

THE
DEVELOPMENT
OF THE
METROPOLITAN DISTRIBUTION SYSTEM

(Eastern Portion)

1900 - 1950

(To be read in conjunction with a series of maps entitled "Metropolitan H.V. System - Eastern Portion - 1900 - " held at the Flinders Street Drawing Office)

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The growth of anything from infancy to maturity, whether animate or inanimate, is always an absorbing study, and the electricity supply system of Melbourne is no exception to the rule. It is, in fact, probably more interesting than human development because the latter, although it is true that no two people are exactly the same, does follow some fairly well defined paths. At a certain age the boy begins to talk; then he begins to walk (or it may be the other way about); then at another age he starts wearing long pants, and some time after that he takes a profound interest in the opposite sex, and so on. There are variations from this general theme, but in the main, if we except the geniuses and the dolts and the woman-haters, and the quintuplets, most follow the same pattern. Other living things grow in a somewhat similar fashion and only very rarely is any interest aroused except when a botanist produces some strange and useless orchid or a cow produces an equally useless three-legged calf.

The growth of an industry, however, is a very different thing. No two are alike, unless they start at the same time and each one keeps a watchful eye on the other to see that it does not get some unfair advantage. The changes in technique, in the demand for the product, in the equipment and facilities available, and in the personality and ability of the people who run them, give each industry a history all of its own. Take any business which has been going for a few decades and compare the size, the output, the quality of the product, and the means adopted to produce it in its early stages and at the present time, and you will have a comparison which is often quite amazing.

Most of us are so used to modern facilities in the way of mechanisation, transport, communications, etc., that it is sometimes hard to imagine anything ever being done without them. Yet things were done, although the manner of doing them would often bring a smile to our faces. They were done according to the ideas of the time and the means that were available. As time went on ideas changed and facilities improved, and the methods and the quality of the product followed suit. Most industries, primary or secondary, show over a period very great changes in methods and use of equipment, and a study of such changes makes one realise what a dynamic world we live in - sometimes, if we contemplate atomic energy, we feel it may be too dynamic to be safe.

It is the custom to use the word "pioneer" largely in the sense of those people who, in the early days of a country, wandered into unknown parts and opened up unsettled land. All praise to them, certainly, for their courage in leaving the comparative civilisation of the towns and facing the unknown difficulties of empty spaces where they fought for a living on the soil or dug in the ground for precious metals. But they were not the only pioneers. Anything new demands that spirit of enterprise, that readiness to face and overcome difficulties, and that ability and determination to get something done with the means available at the time, and those that start something new even at the present time are pioneers just as much as those of a century or several centuries ago.

The electricity supply industry is no exception. Fifty years ago it was a comparative baby, even in the world's most advanced countries. As far as Australia was concerned, any efforts to provide electricity had been tentative and limited. It was, until a few years previously, almost unknown and little other than a laboratory product. Then came the idea of making this product on a larger scale and distributing it in the same way that water and gas had already been distributed. It was, in the true sense of the word, a new idea, and those that put it into effect were real pioneers. There were unknown difficulties

to be overcome; there were real dangers associated with it; there was almost a complete absence of knowledge and data and "instruction books"; mechanical aids were absent and transport and communication facilities were primitive. And yet the enterprise was started, and gave reasonably good service, and those that were responsible for it deserve the very highest degree of recognition.

This is not meant to imply that those now engaged in supplying electricity have an easy time. Far from it, because although the original difficulties and obstacles may have disappeared, others have arisen to take their place. This must continue to be so as long as progress lasts, for progress means adopting something new. There has been, in fact, a continuous stream of new ideas ever since the beginning of the century - new methods to be tried out, and new equipment to be used - all of which have presented their problems and demanded thought, physical effort, ingenuity and courage. It is true that the examples of supply authorities in other parts of the world, and the greatly improved knowledge arising from text-books and the technical press have made many new problems easier to deal with; but this is only part of the story, and each problem that arises has its local and special features which must be handled according to immediate requirements.

Who can say, for example, that the operation of a complex interconnected power system, in spite of instructions galore, remote control, and a highly developed communication system, is less difficult than that of the original single power station, or the subsequent combination of steam sets and temperamental frequency-changers? Who can say that the "live-line" maintenance of high voltage lines, in spite of the weird and wonderful tools in use, is less hazardous than the old "live" work done on 4,000 volt circuits without such special appliances? Who can say that burrowing under mountains is easier than working in evil-smelling "pits"; or the erection of 70 ft. poles with mechanical aids easier than the erection of 30 ft. ones with bare hands and a few pikes?

Comparisons are difficult, and where they are difficult it is wiser not to attempt them. The fact is that the "threshold" of pioneerism has shifted. The problem which was once an almost impossible obstacle has now, with improved methods and mechanical aids, become absurdly easy; its place has been taken by other problems which, relatively, are just as difficult as the earlier ones. So we go on, advancing all the time, and always requiring that courage and determination which have characterised pioneers anywhere and at any time.

And there are still "faults". Men still leave the warmth of their beds and the comfort of their homes and go out into the night and into the storm. They still put on their waterproofs and their sou'westers and arm themselves with ladders and ropes and climb poles in the rain and wind and lightning. They still, if the need is there, work all day and all night to keep the service going. Whatever other changes may have taken place over fifty years, this spirit of service has not changed, and, we hope, it never will.

From now on we will attempt to be more specific. It is the purpose of the following pages, and the associated maps, to portray the growth of the electricity supply system which started in the first year of the twentieth century in the eastern and south-eastern suburbs of Melbourne. In the fifty years which have elapsed the growth of the system has been tremendous, keeping pace with the expansion of Melbourne, both as far as area and population are concerned. The writer has been, in the past, mainly interested in that area which was originally served by The Melbourne Electric Supply Company, and this story is limited to the growth in that area. But the story of the remainder of

Melbourne, and indeed of other cities and areas throughout the State, would be equally interesting. It may be possible for someone else with a knowledge of such areas to compile similar histories of the developments of the first half-century of progress in electricity supply.

The preparation of such a history is not a simple matter, because the very necessary practice of keeping records "up-to-date" frequently destroys old data in the process. Maps are altered as something new is added, old assets are conscientiously removed from the record, and in a few years' time it becomes quite difficult to visualise the system as it existed previously. Recourse to original field notes therefore becomes necessary, but frequently these are not retained after they have been transferred to permanent maps. In this particular investigation the old original underground cable joint books were of inestimable value, but frequently the entries were not dated. Two very valuable substation books were used which provided much data about the early substations, but sometimes dates were omitted from these entries also. Later evidence used was the notification to other public bodies of any high voltage assets to be constructed; but there was always the possibility that the assets were not constructed according to plan, or, if they were constructed, the work was done much later than the notifications would indicate.

Hence, there is a lot of "E. & O.E." about the maps, which purport to show the distribution system each five years from the start of the century. However, they probably are reasonably correct and the comments made on each period do make up a story which is probably not far from the truth.

All this points a moral, which is that if a history of the growth of the undertaking is of value, there should be a record made of the state of affairs from time to time. Five-year intervals have been chosen in this present attempt, and such an interval is probably a reasonable one, since enough alterations and additions will have taken place in such a period to make each map substantially different from the previous one, and to enable a sufficiently interesting story to be written about what has taken place. This thought is put forward for what it is worth and could equally well apply to all branches of the Commission's distribution system, and indeed, to any other sections too. Telling through a succession of Annual Reports seems a laborious method of picking out the highlights of a long period, and diagrammatic layouts, where they apply, create a good pictorial record of development over such a period.

The five-year periods from 1900 to 1950, which are described and pictured herein, show the gradual expansion of the Melbourne Electric Supply Company's 4000 volt single-phase system up to 1925, the absorption of the Company by the Commission, and the changeover of the system to a 6600 volt three-phase one with a number of supply points, and the expansion of that system between 1930 and 1950. They also show the change from a completely underground system to one predominantly overhead, and from a lighting load to one mainly industrial and they show how the supply system reacted to the social and economic events of the half-century. They do not include the western half of Melbourne, which became, in 1930, part of what was later the Metropolitan Branch, as it was thought that Essendon, Sunshine and Werribee could, with better advantage, be dealt with in a separate study treated in the same way as the eastern and south-eastern areas have been.

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