. Sir David Harrel was appointed by the Board of Trade to act as arbitrator. In his award, issued on April 26, 1911, he expressed the opinion that a case had not been made out for the reduction of the working hours from nine to eight, and that such a concession was not necessary in the interest of the health of the men or of the safety of the public. He declared that the tramway employees whose cases were referred to him for decision were not reasonably entitled to have their hours reduced from fifty-four to forty-eight per week without any diminution in the weekly wage then paid, or the curtailment of any of the other privileges which the men then enjoyed.[1]

Many people who follow this case will find it difficult to see how the Amalgamated Association of Tramway and Vehicle Workers could be regarded as acting fairly within their normal scope in attempting to secure an eight-hours' day for the Manchester tramwaymen in the face of the existence of much less satisfactory conditions of work in

[1] As the official Board of Trade Report of Proceedings under the Conciliation (Trade Disputes) Act, 1896, containing this case, has not been published at the time of writing, the information has all been taken from the letters and reports published in the Manchester newspapers at the time when the question was being discussed.

the majority of other towns. A review of the whole situation leaves the impression that this claim by the Trade Union upon the Manchester Tramways Committee was made, not because the men had any real grievance against their employers, but because the Union saw that the undertaking was remunerative, that the Committee had already made numerous concessions, and that there was always a chance, if pressure was brought to bear upon them, that they might make more concessions. Where cases of this kind occur, the best procedure for the municipality concerned to adopt appears to be that adopted by the Manchester Tramways Committee; the publication of all the correspondence and data relating to the claim enables all ratepayers to consider it on its merits, and the local authority can then rely on their support in any reasonable action which it takes in the matter.

Although an arbitration between a local authority and its employees, such as occurred in connection with the Manchester Tramways Department, appears to be quite exceptional, there are at least two cases in which permanent Conciliation Boards have been established in connection with municipal trades. The London County Council Tramways Conciliation Boards are formed to deal with differences relating to rates of wages, hours of labour and general conditions of labour, other than questions of discipline and management.[1] There are four Sectional Boards and one Central Conciliation Board under the scheme. On each of these the Council and the workmen are equally represented. Notice of any proposed change in conditions of employment must be given by either party to the other, and if not accepted within two months, it may be referred to a Sectional Board. If such board fails to agree, or if its decision does not meet with the approval of the Council or workpeople, the matter is referred to the Central Board; if the latter fails to agree, or if its decision is not accepted by the Council or workpeople, the matter is referred to an arbitrator appointed by the Board of Trade when the

[1] Board of Trade (Labour Department), *Second Report on Rules of Voluntary Conciliation and Arbitration Boards and Joint Committees*, 1910 (Cd. 5346), p. 286.

parties cannot agree in their selection. The decisions of the arbitrator are final and binding.[1] The Huddersfield Corporation Tramways Conciliation Board has been formed to determine differences as to rates of wages, or as to hours of labour, or other differences of a serious nature which do not fall within the authority of the tramways manager to settle.[2] The Board consists of the Mayor, the Chairman of the Finance Committee and two members of the Tramways Committee on the one side, the General Secretary and a member of the Executive Committee of the Amalgamated Association of Tramway and Vehicle Workers, together with two employees, on the other side. Questions must first be referred to the Tramways Committee, and then, if unsettled, to the Board. If the Board is equally divided, a president, selected unanimously by the Board or appointed by the Board of Trade, must be called in. A decision of the president is final and binding on all parties.[3]

(*e*) Two specific directions from which pressure may be brought to bear upon municipalities to secure better conditions for their workpeople have been considered. There are, however, other less definite ways in which a local authority may be influenced; socialist views may become disseminated amongst the town councillors, without any efforts on the part of the municipal workpeople, or the employees of the local authority may exert themselves at election times to secure the return of such candidates as will support a very liberal treatment being accorded to them. If the latter contingency occurs, it is more serious than the former, as it represents a flagrant abuse of the franchise. Although the actual number of municipal employees in any constituency may not be great, where the supporters of two parties are fairly evenly balanced, comparatively few organised voters can turn the scale in one direction or the other. The less keen the general body of voters is about a municipal election, the more power is placed in the hands of those who are directly interested in it. The danger of an abuse of the franchise always exists, but it is held in

[1] Board of Trade (Labour Department), *Second Report on Rules of Voluntary Conciliation and Arbitration Boards and Joint Committees*, 1910 (Cd. 5346), p. 289.

[2] *Ibid.* p. 283.

[3] *Ibid.* p. 285.

check by the feeling amongst voters and candidates that it is neither honest nor honourable to barter votes for personal gain; only an unscrupulous candidate would try to bribe voters by promising to improve their positions, as far as it should be within his power, without regard to their capacities or present terms of employment. Perhaps the greatest safeguard of all lies in the publicity which is given to municipal elections; the general body of ratepayers, and especially workmen in private employment, watch closely all efforts to improve the positions of the somewhat privileged class of municipal employees; any attempt to coerce candidates or to bribe voters would be certain to meet with strong disapproval. From time to time the question of disfranchising municipal employees has been mooted, but fortunately there is no reason to think that the existing abuses of the franchise are such as to call for this extreme remedy.

(*f*) The other cause which may lead to over-generous terms being granted to municipal employees, namely, the spread of socialistic views amongst town councillors, is a very real danger. There are men who are not content with according fair and reasonable treatment to municipal workmen, but are desirous of improving their positions at every opportunity; they are willing to vote advances without considering in the least the value of the services rendered. This applies only to people with small incomes; applications for rises in salary by officials who occupy responsible positions are not accorded the same sympathetic reception as similar applications from minor officials and workmen. The evil is consequently a double one: there is a tendency for one class of municipal employees to be overpaid and for another class to be underpaid as a result of the attitude of certain councillors. The chance of the workpeople being overpaid is greater in the case of a trading department than in the case of a non-trading department, because in the former case such a policy can be adopted without making any call upon the rates, if the undertaking is financially successful. This pressure put upon local authorities from the inside, so to say, is the most difficult to control; it is neither tangible nor does it result from people acting directly in their own interests. It is due to altruism rather than to egoism,

but it is misplaced altruism, as it imposes a hardship on the many for the benefit of the few. The general ratepayer is burdened with higher prices for the services or commodities sold by the local authority, or his rates are raised in the interests of a privileged class of municipal employees. As in the other cases where pressure is exerted upon local authorities to improve unduly the conditions of their labour, the principal remedy appears to lie in publicity.

It is impossible to say whether, and if so to what extent, municipal employees are being overpaid for one cause or another, but in view of the influences which may be set in motion at any time, it seems desirable to restrict their number, so far as this can be done without impeding a local authority in fulfilling its proper functions. The direct employment of labour by municipalities cannot be avoided, and should not be allowed to interfere with the undertaking of certain trading enterprises by local authorities, where weighty considerations in favour of such enterprises exist; in itself it is a drawback and not an advantage of municipal trading, and where the considerations in favour of municipalising an undertaking are not strong it may easily outweigh them, as in the case of a Municipal Works Department.

The inadequate payment of the principal officials of large trading departments is a serious problem. Where there is a considerable element of business men on a Town Council, of men who are accustomed to big transactions and who themselves employ large staffs, the importance of paying good salaries in order to attract first-rate men will be realised. Even then it may be difficult to secure the approval of the Council. In other cases, the members of local governing bodies do not appear to appreciate that a good manager makes all the difference between a successful and an unsuccessful undertaking, and that the improved financial results due to his efforts will more than compensate the local authority, which employs him, for any higher salary which he may be paid. For a municipality to act on the principle that no man is worth more than £500 a year, or some such figure, is most unfortunate; low-paid labour is seldom the cheapest in the long run, and

it is not likely to prove true economy to employ low-paid managers. Where in a profession there are few well remunerated positions and many poor ones, these conditions cannot fail to deter promising men from entering it. The small salaries offered for responsible positions in many municipal trading departments must tend to have the effect of making those departments less efficient than might otherwise be the case.[1]

[1] The salaries paid to all officials during 1902 to 1906 in the larger English and Scotch towns will be found in the *Parliamentary Return on Municipal Trading* (*United Kingdom*).

CHAPTER VIII

THE RESULTS OF MUNICIPAL TRADING

§ 1. AMONGST the many difficulties which have to be contended with in any systematic examination of municipal trading, none are greater than those involved in the attempt to use existing statistics for the purpose of reaching some conclusions with regard to the results attained by local authorities engaging in trading enterprises. The material available is employed in one of two ways, either to measure the success or the failure of municipal trading directly, or to do so indirectly by comparing it with private trading. In every case the accuracy of the figures employed and the validity of the interpretation put upon them call for careful consideration. The supreme test of the success of any ordinary business enterprise is the financial result obtained. This test cannot be applied to municipal trading undertakings without some qualifications, as the making of profits is not the primary object of any of these undertakings; the character of the service rendered and the price at which it is rendered must always be considered first. Nevertheless, the question whether the trading enterprises of local authorities are remunerative, or are merely self-supporting, or are actually run at a loss, is of great importance. Where, from the outset, there was no deliberate intention to subsidise an undertaking, it should be so managed as to be at least self-supporting; the making of a net surplus in order to relieve the rates is very often simply a matter of selling policy, and depends upon the price charged for the service or commodity, assuming that indirect competition is not so keen as to leave the local authority little freedom in the fixing of

prices. To make a loss, where it was intended that an undertaking should be self-supporting, shows either bad management, or that a mistake was made in estimating the probable revenue and expenditure of the enterprise at the time when it was being established. The loss may quite well be due to both these causes.

In dealing with the figures relating to the financial position of various trading undertakings the remarks made in Chapter V. concerning municipal trading accounts must be borne in mind; the capital accounts may have been inadequately debited with expenditure incurred in connection with the trading departments, in consequence of which their loan charges would be reduced; a proper share of the general expenses of the municipality may not have been charged to the trading departments, and the provision made for depreciation may be quite insufficient. In this way the annual expenditure of the undertakings would be checked, which would make their financial position appear unduly favourable. On the other hand, if the trading departments have supplied other municipal departments with services or commodities at less than the usual prices, or even free of charge, their receipts would be diminished to that extent, and the return would show their financial position to be less favourable than it really was.[1]

§ 2. In the table given on p. 308 will be found the aggregate receipts and expenditure of English and Welsh local authorities in respect of water, gas, electricity, tramway, harbour and market undertakings during 1907-8. It will be noted that in the case of water and of harbour undertakings there were very considerable deficits. So far as water undertakings are concerned, this is largely explained by the costly schemes which have frequently to be adopted to secure adequate supplies of water for future generations as well as for the present. With the growth of the populations of the areas supplied, the burdens will become less heavy in proportion to the quantity of water consumed; at present it is only possible to meet the heavy expenditure,

[1] The most recent statistics, published after this book was in the press, concerning municipal trading in England and Wales in 1910-11 will be found in the Appendix, p. 397.

TABLE showing the Aggregate Receipts and Expenditure (including Loan Charges) of Local Authorities in England and Wales in respect of certain Reproductive Undertakings during the Year 1907-8.[1]

Service.	Aggregate Receipts.	Aggregate Expenditure.	Surplus (+) or Deficit (−).
Water Supply Undertakings [2]	£4,768,000	£5,252,000	£−484,000
Gas Supply Undertakings	7,649,000	7,098,000	+551,000
Electric Lighting Undertakings	3,404,000	3,283,000	+121,000
Tramways and Light Railways	7,875,000	7,249,000	+626,000
Harbour, Dock, etc., Undertaking	3,615,000	4,182,000	−567,000
Markets	994,000	867,000	+127,000
All above Services	£28,305,000	£27,931,000	£+374,000

which chiefly consists of loan charges, either by fixing the prices very high or by making good the deficiencies out of the rates. The maximum prices which may be charged or the maximum water rates which may be levied are frequently fixed by Parliament. If sufficient revenue is not produced when the maximum water rate is levied, the deficiency must be made up out of the general rates, unless it appears to be only of a temporary character, in which case it may be carried forward, with the intention that it shall be eliminated out of future surpluses. The deficit in connection with water undertakings indicates roughly the subsidies which many local authorities are compelled to make to their water undertakings on account of the parliamentary restrictions on the charges that may be made. The great sanitary importance of a plentiful supply of pure water and the universal character of the demand for water appear to justify the policy of partially meeting out of the rates an abnormally heavy annual financial burden due to a very large outlay, which has been incurred in the present, principally with a view to secure adequate supplies of water for the future. Hence little or no fault can be found with the municipal management of water undertakings on account

[1] *Annual Local Taxation Returns*, 1907-8, part viii. pp. 95, 99.

[2] Including receipts and expenditure of the Metropolitan Water Board.

of the deficit revealed in the return of receipts and expenditure.

The heavy deficit in connection with harbour and dock undertakings is much more serious than that in connection with water undertakings, as the service rendered is not by any means of such general utility in the former as in the latter case. The subject of municipal harbour and dock undertakings has already been discussed, and in particular the advisability of running such undertakings with the assistance of large subsidies from the rates. The heaviness of the burden which may be occasioned by a harbour and dock undertaking is perhaps brought out most clearly by observing the experience of two of the towns which have entered upon big schemes of this character. In Bristol the expenditure exceeded the revenue in 1908-9 by nearly £115,000, and the rate levied to meet this deficit was 1s. 5¾d. in the £ in those parts of the borough which enjoyed no differential rating.[1] In Preston 1908-9 the deficit in connection with the municipal harbour and dock undertaking slightly exceeded £40,000, which necessitated the imposition of a rate of 1s. 9½d. in the £.[2]

Most of the deficits incurred in connection with harbour undertakings have doubtless been foreseen from the outset, and the enterprises have been begun with the deliberate intention of subsidising them out of the rates; the adoption of such a policy is, of course, open to criticism, but not the deficit actually incurred, in so far as it was anticipated. The price paid by the ratepayers of such towns as Bristol and Preston for the development of a shipping business certainly appears very high, but they alone are really in a position to judge to what extent they benefit by the facilities afforded by the harbour and docks; if they are satisfied with their bargain, and there is no reason for thinking that equal facilities could have been obtained on more favourable

[1] See *Annual Local Taxation Returns*, 1908-9, part v. pp. 9, 16, 30, 62. The revenue of the undertaking was £291,060, the working expenses £181,852, and the loan charges £223,630. The outstanding loans in respect of the undertaking on March 31, 1909, were £5,931,437.

[2] See *Annual Local Taxation Returns*, 1908-9, part v. pp. 10, 18, 32, 66. The revenue of the undertaking was £65,487, the working expenses £51,387, and the loan charges £54,229. The outstanding loans in respect of the undertaking were £1,106,284 at the end of 1908-9.

terms had some other form of management been adopted, the arrangement may be accepted as being the best which is possible under the circumstances.

Taking municipal gas, electricity, tramways and market undertakings in the aggregate, a surplus was realised in each case, though, if the trading results of the individual undertakings were examined separately, as is done to some extent below, it would be found that some incurred a loss; the opposite position is, of course, equally true of water and harbour undertakings: some realised a surplus, though in the aggregate there was a deficiency. If the aggregate surpluses are compared with the aggregate turnovers, it will be seen that the best results are given by the market undertakings, the surplus representing nearly 13 per cent of the turnover, the corresponding figures in the case of tramways being nearly 8 per cent, of gas works a little over 7 per cent, and of electricity works only $3\frac{1}{2}$ per cent. The comparatively unremunerative character of municipal electrical undertakings will call for some comment after more evidence bearing on the subject has been examined.

In interpreting this table two points call for especial attention; in the first place the aggregate expenditure does not appear to include the sums paid to reserve, depreciation, or insurance funds,[1] so that the surpluses shown in the last column are gross and not net; and in the second place, the total surpluses realised by the successful undertakings exceed those indicated in the last column by the amounts deducted from them in respect of the deficits incurred by the un-

[1] The aggregate expenditures are taken from a table (*Local Taxation Returns*, 1907-8, part viii. pp. 98, 99) headed "Expenditure of Local Authorities in England and Wales which was defrayed otherwise than out of loans, distinguishing as far as practicable the total amount (including loan charges) expended in respect of each of the principal services." In the same return (p. 24) a table is given relating to such undertakings of town councils as appear to have received no sums from the rates to meet deficiencies in the revenue. One column in this table is headed, "Total expenditure defrayed otherwise than out of loans," but in a footnote it is added that sums paid to reserve, depreciation, or insurance funds are excluded. A comparison of the figures in the two tables leaves little room for doubt that the expression "total expenditure" is used in the same way in both tables, and that consequently the "aggregate expenditures" given in the table in the text do not include any allowance for depreciation. This, so far as it was made, was charged against the "surplus," and diminished the amount available for the relief of the rates.

successful undertakings. The first consideration tends to diminish the sum available in relief of the rates, the latter to increase it. Thus some water undertakings were able to pay sums in relief of the rates, although, taking all municipal water undertakings as a whole, there was a large deficit.

§ 3. The total sums paid in relief of the rates by trading departments, and received by these from the rates to meet deficiencies in revenue, are not available, and cannot therefore be compared with the surpluses shown in the table. So far as certain undertakings are concerned, however, namely those carried on by borough councils during the year 1907-8 without deficiencies in the revenues which were met by transfers from rates or other accounts, the gross surpluses and the surplus revenue employed in relief of the rates can be compared. This is done in the table which follows. It will be noted that the proportion of gross surplus devoted to the relief of the rates varied according to the class of undertaking, the proportions being 57 per cent in the case of tramways, 73 per cent in the case of water works, 84 per cent in the case of gas works and 53 per cent in the case of electricity works. The proportion of the total surplus

TABLE showing the Expenditure and Receipts and Loans outstanding of such Undertakings of Town Councils in England and Wales as appear to have received no Subsidy from the Rates during the Year 1907-8.[1]

Description of Undertakings.	Number of Undertakings.	Total Receipts excluding Loans.	Total Expenditure defrayed otherwise than out of Loans.[2]	Gross Surplus.	Surplus Revenue employed in Relief of Rates.
Tramways and Light Railways . .	65	£5,193,249	£4,612,287	£580,962	£333,445
Water Supply Undertakings . .	160	3,070,225	2,911,211	159,014	116,254
Gas Supply Undertakings . .	101	7,092,929	6,516,741	576,188	484,659
Electricity Supply Undertakings .	119	3,430,171	3,199,441	230,730	121,852
Totals . .	445	£18,786,574	£17,239,680	£1,546,894	£1,056,210

[1] *The Annual Local Taxation Returns*, 1907-8, part viii. p. 24.

[2] Excluding sums paid to reserve, depreciation, or insurance funds.

of the four groups of undertakings devoted to the relief of the rates was 68 per cent. Of the surplus which was not used in relief of the rates, the bulk was probably set aside to provide for depreciation and reserves, but some was undoubtedly used for other purposes, such as wiping out previous deficits or increasing the balances carried forward.

In order to make a more complete study of the question as to how far municipal trading relieves or burdens the rates, it is advantageous on account of the complexity of the material to restrict somewhat the field of inquiry and to examine the accounts of such towns as are selected in some detail. The trading results of an adequate number of representative local authorities will be obtained if the inquiry is limited to English and Welsh boroughs other than the Metropolitan boroughs. The results obtained in larger and in smaller towns differ very considerably, so that it is well to distinguish carefully between county boroughs and non-county boroughs, as in this way towns with 50,000 inhabitants or more are roughly divided from those with a population of less than 50,000.[1] In the table given opposite are set out the sums transferred in relief of the rates, and the sums transferred from the rates to make up deficiencies in revenue, in respect of the tramway, water, gas and electricity undertakings of English and Welsh boroughs. Certain points call for attention. It will be noted that the tramway and electricity departments of the non-county boroughs contribute little in relief of the rates, and on the other hand have to draw on them to a considerable extent for financial assistance. The gas undertakings of the county boroughs were entirely self-supporting, and those of non-county boroughs almost so, and a large sum was available in relief of the rates. In the case of water works the sums received from the rates of both classes of boroughs exceeded those paid in relief of the rates. The explanation of this has already been referred to. To comprehend this table more fully it must be studied in conjunction with the next, which shows the number of boroughs that made con-

[1] The division is not quite accurate, as one or two county boroughs had a population of less than 50,000 in 1901, *e.g.* Canterbury 24,899 and Chester 38,309, and one or two non-county boroughs had a population exceeding 50,000, *e.g.* East Ham 96,008, and Aston Manor 77,326.

TABLE relating to the Accounts of Councils of Boroughs in England and Wales (other than Metropolitan Boroughs) in respect of Tramway and Light Railway, Water Supply, Gas Supply and Electricity Supply Undertakings during the Year 1908-9.[1]

Undertakings in Respect of which Sums were transferred to or from the Rates.	Sums transferred in Relief of the Rates.			Sums transferred from the Rates to make up Deficiencies in Revenue.		
	County Boroughs.	Non-County Boroughs.	All Boroughs.	County Boroughs.	Non-County Boroughs.	All Boroughs.
Tramways and Light Railways .	£284,072	£992	£285,064	£23,420	£32,486	£55,906
Water Supply Undertakings . .	54,687	43,278	97,965	175,335	58,739	234,074
Gas Supply Undertakings . .	371,892	81,638	453,530	...	3,053	3,053
Electricity Supply Undertakings .	94,615	6,975	101,590	11,598	28,455	40,053
All the above . . .	£805,266	£133,883	£938,149	£210,353	£122,733	£333,086

[1] Compiled from the *Annual Local Taxation Returns*, 1908-9, part v. pp. vii, viii, xviii.

tributions to or received contributions from trading undertakings during 1908-9. The table relates to the 568 trading undertakings the financial results of which are embodied in the previous table; of these 568 undertakings in which English and Welsh boroughs were interested, 46 per cent neither assisted nor received assistance from the rates, 31 per cent devoted a surplus to the relief of the rates, and 23 per cent had deficits which were made good out of the rates.

By combining these two tables it is possible to construct another which shows the average contributions received from or paid to the rates by such undertakings as received or made contributions. Amongst those enterprises which do more than pay their way, it is the tramways and the gas works belonging to county boroughs which afford the largest relief to the rates; on the average, each of the former contributed £16,710 and each of the latter £13,280 in relief of the rates. On the other hand, it is the water undertakings of the county boroughs which make the biggest claim on the rates, each undertaking which received assistance requiring on the average £10,960.

In order to throw more light upon the financial results of municipal trading the net sums transferred to or from the rates may be compared with the loans outstanding in respect of the undertakings. It would be much more satisfactory, of course, to compare them with the capital invested in the enterprises, but this cannot be ascertained from the official returns. The great objection to taking loans outstanding as a basis is that more debt will have been paid off in the case of older undertakings, *e.g.*, gas works, than in the case of modern enterprises, *e.g.*, electricity works, which will tend to make the percentage of earnings higher in the former case than in the latter case. Considerable caution must therefore be exercised in using the figures. It must also be remembered that the net surpluses are available after paying interest on capital, and after making provision for the repayment of capital borrowed; so that to ascertain the "earnings" of the undertakings on a basis comparable with the sums devoted to the payment of interest and dividends by trading companies, it would be

TABLE showing the Number of Boroughs in England and Wales (other than the Metropolitan Boroughs) which received Sums in Relief of the Rates, or made good Deficiencies out of the Rates in respect of certain Trading Undertakings, in which they had a Financial Interest during the Year 1908-9.[1]

Undertakings.	Number of Boroughs which received Sums in Relief of the Rates from their Trading Undertakings.			Number of Boroughs which assisted their Trading Undertakings out of the Rates.			Number of Boroughs which neither assisted nor received Relief from their Trading Undertakings.		
	County Boroughs.	Non-County Boroughs.	All Boroughs.	County Boroughs.	Non-County Boroughs.	All Boroughs.	County Boroughs.	Non-County Boroughs.	All Boroughs.
Tramway and Light Railways . . .	17	2	19	11	21	32	31	17	38
Water Supply . .	15	36	51	16	47	63	20	88	108
Gas Supply . . .	28	41	69	0	2	2	6	28	34
Electricity Supply . .	25	12	37	5	29	34	36	45	81
All the above . .	85	91	176	32	99	131	93	178	261

[1] Compiled from the *Annual Local Taxation Returns*, 1908-9, part v. The figures do not coincide exactly with those given on p. 101 as those related only to undertakings *owned and managed* by municipalities and municipal joint boards; consequently these are often larger. On the other hand, joint undertakings are omitted from this table unless the local authorities concerned paid money to them or received it from them (other than loans) during the year.

TABLE showing the Average Contributions paid in Relief of the Rates, or received from the Rates, in connection with such Trading Undertakings of County Boroughs and non-County Boroughs as made or received Contributions in 1908-9.[1]

Undertakings.	Average Sums transferred in Relief of the Rates by such Undertakings as made Contributions.		Average Sums received from the Rates by such Undertakings as received Contributions.	
	County Boroughs.	Non-County Boroughs.	County Boroughs.	Non-County Boroughs.
Tramways and Light Railways . . .	£16,710	£500	£2,130	£1,550
Water Supply . .	3,656	1,200	10,960	1,250
Gas Supply . . .	13,280	1,990	...	1,520
Electricity Supply . .	3,780	580	2,320	980

necessary to add the amount of interest paid, and the sums devoted to the repayment of debt, to the sums transferred in relief of the rates, and the resulting amount would have to be expressed as a percentage of the capital outlay to ascertain the rate of earnings. For example, in the case of the tramway undertakings of county boroughs the net sum transferred to the relief of the rates was £260,652, or 1.30 per cent of the outstanding loans, the interest paid was £671,901,[2] or 3.34 per cent of the outstanding capital, and the sum devoted to the repayment of debt was £649,711,[2] or 3.23 per cent of the outstanding loans, so that the "earnings" would have to be described as the sum of these three amounts, namely £1,582,264, or 7.87 per cent of the outstanding loans.

Another point which must be remembered in considering these "earnings," is that they may be considerably exaggerated on account of inadequate provision having been made for depreciation. On the ground that the extent to which the rates are burdened or relieved by the operations of trading undertakings gives a false impression of the

[1] This table is calculated from the material published in the *Annual Local Taxation Returns*, 1908-9, part v.

[2] *Annual Local Taxation Returns*, 1908-9, part v. p. 44.

earning capacity of the different undertakings, there has been incorporated in the table which has been prepared to show the relationship of the net surpluses or deficiencies to the loans outstanding, the loan charges and their relationship to the loans outstanding. Finally, in column 7 the loan charges and the net sums transferred to or from the rates have been added to indicate the "earnings," and in the last column these earnings are expressed as percentages of the outstanding loans.

§ 4. From the table on page 318 it seems possible to draw certain conclusions, whilst bearing in mind the reservations which have been made above concerning the use of the figures. (*a*) The large sum transferred from the rates to make up deficiencies in connection with the water undertakings of county boroughs represents only one quarter per cent of the outstanding loans, and viewed in this light appears very small. It will also be noted that the rate of earnings in the case of these water undertakings appears to be much lower than in the case of the tramway, gas, or electricity undertakings of county boroughs. This is doubtless accounted for to a considerable extent by the comparatively larger provision for debt redemption which it is necessary to make in the latter cases than in the former case.

(*b*) The very poor results obtained by the tramway and light railway undertakings of the non-county boroughs are clearly revealed by the table. The rate of earnings is not quite $4\frac{2}{3}$ per cent on the outstanding loans, or something less than that on the capital invested. This yield for the capital invested in tramway undertakings, which involve a distinct element of risk, is not at all adequate; and when it is remembered that this yield of some 4 per cent is obtained by largely ignoring the provision which should be made for depreciation,[1] the whole position with regard to the tramway undertakings of the non-county boroughs can only be described as eminently unsatisfactory.

[1] During 1908-9 the sum set aside by the tramway undertakings of non-county boroughs for depreciation and reserve was only £11,217, which represents about one-half per cent on the outstanding capital. The sum remaining in the depreciation and reserve funds at the end of 1908-9 was only £27,901, which represents about $1\frac{1}{4}$ per cent of the outstanding capital (*Annual Local Taxation Returns*, 1908-9, part v.).

TABLE showing the Loan Charges and the Sums paid to, or received from, the Rates in respect of the Tramway, Gas, Electricity and Water Undertakings of the Boroughs of England and Wales (other than the Metropolitan Boroughs) during the Year 1908-9.[1]

Undertakings. (1)	Loans outstanding at End of 1908-9. (2)	Loan Charges.[2] (3)	Loan Charges as Percentage of Outstanding Loans. (4)	Net Sums transferred to (+) or from (−) the Rates. (5)	Net Sums transferred to or from the Rates as Percentage of Outstanding Loans. (6)	Total of Columns 3 and 5. (7)	Total of Columns 3 and 5 as Percentage of Outstanding Loans. (8)
COUNTY BOROUGHS.							
			Per Cent.		Per Cent.		Per Cent.
Tramways and Light Railways	£20,133,923	£1,321,612	6.57	£+260,652	1.30	£1,582,264	7.87
Gas Supply	15,088,531	917,422	6.08	+371,892	2.46	1,289,314	8.54
Electricity Supply	17,002,201	1,228,272	7.22	+ 83,017	0.48	1,311,289	7.70
The three above	52,224,655	3,467,306	6.64	+715,561	1.37	4,182,867	8.01
Water Supply	50,722,534	2,180,858	4.30	− 120,648	(0.26)	2,060,210	4.04
All the above	102,947,189	5,648,164	5.49	+594,913	0.58	6,243,077	6.07
NON-COUNTY BOROUGHS.							
Tramways and Light Railways	2,215,527	134,126	6.06	− 31,494	(1.42)	102,632	4.64
Gas Supply	4,196,356	282,581	6.73	+78,585	1.87	361,166	8.60
Electricity Supply	4,210,616	316,040	7.50	− 21,480	(0.51)	294,560	6.99
The three above	10,612,499	732,747	6.91	+25,611	0.24	758,358	7.15
Water Supply	10,682,588	588,398	5.23	− 15,461	(0.14)	542,937	5.09
All the above	21,305,087	1,291,145	6.11	+10,150	0.05	1,301,295	6.16

[1] Based on the *Annual Local Taxation Returns*, 1908-9, part v.

[2] These include (1) principal repaid, otherwise than out of sinking funds, loan funds, or redemption funds; (2) payments to sinking funds, loan funds, and redemption funds; and (3) interest and dividends.

It is a doubtful point whether any tramway undertaking in a small town really pays its way. Two non-county boroughs in 1908-9 received contributions in relief of the rates from their tramway undertakings. In the one case nothing was paid to a depreciation fund, nor was there anything standing to the credit of such a fund at the end of the year; in the other case, where the outstanding capital was £108,000, a sum of £500 was contributed to a depreciation fund, and that was all that stood to the credit of the fund at the end of the year.[1] In view of these facts it seems fairly safe to treat these so-called net surpluses as non-existent for the purpose of the present discussion. On the other hand, sixteen of the twenty-five non-county boroughs, which owned and managed tramway undertakings, had to contribute to their upkeep out of the rates. As far as the county boroughs are concerned, twenty-four, which had a population of less than 100,000 in 1901, owned and managed tramway undertakings: four of these, all with populations exceeding 85,000, paid sums in relief of the rates in 1908-9,[2] eight received sums from the rates to make good deficiencies, and twelve neither relieved nor burdened the rates.[3] In many of these cases no proper provision was made for depreciation, so that the results are unduly favourable, but even overlooking this fact, it is quite clear that tramway undertakings in small towns are barely self-supporting, if not actually unremunerative. There are various causes which probably tend to bring about these unfavourable results. In the first place, the heavy loan charges overburden many of the undertakings. The cost of preparing the track is much more considerable in the case of electric than of horse traction, and in many towns the traffic is not sufficient to justify the large outlay. An important saving in capital expenditure can be effected if trackless electric tramways are used instead of those now generally in use; an overhead electrical equipment has still to be provided from which the cars obtain their current, but they are supplied with rubber-tyred wheels and run on the

[1] See returns for Southend-on-Sea and Ashton-under-Lyne in the *Local Taxation Returns*, 1908-9, part v. p. 173.

[2] Burnley, Huddersfield, Northampton, Stockport.

[3] See *Local Taxation Returns*, 1908-9, part v. pp. 42-45.

ordinary roads, no special track being laid. The system is not suited for a heavy traffic, as the cars do not carry nearly as many passengers as the ordinary ones,[1] but seems very well adapted for small towns, and for routes which are likely to be but lightly frequented in large towns. The first trackless tramways to be established in this country were those opened in Leeds and in Bradford in June 1911. A special advantage of the system is that it does not call for much road widening, as the cars can move about from one side of the road to the other. Trackless tramways not merely require less capital outlay than ordinary tramways,[2] in consequence of which they are burdened with smaller loan charges, but they involve the setting aside of smaller sums for depreciation, as it is the wearing away of the track against which provision has principally to be made. On the other hand, where this new system is adopted the division of the cost of the upkeep and the maintenance of the roads between the tramway departments and the highway departments concerned will call for attention.

Quite apart from the question of tracks or no tracks, the capital outlay of some tramway undertakings has probably been unnecessarily increased by the failure to have the plant constructed under the immediate supervision and advice of the man who was ultimately to manage the undertaking. It would be essentially to his interest to effect every possible economy in construction, so as to be able to show good working results when the system was put in operation. To secure the services of an expert to advise in the construction of the tramways on the understanding that he is to sever his connection with the undertaking as soon as it is completed, is unlikely to prove economical.

[1] The trackless tramcars recently introduced in Leeds and Bradford are arranged to carry twenty passengers. The double-decked cars in general use in this country carry from forty to eighty passengers, and occasionally even more.

[2] In Leeds the capital outlay, which is mainly on overhead equipment, amounted to £1246 per mile, and at Bradford to £1734 per mile (Report of a Deputation of the Edinburgh Corporation, quoted in the Engineering Notes of the *Manchester Guardian*, October 10, 1911). The cost of constructing the permanent way alone of an ordinary electric tramway is some £4500 or £5000 per mile of single track.

In the second place, the working expenses are often higher than the undertakings can reasonably bear. A frequent cause of high working expenses is the price at which current is purchased from municipal electricity departments. During 1908-9, the year to which the figures given above relate, many tramway undertakings in the smaller towns were paying 1½d. or more per unit for their current. In Lowestoft and Nelson the price was even as high as 2d. per unit.[1] In the former case the electricity bill of the tramway undertaking was £3122, and the loss made good out of the rates was £1668. If the charge per unit had only been a penny, £1560 would have been saved, and the undertaking would almost have been self-supporting. As a result, however, the Electricity Department would probably have required a subsidy of about a similar sum; the burden to the rates would still have existed, but it would have been attributed to the proper cause. In Nelson, where the tramways purchased 231,926 units from the Electricity Department at 2d. per unit, a reduction in the price to a penny would have saved the undertaking some £966, which would have removed the need for a contribution of £797 from the rates, though this saving would, of course, have diminished the receipts of the electricity undertaking. Another way in which a saving could be effected in the working expenses on routes where the traffic is small, is by making the motorman responsible for the collection of the fares; by this means the wages bill can be reduced. This system is adopted on the Osnabrück municipal tramways in Germany, and also on the new trackless tramways in Leeds and in Bradford. In the former case passengers pay their fares into a box in the front of the car, the inside of which is under the observation of the motorman from where he stands by means of a looking-glass device. When necessary, change is given by the driver. The tramway undertaking is small, and a universal 10-pfennigs fare is in force which makes matters comparatively simple. A certain number of passengers, doubtless, escape payment, but the loss to the undertaking on this account is nothing like as great as the saving

[1] *Municipal Year Book, 1911*, p. 504.

effected by not paying conductors' wages. In Leeds and in Bradford passengers enter the trackless cars by the front and pay their fares to the motormen. This necessarily causes some delay, but this is not very serious on routes which are not largely frequented.

In the third place, the receipts are not always as great as they might be on some of the smaller tramway systems owing to the adoption of ill-advised fare policies; there is a tendency to make concessions to the public without considering sufficiently the effects on the revenue. The question of halfpenny fares and workmen's fares has already been fully discussed[1] and need not be entered into here again. If a tramway system is to be self-supporting in a small town, it is necessary, on the one hand, that every possible economy should be effected in the matter of capital expenditure and working expenses, and on the other hand, that no effort should be spared to secure as large a revenue as possible; it is time enough to think of making concessions to the public when it is ascertained that a genuine net surplus is being realised; experience shows that it is generally very difficult to withdraw a concession which has once been made, so that great caution should be exercised in the matter of granting new facilities.

The habit of using a tramway only grows upon people by degrees; they require time in which to adapt their habits to the new conditions. In the future, tramway traffic is likely to develop, quite apart from the increase in the population. So far as existing tramways are concerned, the capital outlay has been incurred, and the trackless system offers no relief; on the other hand, working expenses can doubtless be reduced, and if a firm attitude is adopted by tramway committees, the fare policies of some undertakings could be placed on a sounder basis. In this way the revenue might be made to exceed the expenditure by a sufficient sum to meet all loan charges and to make adequate provision for depreciation. This seems to be the utmost results which a small town can hope to achieve; any sum devoted to the relief of the rates is almost certain to be obtained by neglecting to maintain the plant in proper

[1] See pages 242-255 and 265-271 above.

condition or at the expense of the depreciation funds. To sum up the position: the present financial situation of tramway undertakings in most towns of less than 100,000 inhabitants—and in some larger towns as well—is distinctly unsatisfactory, but there is reason to think that by the exercise of economy and by careful administration these undertakings might be placed on a much sounder financial footing.

(*c*) The results achieved by municipal electrical undertakings next call for consideration. In the case of those belonging to non-county boroughs it has already been noted that the number receiving assistance from the rates considerably exceeds those transferring sums to the relief of the rates, and from the last table it will be seen that the net deficiency in respect of these undertakings which had to be made good out of the rates in 1908-9 was some £21,000, which represented about one-half per cent of the outstanding loans. The position is really much more serious than is suggested by the figures. In the first place, it does not seem possible, on the ground of social expediency or of the universal character of the demand for current, to justify the incurring of any deficiency at all in connection with an electrical undertaking. In the second place, the real deficiency in connection with these undertakings is very much greater than is indicated by the returns. There are at least two reasons for making this statement. More than half the electrical undertakings of non-county boroughs neither set aside any sum for depreciation during 1908-9, nor had they any sum standing to the credit of a depreciation or reserve fund at the end of that year.[1] In view of the heavy wear and tear and the rapidity of obsolescence in this industry, for which absolutely no provision is being made, it is evident that the true financial positions of these undertakings is very much worse than is suggested by any tables containing the summarised annual trading results. Another reason for thinking that the electrical undertakings of non-county boroughs are really in an even more unfavourable position than appears from a casual examination of their accounts, has already been indicated in what was

[1] See *Annual Local Taxation Returns*, 1908-9, part v. pp. 206-215.

said above about the high prices charged to tramway departments for the current supplied by electricity departments. The price charged by these departments for current used by the towns for street lighting or other purposes may also be unduly high. Where an electricity undertaking overcharges the other municipal departments, either intentionally or unintentionally, it is being bolstered up at their expense, and there are good grounds for thinking that this actually occurs in many cases.[1] If the Tramway Department is able to realise a net surplus and the Electricity Department is not, there is a strong temptation to fix the price of current for traction purposes so that both undertakings at least pay their way. If this is not possible, the local authority may well consider it preferable that the tramway rather than the electricity undertaking should show a deficiency, and, if necessary, be assisted out of the rates, as it is possible to make out a much better case for a rate-aided tramway than for a rate-aided electrical works. Where too much is paid to an electrical undertaking for public lighting, this is clearly equivalent to the grant of a subsidy out of the rates, as it is out of the rates that the street lighting is paid for. To show how great the effects on the electricity finances may be of any system of overcharging other municipal departments, it need only be pointed out that of the total receipts of £713,118 obtained by the undertakings of non-county boroughs in 1908-9 for the supply of electricity and rents of meters, motors, stoves and fittings, £180,916, or just over 25 per cent, represented payments from other accounts of the Councils, and the bulk of this sum would doubtless be in respect of current used for traction purposes[2] and for street lighting. If the extent to which the electricity departments actually overcharged the other municipal departments was only 10 per cent, this would account for an increase in the receipts of the electricity departments of

[1] I make this statement as the result of conversations I have had with the managers of various municipal undertakings. The negotiations between the Municipal Tramways and the Municipal Electrical Associations concerning the determination of the price of current have been referred to on page 129.

[2] In 1908-9 £62,765 of the expenditure of the tramway undertakings of non-county boroughs consisted of transfers to other accounts of the Councils. Probably between £50,000 and £60,000 of this amount represented payment for current.

some £18,000, the elimination of which would almost have doubled the deficit to be made good out of the rates. If, as is not at all impossible, the percentage by which municipal departments were overcharged for their current was more than ten on the average, the amount by which the receipts of the electricity departments were unduly increased and the deficiencies unduly decreased would be correspondingly greater than £18,000.

What has been said about the electrical undertakings of non-county boroughs applies in a lesser degree to those of county boroughs. The provision made for depreciation is about twice as great, in proportion to the loans outstanding, as that made in the non-county boroughs, but it still appears to be far too small.[1] Also, there is reason for thinking that the system of overcharging other municipal departments is practised to some extent at least. As one-third of all the revenue of the electrical undertakings of county boroughs from the sale of current and from the rents of meters, etc., is obtained from other municipal departments, in particular from the tramway departments,[2] the effect on the accounts of even a very small overcharge is immediately evident.

The principal causes of the unfavourable results obtained by so many electrical undertakings are the comparatively high costs of production in small power stations, the large outlay on mains in proportion to the number of consumers, the difficulty of obtaining suitable day-time customers who will contribute to a better utilisation of the plant, and the very small demand for current which is comparatively independent of the price charged.[3] In small towns there is little demand for current except for domestic purposes; to most householders electric light is a moderate luxury, and its use will depend very largely upon the price charged. In other

[1] For the exact figures see table on page 162.

[2] Total revenue from sale of current and rents of meters, motors, stoves and fittings in 1908-9 was £2,852,460, of which £947,366 was from other accounts of Councils. The payments by the tramway undertakings of county boroughs to other municipal departments was £753,874, of which probably some £700,000 was for current supplied. The figures are from the *Local Taxation Returns*, 1908-9, part v. pp. 44, 45, 58, 59.

[3] *E.g.*, the demand for current by theatres, music and concert halls, hotels, restaurants, shops and offices. See page 205 above.

words, the demand for current for this purpose will be elastic.[1] To bring about its introduction in private houses, where other illuminants are already established, can only be achieved by offering it at low prices, and small sales at low prices are not compatible with immediate financial success. Nevertheless, in the long run this is doubtless the right policy to pursue, because it is only by increasing the number of customers, and consequently the number of units sold, that the cost of distributing the current per unit of output can be reduced to a minimum. There are various other expenses in connection with an electrical undertaking which do not vary directly with the output, so that a growth in the use of current is bound to lead to more favourable results. The important question is whether municipal electricity works are adopting an enlightened selling policy with a view to securing on the capital invested an adequate return in the future, even if it cannot be secured in the present? The management of some of the undertakings is undoubtedly of an enterprising and progressive character; the introduction in Norwich of a new method of selling current for domestic purposes based partly on the rateable value of the house and partly on the consumption,[2] is a good illustration of this type of management. In other undertakings much more could be done to bring about a more extensive use of electricity; the adoption of a vigorous house-to-house canvass in favour of electricity, carried out by men capable of explaining its advantages, would be almost certain to give good results if reasonable terms were offered.

The matter of the management and the selling policy adopted touches on one aspect only of the problem of small electrical undertakings. The question of the high costs of production, quite apart from the costs of distribution, remains to be considered. The proper solution here appears to lie in the purchase of current in bulk from large producers.[3] Since it is possible to transmit current at a high voltage over long distances with very little loss of

[1] See footnote on page 20.

[2] See p. 230 above.

[3] Compare also what is said on this subject in the chapter on the Management of Municipal Trades, pp. 113-115.

voltage, it is much more economical to generate the electricity in large power-stations, which are favourably situated in respect to a supply of coal or water power, and to transmit it at high voltage to the various distributing centres where it can be transformed down, than to produce current in every little town. A large central power-station can also secure a much better utilisation of its plant than a small power-station, which is very restricted in its sphere of operations, this being another point in favour of the former system. In larger towns and their immediate neighbourhoods sufficient current can probably be sold to allow electricity to be generated economically on the spot; in smaller towns the system of purchasing current in bulk is likely to prove advantageous. If the retailing of the current remains in the hands of the local authority, the principal objects in municipalising an electrical undertaking are achieved with a far better chance of escaping unsatisfactory financial results than if the local authority generates the current itself. In many cases where the latter system has been adopted it might be advantageous to convert the present power-station into a transforming station and to purchase current in bulk instead, either from a large Corporation, or from an Electric Power Supply Company. Various companies of this type exist in this country, organised under special Acts of Parliament. The movement in favour of the establishment of such companies began about 1899, when it met with great opposition from the municipalities.[1] Nevertheless a certain number of these companies have been established during the last ten years. They have secured a fair number of electric lighting orders either direct from the central authority or by transfer from the local authorities. In this way they have come to retail current for lighting purposes in some districts within their areas, either directly or indirectly through affiliated or subsidiary lighting companies. On the other hand, the system of a local authority distributing the current which it has purchased in bulk is still exceptional.[2]

[1] See paper read before the Society of Arts in 1899 by Dixon Henry Davies, pp. 19-23, of the reprint, with additions, from the *Journal of the Society of Arts*.

[2] One or two illustrations may be

This system will, however, have to be greatly extended and much more attention devoted to the adoption of an enlightened selling policy if better financial results are to be obtained. Even under the most favourable circumstances, great economy will have to be exercised for a good many years before the inadequate provision which has been made in the past for wear and tear and obsolescence can be made good. During those years all idea of contributions in aid of the rates should be given up; the first object of local authorities should be to strengthen the financial position of their electrical undertakings; some of these are probably in a moderately sound position to-day, but a large number appear to be in an unhealthy condition which calls for prompt attention. The sooner the need for reform is admitted and strong measures are taken to effect a remedy, the easier it will be to place them on a sound footing, as every delay is likely to involve a further loss of capital.[1]

(*d*) The position of gas undertakings as revealed in the table on page 318 is more favourable than that of tramway or electricity undertakings. It must be remembered that the former have been carried on longer under municipal management than the latter, so that the burden of debt must be comparatively smaller, as a larger proportion of the loans will already have been repaid. This enables a bigger part of the earnings to be devoted to the relief of the rates than in the other cases, where the loan charges are still high. In the gas industry it is more possible to maintain the plant in good repair out of current revenue, than in the case of tramways or electrical works, and consequently the same provision for depreciation is not necessary. Hence there is less reason for doubting how far the returns represent the true position of the undertakings. It is noteworthy that the smaller undertakings

given, taken from *Electrical Review* List of Electricity Supply Works in the United Kingdom, June 1909.

Acton Urban District Council and the Stoke Newington Corporations purchase their current in bulk at 10,000 volts from the Metropolitan Electric Power Supply Company.

Atherton Urban District Council purchase their current in bulk at 7000 volts from the South Lancashire Tramways Co., Ltd.

Bridgend Urban District Council purchase their current in bulk from the South Wales Electric Power Distributing Company at 1.375d. per unit.

[1] On this subject see pp. 157-159.

of non-county boroughs are practically as successful as the larger undertakings of the county boroughs. The explanation probably lies in the fact that the demand for gas, which has become a sort of conventional necessity, is comparatively inelastic;[1] in other words, the consumption is not closely affected by price movements. Small gas undertakings are able to pay their way by charging high prices, if necessary, an expedient which cannot be adopted by small electricity undertakings, as they would find it almost impossible to sell any current. On the whole, the price of gas is higher in small towns than in large towns, though there are important exceptions, as, for example, the small town of Widnes, where the local authority sells gas for a lower price[2] than any other gas undertaking, municipal or private, in the United Kingdom.

§ 5. In order to estimate the importance of the sums paid in relief of the rates by trading undertakings, they may be expressed as being the equivalent of so many pence in the £ of rateable value; in this way the amounts by which the rates are reduced as a result of municipal trading are perhaps put in the clearest light. The relief afforded to the county boroughs by their tramway, gas and electricity undertakings in 1908-9, viz., £715,561, was equivalent to a rate of 3.35d. in the £;[3] if the deficiency on the water undertakings is deducted, the relief was only equivalent to a rate of 2.79d. in the £. The relief afforded to the non-county boroughs by their tramway, gas and electricity undertakings, viz., £25,611, was equivalent to a rate of 0.28d. in the £.[4] If the results of the water undertakings are included in the calcula-

[1] See footnote on page 20.

[2] 1s. 2d. to 1s. 0d. per 1000 cubic feet, according to the quantity consumed. Even at these prices the undertaking is able to pay sums in relief of the rates. The low price is largely brought about by the very favourable local market for the gas by-products. See pp. 215-222 above.

[3] The assessable value of the county boroughs for the borough rates on April 1, 1908, is taken as a basis. In the case of Leicester and Oxford the assessable value for purposes of the general district rate had to be taken, as no borough rates were levied. The total assessable value was £51,261,694. See *Annual Local Taxation Returns*, 1908-9, part v. pp. 62-67.

[4] The assessable value of the non-county boroughs for the borough rate on April 1, 1908, is taken as a basis. In the case of Chepping Wycombe, Grantham and Newport the assessable value for purposes of the general district rate had to be taken, as no borough rates were levied. The total assessable value was £22,093,472. See *Annual Local Taxation Returns*, 1908-9, part v. pp. 218-239.

tions, the relief was only equivalent to a rate of 0.1 1d. in the £. If the making of profits were the sole, or even the principal object of municipal trading, it is fairly evident that the game would not be worth the candle, so far as the non-county

TABLE showing for certain English Towns the Sums transferred from Trading Accounts to the Relief of the Rates during 1908-9.[1]

Town.	Undertaking.	Sum transferred in Relief of Rates.		
		Amount.	As Percentage of Outstanding Loans of Undertaking concerned.	As Pence in £ by which Rates were relieved.
			Per Cent.	
Birmingham	Tramways	£35,000	3.5	2.9d.
Hull . .	,,	20,000	5.1	4.1d.
Leeds .	,,	47,557	3.8	5.5d.
Liverpool .	,,	24,858	1.6	1.3d.
Manchester.	,,	70,000	4.6	4.0d.
Sheffield .	,,	26,356	2.4	3.5d.
Birmingham	Gas	65,313	3.1	5.4d.
Leicester .	,,	34,065	3.2	7.7d.
Manchester.	,,	60,000	4.9	3.4d.
Nottingham	,,	30,000	2.8	6.1d.
Stockport .	,,	15,000	5.2	8.1d.
Warrington.	,,	11,862	7.5	10.2d.
Blackpool .	Electricity	4,000	2.1	2.0d.
Bolton .	,,	6,500	2.6	1.9d.
Liverpool .	,,	20,000	1.2	1.0d.
Manchester	,,	12,000	0.6	0.7d.
Nottingham	,,	11,500	3.2	2.3d.
Salford .	,,	6,500	1.3	1.5d.

boroughs at least are concerned. In the case of the county boroughs, individual towns appear to secure considerable relief to their rates from their trading undertakings, although the average relief obtained is not very great. In order to give some indication of the results obtained, the sums trans-

[1] Compiled from the *Annual Local Taxation Returns*, 1908-9, part v. pp. 43-57, 62-67.

ferred to the relief of the rates by some of the more successful tramway, gas and electricity undertakings in 1908-9 have been tabulated. In addition to the actual amounts contributed to the rates, these amounts have been expressed as percentages of the outstanding loans of the undertakings concerned, and also as the equivalent rate in the £ by which the rates were relieved. This latter figure affords probably the best indication of the part played by the different undertakings in the finance of the various towns; but it is no indication of the comparative efficiency of the different undertakings, as it leaves entirely out of account the state of repair in which the various plants are maintained, and also the provision which is made for depreciation; further, it makes no allowance for the price charged, or the character of the service rendered by the individual undertakings. In the case of each industry the more successful undertakings have been chosen. It is amongst the gas works that the largest relief to the rates occurs, the highest rate to which a trading contribution was equivalent slightly exceeding 10d. in the £ in Warrington, 8d. in the £ in Stockport, and 7½d. in the £ in Leicester. In Leeds the relief to the rates from the contribution of the Tramway Department was 5½d., whereas in Manchester and Hull it was about 4d. The most successful electricity undertakings afforded less relief; Nottingham benefited to the extent of about 2¼d. in the £, and Blackpool by 2d. in the £. In order to give a fair representation of the case, a second table is given, showing for a few of the larger towns the sums transferred from the rates to make up deficiencies in the revenue of tramway, water and electricity undertakings. The heaviest burden was imposed by the water undertakings, the contribution in Swansea being equivalent to a rate of over 1s. 1d. in the £. In the case of tramways a rate of 3½d. in the £ had to be levied in Gloucester and Wigan. As far as electricity works were concerned a rate of 1¾d. in the £ was required in Hastings.[1]

[1] A small publication, which gives useful information concerning the effects of municipal trading on the municipal finances, is that prepared by Mr. James Carter, Borough Treasurer of Preston. It appears about November and contains the rates levied in various towns for the current year, together with the charges for gas, water and electricity, and the estimated

TABLE showing for certain English and Welsh Towns the Sums transferred from the Rates to make up the Deficiencies of Trading Undertakings during 1908-9.[1]

Town.	Undertaking.	Sums transferred from the Rates to make up Deficiencies.		
		Amount.	As Percentage of Outstanding Loans.	As Pence in £ by which Rates were increased.
			Per Cent.	
Gloucester .	Tramways	£3,443	4.4	3.7d.
Ipswich . .	,,	2,715	2.3	1.9d.
Rochdale .	,,	3,298	0.9	1.9d.
Wigan . .	,,	5,000	1.2	3.5d.
Birmingham .	Water	65,000	0.8	5.4d.
Halifax . .	,,	15,933	1.7	7.9d.
Huddersfield .	,,	16,831	0.9	8.4d.
Swansea .	,,	26,381	2.7	13.3d.
Hastings .	Electricity	3,241	2.7	1.7d.
West Ham .	,,	4,670	1.4	0.9d.

In some towns a net surplus, available in relief of the rates, is realised in connection with municipal undertakings other than tramways, gas, water and electricity, such as markets, docks, and estates and property of various kinds, but no complete official information on this subject is available.[2]

§ 6. Before leaving the question of the surpluses realised by the trading undertakings of local authorities and the sums devoted to the relief of the rates, a few figures relating to the results achieved in Germany call for consideration. In the table which follows will be found the outstanding loans,

profits and losses on municipal undertakings for the current year, and the amounts by which rates in those towns will be reduced or increased in consequence. Most of the English and Welsh county boroughs, and some metropolitan and non-county boroughs, are included in the return. The omission of Birmingham is somewhat striking. The return for 1910-11 is reprinted in the *Municipal Year Book, 1911*.

[1] Compiled from the *Annual Local Taxation Returns*, 1908-9, part v. pp. 43-57, 62-67.

[2] See *Parliamentary Return on Municipal Trading (United Kingdom)*, 1902-6. Also Mr. James Carter's publication referred to in the previous footnote.

TABLE showing the Outstanding Loans and Net Surpluses realised in respect of certain Trading Enterprises by Prussian Towns during 1905.[1]

Enterprise.	Loans outstanding at End of 1905.	Loan Charges during 1905.	Net surplus realised during 1905.
Gas Supply	£11,400,000	£640,000	£2,000,000
Electricity Supply	6,490,000	370,000	440,000
Water Supply	15,340,000	920,000	810,000
Tramways and Light Railways	4,800,000	250,000	170,000
Market Halls and Slaughter-houses	8,980,000	520,000	180,000
Harbours and Quays	5,480,000	280,000	...
All the above	£52,490,000	£2,980,000	£3,600,000

TABLE showing the Loans outstanding and the Surpluses or Deficits realised in respect of certain Trading Enterprises by Local Authorities[2] in England and Wales during the Year 1907-8.[3]

Enterprise.	Loans outstanding at End of 1907-8.	Loan Charges during 1907-8.	Surplus (+) or Deficit (−) in 1907-8.
Gas Supply	£23,358,000	£1,473,000	£+551,000
Electricity Supply	28,667,000	1,990,000	+121,000
Water Supply[2]	74,424,000	3,463,000	−484,000
Tramways and Light Railways	33,300,000	2,093,000	+626,000
Markets	7,590,000	370,000	+127,000
Harbours, Docks, etc.	46,874,000	1,839,000	−567,000
All the above	£214,213,000	£11,228,000	£+374,000

the loan charges and the net surpluses[4] realised by certain trading enterprises of Prussian towns during 1905. For

[1] Preussische Statistik, Heft 217, quoted in *Kommunales Jahrbuch, 1910*, p. 596.

[2] Excluding the figures relating to the Metropolitan Water Board.

[3] Compiled from the *Annual Local Taxation Returns*, 1907-8, part viii.

[4] The German expression is "Höhe des 1905 erzielten Reinertrags," which I am inclined to think implies that provision for depreciation had previously been deducted. In confirmation of this view, I may say that in most, if not all, of the German Municipal Trading Accounts that I have examined, provision for depreciation was made by writing down the value of the assets before ascertaining the net surpluses.

purposes of comparison a similar table, so far as the published material will allow, has been constructed relating to the trading enterprises of English and Welsh local authorities. The figures relating to trading enterprises in rural areas in Prussia are excluded from the first table, but their influence on the figures quoted could only be very slight. It is not evident from the return whether the Prussian harbours and quays just paid their way or whether they incurred a deficit, consequently the total of the surpluses realised which is indicated at the foot of the last column may be somewhat greater than that actually realised.

The contrast in the figures contained in the two tables is very striking. The outstanding loans in Prussia in respect of trading enterprises are very much less than in this country, and the surpluses realised are very much greater. This state of affairs is probably due, in the first place, to a more rapid repayment of outstanding loans, it being fairly common in Germany for part of a trading surplus to be used to accelerate the reduction of debt due to the operation of a sinking fund; in the second place, to extensions having been charged to revenue account, or to surplus being devoted to this purpose, which amounts to the same thing; and in the third place, to higher prices being charged for the commodities sold or services rendered.

Particularly noticeable is the fact that whereas in Prussia there is a large surplus on the water undertakings, in England there is a large deficit. The explanation of this was indicated previously when it was pointed out that nearly all water for domestic purposes is charged for in Germany according to the quantity consumed, as contrasted with the system of levying water rates in England.[1] The former method enables a much larger revenue to be raised in proportion to the quantity sold; it also limits the consumption of water very considerably, and thus checks the need for a large capital expenditure. This is a very important consideration, as it is the costly schemes which a few large towns have been obliged to enter upon in order

[1] See Chapter VI. on the Selling Policies of Municipal Trades.

to secure a practically unlimited supply of water for their inhabitants which have occasioned most of the deficits incurred by water undertakings in this country. It must also be remembered that it is the deliberate intention of many English local authorities that their water works shall merely pay their way; there is no desire to secure from them sums in relief of the rates. In Germany the attitude towards water undertakings is different; most local authorities wish to obtain some assistance at least from them. As far as other undertakings are concerned, the desire for profits with which to relieve the rates is probably stronger in Germany than in England, with the possible exception of tramways. The maintenance of comparatively high prices in Germany may be attributed to this desire, but not the adoption of unsound financial expedients, such as inadequate provision for depreciation; as in this respect the finance of municipal trading in Germany appears to be distinctly more sound than it is in England.

To give an idea of the assistance which individual German towns receive from their trading undertakings, information concerning sums transferred from trading departments in relief of the rates is given for a few towns, which have been selected without special reference to their success, which, on the contrary, was done in the case of the English towns given in the table on page 330. Nevertheless, the sums transferred in relief of the rates were very large, especially when it is borne in mind that in the case of each gas undertaking and of two electricity undertakings the street lighting was provided free of charge, and the value of the service is not included in the amounts given in the first column of figures. The assistance received by the town of Cologne from its trading undertakings is remarkable. The gas undertaking contributes some £125,000 if the value of the free street lighting is added to the sum actually transferred; the electricity undertaking contributes some £37,500, including the value of the free lighting, and the water works, £50,000. On the other hand, the tramways undertaking pays nothing in relief of the rates; but this cannot be attributed to any overcharging by the Electricity Department for the current supplied, as the price charged, namely 0.78d.

TABLE showing for certain German Towns the Sums transferred from Trading Accounts to the Relief of the Rates during 1908-9.[1]

Town.	Undertaking.	Sum transferred in Relief of Rates.	
		Amount.	Percentage of Outstanding Loans.
Bonn[2] .	Gas	£14,000[3]	No outstanding loans.
Cologne .	,,	83,000[3]	11.5
Düsseldorf	,,	21,000[3]	6.8
Mannheim	,,	22,000[3]	7.8
Cologne .	Electricity	34,000[3]	6.5
Düsseldorf	,,	16,000[3]	4.3
Mannheim	,,	10,000	2.9
Mayence .	,,	17,000	11.2
Cologne .	Water	50,000	16.9
Düsseldorf	,,	2,000[4]	1.3
Mannheim	,,	12,500	4.9

per unit, appears to be a very reasonable one.[5] The total assistance given by the three undertakings was equivalent to some £217,500. Owing to the method employed of raising the local revenues in Germany, this assistance cannot be expressed as the equivalent of a rate of so many pence in the £. No gas, electricity, or water undertaking belonging to an English town appears to have handed over such large sums to the Borough funds.

§ 7. At the beginning of this chapter a distinction was drawn between the direct and indirect methods of measuring the results of municipal trading; so far the first method only has been applied, and various returns have been examined with a view to ascertaining how far municipal trading has been financially successful. There now remains the other

[1] Compiled from the Annual Reports of the trading departments concerned.

[2] The figures relate to 1909-10.

[3] In addition the streets were lighted free of charge.

[4] In addition, the whole deficit in connection with the swimming baths was borne by the Water Department, which also supplied the town with some £3500 of water free of charge.

[5] *Geschäftsbericht der Gas-, Elektrizitäts- und Wasserwerke der Stadt Cöln für das Jahr 1908-9*, p. 40. The price charged in 1908-9 was 6.66 pf. per k.w.h.

method, which consists in comparing and contrasting the working of municipal and private enterprise in order to show, if possible, wherein the one is superior or inferior to the other. There are various ways in which comparisons between municipal and private trading may be made. In the first place, a particular municipal undertaking may be selected, which at some previous time was under private management; the prices charged before and after municipalisation may be compared, and possibly the progress made or the conditions granted under the two forms of management may also be contrasted. In the second place, a few undertakings engaged in a particular industry may be selected, some organised under municipal and some under private management, and the results obtained may be compared. In the third place, the average results obtained by all municipal and all private undertakings in a particular industry may be contrasted. In the fourth place, international comparisons may be made between a country where there is little or no municipal trading and a country where there is much municipal trading. All these indirect methods of measuring the results of municipal trading are employed by various students of the problem, and it is necessary to consider what conclusions are drawn from them and how far they can be regarded as sound.

(i.) The first of these indirect methods, which consists in making a comparison of the conditions prevailing in a particular undertaking before and after municipalisation, is not very easy to apply. If the conditions, immediately before the transfer of the management, are compared with those immediately after the transfer, it is quite likely that no change will have occurred, as, for example, was the case with the price of gas after the Glasgow and the Leicester gas undertakings were municipalised in the "seventies."[1] On the other hand, if a considerable period is allowed to elapse after the introduction of municipal management before the new prices and conditions are ascertained for the purpose of the comparison, general changes may have occurred in the conditions of the industry, so that the effects, if any,

[1] *Report of the National Civic Federation Commission on Public Ownership*, part ii. vol. ii. pp. 214, 215.

caused by the change in the form of management cannot be isolated. There are other difficulties in connection with this method, but they may best be considered in connection with some illustrations of its application. Although many undertakings have been municipalised in their time, it is often not possible to ascertain the details necessary for making a full comparison, and here the examples are chosen from amongst a few large towns for which information has been published.

The city of Liverpool purchased its electricity undertaking as a going concern from a company in 1896 before the lease had expired. Immediately before the transfer the charge for current was 7½d. per unit for lighting and 5d. per unit for power; immediately after the transfer the charge for current was fixed at 6d. and 4d. per unit for lighting, and to 3d. and 2d. per unit for power.[1]

The Birmingham Corporation municipalised the gas works in 1876; the price of gas, which had been from 3s. to 3s. 6d. per 1000 cubic feet, was at once reduced to from 2s. 9d. to 3s. 3d. per 1000 cubic feet.[2]

The Glasgow Corporation took over the working of the horse trams in 1894. The fares charged by the Company just before and by the City just after the change were as follows:—[3]

Fare.	Average distance in Miles travelled for each Fare.	
	Under Company.	Under Municipality.
	Miles.	Miles.
½d.	...	0.58
1	1.12	1.17
1½	1.80	1.80
2	2.20	2.28
2½	...	2.81
3	3.23	3.41

During the twelve years previous to the transfer, the

[1] *Report of the National Civic Federation Commission on Public Ownership*, part ii. vol. ii. p. 345.

[2] *Ibid.* p. 214.

[3] *Ibid.* p. 480.

mileage of tram line in Glasgow increased from 22.2 to 30, or 35 per cent, whilst during the twelve years subsequent to the transfer, the mileage increased from 30 to 80.5, or 168 per cent.[1] During the last twelve years of Company management the number of passengers increased from 34,150,000 to 53,730,000, or 57 per cent, whilst during the first twelve years of municipal management the number of passengers increased from 53,730,000 to 208,060,000, or 287 per cent.[2] The hours of work under the Company were from 77 to 84 hours per week, but on taking over the system the Corporation reduced the hours to 60 per week and at the same time increased the wages 15 to 25 per cent. Subsequently the hours have been further reduced to 54 per week.[3]

In Manchester the Corporation first began to run tramcars in 1901, but the whole system was not municipalised until 1903. The new scale of fares then introduced and that previously in force under the Company were as follows:—[4]

Fare.	Average distance in Miles travelled for each Fare.		
	Under Company.		Under Municipality.
	Inside.	Outside.	Inside or Outside.
	Miles.	Miles.	Miles.
½d.	...	...	0.72
1	1.08	1.21	2.10
1½	...	...	2.61
2	2.06	2.23	3.34
2½	...	...	4.03
3	3.08	3.08	4.68
3½	...	...	5.43
4	4.30	6.06	6.45

During the four years prior to the opening of the first municipal tramway in Manchester, the miles of line worked by the Company increased from 80.5 to 87.5, or 8.7 per

[1] *Report of the National Civic Federation Commission on Public Ownership*, part ii. vol. ii. p. 705.
[2] *Ibid.* p. 710.
[3] *Ibid.* p. 711.
[4] *Ibid.* p. 481.

cent. During the first four years of municipal management the mileage increased from 55.7[1] to 87, or 56 per cent.[2] Between 1897 and 1901 the number of passengers carried by the Company grew from 54,950,000 to 63,500,000, or 16 per cent. Between 1901 and 1905 the passengers carried by the Corporation increased from 23,590,000 to 133,920,000, or 467 per cent.[3] As far as the wages and hours of labour of the employees are concerned, the Corporation reduced the hours from 70 to 54 per week when it municipalised the undertaking and at the same time raised wages by from 43 to 63 per cent.[4]

So far as these particular undertakings are concerned the tendency for prices to fall, for the undertakings to make more rapid progress, and for labour conditions to improve after they had been municipalised seems to be clearly marked. The material is not sufficient to show whether this tendency is general or not; in any case it has not been shown that the change in the form of management was the cause of the fall in prices or of the more rapid progress. The years which form the basis of the comparison, so far as the Companies are concerned, were the last years of their existence; the likelihood of a change in the form of management would be known some time beforehand, and this fact would naturally discourage progress of any kind; the approaching lapse of a short lease, where such existed, under which the undertaking could be taken over by a municipality at the structural value, nothing being paid for goodwill or for potential earning capacity, would act as an even stronger check on progress. The undertakings would no longer seek to expand, by lowering prices or otherwise, as some time would elapse before the benefits of such a policy could be reaped; in the long run the increase of business resulting from a reduction in the charges might more than justify the reduction, but the immediate result would probably be a loss of revenue, which a Company on the point of being wound up, in order to be taken over by a

[1] A good deal of the Company's track was outside the municipal boundary and was never taken over by the Corporation.

[2] *Report of the National Civic Federation Commission on Public Ownership*, part ii. vol. ii. p. 705.

[3] *Ibid.* p. 710.

[4] *Ibid.* p. 711.

municipality, would be very unwise to incur. In connection with the tramways a special point arises. The Companies were organised for horse traction, the municipalities for electric traction, during part of the time in one case and all in the other. In the case of the Manchester tramways the Company's fares relate to horse trams, the Corporation's fares to electric trams, as the electrification of the system coincided with the municipalisation. The reduction in fares was much greater there than in Glasgow, where the Corporation continued the old horse-tram system for some years after it had taken over the management. Owing to the greater speeds which can be obtained, electric cars can work successfully over much longer distances than horse cars, so that it is not astonishing to find that the miles of line and the number of passengers carried have increased greatly since the electrification of the tramway systems. It has been possible to tap entirely new suburban traffic, which formerly was catered for almost exclusively by the railway companies. Much of their new traffic could never have been secured by the electric tramways unless the distance which could be travelled for the various fares had been increased. A reduction in fares is always likely to lead to more passengers being carried, though not necessarily to more revenue being received, but where the takings do increase, at some point the increase in the working expenses due to the need of providing additional service will equal and finally exceed the extra takings, and the undertaking will then be less remunerative than it was before. The extent to which a reduction of fares will benefit a tramway undertaking depends largely upon the population of the area served and the character of the daily movements amongst that population. In large towns like Glasgow and Manchester it would undoubtedly have been to the interest of newly introduced electric tramway undertakings, however they were managed, to have reduced the fares after displacing the old horse tramways, in order to expand the traffic, and it is incorrect to attribute to municipalisation of the systems what was largely, if not wholly, due to their electrification.

Another point which must be considered in every case

is, whether the facilities granted by the municipalities are being subsidised directly or indirectly out of the rates. If they are, the municipal undertaking is on quite a different footing from a company, and their charges, etc., cannot fairly be compared. So far as Glasgow and Manchester are concerned, the accounts clearly show that the tramway undertakings receive no assistance of any kind from the rates. It is quite possible that these particular municipalities did more in the way of reducing fares and granting better conditions than any electric tramway companies would have done, but it must not be forgotten that a company operating under a twenty-one years' lease occupies a less favourable position than a municipal tramway department, and cannot reasonably be expected to grant the same facilities.

Enough has been said to show that it is comparatively simple to compare and contrast the prices charged and the conditions imposed by an undertaking before and after its municipalisation, but the differences in circumstances, often very considerable, which prevail under the two regimes make it next to impossible to say to what extent the changes in prices and conditions have been caused by the municipalisation of the undertaking. Some, if not all the changes, are probably due to other circumstances than the mere change of management, and on this account any deductions drawn from such figures, whether they be to the advantage or disadvantage of municipal trading, must be regarded as very inconclusive, even if they be not entirely rejected.

(ii.) A second way of indirectly measuring the results achieved by municipal trading is to select various undertakings engaged in a particular industry, some managed by municipalities and some by companies, and to compare the prices charged. Tramways are not generally chosen for this purpose, as it is recognised that so much depends upon local conditions, affecting the daily movements of the population, that it is futile to make comparisons between different towns. In any case it would be difficult to know what to compare in the matter of tram fares, as the average distance which can be travelled for a penny, or any higher fare, will depend considerably upon the other facilities granted, as, for example, halfpenny fares and workmen's

fares. (*a*) In the case of gas and electricity works, especially the former, comparisons are frequently made between municipal and private undertakings. Various gas works are chosen, situated close to coal-fields, say, in Manchester, Nottingham and Leicester, to represent municipal enterprise, and in Bristol, Newcastle and Sheffield to represent private enterprise. It is then ascertained that for lighting purposes the municipality in Manchester charges 2s. 3d., in Nottingham 2s. 2d. to 2s. 6d., and in Leicester 2s. 4d. per 1000 cubic feet, whilst the company in Bristol charges 2s., in Newcastle 1s. 11d. on the average, and in Sheffield 1s. 3d. on the average, per 1000 cubic feet.[1] These figures, it is sometimes claimed, show how much better private management is than municipal management. This contention, however, is not sound. The prices charged for gas by different undertakings cannot be compared in such a simple fashion. It is necessary to take various factors into account. In the first place, allowance must be made for the rents of gas meters and stoves, as where such rents have to be paid, the individual consumer's gas bill is augmented to this extent, and the real price of gas is higher than the apparent price. Municipal gas departments in this country frequently lend meters and stoves to their customers free of charge, which tends to raise the price of gas by an amount which will provide the interest, depreciation allowance, and sinking fund in respect of the capital invested in meters and stoves.[2]

[1] The prices are quoted from Field's *Analysis of the Accounts of the Principal Gas Undertakings in England, Scotland, and Ireland.*

[2] The following figures, relating to the six towns chosen as illustrations, may be quoted from Field's *Analysis.*

Town.	Year.	Meter Rental per 1000 Cubic Feet sold.	Stove Rental per 1000 Cubic Feet sold.	Meter and Stove Rental per 1000 Cubic Feet sold.
Leicester . . .	1909-10	.00d.	.41d.	.41d.
Manchester . .	1909-10	.00	.00	.00
Nottingham . .	1909-10	.84	.48	1.32
Bristol . . .	1909	1.54	.79	2.33
Newcastle . .	1909	1.54	1.07	2.61
Sheffield . . .	1909	1.15	.15	1.30

The figures indicate by how much each undertaking would have to raise the price of its gas if meter and stove rents were abolished.

Companies generally distinguish in their charges between the price of gas and the rents for meters and stoves, which enables them to quote a lower price for gas than if the charge were inclusive;[1] but the consumers have ultimately to pay for the use of the meters and stoves in either case. In the second place, the quality of the gas must be considered. This is a question partly of lighting power and partly of heating power; by degrees this latter consideration is becoming more important than the former with the great growth in the use of incandescent mantles for lighting purposes and the large extension in the use of gas for cooking and heating purposes. In the third place, the amount paid for rates by each undertaking must be allowed for, as some works may be situated in more highly rated areas than others, and consequently be obliged to recoup themselves by charging somewhat higher prices. In the fourth place, the level of standard wages differs from town to town, and prices will tend to be influenced. In comparing prices in two towns, one of which pays higher wages than the other, allowance should be made in respect of higher wages due to a higher standard prevailing in the locality, but not in respect of higher wages due to voluntary action on the part of the management, the former being a payment over which the management has no direct control. The fifth factor to be taken into consideration is of great importance, namely, the opportunities for purchasing coals suitable for use in gas works; the mere fact that the works chosen for comparison are all situated on coal-fields means very little, in view of the fact that some kinds of coal are much more adapted for the production of gas than others. Manchester, for example, is situated on the South Lancashire coal-field; yet the bulk of the coal used in the gas works there has to be brought by train from the Barnsley district of Yorkshire. In the sixth place, the sale of the by-products exercises a great influence on the prices of gas, and this is probably the most important consideration of all which has to be borne in mind in comparing gas prices in different towns. Gas is by no means the only product of a gas works; coke, coal

[1] With regard to the advantages and disadvantages of meters and stoves being lent free of charge, see pp. 187, 202, 203.

tar and ammoniacal liquor, amongst other things, are produced simultaneously with gas, and the price at which gas can be sold depends very considerably on the price which can be realised for the by-products. The opportunities for disposing of coke on favourable terms vary greatly from town to town, the demand for the purpose of local industries being a most important factor in this country. The subject of the sale of gas by-products has already been discussed at some length in Chapter VI.,[1] and here it will suffice to note that gas works have comparatively little control over the prices they can obtain. Some works are much more favourably situated than others in this respect. The more revenue a gas works can obtain from its by-products, the lower the net cost of its coal becomes and consequently the cost of producing gas, and the smaller the price for which the gas can be sold. In Sheffield on some occasions the net cost of the coal has been less than nothing, the revenue obtained from the sale of coke, tar and ammoniacal liquor having exceeded the cost of the coal,[2] but in the great majority of towns this is not the case.[3] The proportion of the total revenue of a gas works which is derived from the sale of by-products varies considerably. It varies from one works to another, and also from one year to another. In Manchester it may represent about one-fifth of all the receipts, in Sheffield as much as one-third.[4] A seventh factor which affects the

[1] See pp. 215-222. [2] *E.g.* in 1910. See Field's *Analysis*, 1910.

[3] The cost of coal and the sums realised by the residuals in the above-mentioned towns during 1909-10 were as follows :—

Town.	Year.	Cost of Coal per 1000 Cubic Feet of Gas sold.	Amount realised by By-products per 1000 Cubic Feet of Gas sold.	Net Cost of Coal per 1000 Cubic Feet of Gas sold.
Leicester . . .	1909-10	11.73d.	8.24d.	3.49d.
Manchester . .	1909-10	12.86	6.51	6.35
Nottingham . .	1909-10	10.76	7.70	3.06
Bristol . . .	1909	16.14	8.49	7.65
Newcastle . .	1909	12.26	8.84	3.42
Sheffield . . .	1909	9.48	8.83	0.65

The figures are from Field's *Analysis*, 1909, 1910.

[4] The exact figures for 1909-10, based upon the information given in Field's *Analysis*, were 19.2 per cent in Manchester and 36.3 per cent in Sheffield.

price at which gas can be sold is the cost of distribution. This depends upon various things. The larger the supply area and the further the mains have to be laid away from the gas works, the greater the leakage will tend to be and the higher the price will have to be to compensate for it. The more densely populated the supply area is, the more consumers per mile of main there will probably be, and the higher the consumption is per mile of main, the smaller the distributing costs will be per unit of gas sold. Thus the number of consumers and their average consumption in relation to the length of mains laid, which depend largely upon the planning of the town supplied and the pursuits of its inhabitants, have a distinct influence on the price. In the eighth and last place, where a gas undertaking, as a matter of social expediency, sells gas by automatic meter at the ordinary price, or at one which is only slightly above this, it incurs a loss,[1] which will tend to keep the ordinary price of gas somewhat higher than would otherwise be necessary. It may be noted in this connection that in Sheffield no automatic meters are used.

It will be seen that many things help to account for the variations in the prices charged for gas in different towns. Amongst municipal undertakings the extent to which it is desired to relieve the rates is also an important factor. To regard the selling price as a direct measure of the efficiency of the management is absolutely unsound. That undertaking which sells gas at the lowest price in the United Kingdom happens to belong to a municipality[2] and not to a company. It is only a small works, and probably cannot even avail itself of all the economies of large-scale production, yet it would be absurd to deduce from the price charged in Widnes that the gas companies in Sheffield, Newcastle and elsewhere are less efficiently managed. As between some gas undertakings, price differences may be partially due to differences in the ability of the managements, but the explanation of the great part, if not of the whole differences, in prices must be sought in the very varying conditions under which gas works

[1] See pp. 211-213 above.

[2] Widnes, where the highest price charged is only 1s. 2d. per 1000 cubic feet.

operate, some being much more favourably situated than others.

The difficulty of measuring, with anything approaching accuracy, the effect on the price of gas of some of the factors which have been enumerated above, makes it almost impossible to show statistically the comparative efficiency of two gas undertakings. Even with the exercise of the greatest patience and ingenuity, it does not seem possible to determine, for example, how much of the price obtained for coke was due to the direct efforts of the management, and how much to local conditions over which the management had no control, and for which, consequently, allowance would have to be made. The same sort of questions would arise with regard to various other business operations of each undertaking, and in each case no definite answer could be given. To make an accurate comparison of gas prices with a view to reaching some conclusions about the results of municipal trading seems hardly possible, and to make a rough comparison, without making a proper allowance for varying conditions, is worthless; consequently this particular method, so far as it relates to gas, can only be discarded as impracticable.

(*b*) The application to electrical undertakings of the method of comparing the prices charged by municipal and private enterprises for lighting purposes has now to be considered. At the outset it may be noted that it is difficult to institute such a comparison at all, as the methods of charging for electricity have a tendency to be somewhat complex;[1] the only rates which appear to lend themselves conveniently for comparison are uniform or flat rates, yet in many cases no such rates are quoted at all. Again, the consumer may be offered a choice of two methods of being charged, for example, a flat rate and a maximum demand rate, one of which will be more favourable to him than the other, according to the character of his demand. Under these latter circumstances it is hardly accurate to regard the flat rate as representing the charge made for current for lighting purposes. Even where the only method of charging

[1] See the account of the various methods of charging for current in the chapter on the Selling Policies of Municipal Trades, pp. 224-231.

for current for lighting purposes is a flat rate, prices may be largely reduced, or big discounts may be granted as a customer's consumption increases. The result of the existence of such a scale of prices in a town will tend to be that the highest price will be somewhat higher than if there were only a single price independent of the consumption. Where a scale of prices or discounts based upon the consumption is established, the whole scale is an integral part of the selling policy of the undertaking, and one price out of that scale cannot be isolated for the purpose of comparing it with the charge made by another undertaking. Consequently the comparisons must be restricted to the prices charged by such undertakings as quote a flat rate, not subject to discounts or reductions, and where no other methods of being charged are available to the consumer. Even if all these preliminary precautions are taken, it is almost impossible to obtain conclusive results from such a comparison. Several of the considerations which influence the prices of gas, and for which allowance must be made, also influence the prices of current, *e.g.* meter rents, the amounts paid in rates, differences in standard wages and the cost of distribution. The cost of obtaining coal, water pressure, or other power with which to generate the electricity is naturally a most important factor in determining the prices, and one over which the management has little control. Finally, an undertaking, which sells a large amount of current for power purposes during the day-time, can afford to sell current for lighting purposes at a lower rate than an undertaking which has few day-time consumers, owing to the fact that the former is able to utilise its plant better than the latter. In so far as the day-time demand for current is due to local conditions, and not merely to the direct efforts of the management, any reduction on this account in the price of current for lighting purposes must not be overlooked.

Sometimes, to remove the difficulty caused by the complicated schedules of charges, a comparison is instituted between different undertakings of the average receipts per unit of current sold for lighting and power purposes. This method is equally unsatisfactory, because beside ignoring all of the above-mentioned considerations concerning differ-

ences in prices, with the exception that it recognises the existence of power as well as light consumers, it ignores a new one of a fundamental character. It fails to take into account the proportion of current sold for lighting and power purposes respectively. As the price of current for power purposes is often only one-third or one-quarter of that charged for lighting purposes, it is easy to see that the average receipts per unit sold will be much lower in the case of an undertaking which caters principally for power consumers than in the case of an undertaking which sells the bulk of its current for lighting purposes. Even where it is possible to obtain the average receipts per unit sold for lighting purposes only, which frequently is not the case, an undertaking which has many large lighting consumers, in receipt of preferential treatment, will presumably show lower receipts per unit sold than an undertaking with no large customers, yet the more favourable results in the former case can hardly be ascribed to the efficiency of the management.

Were it not that this method of selecting a few undertakings, some organised under public and some under private management, and of comparing the prices charged, with a view to showing the advantages or disadvantages of municipal trading, was one commonly employed, it would not have been necessary to consider its defects in such detail. Alone on quite general considerations, such as the difficulty of being sure that the undertakings chosen were typical and the danger of generalising from a few odd cases, the validity of any conclusions reached by this method could be regarded only with a good deal of doubt. When, however, it is realised how impossible it is to get two undertakings which operate under identical conditions, and the prices of the products of which are subject to the influence of all the same factors, except one, namely, the form of the management, so that any difference in price might be definitely attributed to the difference in the form of management, nothing remains but to dismiss this method, when applied to estimating the results of municipal trading, as being absolutely unsound.

(iii.) The third indirect method of measuring the results

of municipal trading is to compare the average results obtained by all municipal and all private undertakings in a particular industry. Such comparisons can be made only in the case of the gas and of the tramway industries, as these are the only two for which the necessary official returns exist.[1] (*a*) In the table which follows a summary is given of the accounts and the operations of public and private gas undertakings in the United Kingdom. These figures, it is frequently claimed, show, firstly, that public enterprise gives a cheaper service; secondly, that public enterprise is more economically and efficiently conducted, and thirdly, that public enterprise is more profitable than private enterprise. The first deduction is apparently based on the lower approximate average charges made by municipal undertakings,[2] the second on their slightly lower ratio of working expenses to receipts;[3] and the third on the higher equivalent return represented by their net receipts on their capital outlay,[4] and particularly on their capital outstanding.[5]

It is necessary to distinguish carefully between the deductions made from the figures and the implication arising out of the deductions. This latter may be considered first. It is suggested that the lower prices charged and the more favourable results obtained by the municipal undertakings are due to the fact that they are under municipal management. If the plants to be municipalised and those to be conducted by private enterprise had originally been selected at random, and the undertakings of the local authorities then showed better results, this would point strongly to more efficient management, provided the number of enterprises were sufficient to minimise the risk of an undue proportion of favourably situated enterprises being allotted to one group or the other. But as a matter of fact the municipal undertakings have not on the whole been selected at random; they have been specially chosen, the

[1] The Board of Trade publish annual returns relating to all authorised Gas Undertakings in the United Kingdom belonging to Local Authorities and to Companies and an annual return relating to Street and Road Tramways and Light Railways authorised by Act or Order. No similar return for electricity supply undertakings is published.

[2] See line 15 of table.

[3] See line 6 of table.

[4] See line 8 of table.

[5] See line 9 of table.

TABLE giving Summary of the Accounts and the Operations of all Authorised Gas Undertakings belonging to Local Authorities and to Companies in the United Kingdom during 1909-10.[1]

	Local Authorities, 1909-10.	Companies, 1909.
1. Number of Undertakings	293	501
2. Capital Outlay	£42,002,322	£90,120,962
3. Capital Outstanding	£27,861,701[2]	£90,120,962
4. Receipts	£10,398,263	£19,951,779
5. Working Expenses	£7,710,985	£15,097,658
6. Ratio of Expenditure to Receipts	74.15 per cent	75.67 per cent
7. Net Revenue	£2,687,278	£4,854,121
8. Equivalent Return on Capital Outlay	6⅜ per cent	5⅜ per cent
9. Equivalent Return on Capital Outstanding	9⅝ per cent[3]	5⅜ per cent
10. Coal carbonised	6,049,788 tons	9,175,532 tons
11. Gas sold (Cubic Feet)	65,352,790,000	112,334,153,000
12. Length of Mains	13,757 miles	21,473 miles
13. Number of Consumers	2,590,270	3,573,796
14. Public Lamps	343,021	369,882
15. Approximate Average Charge per 1000 Cubic Feet	2s. 5¾d.	2s. 9¼d.

majority of the gas works to be municipalised having been selected from amongst those which were most successful when in private hands. Further, there is a bigger proportion of large works amongst the undertakings managed by local authorities than amongst those managed by companies. If the figures relating to the two great London Companies, the Gas Light and Coke Company and the South Metropolitan Gas Company, are eliminated from the second column of the

[1] Compiled from the *Board of Trade Returns relating to Authorised Gas Undertakings in the United Kingdom.* The Returns for Municipalities relate to the year ending March 31, 1910, those for companies to the year ending December 31, 1909. The approximate average charges are those given in the *Municipal Year Book, 1911.*

[2] This sum is the capital outlay less the "Loan repaid, Annuities redeemed, and amount placed in sinking fund" (£14,140,621). In the *Municipal Year Book* a different figure will be found, viz. £30,478,862. It is not clear how it was obtained.

[3] In the *Municipal Year Book* the return is given as 8¾ per cent, which is based on the higher outstanding capital mentioned in the note above.

table, the size of an average company undertaking will prove to be much smaller than that of an average municipal undertaking. The justification for separating the returns relating to two concerns before ascertaining the average, lies in the fact that these two undertakings are in a class by themselves, being so much greater than any other gas undertakings,[1]

TABLE giving a Summary of the Average Operations of the Authorised Gas Undertakings of Local Authorities and Companies (other than the Gas Light and Coke Company and the South Metropolitan Gas Company) during 1909-10.[2]

	Local Authorities, 1909-10.	Companies (other than the Gas Light and Coke Company and the South Metropolitan Gas Company), 1909.
Number of Undertakings	293	499
Average Capital Outlay	£143,000	£108,000
Average Amount of Coal carbonised	20,600 tons	14,800 tons
Average Quantity of Gas sold (Cubic Feet)	223,000,000	154,800,000
Average Length of Mains	47 miles	36 miles
Average Number of Customers	8800	5300
Average Number of Public Lamps	1170	600

[1] A few of the figures for 1909 relating to these two Companies may be quoted from the Board of Trade return :

	Gas Light and Coke Company.	South Metropolitan Gas Company.
Capital Outlay	£27,452,193	£8,934,569
Total Receipts	£4,123,021	£2,052,632
Working Expenses	£2,935,837	£1,569,163
Net Revenue	£1,187,184	£483,469
Coal carbonised	1,655,140 tons	1,133,280 tons
Gas sold (Cubic Feet)	22,540,035,000	12,540,439,000
Length of Mains	2,188 miles	1,231 miles
Number of Consumers	586,569	346,589
Public Lamps	46,863	23,754

The remaining London Gas Companies cannot rank with these two. The next largest, the Commercial Gas Company, carbonised only some 200,000 tons of coal in 1909.

[2] Based on the *Board of Trade Returns relating to Authorised Gas Undertakings in the United Kingdom.*

private or municipal, that their inclusion gives an entirely false impression of the average size of the gas works managed by companies. The average size of gas works is indicated in the table opposite by means of their average capital outlay and of their average operations during 1909-10. It will be noted that the undertakings of the local authorities are roughly half as large again as those belonging to companies.

In view of the fact that municipal gas works, on the whole, are larger than company gas works, and that local authorities have generally municipalised only the more successful of existing undertakings, it is not astonishing if they show better results, which they actually appear to do. Whether the better results are due entirely to the more favourable conditions enjoyed by municipal gas works, or whether they are partly accounted for by better management, or whether they are obtained in spite of less efficient management, thanks to the favoured conditions, it is impossible to say. In the absence of any evidence to the contrary in one direction or the other, the only safe conclusion to accept is that the better average results obtained by municipal gas works are due entirely to the more favourable conditions under which they operate, and have not been increased by more efficient, nor diminished by less efficient, management than that displayed by company gas works.

With regard to the deductions made from the figures, there is some danger of exaggerating their importance. The approximate average charges per 1000 cubic feet for gas are not official figures. They are calculated from the materials published in the Board of Trade returns, and these are inadequate for ascertaining a properly weighted average, for where an undertaking sells gas at different prices, the quantities sold at each are not indicated.[1] The charges are described as approximate, and it is quite possible that the element of error is larger in the one case than in the other, though there is nothing to indicate in which price the

[1] So far as the writer is aware, the approximate average price is calculated by the staff of the *Municipal Year Book*. If in the returns the revenue obtained by the sale of gas were distinguished from the revenue obtained from other sources, an accurate average price could, of course, be obtained, but unfortunately only the total revenue is given.

element of error is greater. It is also conceivable that the error might have tended to augment the one price and to diminish the other, thereby increasing or decreasing the difference between the two, according as the price to be augmented was the higher or the lower. How accurate these average prices are is uncertain, but there is another way in which the question can be approached. If, instead of considering the receipts from the sale of gas alone, the total receipts are considered, it requires a very simple division sum only to ascertain that these represent 3s. $2\frac{1}{8}$d. per 1000 cubic feet of gas sold in the case of municipal undertakings and 3s. $6\frac{5}{8}$d. per 1000 cubic feet of gas sold in the case of the undertakings of companies. These amounts are respectively $8\frac{3}{8}$d. and $9\frac{3}{8}$d. higher than the approximate prices charged for gas by municipal and company undertakings. The $8\frac{3}{8}$d. and $9\frac{3}{8}$d. represent the amount realised per 1000 cubic feet of gas sold by meter and stove rents and the sale of by-products. When it is remembered that a much larger proportion of local authorities provide meters free of charge than of companies,[1] and that in some cases stove rents are not even charged, it is only to be expected that their average revenue from rents and by-products should be somewhat less than that of the companies, and the fact that this expectation is realised by the figures points to the relationship established between the approximate prices charged by local authorities and companies as being substantially correct; in other words, the only way in which the higher average receipts, per 1000 cubic feet of gas sold, realised by the companies, as compared with the local authorities, amounting to $4\frac{1}{2}$d. per 1000 cubic feet sold, can be accounted for, is partly by the higher receipts for meter rents, and possibly to some extent for by-products, but mostly by the higher charge made for gas.

A second point relates to the equivalent return on

[1] According to the Board of Trade Returns, 107 local authorities, or 36.5 per cent of those possessing gas undertakings, provide meters free of charge, whereas only 23 companies, or 4.6 per cent of those possessing gas undertakings, do so. Many of the larger municipal undertakings are amongst those where no meter rents are charged, so that the effect on the average receipts from meter rents, etc., will be more considerable than is suggested by the fact that only a little over one-third of the municipalities charge no meter rents.

capital represented by the net revenue. It need hardly be said that to take the capital outstanding as the basis on which to calculate the return in the case of local authorities, and to take the capital outlay as the basis in the case of companies is entirely misleading, yet this is commonly done.[1] As more and more of the capital borrowed is paid off, the return on what remains outstanding naturally increases, until when the whole of the loans have been repaid by means of sinking funds or otherwise, and the undertakings are entirely free from debt, the net revenue will then present an infinite return on the loans outstanding,[2] but, of course, only a moderate return on the capital invested in the undertakings, which, under these circumstances, will all belong to the local authorities, and not partly to them and partly to the capitalists who have provided the loans, as is now the case, when about one-third of the debts contracted by the local authorities in respect of their gas undertakings have been paid off. Where it is not possible to ascertain the amount of capital invested, it is sometimes necessary to take the capital outstanding as the basis of the calculation relating to the return on capital,[3] but partly to employ the one basis and partly to employ the other and then to compare the results is quite unsound. Consequently the figure in the ninth line of the table on page 351, showing a return of $9\frac{5}{8}$ per cent on the capital outstanding, must be ignored for purposes of a comparison with the results achieved by companies, and the lower figure of $6\frac{3}{8}$ per cent shown in the line above can be contrasted with the $5\frac{3}{8}$ per cent, which is the ratio of net revenue to the capital employed by companies.

A third point is concerned with the ratio of working expenses to income; the difference of $1\frac{1}{2}$ per cent in favour of the undertakings of local authorities in 1909-10 is hardly large enough to serve as a basis for any very positive

[1] This is the only method adopted in the *Municipal Year Book*, for example. Nothing corresponding to the eighth line in the table on p. 351, giving the equivalent return on capital outlay represented by the net revenue, is included in the table of summary results quoted in the *Municipal Year Book*, from which many writers rely entirely for their facts.

[2] This is the position of the Bonn Gas Works; see table on p. 336.

[3] See what is said above on the subject, p. 314.

deductions concerning greater economy and efficiency in management. In any case, the figures constitute no proof that greater efficiency in management exists; they may indicate greater economy, due entirely to the larger scale on which, on the average, the municipal undertakings produce. Taken as a whole, the figures in the table on page 351 show that the gas undertakings of local authorities do obtain better results than those of companies, though the difference is not very great. So far as the explanation of these better results is concerned, it must be attributed to the fact that local authorities have refrained from municipalising unsuccessful private undertakings, and that amongst the public gas works there is a larger proportion of big undertakings than amongst the private gas works. No sort of evidence is forthcoming to show that the more favourable results obtained by the gas undertakings of local authorities are due to municipal management; and to suggest in any way that the better results are caused by the public management being more efficient than the private management, is to advance a proposition in support of which no facts can be produced.

(*b*) As has been already stated, the other industry which can be studied by this method is the tramway industry. In the table which follows there will be found a summary of the accounts and the operations of all authorised tramway and light railway undertakings in the United Kingdom. The difference between the number of undertakings owned and those worked by local authorities is accounted for by some which are authorised, not having yet been constructed, and others having been leased to companies. This, of course, increased the number of undertakings worked by companies. There were, however, one or two companies which have not constructed their lines, and one which has leased its lines to two local authorities. But for this the number of undertakings worked by companies would have exceeded the number owned by companies by rather more. Of the undertakings worked, a good many of those belonging to local authorities, and a few of those belonging to companies, were not worked independently, but were managed by other local authorities or other companies respectively. Thus the

TABLE giving Summary of the Accounts and the Operations of all Authorised Tramway and Light Railway Undertakings belonging to Local Authorities and to Companies in the United Kingdom during 1909-10.[1]

	Local Authorities, 1909-10.	Companies, 1909.
1. Number of Undertakings owned	176	124
2. Total Capital Outlay	£49,568,775	£24,372,884
3. Lines open	1,710¼ miles	851½ miles
4. Average Cost per Mile	£28,983	£28,623
5. Number of Undertakings Worked	136	141
6. Capital Outlay	£44,108,250	£29,556,166
7. Track operated[2]	1,502¾ miles	1,059 miles
8. Gross Receipts	£9,487,434	£3,590,467
9. Working Expenses	£5,887,243	£2,244,871
10. Ratio of Expenditure to Receipts	62.05 per cent	62.52 per cent
11. Net Revenue	£3,600,191	£1,345,596
12. Equivalent Return on Capital Outlay	8⅛ per cent	4½ per cent
13. Number of Miles run by Cars	212,465,787	85,378,899
14. Net Revenue per Car Mile	4.06d.	3.78d.
15. Net Revenue per Track Mile[3]	£2,395	£1,271
16. Number of Passengers carried	2,102,438,010	640,751,429
17. Average Fare per Passenger	1.05d.	1.24d.

136 tramway undertakings worked by local authorities were actually managed by 94 local authorities.

In the case of tramways, even more than in the case of gas works, the majority of the larger and more favourably situated undertakings have been municipalised. The population of the area served is a far more important consideration

[1] The figures in this table are partly taken direct from the *Board of Trade Return on Street and Road Tramways and Light Railways*, and are partly calculated from them. In most cases the calculations made in the *Municipal Year Book* have been used.

[2] The figures in the *Municipal Year Book* are 1503¾ and 1051¾, the total of which does not agree with the total length of line open (line 3 of table), which is correct in the *Municipal Year Book*. The figures in the table coincide with those in the *Board of Trade Return*.

[3] These figures differ slightly from those in the *Municipal Year Book*, owing to the small difference in the track operated mentioned in the previous note.

in the case of tramway than of gas finance. The difficulty of making tramway undertakings which are situated in small towns pay their way has already been discussed in an earlier part of this chapter,[1] and it is only to be expected that the companies, which serve so many small towns, should show somewhat poor results. A net revenue equivalent to a return of $4\frac{1}{2}$ per cent on the capital outlay would be inadequate under any circumstances as the return on money invested in a trading undertaking, but in view of the fact that the net revenue is ascertained before any provision for depreciation has been made, it is distinctly more unsatisfactory than even appears at first sight. The local authorities, thanks largely to the inclusion of a much bigger proportion of large undertakings,[2] are able to show a net revenue equivalent to a return of $8\frac{1}{8}$ per cent on the capital outlay. The lower average fare per passenger in the case of local authorities really means very little in the absence of all information concerning the distance which the passengers were carried. The existence of the halfpenny fare system on a few large municipal undertakings, such as those of the London County Council, Glasgow and Sheffield, undoubtedly helps to reduce the average fare per passenger.

The difference in the results achieved by the tramway undertakings of local authorities and of companies can be fully accounted for by the majority of the areas best suited for tramway enterprise having been secured by the local authorities for their undertakings. The more favourable terms with regard to tenure under which local authorities work, may also to some extent explain the better results they obtain. Taking all the circumstances into consideration which affect the tramway undertakings of local authorities and of companies, it is impossible to draw any deduction concerning the effects of public and private management.

(iv.) The fourth and last indirect method of measuring the results of municipal trading is by means of international

[1] See pages 317-323.

[2] Of the tramway undertakings of local authorities in the United Kingdom, 37 appear to serve towns with populations exceeding 100,000, whereas in the case of company undertakings only 10 serve towns with populations exceeding 100,000. Of these, two (London United and Metropolitan Electric) are in the London area, where the London County Council has the bulk of the traffic, and one is in Birmingham, where the Corporation has a more remunerative system of its own.

comparisons between a country where there is little or no municipal trading and a country where there is much municipal trading. For this purpose the United States and the United Kingdom are nearly always selected. Various information concerning the electricity and the tramway industries can be produced, with the object of showing that they are much more developed in the United States than in this country. As an illustration of this method a few figures relating to tramway undertakings have been collected together in the table given below. The figures unfortunately are somewhat antiquated as they relate to 1902, but as between 1902 and 1905 the rate of increase in the length of track and in the number of cars in use was roughly the same in the United States as in the United Kingdom,[1] the figures may be accepted as approximately representing the relative development of tramway enterprise in the two

TABLE showing the Relative Position of Tramway Undertakings in the United Kingdom and in the United States in 1902.[2]

	United Kingdom.	United States.
Total Length of Tramway Track . .	2,336 miles	22,328 miles
Urban Population per Mile of Track .	12,476	1,516
Number of Cars in use . . .	7,752	59,000
Urban Population per Car . . .	3,760	574
Number of Passengers carried . .	1,394,452,983	5,521,509,521
Average Annual Number of Rides per capita of Urban Population . .	48	161
Average Fare per Passenger . .	1.13d.	1.88d.

countries as late as 1905. That far greater tramway facilities existed in the United States than in the United Kingdom is clearly revealed by the table. In proportion to their urban population the United States had eight times as many miles of track and about seven times as

[1] *Report of the National Civic Federation Commission on Public Ownership*, part i. vol. i. p. 447. The rate of increase was slightly greater in the United States than in the United Kingdom.

[2] *Ibid.* part i. vol. i. pp. 445, 446.

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[2] *Ibid.* part i. vol. i. pp. 445, 446.

many cars in use as the United Kingdom. The only thing which appears to have been in favour of the latter country was the lower average fare per passenger. This was undoubtedly accounted for by the difference in selling policy: the graded fares in this country as contrasted with the uniform fares charged in America. There is nothing to show the average length of journey travelled by each passenger, which was probably much longer in America than over here.

Another indication of the fewer tramway facilities which this country possessed as compared with the United States in 1902 is given by an inquiry showing the number of towns with different populations which were not served by tramways. In the United Kingdom there were two towns with populations exceeding 100,000, seven with populations between 50,000 and 100,000, and thirty-nine with populations between 25,000 and 50,000 which had no tramways. At the same date in the United States there were no towns of these sizes without tramways.[1] During the last ten years several of these British towns have doubtless obtained tramway facilities, but a good many are probably still without them.

A comparison between individual British and American towns shows that the latter have a much longer tramway track in proportion to their populations than the former. For example, in Boston in 1902 there were 253 miles of track, or 1 for every 2073 of the population served.[2] In Manchester in 1905 there were 146 miles of track, or 1 for every 5130 of the population served.[3] In the twenty largest towns in the United States with a combined population of nearly thirteen millions there were 5966 miles of tramway track in 1902, or 1 for every 2155 of their population. In the twenty largest towns in the United Kingdom, with a combined population of fourteen and three quarter millions, there were 1567 miles of tramway track in 1905, or 1 for every 9426 of their population.[4]

[1] *Report of the National Civic Federation Commission on Public Ownership*, part i. vol. i. p. 446.

[2] The population served was 594, 618.

[3] The population served was 850,000.

[4] *Report of the National Civic Federation Commission on Public Ownership*, part i. vol. i. pp. 448, 449.

It now remains to be considered what deductions can be drawn from these various figures. They undoubtedly throw much light on the relative progress in the two countries in the matter of electric traction, but they cannot be held to prove the superiority of private over public management. To draw such an inference from the figures is to ignore entirely the great differences in the conditions prevailing in the two countries. Attention may be drawn to a few of these. In the first place, the very dense network of railways in this country does away to a considerable extent with the need which exists in the United States for trams to provide for distant suburban and also inter-urban traffic. In the second place, American towns are generally far less compact than British towns, so that the need for tramway facilities is much greater in the former than in the latter. Further, towns in this country are generally so planned that people are able to live close to their work, and the need for tramways often does not exist. If the area, instead of the population, served were taken as a basis for comparison, British tramways would compare much more favourably with American tramways. In the third place, the standard of construction is much higher in the United Kingdom than in the United States; from a financial point of view it may be better not to lay the permanent way so thoroughly or to employ such substantial overhead equipment, as these things entail a heavy expenditure and seriously increase the capital charges of such undertakings as are entered upon, and the prospect of these heavy capital charges prevents other lines from being constructed at all, and thus checks the expansion of tramway facilities. On the other hand, from the point of view of the safety, comfort and convenience of the passengers and of the general public who use the streets, it is hardly possible to adopt too high a standard of construction. The higher value attached to life in this country and the stricter control exercised by the Central Government over the construction of tramways undoubtedly account largely, if not entirely, for the cost of construction being higher in the United Kingdom than in the United States. Differences in the habits of the people, and also of the law in the two countries, have probably

helped to bring about the greater expansion of the tramway system on the other side of the Atlantic than on this.

There is no evidence to show that public ownership has had the effect of checking the growth of tramway facilities in this country. At the time when this industry was entirely managed by companies, it was conducted on a very small scale only. However progressive private enterprise may have been in the United States, it did not effect very much in the United Kingdom. This was doubtless partly due to the law, as indicated above, the limitation of leases to twenty-one years under the Tramway Act, 1870, being likely to check the development of tramways to some extent. This piece of legislation was enacted by Parliament, for good or for evil, and the local authorities cannot be held responsible for any consequences which may be attributed to the short-lease system. Since the days of the municipalisation and of the electrification of tramways, progress has been much more rapid, though it is impossible to say how much is due to the one cause and how much to the other. In any case it can safely be asserted that municipal enterprise has done as much, if not more, than private enterprise to help on the development of the British tramway system. In the table which follows, the expansion of tramways in

TABLE showing the Development of the Tramway Systems of the United Kingdom from 1886 to 1910.[1]

Year.	Length of Route open for Public Traffic.	Number of Cars.	Total Number of Passengers carried.
	Miles.		
1886	865	3,440	384,157,524
1894	975	4,179	616,972,830
Percentage increase since 1886	12.7 per cent	21.5 per cent	60.6 per cent
1902	1,484	7,752	1,394,452,983
Percentage increase since 1894	52.0 per cent	85.5 per cent	126.0 per cent
1910	2,562	12,350	2,743,189,439
Percentage increase since 1902	72.6 per cent	59.3 per cent	96.7 per cent

[1] *Board of Trade Returns relating to Tramways and Light Railways.*

the United Kingdom since 1886 is briefly indicated. The year 1886 represents company management at its prime. By 1894 the first cases of the introduction of municipal management had occurred, the Corporation of Glasgow, for example, taking over its tramways in that year. Between 1894 and 1902 the processes of municipalisation and electrification made considerable progress, and this has been continued since 1902.

One further comparison which is sometimes made between American and British tramway undertakings relates to the distance which can be travelled for 5 cents or 2½d. In Baltimore, for example, a passenger for 5 cents can ride 10.6 miles without changing cars, and 17.3 miles by means of a transfer. In Glasgow the longest journey which can be made for 2½d. is 5.88 miles.[1] Such a comparison is absolutely worthless so far as the results of municipal trading are concerned, just as much as the converse proposition would be, that in Glasgow a passenger can ride 2 miles for a penny, whilst in Baltimore it costs 5 cents to ride 2 miles. On the one system graded fares have been established, and on the other a uniform 5 cent fare. The advantages and disadvantages of the two fare policies have already been discussed;[2] the adoption of the one or the other depends largely upon local conditions; the intention of the one is to favour short or medium-distance travellers; the intention of the other is to favour long-distance travellers; a contrast between the cost of travelling a particular distance under the two systems conveys no information whatever concerning the efficiency of the two managements, it merely illustrates the effects of adopting the particular fare policies. In this country both local authorities and companies adopt graded fares, as they seem most suited to British conditions. In the United States uniform 5 cent fares predominate presumably because they are best suited to American conditions. The results of adopting the one fare policy or the other are, of course, different, as it is intended that they should be, but to base arguments in favour of public or private ownership on these differences is absurd.

[1] *Report of the National Civic Federation Commission on Public Ownership*, part i. vol. i. p. 475.

[2] See pp. 236-238.

The position with regard to the deductions which can be made concerning the results of municipal trading from international comparisons, the detailed application of which to British and American tramways has just been considered, may be summarised as follows: the conditions prevailing in any two countries are necessarily so diverse that it is impossible to attribute any differences, which may be noted in the results achieved by an industry in two selected countries, to any one particular cause, such as a predominance of public ownership in one country, and private ownership in the other. The probability is that the different results achieved in two countries are due to the co-operation of many causes, and there is nothing to show to what extent, if at all, the form of management influences the results. It may be readily admitted that international comparisons are both instructive and suggestive, but they do not enable any definite conclusions to be drawn concerning the advantages and disadvantages of municipal trading.

§ 8. Sufficient details have been given concerning the various methods of measuring the results of municipal trading to bear out the statement at the beginning of the chapter, with regard to the difficulties involved in the employment of existing statistics for this purpose. Uncertainty about the completeness or accuracy of some of the figures employed, together with the complexity of the causes at work in many cases, make it almost impossible to form absolutely reliable conclusions on the basis of statistics about the effects of public ownership. Many of the statements commonly made about municipal trading on the strength of figures, similar to those examined in this chapter, cannot be justified, as more careful inquiries into all the surrounding circumstances make other explanations equally, if not more, likely. This refers particularly to the indirect methods of measuring the results of municipal trading by comparing them with the results achieved by private trading. The application of the direct method of gauging the effects of public ownership is rendered difficult by the uncertainties associated with municipal accounting; an undertaking which is apparently a financial success may really be in receipt of assistance from the rates, or in any case be barely paying

its way when it appears to be flourishing. Under any circumstances, the success of municipal trading cannot be fully measured by the net surplus realised, so long as the industry concerned is monopolistic in character. An undertaking of a local authority might quite well earn a large surplus by rendering an inefficient service and by charging high prices, and in this case the results could certainly not be described as satisfactory. What constitutes an inefficient service, and what must be regarded as high prices, depend entirely upon local conditions. There is no one standard of adequate service and reasonable prices. Prices which could be described as reasonable in one town might be extortionate in another. Often it is not even possible to compare directly the prices charged in different towns, as the same selling policy may not be adopted in each.

Summarised data referring to a large number of undertakings, if interpreted with caution, may give useful indications concerning the results obtained, but can hardly do more. Too much reliance, however, must not be placed upon collective results, so far as the public utility services are concerned. Each local authority has its own problems to deal with, which are to a considerable extent related to the physical characteristics of the area served. The conditions in any one town are certain to be at least slightly different from the conditions in every other town, so that each town can fairly claim that its trading undertakings should be judged by themselves. To do this in the absence of any clearly defined standard of success, by which each undertaking could be immediately judged, and in view of the uncertainty concerning the accuracy of municipal trading accounts, would necessitate a detailed inquiry concerning every trading department, including an elaborate research into its financial history, to ascertain whether capital expenditure had been properly booked. The appalling proportions which such an investigation would reach, make the acceptance of collective results necessary; but it must never be forgotten that these ignore local conditions, and that they are based upon material which at the best is not very accurate, and in some cases is probably distinctly inaccurate.

CHAPTER IX

SUMMARY AND CONCLUSION

§ 1. IN the course of the preceding chapters, in which the very large field of Municipal Trading has been briefly surveyed, the more important of the various reasons which account for the introduction of municipal trading in its different forms have been considered, and attention has also been devoted to the policies adopted by local authorities in managing their trading undertakings. Some of these are conducted on purely commercial lines, and others with a view to effecting social reforms, by supplying some sections of the population with products or services on more favourable terms than others. In many cases a municipality is prepared to manage reproductive undertakings at a loss in order to further the securing of conditions which are in the best interest of sanitation, of the public health, or of the general welfare. Such enterprises lie outside the scope of municipal trading, as they are deliberately subsidised from the rates, and are not conducted with the intention of being self-supporting. The first question which must be asked with regard to them, is not whether they are suitable for municipal management, but whether there is any justification for subsidising them from the rates. In attempting to answer this question it is not sufficient to consider each particular enterprise on its own merits. It is necessary to review the whole sphere of activities, present and future, of the local authority concerned. It is impossible to contemplate the great rise which has occurred of recent years in the rates of certain towns except with the gravest concern. Industries tend to migrate from those towns and new works

will no longer be erected there. The local authority, far from benefiting the inhabitants by its well-intended schemes, may do them serious harm. The rates cannot be indefinitely increased without affecting the prosperity of a town, and as a consequence the undertaking by a municipality of any new function, which imposes a burden on the rates, will tend to check the assumption of other functions which may be even more desirable. A local authority must fulfil certain obligatory functions which have been entrusted to it by the central authority, such as the maintenance, cleansing and lighting of the public roads and streets, the upkeep of police, the administration of justice, the sewering of the streets and the disposal of sewage, and the provision of facilities for elementary and higher education, and in every area ratepayers will have to contribute to the relief of the destitute. It is only after the cost of fulfilling the various obligatory functions has been met, that a municipality is able to judge what expenditure it is in a position to incur voluntarily without placing an unreasonable burden upon the ratepayers. The large increase in the expenditure of local authorities on education since the passing of the Education Act of 1902 has considerably restricted the resources of these authorities available for other purposes, and this only emphasises the need for making the most careful inquiries before embarking on any scheme which will impose a more or less permanent burden on the rates.

§ 2. If, on account of the fact that the resources of local authorities are practically limited, it is necessary to examine every proposal to subsidise an undertaking from the rates in respect both of the urgency with which it is required, and of the position it occupies as compared with other schemes that may call for assistance at that time or at some future date, before it can be approved of, it is evident that a municipal undertaking which is established with the intention of being self-supporting, but which actually imposes a burden on the rates, is in an eminently unsatisfactory position. The local authority is forced into aiding such an undertaking, either without any opportunity of deciding whether it deserves assistance or not, or after previously considering the situation and reaching the conclusion that

the enterprise must be managed on self-supporting lines, if it is to be conducted as a public undertaking at all. A municipal electricity works is a case in point; it is difficult to conceive of any ground on which the subsidising of such an undertaking from the rates can even be urged, let alone justified; yet quite a number of local authorities find themselves compelled to make good deficiencies incurred by such enterprises. The existence of such a situation is probably due to one or both of two causes: to incompetent management and to misestimates as to the prospects of the enterprise when the plans for its establishment were under discussion. For the former, the responsibility rests entirely with the local authority, but for the latter, the central authority which authorises the undertaking and permits the necessary money to be borrowed is considerably to blame. Where the necessary powers are obtained by means of a provisional order, the department which is entrusted by Parliament with the granting of such order, the Board of Trade, for example, in the case of electricity and tramways, should make more careful preliminary inquiries before granting orders which are applied for. The Board refuse to grant some electric lighting orders because they are not satisfied that the undertakings can be established without involving the local authorities in losses,[1] but it is clear from the unsatisfactory results obtained by many municipal electricity works, either that the Board have not always acted according to this essentially sound policy, or that they have not been nearly strict enough in their requirements as to what constitute indications of a reasonable prospect that an undertaking will prove itself self-supporting. Experience shows that the councils of local authorities are often ambitious concerning the enterprises they would like to manage, that they are very optimistic with regard to the financial success which could be achieved by such enterprises, and that at all times they are much more anxious to minimise the burdens of present ratepayers than to deal equitably by future generations of ratepayers. Under these circumstances, it is the duty of the central authority, through whatever agency it acts, in the first place, to take a sober and

[1] See page 10 above.

conservative view of the functions of local authorities and of the financial prospects of any enterprises which they may propose to undertake, and in the second place, to represent the interest of future generations of ratepayers, so that they may not be unduly burdened by the transactions of their predecessors. The Board of Trade, by sanctioning some of the more or less financially unsound proposals in connection with tramway and electricity undertakings which have been submitted to them from time to time by local authorities, share with the local authorities concerned the responsibility for the losses which have been incurred. The fact that an unfavourable decision on the part of the Board is not absolutely final, as a local authority can always proceed by way of a private bill, should make them very careful to err on the side of safety, whenever there is uncertainty as to the financial stability of any scheme which may be brought forward; but, to judge by the results achieved, it is very doubtful if this is the view taken by the Board.

Whatever blame attaches to the central authority for originally sanctioning schemes which have since proved to be unsound, a considerable share always, and in some cases the whole of the responsibility must rest with the local authorities. They have to answer for the planning and the management of the undertakings. It has been pointed out in the previous chapter that the purchase of current in bulk at high voltage from electric power companies appears to offer to many small towns a much better prospect of conducting electricity supply undertakings on a self-supporting basis than the maintenance of small municipal power stations. The adoption of this system is not restricted to undertakings to be established in the future. It would probably pay many local authorities to convert their existing generating stations into transforming stations and to purchase their current in bulk, yet they seem loath to adopt this course, presumably owing to the mistaken idea that it would be an undignified course for a local authority to adopt. Again, if the management of some of these undertakings displayed more initiative, it should be possible to increase considerably the sale of current with little or no increase in the fixed costs. Whether the plans of the electricity supply scheme

as originally sanctioned were unsound or not, there seems little doubt that it rests with a good many local authorities to make a better financial showing than they are doing at present.

The position with regard to tramways is somewhat different; if once the mistake has been made of incurring a too great capital expenditure, it is almost impossible to remedy this until the permanent way and rolling stock wear out. Then, in a district with a small population a system of trackless tramways with its much lower capital costs, offers the best prospect of maintaining mechanical transit facilities on a self-supporting basis. In the meantime a good deal could be done in such towns, and even more in towns where the population is sufficient to justify ordinary electric tramways, by adopting a sounder policy with regard to the fixing of fares. To carry workpeople at certain hours of the day at cost price or even less than cost price, in a town which is composed almost entirely of working-class people, is a suicidal policy to adopt. Yet this appears to be what is happening in a good many industrial towns. It is true that by law they are generally limited with regard to the fares they may charge workpeople at certain times, but often they give much longer rides for workmen's fares than they are compelled to give.[1] The limit is a halfpenny per mile or fraction of a mile, with a minimum fare of one penny. Many local authorities would be well advised to keep much closer to this limit and to allow little more than one mile to be travelled for a penny, little more than two for three halfpence, and little more than three for twopence. In this way it would be possible to grant more favourable terms to ordinary passengers than is now the case, and by this means remunerative traffic might be developed. Where it could be arranged to abolish workmen's fares entirely by making the ordinary fares comply with the conditions prescribed by law for workmen's fares, and in this manner to do away with all preferential treatment of certain passengers, the undertakings would probably be placed on a much sounder financial footing.

[1] See Table of Fares in the *Report of the General Manager of the Manchester Corporation Tramways in regard to the Proposed Extension of Workpeople's Fares.*

§ 3. If the deficits incurred by certain municipal trading enterprises were really measured by the debit balances shown in their annual accounts, the position of these undertakings would not be nearly so serious as it actually is, because there is good reason for thinking that the losses in many cases considerably exceed the nominal deficiencies. This subject was discussed at some length in the chapter on the Financial Aspects of Municipal Trading; it was shown there that not infrequently items which should be charged to the capital or the revenue accounts of trading undertakings are not so charged, and further, that the provision for depreciation is often quite inadequate. There are some industries in which the cost of repairs and renewals varies very little from year to year, and in these cases an undertaking can be maintained in a high state of efficiency out of revenue without causing undue fluctuations in the annual surplus. But there are other industries in which the cost of renewals will be very heavy in some years and light in others; under these circumstances it is essential that sums should be set aside out of revenue each year to meet future expenditure on replacements, in order that the finances of an undertaking may not be periodically disorganised, and that the annual financial statements may represent the position of the enterprise more accurately. Tramway and electricity undertakings are most distinctly of this latter type. The making of provision for renewals and replacements is very seldom obligatory in England and Ireland, and the Select Committee on the Repayment of Loans by Local Authorities recommended that power should be given to the sanctioning authority to make it a condition of their sanction that provision should be made for the probable annual average cost of repairs during the currency of a loan.[1] They recommended, further, that the amount of such necessary provision should be fixed by the sanctioning authority, and should depend upon the character of the purpose for which the loan is required and the method by which it is to be repaid, and that compliance with this condition should in all cases be enforced by Government audit.[2] Up to the

[1] *Report from the Select Committee on the Repayment of Loans by Local Authorities*, 1902, § 40.

[2] *Ibid.* § 40.

present nothing appears to have been done to give effect to this recommendation, which is a matter for regret.

The effect of making inadequate provision out of revenue to pay for the cost of renewals and replacements in the case of industries, where current revenue will not suffice for this purpose, will be that fresh loans will have to be contracted for the purpose. In this way one of three situations will be brought about. Firstly, if the new loans together with the outstanding loans in respect of the undertaking are less than the original loans, the burden of debt is presumably somewhat less than it was at the outset; secondly, if the new loans together with the outstanding loans are equal in amount to the original loans, the debt is practically perpetuated, and in this way the policy wisely adopted by the central authority in the interests of future generations, that local authorities shall not establish permanent debts, is defeated; thirdly, if the new loans together with the outstanding loans exceed the original loans, the burden of debt has been increased, unaccompanied by any corresponding increase in the earning capacity of the undertaking. This is a most unenviable position for any enterprise to occupy; it implies that very considerable assistance from the rates will be required sooner or later. All these situations are caused primarily by the failure of the local authority to make good the wear and tear out of revenue, but the last and most unsatisfactory of all, is due in a secondary measure to the fact that the period granted for the repayment of the loan was too long. For this, of course, the authority which sanctioned the loan is responsible; but their task of estimating the probable life of an undertaking is not infrequently one of extreme difficulty, as the actual life of any works must depend so much upon circumstances over which the central authority has no control, as, for example, upon the way in which the works are used and the state of repair in which they are kept by the local authority, and upon scientific and technical discoveries which may be made. The probable life of an undertaking, or preferably something less than that, so as to reserve a margin of safety, appears to be the only feasible basis to adopt in fixing the period of repayment for unproductive undertakings, but in the case of trading enter-

prises this basis, with its attendant uncertainties, could very well be abandoned in favour of adapting the period of repayment to the financial circumstances of the local authority concerned, or to the trading prospects of the particular trading undertaking, *provided that provision for depreciation on an adequate scale were made compulsory.* The basis on which depreciation must be provided would be fixed at the outset by the sanctioning authority, as far as possible in a manner which would lead automatically to larger provision being made, the larger the use which was made of the plant. Thus a tramway undertaking might be compelled to contribute annually at least one penny per car mile run to a depreciation fund. In any case, however, the sanctioning authority would have to have power to re-adjust the depreciation basis at any time, if it was considered desirable to do so.

§ 4. Assuming proper provision were made for depreciation, a trading undertaking could be treated as an institution of permanent utility. As has been pointed out elsewhere, this would be no reason for allowing the formation of a perpetual debt in respect of it, but the sanctioning authority would be left with greater freedom in fixing the repayment period than if the works were only of temporary utility. Under these circumstances, the first thing the sanctioning authority should look to would be the probable earning capacity of the undertaking. The estimated balance of net revenue, after debiting the obligatory depreciation allowance and all proper charges to the net revenue account, should be ascertained, and it should be arranged if possible that the sinking fund contribution should be something less than the estimated balance of net revenue, so that the undertaking might be entirely self-supporting. In small towns it would frequently be necessary to make the repayment period fairly long, say forty-five, fifty, or even sixty years, in order to reduce the sum to be devoted for debt repayment to such dimensions as could be met out of the net surplus revenue. In larger towns where the net surplus revenue would probably suffice to repay the loans in a much shorter period, perhaps in twenty to thirty years, or even less, the other consideration in fixing the period for loan repayments, namely, the general

financial circumstances of the local authority concerned, should be taken into consideration; and if the rates are high, if the loan charges are very considerable, if heavy capital or annual expenditure is likely to be required in the future in connection with improvement schemes or otherwise, unduly long repayment periods should not be sanctioned, especially as these must always involve a certain element of risk owing to the possibility of works becoming obsolete before they are worn out. Even if the obligations of a local authority are comparatively small, so that the urgency for repayment is not very great, it is probably well not to allow a period exceeding forty years for repayment, providing it is anticipated that the net surplus revenue will prove sufficient to allow the loans to be paid back in that number of years without imposing a burden on the rates. In any case, for however long a loan for trading purposes may be sanctioned, it would be well that the instalment system of repayment should be adopted,[1] in view of the fact that a much smaller total payment of capital and interest is involved than on the other systems, and that the debt charges remaining will be less, if obsolescence or some unforeseen contingency renders the works useless, or if the provision made for depreciation ultimately proves to be inadequate.

If the provision of a renewals and replacement fund were obligatory, in all cases where an undertaking cannot be efficiently maintained out of current revenue, a town council would no longer be in a position to act so unfairly towards future generations as they do now, if they require one of their trading undertakings to pay over a sum in relief of the rates, when either no provision or grossly inadequate provision has been made for depreciation. Illustrations of such transactions in connection with municipal electricity and tramway undertakings have been given in a previous chapter. In some of these cases the net revenue, after meeting other charges, might just be sufficient to enable a suitable sum to be set aside for renewals and repairs and to leave over the balance necessary for debt repayment

[1] See page 151 above, and also *Report from the Select Committee on the Repayment of Loans by Local Authorities*, 1902, § 19.

purposes. In other cases it would not suffice, but a suitable sum should be set aside, nevertheless, to meet future renewals and replacements, and the consequent deficiency in the amount necessary for debt repayment should be made good out of the rates, or carried forward to be eliminated out of future surplus revenue. Instead of leaving the trading committee to dispose of its revenue in the proper manner, and if necessary making good a deficiency out of the rates, the town councils demand contributions from these departments which, strictly speaking, they are not justified in paying. Such contributions represent the exploitation of future ratepayers for the advantage of the present ratepayers; momentarily the rates are relieved at the expense of the capital invested in the trading undertakings, and the unpleasant necessity of raising the rates to meet the outlay incurred by local authorities in fulfilling their functions is postponed. Ultimately a day of settlement must come, and the burdens will be shifted on to shoulders where they ought never to have rested; expenditure which should have been met out of current revenue at the time when it was incurred, has been capitalised, and to meet it what are practically forced loans have been raised from the trading undertakings concerned, which are thereby placed in unsound financial positions which might have been largely, if not entirely, avoided if the undertakings had been fairly treated by the local authorities which owned them. Although many town councillors and present ratepayers, in their efforts to secure their immediate objects with the least expense to themselves, may be utterly indifferent to the financial interests of future generations, these are entitled to consideration, and it is the duty of the central authority to protect their interests, if a local authority fails to do so. The making compulsory of an adequate provision out of revenue for depreciation in cases where such is necessary, would, in addition to encouraging sounder finance, possess the advantage of affording to future generations some protection from an abuse in respect to which the central authority is at present powerless to help them.

§ 5. Owing to the complicated character of municipal trading finance and the difficulty which exists at present in

obtaining accurate information concerning the true position of these trading undertakings, the introduction of a really comprehensive and efficient system of auditing is badly needed. The recommendations on this subject made by the Joint Select Committee on Municipal Trading in 1903 have been considered elsewhere[1] and need not be repeated here. But it is worth while noting that if the formation of depreciation funds were made obligatory, some new system of auditing would have to be introduced, as it would otherwise be impossible to ascertain whether adequate provision for future renewals and replacements was being made or not. To express an opinion on this subject, as well as to see that all expenditure incurred in connection with trading undertakings was properly debited to the trading accounts, would be included amongst the functions of the auditors of local authorities, if the recommendations of the Joint Committee were followed.

§ 6. One other matter in connection with finance calls for brief mention. In certain cases local authorities are expressly authorised to accumulate reserve funds up to a certain amount in connection with specified trading undertakings. The expression reserve fund is here used in the strict sense of sums set aside out of surplus net revenue, or profits, in order to strengthen the financial position of an undertaking. As far as the enterprise is concerned to which this limitation is applied, the limitation is objectionable in two ways. In the first place, it may easily be misunderstood and be regarded as applying to depreciation funds and other reserves which are set aside from net revenue to meet future liabilities, and which must be provided for before surplus net revenue, or profits, can be ascertained. There is good reason for thinking that the restriction frequently is misunderstood in this way, and that this is one reason why adequate provision is not made for renewals and replacements in certain cases. In the second place, the limitation upon the size of the reserve funds seems quite uncalled for under existing circumstances; the accumulation of a large reserve fund out of profits would represent a provision for the relief of future ratepayers at

[1] See pages 176-179 above.

the expense of present ratepayers. It is quite contrary to the policy generally adopted by local authorities, and is very unlikely to occur; but if it did, it would represent a comparatively small compensation only to future generations for the many burdens which are being bequeathed to them by the present generation.

The effect upon municipal trading undertakings in general, of granting permission to accumulate reserve funds in certain cases, and of limiting the amount of such funds, must be considered. It may be assumed by an enterprise which is not expressly authorised to form a reserve fund that it has no right to do so, although actually there does not appear to be anything to prevent a local authority from building up a reserve fund out of the profits of its trading undertaking, if it wishes to use some or all of the profits in this way. Nevertheless, there do not appear to be very many enterprises which, without express authorisation, have formed such a fund, or paid for extensions out of profits, which practically comes to the same thing. If the expression reserve funds is misinterpreted to imply depreciation funds and other reserves against future liabilities, a local authority which is not expressly authorised to form a reserve fund may not merely set nothing aside out of profits to strengthen the financial position of its undertakings, but may not even charge provision for depreciation against net revenue, in the belief that it is not empowered to do so. No difficulty, real or imaginary, should be placed in the way of a municipality which wishes to conduct the finances of its trading undertakings on sound lines such as are approved of by the best commercial practice. Well-managed companies nearly always seek to accumulate good reserve funds out of profits so as to strengthen their positions and to increase their resources; by this means the inconveniences arising out of fluctuations in annual profits are minimised, and any heavy unforeseen losses, which have not been specially provided for out of net revenue, can be written off out of accumulated profits instead of burdening current profits or even necessitating a reduction of capital. Amongst the alterations in the law in connection with the financial

aspects of municipal trading which are desirable, removing all limitations on the size of reserve funds, and according to all trading undertakings the power to accumulate reserve funds, should be included, so that all doubt might be removed concerning what enterprises may form reserve funds. If at the same time the provision of a depreciation fund were made compulsory, in all cases where the provision of such a fund was desirable, the present confusion which appears to exist between such funds and reserve funds would be removed, or in any case would be rendered comparatively harmless in its effects.

§ 7. It is impossible to study the details concerning the management of municipal trading undertakings without feeling that the method of conducting their finances, in many cases, leaves much to be desired. There are various causes for this unsatisfactory state of affairs. In the first place, the wish of many local authorities to show favourable results with their trading enterprises frequently deters them from debiting various items to their trading accounts, which ought properly to be charged to them, and may lead them to credit too much to these accounts in respect of products sold or services rendered to themselves by these enterprises. In the second place, the absolute ignorance of many town councillors of the most rudimentary principles of accountancy, leads them to oppose proposals made on the advice of financial and technical experts with a view to securing the financial stability of the trading undertakings. In the third place, the possibility of shifting, to a considerable extent at least, the burdens arising out of present operations of local authorities on to the shoulders of future ratepayers, is a temptation to which many people, who are always only too anxious to postpone the unpleasantness associated with a day of settlement of any kind, give way very readily. In the fourth place, the anxiety of town councillors to gain popularity amongst the ratepayers and voters influences the finances of the trading departments in two ways: in October, before election time, it leads to concessions being made to the customers of the trading departments, without proper consideration having been given to the cost of the concessions, and in April, when the budget for the new

financial year is being discussed, it leads to unreasonable claims being made on the trading departments for contributions in relief of the rates, in order to avoid the necessity of making heavier demands upon the ratepayers. The October policy has at least one advantage as compared with the April policy; its effects are very quickly felt; the decrease in revenue will soon be apparent, and if the decrease is too serious to be compatible with sound finance, the over-generous facilities will presumably be very shortly withdrawn.[1] The situation is worse if the concessions are greater than an undertaking can really stand, but not so great as to make the financial unsoundness of the enterprise apparent to even the most casual observer. Under these circumstances town councillors may hesitate about withdrawing concessions once granted, for fear of incurring unpopularity, and the position of the undertaking may be allowed to grow steadily from bad to worse. The April policy is always dangerous, because years may elapse before the consequences of encroachments upon the depreciation funds will be clearly revealed.

§ 8. The unsatisfactory character of municipal trading finance in many towns is one very serious drawback to local authorities engaging in trading enterprises, in this country at least.[2] Another drawback of municipal trading is that it involves the employment by local authorities of large bodies of labour. It is perfectly right that municipalities should be good employers, and that they should give their workpeople adequate wages and fair conditions with regard to hours, holidays, etc., in accordance with the generally accepted standards in the various districts. In skilled occupations, where trade union rates of pay and hours of labour are adopted by private employers,

[1] The experience of Salford Corporation Tramways, mentioned on p. 266, is a case in point of concessions granted and then withdrawn after a year.

[2] My general impression with regard to municipal trading in Germany, gathered from the interviews I had over there with various municipal officials, from examining the Annual Reports and accounts of numerous undertakings and from studying a good deal of published information on the subject, is that the trading enterprises are conducted on distinctly sounder financial bases than in this country; but as my inquiries were chiefly restricted to larger German towns, and cannot be said to have been representative, I refrain from drawing any definite distinctions between English and German conditions.

a municipality can employ its labour on the same terms and probably no difficulties will arise. Unfortunately, most workpeople in the employ of municipalities are of the unskilled or semi-skilled type, in connection with whom a recognised standard of wages or of hours of labour seldom exists. As a consequence, unduly favourable terms may be granted to these workpeople at the expense of the general body of ratepayers, and in this way a small privileged class of wage-earners may be created. This may be brought about by the direct agitation of the municipal workpeople or by the advocacy of their claims on the town councils by particular members, who make themselves the spokesmen of the workpeople. A municipality is really a co-operative society, of which all ratepayers are members, yet the councillors sometimes forget their duties to the ratepayers, and seek to exploit that body in the interests of particular people. Their conduct in this respect may be contrasted with that of the committee men of a distributive co-operative society; the employees of such a society are treated well by the working-class people who constitute its membership, but any attempt by the committee to offer employees over-generous terms would be certain to arouse strong opposition among the members. The committee men realise this, and do not forget that they manage the society on behalf of the members. Working men, who, as members or officials of a co-operative store, will act reasonably and fairly by their employees and resent any attempt to over-pay them, will often, as ratepayers or town councillors, support movements to improve the positions of municipal labourers, without any reference to the value of the services rendered. Whether it is because they personally will suffer less financially if the municipal wages bill is increased at the expense of the rates, than if a co-operative society's wages bill is increased at the expense of the "dividend," or, in the case of councillors, because they are anxious to curry favour with those municipal employees who are ratepayers, or for other reasons, it is difficult to say. The same thing applies to many town councillors who do not especially represent labour interests; they adopt one scale of wages as fair and

reasonable in any firm or company in which they may be interested, and another and higher scale on the Town Council. It is not quite certain how the general body of ratepayers regards these attempts to create a highly favoured and privileged class of municipal employees, but it does not appear to give very much consideration to the matter, the interest at stake being so small in the case of most individual ratepayers.

On general principles, the employment of a large body of unskilled labour by a local authority cannot be approved of; in the first place, it fosters a somewhat loose standard of honesty according to which people are prepared to spend ratepayers' money freely, if not extravagantly, in a way in which they would never do if it were their own, instead of acting in the true interests of the present and future ratepayers, for whom they are practically trustees. In the second place, the growth in the number of municipal employees increases the danger of corruption; the temptation to councillors to act in a manner which will please those ratepayers who are municipal employees, instead of in the best interests of the ratepayers in general, becomes greater. In the third place, the existence of a highly favoured and privileged class of municipal employees affords most undesirable opportunities for nepotism and jobbery; wherever a local authority engages its workpeople on the recommendation of the councillors, as is not uncommonly the case, the multiplication of jobs under a council offers dangerous facilities for abuse.

There are other drawbacks to municipal trading in addition to its financial and labour aspects. With the continual increase in the duties imposed upon, or voluntarily undertaken by, the councils of local authorities, there is a serious danger of these bodies being overworked. The list of committees and sub-committees in connection with commercial administrations grows, and council meetings last longer, and have to be held more frequently to deal with the additional business involved by the new functions. One effect of this will tend to be that many able, experienced men, whose knowledge of finance and business organisation render them most suitable to share in the local administra-

tion, will find themselves unable to spare the requisite time. Another effect may be that town councils will devote insufficient attention to carrying out some of their functions. A further drawback to municipal trading, which is one that applies to all government trading, is that less initiative and enterprise is likely to be shown by the management than would be the case if the undertakings were managed privately.

§ 9. Taking all the attendant circumstances and conditions into consideration, municipal trading in itself cannot be regarded as a desirable institution; the management of industrial undertakings is not really a suitable sphere of activity for a local authority. Nevertheless, in certain cases it may offer a reasonable prospect of serving the general public better than private enterprise, and in consequence the municipalisation of particular industries may be justified. These industries are such as have a strong tendency to become local monopolies, which is generally true of tramways and of water, gas, and electricity supply undertakings. As water is an absolute necessary of life, and tramways and gas are used very largely by the general public, a private monopolist could not be left absolutely free to charge what he liked, and to provide such service as he chose. It would hardly be fair, in view of the local monopoly it possesses, to leave an electricity company entirely unrestricted in the matter of the treatment it may give to its actual customers and would-be customers, even though electric current does not partake of the character of a necessity from the point of view of the majority of ratepayers. The need arises to control the private monopolists in some way; the fact that they require the use of the streets for the purpose of conducting their businesses, which is often put forward as a reason for municipalising these undertakings, compels them to seek authorisation from the central or local authorities. This affords an opportunity for imposing restrictions upon the monopolists, but unfortunately experience shows that it is practically impossible to draft a lease or franchise embodying the various conditions, in which, sooner or later, one or more serious defects may not prove to exist. The difficulty of exercising

satisfactory control over many monopolistic tramway, water, gas, and electricity undertakings affords the principal justification for their municipalisation. There can be no general rule on the subject, each individual case must be considered on its own merits. If there is a reasonable prospect that a local authority, whilst conducting the undertaking on a self-supporting basis, will be able to provide a better service on more favourable terms than a company, which is already in existence or which is about to be formed, a municipality will probably be justified in managing a tramway, water, gas, or electricity undertaking. In the case of water, and to some extent in the case of tramways[1] and gas, considerations of the public health and general welfare strengthen the movement in favour of municipalisation.

Apart from water, gas, electricity, and tramway undertakings, and also market undertakings, which occupy a somewhat special position, as was pointed out in Chapter II., there are certain industries, subsidiary to these undertakings, the engaging in which by local authorities appears to be justifiable, although the industries may be actually competitive in character. If the conduct of these industries by local authorities is essential to the successful management of gas and other local monopolistic undertakings by them, or if it evolves directly out of such management, it would not be fair to refuse the local authorities permission to carry on the industries. Under any other circumstances, with one or two small exceptions, the management of competitive enterprises by municipalities is strongly to be deprecated. The exceptions have been fully discussed in a previous chapter; here it may be mentioned that they include a small amount of experimental house-building, where such is necessary to form a basis for new and better building regulations, or for town-planning schemes, and the provision of savings banks where suitable facilities for the safe keeping of small sums of money are not provided by the central government or by private undertakings of high-class standing.

[1] I do not refer to the granting of assistance to certain classes by means of preferential treatment, to which, as will have been noted previously, I am opposed, but to the arrangement of the fares in such a way as to combat as far as possible the tendency to congestion in the centre of larger towns.

§ 10. If a certain amount of municipal trading is to be permitted, in spite of the drawbacks which are connected with it, it becomes necessary to inquire how these drawbacks can be minimised. As far as the weaknesses associated with municipal trading finance are concerned, various suggestions have already been made which, if carried into effect, should add greatly to the financial stability of the trading undertakings of local authorities. It is difficult to put forward any scheme by which the objections to the direct employment of large bodies of labour by municipalities can be overcome, but the danger of nepotism and jobbery can at least be considerably reduced, if the appointment of all workpeople is left entirely in the hands of the principal officials of the different departments, and if it is expressly understood that a recommendation from a councillor is to disqualify any applicant. In what concerns the overworking of town councils, the German system of appointing a certain number of salaried aldermen, who devote their whole time to the municipal service, and act as chairmen of the different committees, probably offers the best solution; this would really amount to adopting in a modified form the arrangement by which a Member of the House of Commons or of the House of Lords is head of the great State trading department in this country, viz. the Post Office; only instead of making the chairmanship of a municipal trading committee a political office, the occupation of which would depend upon what party happened to be in power, as is the case with the Postmaster-Generalship, it would be occupied by that salaried alderman who appeared to be best qualified to fill the position successfully. If the different committees were presided over by paid chairmen, who were also members of the councils, it should be possible for town councils to exercise a general control over each department without concerning themselves with such small details of departmental administration as they do at present, and in this way the amount of work which they have to do would be reduced to more reasonable proportions than is often the case at present. Further, the difficulty of finding councillors, who have the ability and requisite amount of spare time to make good chairmen of

committees, would be largely overcome. Already a good deal of the work, which has nominally to be done by committees, is left to the chairmen because the members of the committees cannot afford to give the necessary time; if the chairmen were salaried aldermen, giving their whole time to the municipal service, even more duties might be allotted to them than are at present undertaken by them voluntarily, and in consequence more moderate claims might be made upon the time of the members of committees.

That the management of municipal trading undertakings lacks enterprise and initiative is due, of course, to the fact that those who are responsible for the conduct of the management have no direct financial interest in the success of the undertaking; such a direct financial interest is not merely an incentive to people to do their utmost to develop a business, but acts involuntarily as a break upon any inclination towards recklessness and extravagance; it both encourages and restrains men in their business transactions, and enables them to conduct undertakings so that their efforts neither run in grooves nor savour of speculation and rashness. The directors and officials of companies frequently have not enough at stake to call for the best that is in them, however hard they may try, and in the case of a municipal undertaking the committee and manager have practically nothing at stake at all. Under the circumstances, the only course which seems to offer a reasonable chance of introducing a progressive spirit into the management of such undertakings is to pay good salaries to the high officials, so that men of first-rate ability may be attracted into the service. There are undoubtedly many able men in the service of British municipalities at the present time, but the salaries paid to the managers of trading undertakings, by the smaller local authorities in any case, are often absurdly inadequate in view of the responsibility of the positions, if good men are to be attracted and kept. It is a great mistake to think that because an undertaking is not large it is easy to manage; to make a tramway or electricity undertaking self-supporting in a small town calls for very considerable ability in the

manager, and it would often pay local authorities to offer better salaries than they do at present.

In this country, the final decision whether a local authority shall engage in a particular trading enterprise rests with the central authority, but before any bill or provisional order is promoted by a corporation those local ratepayers, who have a vote, have an opportunity of expressing an opinion upon it, either at a public meeting or at an inquiry held by an inspector of one of the Government departments. In some cases a poll of the voters is taken. In view of the fact that it is the people who pay the rates who are ultimately responsible for any municipal undertaking, both as guarantors of any loans raised and as the source from which any deficits incurred will have to be made good, it is only right that they should be consulted before any new enterprise is established with their money. Under the present system they are not all consulted, and, on the other hand, very often some people are, who pay no rates directly. The former situation is due to the fact that many large ratepayers are incorporated companies which possess no votes. The latter situation is due to the compounding system by which landlords pay the rates in respect of small dwellings and let them at inclusive weekly rents. The tenants pay rates indirectly only, and do not feel movements in the rates due to unsuccessful trading results, or to subsidies granted to reproductive undertakings, in the same way in which they would if they paid rates directly. That large ratepayers, like railway companies and limited companies, should have no say in the establishment of new municipal trading undertakings, whilst tenants of small property, who pay no direct rates, have a say in the matter, is quite inequitable. It would be much fairer if individuals and firms, however organised, who reside or who carry on business in a local area, were consulted in their capacity as ratepayers and not simply as voters.

§ 11. The subject of municipal trading is very complex; in connection with some aspects of the problem a very fair amount of material is available in official or semi-official publications, but with regard to other points all information

must be collected at first hand, and it is impossible for a private investigator to secure enough on which to base anything more than suggestions of what such facts as have been ascertained appear to point to. The opinions expressed in this book have been gradually formulated as a result of several years' study of the practical working of municipal trading. If more complete and more detailed information on the subject could be ascertained, it might be established that some of the conclusions drawn here are not based on representative facts, or, in other words, that the undertakings selected at hazard for the study of particular points were not typical. Subject to this reserve, and in the hope that a thorough and systematic official investigation of the whole subject may be made before long, the general conclusion reached in this book may be repeated, namely, that municipal trading in itself is undesirable, but that nevertheless a certain amount of it may be justified, owing to the fact that in certain industries private enterprise may give even less satisfactory results than municipal enterprise.

APPENDIX A

BIBLIOGRAPHICAL NOTE

THE number of publications bearing on municipal trading is very great, and it is only possible to indicate here some of the more important sources of information. *The Report from the Joint Select Committee of the House of Lords and the House of Commons on Municipal Trading*, 1900, consists of only ten lines, but the Minutes of Evidence and the Appendix contain much valuable information bearing on almost all aspects of the problem. The most comprehensive official collection of material relating to municipal trading in practice is a *Parliamentary Return* for the years 1902-3, 1903-4, 1904-5, and 1905-6. The scope of this return can best be indicated by its full title: "Return showing for the London County Council, the Corporation of the City of London, the Council of each Metropolitan Borough, the Corporations of the Municipal Boroughs of Liverpool, Manchester, Birmingham, Leeds, Sheffield, Bristol, Bradford, West Ham, Newcastle-upon-Tyne, Kingston-upon-Hull, Nottingham, Salford, Leicester, Portsmouth, Bolton, Cardiff, Sunderland, Oldham, Croydon, Blackburn, Brighton, Derby, Preston, Norwich, Birkenhead, Gateshead, Plymouth, Halifax, Southampton, South Shields, Burnley, East Ham, Huddersfield, Swansea, Wolverhampton, Stockport, Middlesbrough, Stockton-on-Tees and Blackpool, and the Corporations of Edinburgh, Glasgow, Dundee and Aberdeen, the nature and extent and, for each of the last four years for which figures are available, the financial results of reproductive municipal undertakings, including, for each undertaking separately, a short description thereof, date and terms of original acquisition or establishment or subsequent extension, how managed, capital employed and how obtained, value of the undertaking, capital paid off and outstanding, loan charges, provision for depreciation, gross income and expenditure, net profit or loss, how profit is allocated or loss met, amount of relief or burden to rates, number and salaries of the chief paid officials, number of workpeople, rate of wages paid in chief classes of labour, and prices charged for products or services supplied or rendered."

The return, which occupies over a thousand pages of folio size, was published in six parts (171, 171 I., 171 II., 171 III., 171 IV., 171 V.) during 1909 and 1910, so that it was somewhat out of date already when it appeared.

The *Report from the Joint Select Committee of the House of Lords and the House of Commons on Municipal Trading*, 1903, deals almost exclusively with municipal accounts, with regard both to the form in which they are prepared and the systems under which they are audited. The report is only short, but there is a considerable amount of evidence and a long appendix. Another Parliamentary paper which is concerned with the financial aspect of municipal trading is the *Report from the Select Committee on the Repayment of Loans by Local Authorities*, 1902. Much information concerning labour conditions in gas, electricity, water and tramway undertakings, without reference to the form of management, is contained in the *Report of an Enquiry by the Board of Trade into the Earnings and Hours of Labour of Workpeople of the United Kingdom*, vol. iv., *Public Utility Services in 1906*.

Amongst the annual official publications are the *Return relating to all Authorised Gas Undertakings in the United Kingdom belonging to Local Authorities*, the *Return of Street and Road Tramways and Light Railways, authorised by Act or Order* and the *Report by the Board of Trade respecting the Applications to and the Proceedings of the Board of Trade under the Electric Lighting Acts, 1882 to 1902*. The first two give information concerning the revenue and expenditure of the undertakings, and the charges imposed and the quantity of gas sold or car miles run. No similar detailed returns for water and electricity are published, but summary statements concerning revenue and expenditure and loans outstanding of all the principal trading undertakings will be found in the *Annual Local Taxation Returns*.

For many purposes it is absolutely necessary to refer to the Annual Reports and Financial Statements, the Regulations and the Scales of Charges issued by the various trading undertakings. In the case of the larger towns these Annual Reports are often most elaborate and comprehensive documents. Particularly valuable are the Special Reports issued from time to time in connection with particular trading departments, such as the Reports prepared by Mr. W. B. Peat, President of the Institute of Chartered Accountants, and Mr. F. W. Pixley, F.C.A., upon the Accounts of the London County Council's Tramways and upon the Accounts of the London County Council's Working-class Dwellings and Steamboats; the Reports of Mr. J. Dalrymple, General Manager of the Glasgow Corporation Tramways, on Transfers and on Halfpenny Fares; the Reports of Mr. J. M. McElroy, General Manager of the Manchester

Corporation Tramways, in regard to (*a*) halfpenny fares, (*b*) extension of the time during which workmen's fares are in operation, (*c*) special fares for working women, and (*d*) children's fares, published in April 1909, and in regard to the Proposed Extension of the Time during which Workpeople's Fares are in Operation, published in April 1911; and the Report of Mr. G. W. Holford, General Manager of the Salford Corporation Tramways, with regard to the Depreciation and Renewals Fund. Sometimes these special publications do not take the form of reports, but merely contain information collected from various sources. Thus the Reading Corporation Tramways have published *Summaries of Information from various Tramway Undertakings respecting Season Tickets and Books of Discount Tickets*, and the Croydon Corporation Tramways have published *Information respecting Halfpenny Fares.*

A most useful and indispensable work is the *Municipal Year Book*, an annual publication containing a great variety of financial, statistical, and other information bearing on municipal trading in the United Kingdom. Another annual publication which is essential when dealing with the gas industry is Field's *Analysis of Gas Accounts.*

For other sources of information the reader must be referred to foreign publications. The Report to the National Civic Federation Commission on Public Ownership and Operation, entitled *Municipal and Private Operation of Public Utilities* (New York City, 1907), is a lengthy work in three volumes. The first contains the general conclusions and reports, the second is devoted to the reports of experts upon conditions in the United States, and the third is devoted similarly to the situation in Great Britain. The Committee of Investigation was formed of persons about equally divided into three groups, those regarded as "pros," those regarded as "antis," and those who were classed as having taken no pronounced position whatever. The method adopted was to select a certain number of public and private plants for examination, and experts were appointed to report upon the engineering and financial aspects of each undertaking.

The undertakings selected for examination in this country were as follows:—

Gas.—Municipal: Glasgow, Manchester, Birmingham, Leicester.

Private: South Metropolitan Gas Company (London), Newcastle and Gateshead, Sheffield.

Electric Lighting and Power.—Municipal: Glasgow, Manchester, Metropolitan Borough of St. Pancras, Liverpool.

Private: Newcastle (both companies), London (Westminster Company, St. James and Pall Mall Company, Central Company, City of London Company).

Tramways.—Municipal: Glasgow, Manchester, Liverpool, London (Southern System of the London County Council).

Private: Dublin, Norwich, London (London United Tramways), Bristol.

As is only to be expected from the constitution of the committee of inquiry, some of the reports are favourable and some unfavourable to municipal trading.

Amongst the German sources of information two call for special notice. The one is the *Kommunales Jahrbuch*, edited by Dr. H. Lindemann and Dr. A. Südekum (Gustav Fischer, Jena). It corresponds to the *Municipal Year Book* in this country, and is an equally useful publication. The other is a most comprehensive series of monographs edited by Professor C. J. Fuchs in connection with the Verein für Socialpolitik. It contains general surveys of the development of municipal trading in different countries, and detailed accounts of municipal trading in particular towns. There are also essays dealing with certain special points. The three volumes (*Schriften des Vereins für Socialpolitik*, vols. 128, 129, 130, Duncker and Humblot, Leipzig, 1908, 1909, 1910) are entitled "Gemeindebetriebe. Neuere Versuche und Erfahrungen über die Ausdehnung der kommunalen Tätigkeit in Deutschland und im Ausland." The scope of the inquiry can best be indicated by a brief summary of the contents:—

VOL. I. (pp. 440)

Paul Mombert. Die Gemeindebetriebe in Deutschland.
Theodor Kutzer. Erneuerungsfonds bei gemeindlichen gewerblichen Betrieben.
Heinrich Silbergleit. Städtische Betriebe zur Lebensmittelversorgung.
Emil v. Dunker. Die kommunalen Einrichtungen Deutschlands für Fischversorgung.
Leopold Spiegel. Kommunale Milchversorgung.
Joseph Ehrler. Gemeindeschlächtereien.
Emil v. Fürth. Die städtische Übernahmstelle für Vieh und Fleisch in Wien und die erste Wiener Grosschlächterei-Aktiengesellschaft.
Leo Wormser. Die kommunale Schweinemast in Karlsruhe.
Wilhelm Weis. Die Verwertung der Gasnebenprodukte in den städtischen Gasanstalten.
Joseph Ehrler. Gemeindezeitungen, Druckereien und Plakatinstitute.
Carl Mollwo. Kommunale Lagerhäuser.
M. Spiegel. Ledigenheime.
Philipp Stein. Das Verhältnis der freiwilligen und zwangsgemeinschaftlichen Körperschaften in der Wohlfahrtspflege.

VOL. II. (pp. 1330)

Ernst Busse.	Die Gemeindebetriebe	Münchens.	
Otto Most.	„ „	der Stadt	Düsseldorf.
O. Landsberg.	„ „	„	Magdeburg.
E. W. Schiele.	„ „	„	Naumburg a/S.
A. Busch.	„ „	„	Frankfort a/M.
Otto Moericke.	„ „	Mannheims.	
Joseph Ehrler.	„ „	der Stadt	Freiburg i/B.
Dr. Bucerius.	„ „	„	Remscheid.
Paul Weigel.	„ „	„	Leipzig.
Hugo Wasmuth. Georg Goldstein. Paul Ochse.	„ „	„	Halle a/S.
Georg Neuhaus.	„ „	„	Königsberg i/Pr.

Heinrich Lücker. Die Gemeindebetriebe in den Städten und Kreisen und Landgemeinden des Oberschlesischen Industriebezirks.

VOL. III. (pp. 695)

C. Horacek, Carl Schwarz, K. T. Wächter, L. Bernhard, and Julius Sylvester. Die Gemeindebetriebe in Österreich.

Gisela Michels-Lindner. Geschichte der modernen Gemeindebetriebe in Italien.

Eugen Grossmann. Die Gemeindebetriebe der Stadt Zurich.

Ernest Brees. Les Régies communales en Belgique.

Robert Schachner. Die kommunale Sozialpolitik in Australasien.

H. Berthélemy. Les Industries communales en France.

Douglas Knoop. The Trading Enterprises of Manchester.

There are various books dealing with municipal trading; the principal one is Leonard Darwin's *Municipal Trade*; a smaller book by the same author is entitled *Municipal Ownership*. Major Darwin takes an unfavourable view of Municipal Trading, and this attitude is even more strongly represented by Lord Avebury, *On Municipal and National Trading*; Hugo R. Meyer, *Municipal Ownership in Great Britain*; Robert P. Porter, *The Dangers of Municipal Trading*, and W. G. Towler, *Socialism in Local Government*. Two writers who favour municipal management are Bernard Shaw, *The Commonsense of Municipal Trading*, and R. B. Suthers, *Mind your own Business*.

APPENDIX B

LIST OF MUNICIPAL TRAMWAY UNDERTAKINGS IN THE UNITED KINGDOM

I*a*. On which Halfpenny Fares have been entirely adopted:[1]—

Aberdeen.	Glasgow.	Nelson.
Ashton-under-Lyne.	Ilford.	Rotherham.
Ayr.	Kilmarnock.	Sheffield.
Darlington.	Leeds.	Stalybridge.
Dundee.	Leyton.	Walthamstow.
East Ham.	London County Council.	West Ham.

I*b*. On which Halfpenny Fares have been partially adopted:—

Barking.	Manchester.	Southend.
Birkenhead.	Plymouth.	Stockport.
Ilkeston.	Preston.	Swindon.

I*c*. On which Halfpenny Fares have not been adopted:—

Accrington.	Chesterfield.	Kirkcaldy.	Portsmouth.
Belfast.	Colchester.	Lancaster.	Rawtenstall.
Bexley.	Darwen.	Leicester.	Reading.
Birmingham.	Derby.	Leith.	Rochdale.
Blackburn.	Doncaster.	Lincoln.	Salford.
Blackpool.	Dover.	Liverpool.	Southampton.
Bolton.	Erith.	Lowestoft.	Southport.
Bournemouth.	Exeter.	Maidstone.	South Shields.
Bradford.	Great Yarmouth.	Newcastle.	Sunderland.
Brighton.	Gloucester.	Newport.	Wallasey.
Burnley.	Halifax.	Northampton.	Walsall.
Burton-on-Trent.	Huddersfield.	Nottingham.	Warrington.
Bury.	Hull.	Oldham.	Wigan.
Cardiff.	Ipswich.	Perth.	Wolverhampton.
Chester.	Keighley.	Pontypridd.	York.

[1] Croydon Corporation Tramways, *Information respecting Halfpenny Fares*, February 1911.

II*a*. On which Transfers are issued on the Whole System :[1]—

Burnley.	Halifax.	Leith.	Southampton.
Cardiff.	Hull.	Northampton.	Stockport.
Croydon.	Ipswich.	Perth.	Sunderland.
Dover.	Keighley.	Preston.	Walthamstow.
Gloucester.			

II*b*. On which Transfers are issued on Certain Sections :—

Barking.	Chester.	Lancaster.	Maidstone.
Bexley.	Darwen.	Leyton.	Newport.
Birkenhead.	Dundee.	London County	Pontypridd.
Bournemouth.	Ilkeston.	Council.	Southend-on-Sea.
Bury.			

II*c*. On which Transfers were issued, but have been discontinued:—

Belfast.	Liverpool.	Wigan.

II*d*. On which no Transfers are issued :—

Aberdeen.	Colchester.	Leeds.	Rochdale.
Accrington.	Darlington.	Leicester.	Rotherham.
Ashton-under-	Derby.	Lincoln.	Salford.
Lyne.	Doncaster.	Lowestoft.	Sheffield.
Ayr.	East Ham.	Manchester.	Southport.
Birmingham.	Erith.	Nelson.	Stalybridge.
Blackburn.	Exeter.	Newcastle-on-	Wallasey.
Blackpool.	Glasgow.	Tyne.	Walsall.
Bolton.	Great Yarmouth.	Nottingham.	Warrington.
Bradford.	Huddersfield.	Plymouth.	West Ham.
Brighton.	Ilford.	Portsmouth.	Wolverhampton.
Burton-on-Trent.	Kilmarnock.	Rawtenstall.	York.
Chesterfield.	Kirkcaldy.	Reading.	

[1] *Report of the General Manager of the Glasgow Corporation Tramways on Transfers*, July 1910.

APPENDIX C

HOURLY TRAFFIC ON TYPICAL MANCHESTER AND GLASGOW TRAM ROUTES

THE following are the figures upon which the Traffic Diagrams on page 244 are based. The Manchester Route is that between Levenshulme and the City, the Glasgow Route that between Kelvinside and Dennistoun.

	Manchester.		Glasgow.					
	Inward Journey.	Outward Journey.	Inward Journey.			Outward Journey.		
			Passengers carried.			Passengers carried.		
	Total Passengers carried.	Total Passengers carried.	Half-penny Fares.	Penny Fares and Upwards.	Total.	Half-penny Fares.	Penny Fares and Upwards.	Total.
Up to 7 A.M.	1040	370	107	330	437	81	160	241
7–8 ,,	1330	230	188	553	741	37	71	108
8–9 ,,	2760	630	423	1159	1582	195	273	468
9–10 ,,	1340	610	261	729	990	259	290	549
10–11 ,,	460	390	146	448	594	170	224	394
11–12 noon	480	560	170	446	616	162	184	346
12–1 P.M.	660	920	292	589	881	388	647	1035
1–2 ,,	900	750	388	983	1371	541	665	1206
2–3 ,,	1100	670	405	822	1227	337	460	797
3–4 ,,	650	770	317	720	1037	281	321	602
4–5 ,,	600	1080	334	726	1060	333	396	729
5–6 ,,	810	2280	335	764	1099	461	775	1236
6–7 ,,	930	2030	329	851	1180	366	667	1033
7–8 ,,	740	1140	314	787	1101	368	428	796
8–9 ,,	780	920	176	466	642	258	239	497
9–10 ,,	420	680	154	440	594	206	354	560
10–11 ,,	460	1060	139	329	468	244	330	574
After 11 ,,	740	470	29	101	130	58	216	274

APPENDIX D

SUPPLEMENTARY STATISTICS CONCERNING MUNICIPAL TRADING DURING 1910-11

THE most recent figures concerning Municipal Water, Gas, Electricity, and Tramway Undertakings in England and Wales, which appeared too late to be embodied in Chapter VIII., are given in the Table which follows.

Table showing for the Year 1910-11 the Receipts and Expenditure of the Principal Classes of Rate-spending Local Authorities in England and Wales in respect of Water, Gas, Electricity, and Tramway Undertakings:[1]—

Items.	Water Undertakings.[2]	Gas Undertakings.	Electricity Undertakings.	Tramway Undertakings.	All Undertakings.
	£	£	£	£	£
Receipts in Respect of Products or Services sold	5,305,000	8,351,000	5,425,000	9,041,000	28,122,000
Sums transferred from Rates to meet Deficiencies	516,000	7,000	66,000	128,000	717,000
Total Receipts from Sources other than Loans	5,821,000	8,358,000	5,491,000	9,169,000	28,839,000
Expenditure, including Loan Charges and Cost of Maintenance	5,543,000	7,489,000	4,967,000	8,229,000	26,228,000
Payment to Reserve, Depreciation or Insurance Funds	109,000	197,000	245,000	633,000	1,184,000
Surplus Revenue devoted to Relief of Rates	174,000	560,000	192,000	387,000	1,313,000
Total Expenditure met otherwise than out of Loans	5,826,000	8,246,000	5,404,000	9,249,000	28,725,000
Outstanding Loans	70,392,000	22,442,000	29,542,000	36,216,000	158,592,000

[1] Compiled from *Statement showing for the year ended in March 1911 the Amount of the Receipts, Expenditure, and Outstanding Loans of the Principal Classes of Local Authorities (England and Wales)*, Cd. 5997.

[2] The sums accounted for by the Metropolitan Water Board are not included in this column.

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