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Public Control of Electric Power and Transit

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Public Control of Electric Power and Transit.

The Report of a Committee of the Society appointed to consider the Control of Electrical Power and Transit, presented to the Society on 25th November, 1904, by S. G. HOBSON, the Chairman of the Committee, and adopted.

IF there is one thing in the world which a sanely ordered society might be expected to consider a matter for the community to undertake, it is the management and control of transit. For, by its very nature, transit cannot be other than an essentially communal affair. It affects not one trade or one group of trades only, but every industry, every class, every individual throughout the land. The farmer, whose success depends on his ability to send his produce rapidly and in large quantities to the best market, the manufacturer who must obtain his raw materials cheaply and dispose of his finished wares easily if he is to stand up against foreign competition, the workman, for whom the all-important housing problem is almost entirely the problem of ready and cheap access to his work, the ordinary "man in the street," whose only chance of physical health so often depends upon his being able periodically to get out of the street into the purer air of the country,—to all these good transit is a primal necessity of life.

No private corporation is likely to take all these varied and important public needs into account. Nor is there any reason why we should expect it to do so. Railway and tramway companies are not philanthropic or patriotic agencies, but bodies of commercial operators carrying on business avowedly for their own profit. They will not and cannot consider the public interest except in so far as it may chance to be identical with their own. Therefore, since the public interest is at every point so vitally involved, it should surely be plain to a reasonable man, uninstructed in old-fashioned economics, that transit is par excellence a matter for the public itself to look after.

Our forefathers thought otherwise. When the application of steam to transit brought about a revolution in the means of communication throughout the United Kingdom, it hardly seems to have occurred to statesmen of that era that the matter was one with which the State had any concern. The whole responsibility of building up our railway system was left to private corporations, who exploited the needs of the public in their own interests, and from whose manifold oppressions and exactions we are still suffering.

The Advent of Electricity.

Fortunately we are now in a position to avoid similar mistakes. The discovery of electricity and of its almost inexhaustible potentialities has created a situation essentially similar to that created in the last century by the discovery of steam. If gigantic and tyrannical trusts monopolizing the production and use of electrical power are not to dominate our children as the railway companies dominate us, we must see that the community secures at the outset effective and systematic control over the new force.

The economical generation of electrical power and the efficient administration of all forms of transit have now become two of the most pressing of industrial problems. That they are closely related, the one to the other, needs no argument; it is, of course, obvious. Modern conditions, notably the economy of electrical production on a large scale and the growing need for the effective co-ordination of all means and methods of transit, render it imperative in discussing electrical power also to consider the means of communication. The merest tyro in industrial science knows that the production of electrical power can only be cheap in places where a traction load is in demand in addition to a lighting load. The social and industrial significance of electricity does not end here; for the most economical production is where the factories also draw upon the public generating station for their power. It is clearly our business to examine the new economic situation which has thus been created.

Apart from the many controversies which circle round our competitive efficiency in the world's market, in which power and transit play the most prominent part, it is evident that when the transmission of electrical energy from a central station becomes an accomplished fact, it also becomes a problem of public administration. Trespass in various forms upon public property and rights is involved. Trivial though this may be in practice, it nevertheless raises important issues. The tearing up of our streets may be quite the least inconvenience experienced by the local authority. The general welfare of a locality may be endangered by inefficient power production or by extortionate charges levied by a private company whose dividends are the goal of their short-sighted ambition. Arbitrary private management of such important economic factors is far too dangerous to be permitted or allowed indefinitely to continue.

Electricity and the State.

Previous to the passing of the Electric Lighting Act of 1882, there existed no authority, the City of London excepted, that could permit the laying of underground mains for electric lighting. Prior to the passing of this Act, several companies had promoted private bills seeking such powers. The Government deemed it more expedient to pass a general measure to facilitate the use of electricity. Under this Act the Board of Trade could grant licences or provisional orders to public authorities or private companies to establish a system of electric distribution in any district. In the case of a private company the consent of the local authority had to be obtained. Any agreement made between the two parties was subject to the sanction of the Board of Trade. If the local authority objected, a provisional order could be secured if a majority of the inhabitants unmistakably

signified their acquiescence. A considerable agitation followed the passage of the Act, which was in the nature of things largely experimental. Neither the private companies nor the public authorities were satisfied, and between the clashing of the two interests the Board of Trade was providentially kept alive. It may be admitted that the private companies did not get a fair chance. The supply of electricity was practically a new industry. If it were deemed best to let the speculator take the risks, he should at least have been given a chance to recoup his outlay. Section 27 of the Act gave the local authorities power to purchase the undertaking at the expiration of 21 years, the price to be paid being the "value of all lands, buildings, works and materials of the undertakers without any addition in respect of compulsory purchase or of goodwill or of any profits which may or might have been made from the undertaking, or of any similar consideration." This clause, obviously intended to protect the public interests, defeated its own purpose. The sinking fund charges were necessarily so heavy that the supply of electricity became financially impracticable. The effect of this clause is shown in the following table :

PROVISIONAL ORDERS.						
<i>Year.</i>	<i>Applied for.</i>		<i>Obtained.</i>		<i>Since Revoked.</i>	
1883	...	106	...	69	...	62
1884	...	4	...	4	...	4
1885	...	1	...	0	...	—
1886	...	2	...	1	...	1
1887	...	0	...	0	...	—
1888	...	1	...	0	...	—

Of the orders granted in 1883 only 14 were to local authorities (St. Pancras being the only Metropolitan authority), and of these only six are now in operation, eight having been revoked.

The whole blame, however, must not be ascribed to the 1882 Act. The great electrical boom of 1883 saw millions of money invested in this infant industry. Of course, the company promoter reaped a rich harvest, whilst the daring investor came off scot free of any dividends. Several years later, in 1896, Sir William Preece remarked that the rapid development of electricity supply had been seriously retarded in England by the operations of a monster, called into existence by the Joint Stock Acts, the rapacious company promoter whose plunders in one year far exceeded in amount the sum of all the thefts of all the highwaymen and burglars that were hanged. But the promoter evidently has his appointed use in the scheme of life, for Sir William further declared that he (the promoter) had ruined the prospects of private enterprise and had rendered absolutely necessary the Acts of 1882 and 1888, which had thrown the industry into the hands of our local authorities.

The Act of 1888, mentioned by Sir William Preece, amended the 1882 measure, and extended the period of purchase to 42 years, with subsequent periods of 10 instead of seven years. This measure opened the door to the more responsible utilization of electrical energy, and since that date the supply has grown by leaps and bounds. The following table, similar in form to the previous one, shows this clearly :

SUMMARY OF ELECTRICAL LIGHTING PROVISIONAL ORDERS.

<i>Year.</i>	<i>Applied for.</i>	<i>Granted.</i>	<i>Since Revoked or Repealed.</i>	<i>Still in Force.</i>
1889	... 17	... 12	... 2	... 10
1890	... 161	... 74	... 20	... 54
1891	... 70	... 59	... 16	... 43
1892	... 32	... 25	... 5	... 20
1893	... 18	... 15	... 1	... 14
1894	... 26	... 24	... 6	... 18
1895	... 29	... 23	—	... 23
1896	... 38	... 31	... 4	... 27
1897	... 55	... 50	... 2	... 48
1898	... 84	... 65	... 3	... 62
1899	... 109	... 89	... 4	... 85
1900	... 108	... 98	... 5	... 93
1901	... 108	... 96	... 0	... 96
1902	... 67	... 64	... 0	... 64
1903	... 61	... 53	... 0	... 53
<i>Total (1883-1903)</i>	<i>1,097</i>	<i>852</i>	<i>134</i>	<i>718</i>

Several undertakings are under more than one order, and of the orders granted 129 belonging chiefly to small authorities and 19 belonging to companies have not yet been acted upon, so that at the end of 1903 468 undertakings were either working or constructing as against eight working in 1888—an increase of 460 in 15 years.

Municipalities v. Companies.

It is too readily supposed that the present installation of electrical plant throughout the United Kingdom tends more and more to come under the control of the municipalities. So far as mere tendency is concerned this may be true, but at the present time, and for many years to come, the private companies are in possession. The capital invested in plant for the supply of electricity is nearly £55,000,000, of which roughly £30,000,000 is invested by local governing bodies, and £25,000,000 by private companies; but when we consider capital invested in electric traction, we find that of nearly £80,000,000 invested over £60,000,000 is owned by the private companies. It is evident that the situation is a dangerous one, and demands immediate consideration. But the figures already quoted by no means indicate the powerful grip of the companies upon our industrial areas. The £55,000,000 invested in installations for the supply of electricity by no means discloses the real facts. It would be assumed that the municipalities are financially the more powerful. This is far from being the case. When we consider the parliamentary powers granted to companies to supply electricity in bulk, it is at once discovered that the private companies have picked out the industrial eyes of Great Britain. Excluding certain large municipalities, the private company is now legally empowered to supply electricity in bulk practically over industrial Britain—the North-East coast, a large part of Lancashire, the West Riding, the most productive part of the Midlands, South Wales and Cornwall—and parliamentary powers are being sought for other rich districts. We shall later consider the

causes which have led to this undesirable allocation of power to private companies (most of them in close association, if not in actual financial combination) to control so largely an industry that undoubtedly ought to be completely under public guidance and governance. At this stage it is important to grasp the facts and realize their significance.

The Condition of Electrical Economy.

Turning now to another side of the problem, it may be desirable briefly to indicate the main factors necessary to the economical production of electricity. We need not linger over the purely financial aspect. One or two observations will suffice. In the first place we may note an advantage possessed by the public authority over the private company. The public authority, so to speak, builds for all time, and may therefore build on an enduring foundation; the private company knows neither the day nor the hour when its life shall be demanded. Its sinking fund charges are therefore heavier. Thus, though its initial capital expenditure may be less than that incurred by a municipality, its yearly costs are probably greater. Then, again, dividends must be earned, for shareholders when not inhuman are human. Hence the adage that good finance is bad engineering. In this connection it may be admitted that engineers are often extravagant when they are backed by the public purse. It is not wise to supply the workhouse with silver platters, and then save the rates by cutting down the rations. But other things equal, the local authority, being the residual legatee, is economically in the stronger position. So far as results are concerned, however, it is not easy to prove this. It is practically impossible to draw accurate comparisons between the operations of privately and publicly controlled electrical undertakings, because there are so many widely different factors in every locality. There are the various local costs—fuel, water and stores, wages, repairs and maintenance, rents, rates and taxes, management, office and legal expenses. All this expenditure is naturally conditioned by the physical features of the district, distance from the coalfield, density of population, and many other considerations.

More important than all these are the "diversity" and "load factors." When we speak of a good diversity factor we mean that the generating station is so happily situated that it meets a regular and constant maximum demand for diverse purposes. As example, we will take a thriving factory town. At six in the morning is a tram load to carry the workmen to the factories. A little later a heavier tram load is in request to carry the office population. At midday the factory load slackens and the tram load increases. Then in the evening or earlier the shops light up, and later the domestic houses. A continuous "diversity factor" makes a good "load factor," although this latter might conceivably be obtained by a constant demand from one source. But we must look to the diversity factor to enable us economically to produce electrical power. For not only is it essential to maintain a high average load factor; it is also necessary to secure a large output. Briefly summarized the economic factors are:—

- (1) Wise capital outlay; good finance wedded to good engineering.

(2) A good load factor. Wherever there is economical production of electricity it almost invariably happens that a good demand for light and power is allied with a heavy traction load.

(3) Cheap fuel. Pending a rearrangement of railway rates proximity to the coal-fields is an enormous advantage.

(4) The need for a large output. It is not necessary to argue this. There is one train of facts, however, which places the electrical industry in a category of its own. And that is the striking difference between possible and actual output of energy. Even in the most successful stations the load factor seldom exceeds 20 per cent. Bradford, Bootle, Liverpool and Salford seem to be about the only exceptions. Rotherham, which produces at a cost of '66d. per unit has an average load factor of only 16·58. Bangor, with a load factor of 6·98 costs per unit 3·97d.

We have described the local authority as the residual legatee of the private company. It is a great deal more : effectively organized and complete co-operation secured between the governing units in any suitable area, the local authority becomes the most economical agent for the production and distribution of electricity. We have seen what an important factor in the cheap production of power is traction. Nobody, with the exception of Lord Avebury and the Hon. R. P. Porter, believes that the local control of traction can or ought much longer to be under private management. The public authority must obviously soon possess the key to cheap electrical production. We are, therefore, in this predicament : if we fail to organize the fabric of central and local government, the private companies will continue, and the community must carry an unnecessarily heavy economic burden ; or, without delay we must adapt local government to the industrial necessities of the new situation. Our problem is to discover and bring to life the governing economic unit.

The Future of Electric Traction.

It is evident that the application of electricity to traction has begun. Developments in this direction cannot with any accuracy be foretold ; but we may be sure that not many decades will pass before electricity has asserted itself on light railways, suburban railways, possibly main lines, industrial motor car services ; and there are experts who foretell the electrification of canals. Already the practical tramway manager is working out plans how to link up his system with light railways. Mr. C. R. Bellamy, manager of the Liverpool trams, and this year's president of the Municipal Tramways Association, devoted his presidential address to this question. He thinks that the Light Railways Act has failed for two reasons : first, because the authorization was not transferred to local authorities ; and secondly, because local authorities have not attempted to provide the railways. He looks to the development of a goods traffic on tramways and light railways under joint municipal control. He states the problem succinctly : "For many years it has been apparent that some better method of collecting and carrying the agricultural and dairy produce of the districts surrounding large towns has been necessary beyond that provided by the railways, which cater almost exclusively for the traffic between the large centres. Considerable areas are wholly without any form of carriage other than the horse-

vehicle ; in fact, the abandonment of the canals of the country, largely as a result of their purchase by the railway companies, has reduced the distributing network." Our only comment on this is that if there is to be a growing co-ordination between the tramway and light railway systems, electricity will undoubtedly be the motive force.

Again, the electrification of suburban railways proceeds apace. Engineers are practically unanimous that electric haulage is considerably cheaper than steam haulage both as regards capital costs and running charges. The comparative running costs of the Manhattan Railway in the years 1901 and 1904 leave no doubt about it. In 1901, the last period of operation by steam, the total working expenses per car mile totalled 11·977 cents. This year, the first period of complete electric traction, the expenses fell to 9·468 cents. In other words, this marks a reduction in cost of from 6d. to 4½d. And Manhattan is not famous for cheapness. But about £40,000,000 is invested in locomotives, and conversion is therefore a serious difficulty. The railway companies have, however, to retain their suburban traffic or suffer in dividends. They can only do so by supplying a quick and continuous service. To give this they have found that electricity is the only available agent. The electrification of the District Railway, the electrification of the Liverpool and Stockport branch, a distance of eight miles, and the electrification of 80 miles of North Eastern track around Newcastle-on-Tyne, all point the moral. Even more significant is the curtailment of the Glasgow railway service owing to tramway competition. So complete is it that railway travellers had their season tickets cancelled and the balance refunded. As Glasgow is in Scotland, it is surely a miracle that compelled the refunding of a balance. If this local electrification of suburban railway lines is to develop, it seems only sensible that there should be co-operation in the production of electrical power between the companies and the local authorities.

Nor is it in the least improbable that long distance traffic will be propelled by electricity within an appreciable period. The experiments which have taken place in Italy, Scandinavia and America point this way. For example, the Union Traction Company of Indiana have electrified 200 miles of single track. It cannot be doubted that the steam engine on main lines has a very limited future.

The Revival of Canals.

In considering traction, sight should not be lost of our canals. It is well known that the policy of the railway companies has largely atrophied the usefulness of the British canals. It is argued by many acute observers that our canal system is capable of economic development. Broadly, we may divide our canals into two classes : those which still continue a semi-dormant existence in spite of the railways, and those which are the property of the railways and have purposely been disused. Now with canals, as with other carrying concerns, efficient haulage is the main consideration. Horse traction is palpably an anachronism ; it is probable that electric haulage solves the problem. The use of an overhead conductor raises no engineering difficulties. On the Brussels-Charleroi Canal, 50 miles

long, the tug-boat system obtains, the generating stations being 29 miles apart. Each tug-boat hauls two barges. Another possible method is the tram-engine system. The cost of laying tram-rails on the tow-path is comparatively small. This system is also in use on the Brussels-Charleroi canal. One engine hauls 70 tons at a cost of about one-tenth of a penny per ton per mile. The River Lea Navigation Company are now experimenting in electrical haulage, and so we may live to see our canals re-vitalized by electricity.

Summary.

It may be well at this point to summarize the facts in regard to electricity and transit so far as we have gone. We have found :

- (1) That industrial electricity has opened a new era.
- (2) That the control of electricity, especially in bulk, is largely under private management.
- (3) That the local authorities are the natural inheritors and administrators of electrical power.
- (4) That the application of electricity to traction leads to (a) economical production of power, and (b) more efficient transit both for persons and merchandise.
- (5) That there is need for the co-ordination of tramways and light railways.
- (6) That other traction developments are possible. To those already considered we might add motor car service in rural districts, possibly in connection with an agricultural post.

There remains for us to consider :

- (7) The further co-ordination of transit involved in the co-operative administration of the railways with the lighter systems.
- (8) The most conveniently organized unit of local government capable of generating power economically and of administering traction.
- (9) The organization of the Central Government in the light of these new facts.

Nationalized Railways.

From the social point of view, and apart from their widely different engineering features, the broad distinction between a tramway and a railway is that the one can be operated by the local community and the other cannot. The one is the creation of what were deemed to be exclusively local needs ; the other is a component part of a national network of railed highways. It is probable that public opinion is ripe enough to recognize the right of a municipality to run all or part of its tramway system either at a loss or at least without profit, if it be shown that public health or convenience be benefited. It is doubtful if public opinion would sanction the expropriation of railways to be worked at a loss in the interests of home industry. But public opinion is probably quite sufficiently matured (the bucolic phrase is not unappropriate) to agree that railways, under public control, should not earn more than an investment in Consols. There are signs that the old community of interest between investors is being broken down so far as railway holdings are concerned. Quite recently the Birmingham Chamber of Com-

merce proposed to nationalize railways. It approached the question as a body of manufacturers who stood to gain by a revision of railway rates. It was only at the request of Mr. Arthur Chamberlain that the motion was not pressed. His argument was characteristically incisive: "Gentlemen," said he, "shall dog eat dog?" Other Chambers of Commerce have not been so squeamish. But whatever may be the present state of that variable quantity which we call "public opinion," there is only one safe principle to guide the reformer. The tramways, the light railways, and the railways must be regarded as the modern form of the King's highway. Our fathers spent time and trouble ridding the roads of tolls; and railway rates and passenger fares are merely modern tolls. Their abolition must come sooner or later. In this regard it is well to remember that British railway law expressly admits that a railway line is a public way. "A railway company," says Hodges, "is not entitled to an absolute and perpetual property in its line."

Public and Private Administration.

The cardinal fact in the argument is that national control of the railways has become imperative because they must be co-ordinated with the lighter systems. No doubt, the case for nationalization can be successfully argued without regard to other systems of transit, but when we remember that year by year both the central and local authorities are more and more compelled to organize local traffic and transit, it follows that the connection between all local authorities must, in due course, be also under national control. It is a safe generalization that public and private administrations do not mix; the one invariably ejects the other. This tempts every Socialist to believe in an over-ruling Providence. In a few years, when local transit and traffic are operated by the organized community, we may rest assured that the main arteries of communication must come into the picture; and in those circumstances private management will be as much an anachronism as an ancient toll-gate. One fact stands out clear: neither our commerce nor our communities will tolerate the chaos and utter lack of prevision which characterize railway management. Indeed, chaos is the legacy of earlier railway days. Railways have never been built on any system. Like Topsy they have just growed; but with less beauty of outline. The great companies that to-day guard all the main lines of communication and hold us up for plunder are merely the latest phase of indiscriminate amalgamation. Waterloo Station may be regarded as a microcosm of the British railway system. It may be that the chaos of to-day and yesterday were inevitable; but to-morrow is a different story. For industrially we now know where we are. We know precisely the distribution of our population; we know with considerable exactitude what the population requires both in raw material, food, and the alleged pleasures of travelling. We are gradually finding out the exact relation of transit to the effective development of industry, particularly agriculture. It is, for example, of considerable interest to note that last year we imported "farm produce" (eggs, butter, etc.) to the value of over £40,000,000, all of which could incontestably be grown in this country, and the bulk of it profitably, subject to efficient conveyance between producer and consumer. The not impossible ideal to be aimed at is the

carriage of an egg or a basket of vegetables from a Midland or Southern farmer five miles from the nearest railway station to the Kensington or Camberwell consumer as speedily, as safely, and as cheaply as a letter through the Post Office. And this is only possible when we have co-ordinated all means of transit under public control. It is impossible to over-estimate the wastage caused by the present want of system; it would be impossible to gauge the economies, negative and positive, to be effected under a nationalized and co-ordinated system.

The Price of the Railways.

Nor need the difficulties of the transfer to the State be regarded as a serious obstacle. The nominal capital of British railways in 1902 was 1,216 millions sterling; of this 189 millions was watered stock; the net nominal capital being 1,027 millions. This sounds appalling, but closer examination dissipates our doubts. Let us at once recognize that the nominal capital of a railway has no relation to the price which the community should be called upon to pay. The nominal capital does not represent either the money actually subscribed by the first shareholders in each case, or the capital profitably expended, or the market value of the railway as a going concern, or, precisely, its earning capacity. All that £100 of railway stock represents is a claim to a certain proportion of the profits, if any, and a right to a certain share in the control of the line. A railway must be regarded for the purposes of purchase as a concern earning a certain net profit, and the equitable basis of purchase is to be found in Gladstone's Act of 1844, which enables the Treasury to buy out the shareholders of lines built since this date at 25 years' purchase estimated on the earnings of the previous three years. With the exception of the Great Northern, all the main lines were sanctioned before this Act, but it should in principle be made applicable to all companies. Any hard and fast rule as to the number of years' purchase for various classes of stocks is impossible. For first-class railways, earning regular and substantial dividends on their ordinary stocks, general rules can be framed: so many years' purchase for debentures, so many for guaranteed, so many for preference, and so many for ordinary. In the case of non-dividend earning concerns, we must temper the east wind of justice with the west wind of mercy; for verily are the lambs already shorn. For various reasons, although no dividend has been paid perhaps from the start, their stocks command a substantial price in the market, and this price must in some form be taken as the basis for compensation, since the holders cannot suffer confiscation at the hands of the community when the other shareholders are paid out a fair price.

The Bane of Boundaries.

We now come to the crucial question: are the local authorities capable of producing electricity economically and of efficiently organizing transit in their own areas? The answer probably is that even under present conditions the great municipalities are more capable masters in their own households than any private company could be. The smaller local governing units are not so strongly situated; they cannot command such a large diversity factor as the

larger bodies ; their traction load is proportionately less ; nor have they in their service the requisite managerial skill. But even the largest municipalities could produce electricity and direct traction much more economically and efficiently if they were not hampered and circumscribed by borough boundaries of other days. It has been suggested that every needful economy could be effected by resort to "running powers," as is the case with railways. It is certainly desirable that no municipal boundary should limit the spread of a tram service ; but where convenience of transit is inter-related with cheap production of electric power, it is evident that joint management is essential. To secure running powers is not to obtain joint management. The plain fact is that the pressure upon local government necessitates not only a re-arrangement of local governing areas, but an automatic revision by a permanent boundary commission. The necessity for this is demonstrated not only in connection with the development of power and transit, but also with water, sewage, education, housing, and other subsidiary proposals, all springing from the advancing standard of life and health. The local sanitary authority, the real administrative unit, wisely directed, might have risen to its opportunities a generation ago. To-day both its areas and functions are hopelessly out of date. For the industrial development of England has, largely unconsciously, disposed our population into an inchoate heptarchy. We must recognize this change and clothe the various populous aggregations with statutory form and function. It follows that some new system of public administration must be evolved, which, whilst preserving local rights and interests, is nevertheless organized on a scale large enough to guide and direct such services as power, transit, water, sewage, housing ; and, indeed, any kind of public enterprise necessitating heavy maintenance charges and the employment of a large staff.

The solution would seem to lie along two parallel lines of development. First, greatly enlarged borough boundaries ; second, joint committees or boards for special purposes.

A Permanent Boundary Commission.

In regard to the first point it may be said without exaggeration that there is not an administrative area that does not need immediate rectification. If this be so, why is it not done ? The answer is twofold : in the first place because of the clumsy and ponderous parliamentary process necessary ; and, in the second place, because of local difficulties, partly political but mainly difference in rating. And so it happens that economic developments of the very first magnitude are thwarted or diverted because of local quarrels. The time has come to end this unhappy state of affairs. These disputes are generally fomented by interested officials ; all the average ratepayer wants is value for his money, and it is the business of responsible statesmanship to see that he gets it. We therefore propose the constitution of a permanent Boundary Commission, which shall be charged to enquire into and determine the limits of all local areas, municipal or otherwise. To this Commission should be given full powers. It should be composed of men well trained in the intricacies of local administration, so that their decisions should be in harmony with public policy.

Parliament is of course the final arbiter. It is possible that from time to time the Boundary Commission might reach conclusions locally regarded as inequitable. A permanent Parliamentary Committee might sit to revise the judgments of the Commission.

Power and Transit Boards.

Boundary areas being thus adapted to industrial needs, the public management of power and transit is materially simplified. County councils must be given power to produce electricity. Next must follow the formation of statutory Power and Transit Boards, composed of delegates from adjacent county and town councils, charged to administer all that pertains to the production and transmission of electricity and to the transit of passengers and merchandise both on tramways and light railways in the area concerned. It is important to remember that this particular area need not coincide with any official boundaries at present in existence. Elasticity of organization is of the essence of the scheme. Every Power and Transit Board would probably extend its operations year by year. All that is necessary is that representatives from the near districts should join the Board to watch the interests of their several localities. The distribution of the profits, if any, is a matter of book-keeping; but it is doubtful whether profits ought not automatically to be absorbed either in new capital expenditure or in reduction of price. It may here be observed that municipal profit-mongering has become a serious menace to the more effective organization of industrial England.

Let us now try to visualize these proposed changes. Our large municipalities are no longer hemmed in by semi-irresponsible minor authorities. Manchester, Birmingham, Liverpool, Newcastle, London at length administer the affairs of the populations depending upon the local industries. Out of a hopeless welter of borough, urban and rural and parish councils, emerges a large, responsible and unified governing body which attracts not only the best representative citizens, but also the most capable engineering and administrative experts. "Sister am I in my mother's house but mistress of my own" might almost be the motto of these new bodies. Thus equipped, it may be said that the way is clear for the complete control of electrical power and transit: control within its own enlarged area; control over a vastly greater area by means of joint boards or other co-operative action. Nor need developments end here. The enormous demand for electrical machinery, for rails, for fuel, for raw material, suggests the early possibility of collective production, which would be simplified by the necessity imposed upon authorities to standardize all their *matériel*.

Present Power of the State.

But collective production can only be adequately managed by a central engineering department. This, in its turn, must be attached to a reorganized Board of Trade. For it is certain that great local changes cannot be enacted unless with a corresponding adaptation at headquarters. This brings us to the final stage of our enquiry.

Since 1840 the Board of Trade has been, theoretically at least, in charge of the railway system. Its powers are, in law, enormous.

The Board of Trade can practically compel the companies to adopt any mechanical contrivance deemed to add to the safety of the travelling public. It is impossible to exaggerate the power thus vested in this State Department. For any mechanical arrangement deemed safe to-day may be adjudged unsafe to-morrow. The reason is obvious: new mechanical developments involving greater pressure of work or excessive use of plant and machinery render the old safeguards useless. Safety, in the mechanical sense, is a relative term. The Board of Trade in this particular sphere is omnipotent. Apart from the mechanical working of the railways it is invested with great legal responsibilities. Practically every Act of Parliament dealing with transit constitutes the Board of Trade a court of appeal of some sort, either in regard to provisional orders or consent to a variety of changes in policy. Thus by the Act of 1844 it may revise rates if a 10 per cent. dividend be paid by any railway company. Again, it may authorize any company to work its line as a light railway. Schedules of rates must be submitted by every railway and canal company to the Board of Trade, which after discussion and approval may be embodied in a provisional order for presentation to parliament. We now come specifically to our present purpose; the Board of Trade may make an order (not a provisional order, be it observed) authorizing a railway company to use electricity as the motive power. The Light Railway Act of 1896 practically empowers it to do as seems best in the establishment and construction of light railways. Any borough, district or county council may apply for powers to work light railways, individually or conjointly. And the Treasury may grant loans for this purpose up to one million pounds. Whether it be railways, light railways or tramways, it is always the Board of Trade or its offshoot the Railway Commission to whom we must go for sanction for practically everything.

It is not necessary to labor the point further. The essential fact is that all these powers are lodged with a responsible Government department. The fatal criticism is that social and mechanical changes have outstripped in pace the archaic methods of the Board of Trade.

A National Mercantile Marine.

A logical consequence of the national management of internal means of communication will be the completion of the State control of our oversea transit. Already the British producer is handicapped by the shipping rings which are able, at will, to annihilate the profits on any of our staple trades by exorbitant charges, and unfair rebates to foreign rivals.*

It is impossible here to go into details. Let it suffice to remark that already the nation has a direct financial interest in the great steamship lines, through its mail subsidies, and Admiralty loans with corresponding claims for service in war; that intellectually the nation, by its pride in its magnificent mercantile fleet, regards it as a national possession, and declines to consider our shipping as the mere private property of the shareholders of the steamship companies; and finally that our navy is maintained at enormous public expense expressly to protect the mercantile fleet, which at present is mainly private property.

* See Fabian Tract No. 116, "Fabianism and the Fiscal Question."

Everything indicates that the time is not far distant when the chief shipping lines will be completely acquired and managed by the community for the benefit of the empire as a whole.

A Co-ordinating Department.

Finally, we propose a Central Transit and Power Department, organized to meet modern ideas and to safeguard the public convenience and protect the community from monopoly in the hands of private companies. It should maintain a small army of scientists and inventors whose only business should be to improve traction and simplify electrical production. The time is almost ripe either to purchase some present undertaking or to organize an engineering department to make standardized machinery to the order of all local authorities. With railways nationalized, the locomotive and carriage building works at Crewe, Derby, Swindon and elsewhere might be indefinitely enlarged. Neither the central nor the local authorities must flinch from the responsible task of guiding, controlling and ultimately possessing the national and international means of locomotion—both the organization, the machinery and the motive force.

The Need for Action.

Sooner or later a reconstruction of our electricity and transit system on some such lines as these is inevitable if our country is to maintain its position amongst its better organized competitors. It must never be forgotten that archaic incompetence in industrial organization at the top, means at the bottom unskilled ill-paid irregular labor; and from this follows unemployment, underfeeding, slums, pauperism, and all the social evils which everybody deplures, and few really try to remedy. So long as the means of distribution are left in private hands to be managed for private profit with the short-sighted stupidity of the ordinary man of business, the trade of the country will suffer, and all those who live by that trade will suffer also.

The reorganization of our transit system is no doubt a great and complex undertaking. But a parliament which consisted of a competent government and a public spirited opposition would not hesitate to undertake what is obviously required by the necessities of modern progress. But we must regretfully admit the prospects of a measure so extensive are not at present bright. So long as the government limits its ambition to one or two second-rate bills in each session, and the opposition wastes the nation's time in unending debates on obstructive amendments, and perpetual divisions demanded for the sake of the delay they occasion, the chances of any serious attempt to bring our obsolete systems into harmony with modern requirements are remote. But the time will presently arrive when the electors will awake to the disgraceful incompetence of their representatives, whether Liberal or Tory, and will put in their place men determined to redeem the mother of parliaments from the ignominy of inefficiency which at present is her disgrace.

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