

1930.



THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA.

Laid on the Table by *Brought up*  
by Senator *Dooly*

Pursuant to Statute

By Command

In return to Order

PARLIAMENTARY STANDING COMMITTEE

Clerk of the Senate.

ON PUBLIC WORKS.

26 NOV 1930

## REPORT

TOGETHER WITH

## MINUTES OF EVIDENCE

RELATING TO THE PROPOSED ESTABLISHMENT OF AN

# AUTOMATIC TELEPHONE EXCHANGE

AT

## MAYLANDS, W.A.

By Authority:

H. J. GRIMM, GOVERNMENT PRINTER, CANBERRA.

MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

(Seventh Committee.)

ANDREW WILLIAM LACEY, Esq., M.P., CHAIRMAN.

Senate.

Senator John Braidwood Dooley.  
Senator Matthew Reid.  
Senator Burford Sampson.

House of Representatives.

Malcolm Duncan Cameron, Esq., M.P.  
John Curtin, Esq., M.P.  
Hon. Henry Gregory, M.P.  
Edward James Holloway, Esq., M.P.  
William John Long, Esq., M.P.

INDEX.

	PAGE
Report .. .. .	1
Minutes of Evidence .. .. .	1

VOTES AND PROCEEDINGS OF THE HOUSE OF REPRESENTATIVES, No. 13.

Dated 11th December, 1929.

5. PUBLIC WORKS COMMITTEE—REFERENCE OF WORK—MAYLANDS, WESTERN AUSTRALIA—AUTOMATIC TELEPHONE EXCHANGE.—Mr. Lyons (Minister for Works and Railways) moved, pursuant to notice, That, in accordance with the provisions of the *Commonwealth Public Works Committee Act 1913-1921*, the following proposed work be referred to the Parliamentary Standing Committee on Public Works for investigation and report:—  
Maylands, Western Australia—Establishment of Automatic Telephone Exchange.

Mr. Lyons having laid on the Table plans, &c., in connexion with the proposed work—

Debate ensued.

Question—put and passed.

LIST OF WITNESSES.

	PAGE
Cook, George Sydney, Works Director for Western Australia .. .. .	10
Crawford, John Murray, Chief Engineer, Postmaster-General's Department, Melbourne .. .. .	2, 12
Henderson, Edward Hubert, F.R.I.B.A., Principal Designing Architect, Department of Works, Canberra .. .. .	1
Kilpatrick, James George, Superintending Engineer, Postmaster-General's Department, Perth .. .. .	5
Monaghan, Sidney Laurence, Superintendent of Telephones, Western Australia .. .. .	8
Stockdale, Walter Ernest, Secretary, Perth Road Board .. .. .	10
Timms, Edward Arthur Parker, Secretary, Bayswater Road Board .. .. .	11

# AUTOMATIC TELEPHONE EXCHANGE, MAYLANDS, W.A.

## REPORT.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, to which the House of Representatives referred for investigation and report the question of the establishment of an automatic telephone exchange at Maylands, Western Australia, has the honour to report as follows:—

### PROPOSAL.

1. The proposal submitted for the consideration of the Committee is to erect on a site which has been acquired at the corner of Carrington-street and Central-avenue, Maylands, a modern exchange building, and install therein an automatic telephone switching system having an initial equipment for 1,100 subscribers' lines, and an ultimate capacity of, approximately, 2,300 subscribers' lines. It is proposed that the initial equipment shall be capable of extension to the ultimate capacity named, and thus enable requirements to be met in the proposed automatic exchange area for a period of, approximately, twenty years from the proposed date of opening.

### REASON FOR THE PROPOSAL.

2. The area which would be served by the proposed exchange comprises the eastern portion of the existing Perth exchange area, and includes the suburbs of Mount Lawley, Maylands, and Bayswater.

It was represented that the exchange was considered necessary in order to meet the rapid developments in the area which, in future, cannot be catered for economically from the existing Perth exchange. It is stated that the installation of the proposed exchange would obviate unnecessarily high expenditure on external plant, and would enable the Department to provide a cheaper and more efficient service to subscribers in the extreme limits of the area mentioned.

### ESTIMATED COST.

3. The estimated immediate cost of the work is set down at—

Site (already acquired)	£
Building	450
Exchange equipment, including that necessary at other exchanges	4,200
Sub-station equipment	18,852
Line plant	Nil
Sundries	17,576
	362
	<hr/>
	41,440

and it is estimated that the new exchange could be opened for traffic within fifteen or eighteen months of the date of approval.

### COMMITTEE'S INVESTIGATIONS.

4. The general committee made a careful scrutiny of the plans submitted, and took evidence from the Principal Designing Architect, Department of Works, Canberra, and from the Chief Engineer, Postmaster-General's Department, Melbourne, and then, taking advantage of the presence in Perth of the two Western Australian members of the committee, constituted a sectional committee of three, which inspected the site at Maylands and took evidence in Perth from the Superintending Engineer, Postmaster-General's Department, the Superintendent of Telephones, Commonwealth Works Director for Western Australia, and from representatives of the Perth and Bayswater Road Boards.

## SITE.

5. The site, which was acquired by the Commonwealth for the sum of £450, is situated at the corner of Carrington-street and Central-avenue, as near as practicable to the theoretical telephone centre. It has a frontage of, approximately, 66 feet to Central-avenue, by a depth of about 165 feet along Carrington-street. It is in an elevated position and almost level in character, with a slight fall to the western boundary. The area is good building land, and, in the opinion of the Committee, eminently suitable for the purpose for which it is intended.

## BUILDING.

6. The building proposed will cover an area of about 3,274 square feet, and is to be a single-story building of simple construction. The walls are to be of brick, and the floors of reinforced concrete. The roof is to be constructed of steel principals covered with red tiles, and the ceilings lined with fibro-cement sheets fixed to wooden bearers. In addition to the natural lighting, four skylights in the roof will give direct lighting through a similar number of fixed lights in the ceiling. Steel frame windows glazed with wired rolled plate glass are provided throughout the building. The elevations are designed in brick, with cement finishing, and, generally speaking, the building will be of plain design, and fire resisting.

7. In preparing the plan for the building provision has been made for the following accommodation:—Switch-room, 50 feet by 30 feet; power-room, 22 ft. 6 in. by 16 feet; staff-room, 16 feet by 12 ft. 9 in.; battery-room, 22 ft. 6 in. by 14 ft. 6 in.; and a store, 12 ft. 9 in. by 6 feet; together with the necessary lavatory accommodation.

The height of the ceiling in the switch-room will be 12 ft. 6 in., while that of the other rooms will be 10 ft. 6 in. It is estimated that the building can be erected in about six months from the date of commencement.

## MECHANICAL SERVICES.

8. No provision has been included for the installation of air-conditioning plant, cleaning, or compressed air service. Portable vacuum cleaners are proposed.

9. The estimate of the building is a tentative one, based on the preliminary sketches, and allows for the installation of electric light, water supply, and septic tank for sewerage. These services present no difficulties, the necessary electric light and water mains being in the adjacent streets. Fire appliances will be installed in accordance with the regulations governing these services as laid down by the Commonwealth Fire Board for all exchanges.

## FINANCIAL ASPECT.

10. It was stated in evidence that the total annual charges for the proposed automatic telephone system as at the proposed date of cut-over were estimated at

and five years later at	£9,260
The estimated revenue as at date of cut-over was	10,950
and five years later	9,340
The assets thrown spare if the automatic system is installed are estimated to have a recoverable value of	11,600

An amount of £1,600 will have to be written off in the departmental accounts as representing the proportion of the capital on the original assets which is irrecoverable, and includes depreciation due to wear and tear, and labour in installation.

## CANCELLATION OF TELEPHONES.

11. In the course of its investigations the Committee ascertained that conditions in regard to Maylands have materially altered within the last few months. When this proposal was put forward the rate of development in the Perth exchange area, which included that to be served at Maylands, was 650 lines per annum. For the two previous years the figures were 655 and 657, respectively. At the then rate of development the Perth equipment would have been fully utilized by 1931; hence the necessity for taking steps to relieve it.

During recent months, however, Perth, in common with other metropolitan areas throughout the Commonwealth, has suffered from a distinct decline in telephone development, and for the first nine months in 1930, instead of the usual increase in the number of telephone subscribers there has been an actual decrease of 75 in the Perth area, but an increase of 37 in the Maylands area. If the decline continues prospective subscribers in the Maylands area could be catered for from the Perth exchange for some considerable time, while it is represented that, even when the financial position improves and the normal rate of development is resumed, it will still be capable of giving service for two years or more.

Moreover, when the exchange at Victoria Park, which has been approved, but postponed for the present, is completed, further lines will be transferred to that exchange from Perth and enable the central exchange to give service for probably another year at normal rate of increase.

The Committee is aware, from its inquiries, that certain subscribers in the Maylands area, being beyond the 2-mile radius of the central exchange, are called upon to pay a rental of 10s. per annum extra for each quarter of a mile beyond that distance. With the establishment of an exchange within the Maylands area the subscribers within the area would benefit to the extent that this extra rental would be eliminated. The Committee consequently gave some attention to the possibility of installing, as a temporary measure, a small manual exchange thrown spare from some other centre, or a 100 or 200 line unit of an automatic exchange.

Evidence obtained, however, did not justify this proposal. It was stated that, in the present disadvantages suffered, there is no essential difference between Maylands and several other districts in the Commonwealth where the Department's policy has been that, until justification exists for the erection of a permanent automatic exchange, these isolated areas suffer the disability of a higher rental charge. It was estimated that to install a small temporary automatic unit the cost, including building, equipment, and line diversion costs, would approximate £3,500, while a temporary manual installation would cost about £2,750.

An important feature in considering any temporary arrangement is the loss of revenue from existing subscribers whose rental must necessarily be reduced. This, it is estimated, would involve the Commonwealth in a loss of £530 per annum.

Summarized, it was stated that the minimum loss on a temporary exchange might be expected in the first year, on an automatic exchange, to be, approximately, £650, and on a manual system, £770.

For the second year it was estimated that these figures would reach £850 on automatic, and £900 for a manual.

The Committee is therefore satisfied that there is no justification for the establishment of a temporary exchange either of the automatic or manual type.

## COMMITTEE'S RECOMMENDATION.

12. The Committee is satisfied that as affairs stood when this proposal was inaugurated, the Department was justified in assuming that the then normal rate of progress would be maintained, and was in duty bound to take steps to ensure that service could be given to prospective subscribers in the Perth and Maylands areas. It was shown that Maylands is a progressive district, and that the site chosen for the exchange was suitably situated and good building land; and in normal circumstances a new automatic exchange in this area would have been essential. With the economic changes of recent months, however, and the rapid decline in the number of telephone subscribers, the conditions which the installation of this exchange were designed to meet do not exist, and, so far as can be foreseen will not recur until, say, two years or more after a return to normal.

Under these circumstances the Committee is unanimously of opinion that the installation of an automatic telephone exchange at Maylands at present is unnecessary.

*A. W. Lacey*

A. W. LACEY,

Chairman.

Office of the Parliamentary Standing Committee on Public Works,

Parliament House,

Canberra, 7th November, 1930.

# MINUTES OF EVIDENCE.

(Taken at Canberra.)

THURSDAY, 7th AUGUST, 1930.

Present:

Mr. LOCKY, Chairman;

Senator Reid	Mr. Gregory
Senator Sampson	Mr. Holloway
Mr. M. Cameron	Mr. Long.
Mr. Curtin	

Edward Hubert Henderson, F.R.I.B.A., Principal Designing Architect, Department of Works, Canberra, sworn and examined.

1. *To the Chairman.*—I am aware of the proposal to establish an automatic telephone exchange at Maylands, Western Australia. The site is situated in an excellent position, on the top of a hill, is of a sandy nature and covered with small scrub. It is bounded by Central-avenue on the south-west, Carrington-street on the south-east, and adjoining properties, composed of brick cottages, on the north-west and south-east. There is a fall in the land of approximately 3 ft. 6 in. to Central-avenue and 1 ft. to Carrington-street.

The dimensions of the site are—North-east, 66 ft.; south-west, 66 ft.; south-east, 165 ft.; north-west, 165 ft. The total area of the land is 10,890 square feet, and the area which will be occupied by the proposed building is 3,374 square feet. In preparing the plan for the building, allowance has been made for the following accommodation:—Switch room, containing cable trench, power room, battery room, staff room, store and lavatories. The plan is so arranged that the switch room can be extended in the future if so desired, and also allows for the usual entrance for staff and machinery, the staff entrance being by a 10-ft. right-of-way from Central-avenue. The building will be constructed of brick with floors of reinforced concrete. The roof will have steel principals covered with red tiles, and ceilings will be lined with fibro cement sheets fixed to wooden beams. Four skylights are shown in the roof giving direct light to a similar number of fixed lights in the ceiling of the switch room. Steel-framed windows, glazed with rolled wired plate glass, will be used throughout. The building is of simple design, and construction, finished externally in brick with cement finishings. The estimated cost, £4,200, is a tentative one, based on the sketches submitted, and includes the amount necessary to cover the installation of electric light, water supply and septic tank for sewerage.

No provision has been made for the installation of air conditioning plant, cleaning or compressed air services. Portable vacuum cleaners will be provided. The fire appliances will be in accordance with the Commonwealth Fire Board Regulations, as laid down for all exchanges. Upon completion of the working drawings, and before commencing the work of erecting, a detailed estimate will be prepared.

The estimated cost of the proposed building is £4,200, and in ordinary circumstances, should take about six months to complete. I have not inspected the site, but the frontage of the building is to the

narrowest portion of the site, with the spare land in the rear. The area in which the proposed building is to be constructed is not sewered, and it is intended to utilize the septic tank system. If supplies of oregon are not available we shall probably have to use hardwood timber; but very little timber will be required. At the moment I have not the figures before me to show how the prices of building materials in Perth compare with those prevailing in Sydney. The estimated cost of the building has, I understand, been prepared by our quantity surveyor.

2. *To Mr. Curtin.*—The site has considerable depth, and the area, which at present will not be used for building purposes, can, if necessary, be utilized for future extensions. In connection with structures of this nature it is desirable to have the building on the street alignment. In comparison with a building of a similar nature this structure is slightly more modern; but, generally speaking, it is on similar lines to those constructed in other parts of the Commonwealth.

3. *To Mr. Long.*—I have, of course, no direct knowledge of the telephonic requirements in this particular area. That information is supplied by the Post and Telegraph Department, and our department then provides the accommodation asked for. From the information received it would appear that the site is quite suitable for the purpose.

4. *To Mr. M. Cameron.*—The building is somewhat smaller than others which have been constructed. In this instance no air conditioning room has been provided. The Telephone Department supplies us with the size of the rooms required and we arrange them to the best advantage. I am not fully conversant with the timber available in Western Australia, but hardwood will possibly be a good substitute for oregon. A comparatively small quantity of timber will be used, as the roof will be supported by steel principals. Hardwood is not as good as oregon; but in the circumstances would meet the requirements. Certain objections to its use may be raised, because it is likely to warp, and, generally speaking, it does not stand as well as oregon.

5. *To Mr. Gregory.*—The building is to face Central-avenue, and in designing it every endeavour has been made to keep the cost down as low as possible. It would be practicable to make the whole frontage in one design by carrying the parapet right through; but that would involve an additional expenditure of perhaps £50. The wired glass, for which provision has been made, is used as a safeguard in the event of fire. It could be dispensed with in the windows facing the street; but possibly it may be necessary to use it in the windows facing the right-of-way. By dispensing with it in the front windows the cost would be reduced by perhaps £10 or £15. Apart from protection against fire, its use is only advantageous in the event of a window being broken, otherwise ordinary plain glass would be sufficient. No provision has been made for a dehumidifying plant, as the telephone authorities do not consider such an installation necessary. Such a plant could, however, be accommodated by removing the lavatories. I do not think it would make any difference if it were separated from the power room. If such a plant were to be installed, possibly we would place the three rooms together; but it would depend upon

how the plan worked out. Although there may be a good deal of humidity in the atmosphere at times, a de-humidifying plant has not been asked for. The only staff entrance is at the back, and that to the switch room is through the passage and a rear door. There is no necessity to provide for a second door at the back in order to prevent the entrance of dust, as that door is used only on rare occasions. The parapet will not be extended to the back portion of the building; the roof will go over at the side of the switch room.

6. To Senator Reid.—The base and parapet will be of cement. The use of hardwood will probably increase the cost to a slight extent because more work will be involved. There is no risk of the timber used in the roof warping or twisting to any extent. Steel rafters and purlins are to be used and the only wood in the roof will be the bearers for the ceilings.

(Taken at Melbourne.)

MONDAY, 11TH AUGUST, 1930.

Present:

Mr. LACEY, Chairman;

Senator Reid Mr. Gregory  
Senator Sampson Mr. Holloway  
Mr. M. Cameron Mr. Long  
Mr. Curtin

John Murray Crawford, Chief Engineer, Postmaster-General's Department, Melbourne, sworn and examined.

7. To the Chairman.—When the proposal to erect an automatic telephone exchange at Maylands in Western Australia was prepared, the rate of development in the Perth exchange area, which includes that to be served at Maylands, was 650 lines per annum. For the two previous years, the figures were 655 and 657 respectively; but for the year-ended last September, the figures dropped to 388. A slump then occurred, and for the last six months there has been a net addition of only sixteen lines. This is due to the fact that there have been a large number of cancellations. When this proposal was first submitted, the Perth equipment at the then rate of development would have been fully utilized in 1931; but at the present rate, as the committee will see, it might take three or more years before the department would fully utilize the spare equipment now at the Perth exchange. At the time we prepared our estimates for the Maylands exchange, the rate of development had been for 1928, 783 lines, and for 1929, 815 lines. The estimated figures were 790 as at the 1st June, 1928, and 910 as at 1st July, 1931. Actually from the 1st March, 1929, to 1st March, 1930, the figure was 925 which was above our estimate for that area. The committee will see that our estimate when prepared was fully justified by the figures at our disposal; but since then there has undoubtedly been a very distinct slump in development. Perth is not the only centre in which there has been a decline in development; it has been the experience throughout the whole Commonwealth. In New South Wales, in 1928-29, approximately 5,157 additional subscribers were connected; but for the year-ended 30th June, 1930, the number had decreased to 1,945, and in the last six months of that year it had been reduced to 97. From these figures it will be seen that there has been a marked decline in telephone connexions. Although this department is placing this proposal before the committee it is not proposed to proceed with the work

until it has been determined whether it is actually necessary. The department realizes how essential it is to avoid spending money unnecessarily, and it has been revising its exchange proposals in the light of latest developments. For the information of the committee, I submit a plan showing the area proposed to be served, the Maylands area being shown in red, and the site on which the proposed exchange is indicated.

The proposal is to erect a building on a site which has been acquired at the corner of Carrington-street and Central-avenue, Maylands, and install therein an automatic telephone switching system having an initial equipment for 1,100 subscribers' lines and an ultimate capacity of approximately 2,300 subscribers' lines. It is proposed that the initial equipment shall be capable of extension to the ultimate capacity named, and thus enable requirements in the proposed automatic exchange area to be met for approximately twenty years after the proposed date of opening.

The area which is to be served by the proposed Maylands automatic telephone exchange comprises the eastern portion of the existing Perth exchange area, and includes the suburbs of Mr. Lawley, Maylands and Bayswater. The exchange is necessary in order to meet the rapid development in the area, and to give service which cannot in the future be catered for economically from the existing Perth exchange. A cheaper and more efficient service to subscribers in the extreme limits of the areas mentioned will be provided if the proposed exchange is established.

#### ESTIMATED COST.

The estimated immediate cost of the work is—

	£
Site .. .. .	450
Building .. .. .	4,200
Exchange equipment, including that necessary at other exchanges .. .. .	16,832
Substation equipment .. .. .	nil
Line plant .. .. .	17,576
Sundries .. .. .	362
	£41,440

Although the estimated cost of the building is given as £4,200, later figures from the Works Department give the amount as £4,150. In view of the comparatively slight decrease, the estimate has not been amended.

The actual revenue from the subscribers in the Maylands portion of the existing Perth telephone exchange area for the year-ended 30th June, 1929, and the annual revenue it is estimated will be obtained from the subscribers in the proposed Maylands automatic exchange area on the date of opening and five years thereafter is shown hereunder—

Average number of subscribers' lines connected during year ended 30th June, 1929.	Estimated annual revenue received for the year-ended 30th June, 1929.	Estimated number of subscribers' lines in proposed Maylands area as at 1st January, 1931 (date of opening).	Estimated annual revenue from the proposed Maylands area as at 1st January, 1931 (five years date).	Estimated annual revenue as at 1st January, 1936 (five years date).
648	£ 9,174	910	£ 9,340	£ 11,200

In this connexion, I submit the certificate of the Accountant of the Postmaster-General's Department in Perth. It reads—

#### POSTMASTER-GENERAL'S DEPARTMENT, WESTERN AUSTRALIA. REVENUE OF PROPOSED AUTOMATIC TELEPHONE EXCHANGE, MAYLANDS.

(a) Actual total revenue from the subscribers and public telephones in the Maylands portion of the existing telephone exchange area for the twelve months ended 30th June, 1929—

	£	s	d
Rents .. .. .	4,738	1	6
Calls .. .. .	3,550	14	0
Miscellaneous charges .. .. .	142	12	6
Think line edis .. .. .	230	15	8
Total .. .. .	9,174	3	7

Average number of lines connected during the above-mentioned twelve months 848.

	£	s	d
(i) Average revenue per line (as connected to existing exchange) .. .. .	10	10	4
(ii) Estimated revenue per line (if connected to proposed Maylands exchange) .. .. .	10	6	2

(b) Estimated annual revenue for the proposed Maylands automatic telephone exchange area as at the proposed date of outset, i.e. 1st January, 1931, and five years later—

	No. of Lines.	Rents.	Calls.	Miscellaneous Charges.	Think Line Edis.	Total.
As at outset .. .. .	910	£ 4,822	3,610	152	291	£ 9,242
Five years later .. .. .	1,310	£ 6,900	4,750	160	362	£ 12,091

I hereby certify that the above figures have been computed from the books and records of this office, and the figures with respect to the revenue are to the best of my knowledge and belief correct.

(Sgd.) A. M. CAMERON,  
Accountant, Postmaster-General's Department, Perth, Western Australia, 10th October, 1929.

The proposed site is situated at the corner of Carrington-street and Central-avenue. It has a frontage of approximately 65 feet to Central-avenue, and approximately 165 feet to Carrington-street, and is located as near as practicable to the telephone centre of the proposed automatic exchange area.

It is proposed that the building shall be of simple design and built on the latest fire-resisting principles. The immediate installation is for an equipment of 1,100 subscribers' lines, but the building will be designed to accommodate equipment having a capacity of approximately 2,300 subscribers' lines.

#### FINANCIAL ASPECT.

	As at 1st January, 1931.	As at 1st January, 1936.
1. Estimated capital cost—new .. .. .	£ 41,140	£ 53,580
2. Estimated capital cost—new and in situ .. .. .	76,780	88,040
3. Estimated annual working expenses of proposed automatic exchange .. .. .	3,320	4,240
4. Estimated total annual charges for proposed automatic exchange .. .. .	£ 2,200	£ 10,950
5. Annual Revenue— Actual for the year ended 30th June, 1929, 9,174. Estimated as at 1st January, 1931 .. .. .	9,340	11,900
6. Assets recoverable or thrown spare if an automatic exchange is established on new site at 1st January, 1931— (i) Book value .. .. .	20,340	
(ii) Recoverable value .. .. .	19,680	
(iii) Cost of recovery .. .. .	90	

Regarding item 6 of the foregoing statement, the difference between sub-items (i) and (ii), namely, £1,660, is an amount which will be written off in the departmental accounts as representing the proportion of the capital outlay on the original assets which is irrecoverable, and includes depreciation due to wear and tear and labour in installation. The high recoverable value is due to the fact that Maylands being situated in an automatic area, very little equipment will need to be scrapped. There will not be any necessity to disturb the sub-station equipment as the proposed exchange is situated in an automatic area. If the committee should decide to approve this proposed work the department will proceed with it only when it is necessary. We will watch the development very closely, and when the position begins to improve, and we find that spare equipment at the Perth exchange is likely to be used up, we shall endeavour to have the Maylands exchange completed rather than hold up additional subscribers. The proposal is not urgent at the moment. Until 1st March of this year, the increase in subscribers was somewhat ahead of our estimate; but since that time there has been a distinct slump. It commenced in April, and during May and June it became more pronounced; it is still on the downward grade. There have been nearly as many cancellations as new subscribers, which is probably due to the fact that some persons in reducing expenditure have had the telephone disconnected. I believe that in some instances they have failed to estimate the value of the telephone. When they realize that it costs 2d. to send a letter and that for 1½d. they can send a message and receive a reply, they will possibly save expenditure in other directions. As the committee is aware, it is not proposed, in this instance, to install an air-conditioning plant. According to the records, the highest percentage of humidity in Perth is in July when it has been 84 per cent, and the lowest in January when it has been 61 per cent. In these circumstances, there is not the same necessity to incur a considerable amount of expenditure on an air-conditioning plant as there is in, say, Sydney or Brisbane. As the result of experience in that locality, we are proposing to put in only a small plant which has been included in the price of the exchange equipment. The dust is not likely to cause much trouble as the proposed site is in a good residential area, and is right opposite a public reserve. We think that we will be quite safe with the provision which has been made to prevent any deterioration of the switches. Portable vacuum cleaners, similar to that proposed to be used in this instance, have been used in exchanges of this size for years, and have been found to be efficient. We feel confident that the portable type will meet all requirements. Some of the vacuum cleaners in use are of a larger type than those used for domestic purposes, but are on the same principle with a rotary brush and a certain amount of suction. They are, however, of no use for extracting the dust from the points of contact or the intricate parts of the mechanism as is done by the bigger plants. The members of the staff can remove the dust from these portions of the plant. The estimated cost of a portable vacuum cleaner is £80. Good vacuum cleaners are made in Australia, and the policy of the department is to obtain Australian products whenever practicable. I was asked to supply the committee with a statement showing the estimated costs and estimated number of

how the plan worked out. Although there may be a good deal of humidity in the atmosphere at times, a de-humidifying plant has not been asked for. The only staff entrance is at the back, and that to the switch room is through the passage and a rear door. There is no necessity to provide for a second floor at the back in order to prevent the entrance of dust, as that door is used only on rare occasions. The parapet will not extend to the back portion of the building; the roof will go over at the side of the switch room.

6. To Senator Reid.—The base and parapet will be of cement. The use of hardwood will probably increase the cost to a slight extent because more work will be involved. There is no risk of the timber used in the roof warping or twisting to any extent. Steel rafters and girders are to be used and the only wood in the roof will be the bearers for the ceilings.

(Taken at Melbourne)

MONDAY, 17th AUGUST, 1930.

Present:

Mr. LACEY, Chairman;

Senator Reid                    Mr. Gregory  
Senator Sampson            Mr. Holloway  
Mr. M. Cameron            Mr. Long  
Mr. Curbin

John Murray-Crawford, Chief Engineer, Postmaster-General's Department, Melbourne, sworn and examined.

7. To the Chairman.—When the proposal to erect an automatic telephone exchange at Maylands in Western Australia was prepared, the rate of development in the Perth exchange area, which includes that to be served at Maylands, was 650 lines per annum. For the two previous years, the figures were 655 and 667 respectively; but for the year ended last September, the figures dropped to 555. A slump then occurred, and for the last six months there has been a net addition of only sixteen lines. This is due to the fact that there have been a large number of cancellations. When this proposal was first submitted, the Perth equipment at the then rate of development would have been fully utilized in 1931; but at the present rate, as the committee will see, it might take three or more years before the department would fully utilize the spare equipment now at the Perth exchange. At the time we prepared our estimates for the Maylands exchange, the rate of development had been for 1929, 723 lines, and for 1928, 815 lines. The estimated figures were 700 as at the 1st June, 1928, and 910 as at 1st July, 1931. Actually from the 1st March, 1929, to 1st March, 1930, the figure was 925 which was above our estimate for that area. The committee will see that our estimate when prepared was fully justified by the figures at our disposal; but since then there has undoubtedly been a very distinct slump in development. Perth is not the only centre in which there has been a decline in development; it has been the experience throughout the whole Commonwealth. In New South Wales, in 1928-29, approximately 5,187 additional subscribers were connected; but for the year ended 30th June, 1930, the number had decreased to 1,445, and in the last six months of that year it had been reduced to 97. From these figures it will be seen that there has been a marked decline in telephone connections. Although this department is placing this proposal before the committee it is not proposed to proceed with the work

until it has been determined whether it is actually necessary. The department realizes how essential it is to avoid spending money unnecessarily, and it has been revising its exchange proposals in the light of latest developments. For the information of the committee, I submit a plan showing the area proposed to be served; the Maylands area being shown in red, and the site on which the proposed exchange is indicated.

The proposal is to erect a building on a site which has been acquired at the corner of Carrington-street and Central-avenue, Maylands, and install therein an automatic telephone switching system having an initial equipment for 1,100 subscribers' lines and an ultimate capacity of approximately 2,300 subscribers' lines. It is proposed that the initial equipment shall be capable of extension to the ultimate capacity named, and thus enable requirements in the proposed automatic exchange area to be met for approximately twenty years after the proposed date of opening.

The area which is to be served by the proposed Maylands automatic telephone exchange comprises the eastern portion of the existing Perth exchange area, and includes the suburbs of Mt. Lawley, Maylands and Bayswater. The exchange is necessary in order to meet the rapid development in the area, and to give service which cannot in the future be catered for economically from the existing Perth exchange. A cheaper and more efficient service to subscribers in the extreme limits of the areas mentioned will be provided if the proposed exchange is established.

#### ESTIMATED COST.

The estimated immediate cost of the work is—

Site	£	450
Building	£	4,200
Exchange equipment, including that necessary at other exchanges	£	18,952
Substation equipment	£	117
Line plant	£	17,570
Sundries	£	302
	£	241,440

Although the estimated cost of the building is given as £4,200, later figures from the Works Department give the amount as £4,150. In view of the comparatively slight decrease, the estimate has not been amended.

The actual revenue from the subscribers in the Maylands portion of the existing Perth telephone exchange area for the year ended 30th June, 1929, and the annual revenue it is estimated will be obtained from the subscribers in the proposed Maylands automatic exchange area on the date of opening and five years thereafter is shown hereunder—

Average number of subscribers' lines connected during year ended 30th June, 1929.	Actual total revenue received for the year ended 30th June, 1929.	Estimated number of subscribers' lines in proposed Maylands area as at 1st January 1931, (date of opening).	Estimated annual revenue as at 1st January 1931 (date of opening).	Estimated number of subscribers' lines in proposed Maylands area as at 1st January 1935 (five year date).	Estimated annual revenue as at 1st January 1935 (five year date).
816	9,711	910	£ 9,810	1,100	£ 11,500

In this connexion, I submit the certificate of the accountant of the Postmaster-General's Department in Perth. It reads—

#### POSTMASTER-GENERAL'S DEPARTMENT, WESTERN AUSTRALIA. REVENUE OF PROPOSED AUTOMATIC TELEPHONE EXCHANGE, MAYLANDS.

(a) Actual total revenue received from the subscribers and public telephones in the Maylands portion of the existing telephone exchange area for the twelve months ended 30th June, 1929—

Rents	£	4,738	1	8
Calls	£	3,550	14	0
Miscellaneous charges	£	142	12	5
Trunk line calls	£	730	15	8
Total	£	9,174	3	7

Average number of lines connected during the above-mentioned twelve months 818.

£ s. d.

(1) Average revenue per line (as connected to existing exchange) .. 10 16 4

(11) Estimated revenue per line (if connected to proposed Maylands exchange) .. .. 10 5 2

(b) Estimated annual revenue for the proposed Maylands automatic telephone exchange area as at the proposed date of cutover, i.e. 1st January, 1931, and five years later—

	No. of Lines.	Rents.	Calls.	Miscellaneous Charges.	Trunk Line Calls.	Total.
As at cutover five years later	910	£ 9,810	£ 8,810	£ 253	£ 701	£ 19,574
	1,100	£ 6,602	£ 7,250	£ 160	£ 582	£ 14,594

I hereby certify that the above figures have been computed from the books and records of this office, and the figures with respect to the revenue are to the best of my knowledge and belief correct.

(Sgd.) A. M. CAMERON,  
Accountant, Postmaster-General's Department, Perth, Western Australia, 16th October, 1929.

The proposed site is situated at the corner of Carrington-street and Central-avenue. It has a frontage of approximately 65 feet to Central-avenue, and is located approximately 165 feet to Carrington-street, and is located as near as practicable to the telephonic centre of the proposed automatic exchange area.

It is proposed that the building shall be of simple design and built on the latest fire-resisting principles. The immediate installation is for an equipment of 1,100 subscribers' lines, but the building will be designed to accommodate equipment having a capacity of approximately 2,300 subscribers' lines.

#### FINANCIAL ASPECT.

	As at 1st January, 1931.	As at 1st January, 1935.
1. Estimated capital cost—new	£ 41,140	33,880
2. Estimated capital cost—new and in situ	£ 70,780	88,040
3. Estimated annual working expenses of proposed automatic exchange	£ 3,420	4,240
4. Estimated total annual charges for proposed automatic exchange	£ 9,260	10,950
5. Annual Revenue— Actual for the year ended 30th June, 1929, £9,174. Estimated as at 1st January, 1931 .. .. .	£ 9,340	11,000
6. Assets recoverable or thrown spare if an automatic exchange is established on new site at 1st January, 1931— (i) Book value .. .. .	£ 20,340	
(ii) Recoverable value .. .. .	£ 18,080	
(iii) Cost of recovery .. .. .	£ 00	

Regarding item 6 of the foregoing statement, the difference between sub-items (i) and (ii), namely, £2,060, is an amount which will be written off in the departmental accounts as representing the proportion of the capital outlay on the original assets which is irrecoverable, and includes depreciation due to wear and tear and labour in installation. The high recoverable value is due to the fact that Maylands being situated in an automatic area, very little equipment will need to be scrapped. There will not be any necessity to disturb the sub-station equipment as the proposed exchange is situated in an automatic area. If the committee should decide to approve this proposed work the department will proceed with it only when it is necessary. We will watch the development very closely, and when the position begins to improve, and we find that spare equipment at the Perth exchange is likely to be used up, we shall endeavour to have the Maylands exchange completed rather than hold up additional subscribers. The proposal is not urgent at the moment. Until 1st March of this year, the increase in subscribers was somewhat ahead of our estimate; but since that time there has been a distinct slump. It commenced in April, and during May and June it became more pronounced; it is still on the downward grade. There have been nearly as many cancellations as new subscribers, which is probably due to the fact that some persons in reducing expenditure have had the telephone disconnected. I believe that in some instances they have failed to estimate the value of the telephone. When they realize that it costs 2s. to send a letter and that for 14d. they can send a message and receive a reply, they will possibly save expenditure in other directions. As the committee is aware, it is not proposed, in this instance, to install an air-conditioning plant. According to the records, the highest percentage of humidity in Perth is in July when it has been 84 per cent, and the lowest in January when it has been 61 per cent. In these circumstances, there is not the same necessity to incur a considerable amount of expenditure on an air-conditioning plant as there is in, say, Sydney or Brisbane. As the result of experience in that locality, we are proposing to put in only a small plant which has been included in the price of the exchange equipment. The dust is not likely to cause much trouble as the proposed site is in a good residential area, and is right opposite a public reserve. We think that we will be quite safe with the provision which has been made to prevent any deterioration of the switches. Portable vacuum cleaners, similar to that proposed to be used in this instance, have been used in exchanges of this size for years and have been found to be efficient. We feel confident that the portable type will meet all requirements. Some of the vacuum cleaners in use are of a larger type than those used for domestic purposes, but are on the same principle with a rotary brush and a certain amount of suction. They are, however, of no use for extracting the dust from the points of contact or the intricate parts of the mechanism as is done by the bigger plants. The members of the staff can remove the dust from these portions of the plant. The estimated cost of a portable vacuum cleaner is £80. Good vacuum cleaners are made in Australia, and the policy of the department is to obtain Australian products whenever practicable. I was asked to supply the committee with a statement showing the estimated costs and estimated number of

subscribers' lines, and also the actual costs and number of subscribers in connexion with a few previous proposals of this nature. I have had a statement prepared giving this information, which reads—

PROPOSALS SUBMITTED TO PARLIAMENTARY WORKS COMMITTEE.  
COMPARISON OF FIVE YEARS FIGURES AS ESTIMATED AND AS REALIZED.

Exchange.	State.	Subscribers' Lines.		Revenue.			Estimate, five-year date.
		Five-year estimate in proposal.	Lines actually connected relative date.	Five-year estimate in proposal.	Average per line as incorporated in proposal.	Average per line in metropolitan area at present.	
Albion .. ..	Queensland..	2,240	3,105	10,882	8.87	13.41	1.6.20
Newmarket ..	Queensland..	480	350	3,781	7.88	13.41	1.8.28
Acet .. ..	Victoria ..	2,800	2,240	23,800	8.50	13.63	1.6.28
Carlton .. ..	Victoria ..	3,000	4,041	31,860	10.02	13.63	1.7.28
South Brisbane	Queensland..	3,800	3,203	41,400	11.50	13.41	1.6.28
Canterbury ..	Victoria ..	4,000	3,604	35,000	9.5	13.63	1.1.20
				Actual Revenue—			
Cottesloe .. ..	Western Australia	1,400	1,368	41,130	10.16	11.33	1.6.28
Prospect .. ..	South Australia	1,700	1,835	20,000	11.43	13.67	1.7.28
Glencig .. ..	South Australia	1,600	1,170	17,651	11.03	13.67	1.7.28
Brighton .. ..	South Australia	570	470	6,490	11.40	13.67	1.7.28
Box Hill .. ..	Victoria ..	1,430	1,316	13,685	9.5	13.63	1.1.20
South Melbourne	Victoria ..	3,000	2,662	40,430	15.46	13.63	1.1.20
				Actual Revenue—			
Gordon .. ..	New South Wales	1,000	1,551	16,293	16.18	14.32	31.12.28
Randwick .. ..	New South Wales	4,900	4,732	48,673	9.93	14.32	30.9.28
Waverley .. ..	New South Wales	3,200	3,183	31,080	9.71	14.32	31.12.23
Unley .. ..	South Australia	5,500	4,760	68,004	10.73	13.67	1.1.30
Norwood .. ..	South Australia	5,700	3,929	54,706	9.60	13.67	1.1.30
Total .. ..		40,770	43,859				

Note.—Statement of actual revenue for individual exchanges are not immediately available except in cases shown.

8. To Senator Boyd.—The decrease in the price of metals would be a factor in decreasing costs generally, but that would only be very small on a whole equipment. The effect of Arbitration Court awards has been to slightly increase wages. Manufacturers are, however, cheapening production, and the costs of our carrier equipment has decreased considerably. We have suggested dispensing with the air-conditioning plant in this particular area, because, in the circumstances, it is considered unnecessary. With the larger vacuum-cleaning plants, it is possible to remove more dust than with the smaller plants; but the plant proposed in this instance is considered sufficient. The vacuum-cleaning plant is only a portion of the air-conditioning equipment. With a temperature of 85 degrees and a high percentage of humidity, the working conditions would be unfavorable, but such conditions are not likely in this area. The department has no means of determining how long the present rate of cancellations will continue; but there has been a pronounced decline during the past three months. There was a sharp decrease during the war period, but that was only of temporary duration.

9. To Mr. Long.—The department does not feel justified in proceeding with this proposal until there is a prospect of the spare equipment in the Perth exchange being utilized. At present, the Maylands district is served by the Perth central exchange. If it should happen that subscribers in the Maylands area who have had service disconnected were to again become subscribers, this proposal would have to be

proceeded with as soon as practicable. As soon as conditions become normal, the erection of this exchange will be necessary, and had it not been for the slump, our spare equipment would have all been in use next year. The Perth exchange is not actually overloaded as the department is still able to give service, but as soon as the Maylands exchange is open about 850 subscribers' lines will be taken from the Perth exchange and connected with Maylands. In that case, additional connexions would be made to the Perth exchange for perhaps another two or three years. That is the object of opening these exchanges in residential areas. The manufacturers of automatic telephone equipment will not guarantee satisfactory work if the humidity rises above 70 per cent. when there is a reasonably high temperature, or where there is likely to be a deposition of moisture. If the humidity only rises above 70 per cent. from May to October, and above, say, 61 per cent. in the summer months, we should be fairly safe in this area. I should not regard the percentage of humidity in the Maylands area sufficiently high to be detrimental to the plant. We have not a dehumidifying plant at Perth.

10. To Mr. M. Cameron.—The statement contained in the earlier portion of my evidence to the effect that this exchange is necessary to meet the rapid development in that locality was prepared some time ago, and is not applicable to day. This proposal has been in the hands of the committee since October of last year. It is for the committee to decide whether this inquiry should be postponed for twelve months.

I do not see the necessity of going on with the work for approximately that period. I do not think that we shall want the exchange for at least two years. At the present rate of development, we may not need it for three years, but it is impossible to say how long present conditions will continue. We have had no indication of the present rate of disconnections ceasing. We have not the July figures, but in June there was still a decline.

11. To Mr. Curtin.—The estimated working expenses of £2,450 are exclusive of interest; but in the item of £9,360 for "total annual charges" interest is included. Interest on the capital cost of recoverable assets is taken at 8 per cent. We are paying about 33 per cent. on that outlay, and about 6 per cent. on all new plant. Provision is made for an estimated total annual charge of £9,360, and an estimated revenue at 1st January, 1931, of £9,340, so that, even at the rate of the cutover, the whole annual charges will be more than covered. Five years afterwards, it is estimated that the revenue will be £11,600, and the annual charges only £10,960. Although the difference at the 1st January next would be only £50, in five years' time it is estimated that it will be £250. It is not desired to make any profit out of the undertaking; we aim at giving service at cost price after allowing for interest, depreciation, and other charges. Over the whole service for the last year, the revenue has been slightly below the annual charges. There has been a loss in country districts, and a small gain in the metropolitan area. I think it would be reasonable to make a small profit on the metropolitan services in order to meet possible deficiencies in rural services, particularly as the country needs developing, and the provision of the telephone at reasonable rates is an aid in that direction. If, however, the loss on country services was very marked, the city people would complain. The extension of telephone services in rural districts is an indirect benefit to metropolitan subscribers.

12. To Mr. Gregory.—The department is satisfied, that it is receiving reasonable tenders from contractors. We are obtaining prices as good as those obtained by the British post office and by the New Zealand Government. Moreover, the number of contractors has increased from five to six which will tend to keep prices down. Although there has been an appreciable drop in the price of lead, copper and tin, it has no marked effect on the price of automatic equipment because the quantity of these metals used in its manufacture are comparatively small. The prices we have received for automatic equipment are lower than they were four years ago. Our last tender shows a distinct drop as compared with the previous tender. Although the installation of automatic exchanges has not resulted in a decrease of 20s. per subscriber, we are safe in assuming that, but for the installation of the automatic system, rates would have been higher than they are today. I do not think that the manual service in Adelaide, good though it is, is comparable with the automatic service. We are now working on a proposal to install the automatic system in Adelaide. Taking everything into account, the annual costs of the automatic system are decidedly lower than those of the manual system. Practically the same number of technical officers are required in both instances, but with the automatic system no operators are necessary. If the automatic system had not been adopted the department could not have continued paying increased salaries and wages to those engaged in the telephone branch without considerably increasing the costs to subscribers. There is a point beyond which the manual system cannot develop economically. We are doing only what is being

undertaken in all other countries. There is no instance on record in which the manual system has been reverted to. I understand that the department is paying about £98 a ton for copper wire which is obtained from the Port Kembla works. The cost of the Australian product is higher than that of British manufacture, because the wages here are higher. The quantity of copper used in the automatic equipment proper is comparatively small, but for underground cables it is an important factor. The actual cost of copper in a selector switch would be slight, and therefore the difference in the price of copper as between £50 and £120 a ton would be negligible. The cost of copper in the underground work would depend upon the weight of copper of the cable. I shall supply the committee with the prices at present paid for copper products used in connexion with automatic telephone exchanges.

13. To Mr. Hollaway.—From the time when tenders are accepted, it takes six or seven months before the equipment reaches Australia, and in a comparatively small exchange of this type another four to six months to install it. The building would take eight or nine months to erect. Generally speaking it would take from eighteen to nineteen months to complete the whole work. If our economic position does not improve, we could carry on with our present equipment for some time. We shall, however, watch the position very carefully, because we wish to have the work completed in sufficient time to prevent possible subscribers being deprived of service. Although from some viewpoints it may be of advantage to undertake such work during the period of financial depression, the Government does not wish to incur expenditure which can for a time be avoided. I shall supply the committee with the information concerning the ground rentals and calling rates charged in other countries. Generally speaking, those in Australia are much cheaper than in America, a little cheaper than in Great Britain, and dearer than in one or two Scandinavian countries. They are about the same as in New Zealand. The rates in Canada and the United States of America are about the same; but they are much higher than those prevailing in the Commonwealth.

(Taken at Perth.)

TUESDAY, 9th SEPTEMBER, 1930.

Present:

(SECRETARIAL COMMITTEE.)

Mr. LACEY, Chairman;

Mr. Curtin | Mr. Gregory.

James George Kilpatrick, Superintending Engineer, Postmaster-General's Department, Western Australia, sworn and examined.

14. To the Chairman.—I have with me a proposal for establishing an automatic telephone exchange at Maylands, Western Australia. The proposal is to erect a building on a site which has been acquired at the corner of Carrington-street and Central-avenue, Maylands, and install therein an automatic telephone switching system having an initial equipment for 1,100 subscribers' lines and an ultimate capacity of approximately 2,300 subscribers' lines. It is proposed that the initial equipment shall be capable of extension to the ultimate capacity named, and thus enable requirements in the proposed automatic exchange area to be met for approximately twenty years after the proposed date of



opening. The reasons for the proposal are: The area which will be served by the proposed Maylands automatic telephone exchange comprises the eastern portion of the existing Perth exchange area, and includes the suburbs of Mount Lawley, Maylands, and Bayswater. The exchange is necessary in order to meet the rapid development in the area and to give service which cannot in the future be afforded economically from the existing Perth exchange. A cheaper and more efficient service to subscribers in the extreme limits of the areas mentioned will be provided if the proposed exchange is established. The estimated immediate cost of the work is—

Site	£
Building	450
Exchange equipment, including that necessary at other exchanges	18,852
Substation equipment	17,576
Line plant	262
Standards	241,440

The actual revenue from the subscribers in the Maylands portion of the existing Perth telephone exchange area for the year ended 30th June, 1929, and the annual revenue it is estimated will be obtained from subscribers in the proposed Maylands automatic exchange area on the date of opening and five years hereafter is shown hereunder—

Average number of lines in use during year ended 30th June, 1929	Actual number of lines in use during year ended 30th June, 1929	Estimated number of subscribers in proposed Maylands area (date of opening)	Estimated annual revenue from subscribers in proposed Maylands area (date of opening)	Estimated annual revenue from subscribers in Perth area (date of opening)
818	914	910	£ 9,310	£ 11,900

The proposed site is situated at the corner of Carrington-street and Central-avenue. It has a frontage of approximately 65 feet to Central-avenue, and is located approximately 165 feet to Carrington-street, and is located as near as practicable to the telephone centre of the proposed automatic exchange area. It is proposed that the building shall be of simple design, and built on the latest fire-resisting principles. The immediate installation is for an equipment to accommodate 2,300 subscribers' lines. The financial aspect is as follows—

Item.	£	£
	As at 1.1.31.	As at 1.1.36.
1. Estimated capital cost—new	41,410	33,590
2. Estimated capital cost—new and in situ	76,780	88,040
3. Estimated annual working expenses of proposed automatic exchange	3,420	4,210
4. Estimated total annual charges for proposed automatic exchange	9,260	10,550
5. Annual revenue—		
Actual for the year ended 30th June, 1929—£9,174		
Estimated as at 1st January, 1931	9,310	..
Estimated as at 1st January, 1936	..	11,900
6. Assets recoverable as shown spare if an automatic exchange is established on new site at 1st January, 1931—	20,340	..
(1) Book value ..	18,650	..
(2) Recoverable value ..	1,690	..
(3) Cost of recovery ..	90	..

Regarding item 6 of the foregoing statement, the difference between sub-items (1) and (2), namely, £1,690, is an amount which will be written off the departmental accounts as representing the proportion of the capital outlay on the original assets which is irrecoverable, and includes depreciation due to wear and tear and labour in installation. It was decided to submit this proposal in December, 1928. In the following month our figures were forwarded to the central office and on them a general proposal was prepared by the Chief Engineer. At the time we were faced with the difficulty that the Perth exchange has accommodation for only 8,000 lines, and the figures showed that we were developing at the rate of 10 per cent. per annum, which meant that by 1931 the capacity of the Perth exchange would be reached, and we should have either to extend the existing exchange to accommodate additional subscribers, or to establish exchanges in the more developed suburban areas, particularly in Maylands. Each subscriber must have one pair of wires. Portion of Maylands is over two miles from the Perth exchange. We were reaching the limit of the existing conduits; it meant the laying down of additional conduits to provide for additional applications from the Maylands area. A cable containing a thousand pairs of wires costs anything up to £3 a yard, consequently the cost of providing lines to serve the additional Maylands subscribers was likely to prove a heavy item; at any rate, a more costly one than that of establishing a new exchange, utilizing the existing line plant to carry the junction lines between the two exchanges. Unfortunately, to-day instead of there being a 10 per cent. development, there has been, within the last three or four months, a falling off of 4 per cent. in development figures. That is to say, we have fallen from plus 10 to minus 4 per cent. Actually, we have lost 129 subscribers in three months. The total number of subscribers in 1928 was 7,583. The total capacity of the exchange is 8,900. That, however, does not mean that we can have 8,900 subscribers; we must have one line in every hundred for testing purposes in an automatic exchange, and we must also have spare lines. For instance, if a subscriber gives floating numbers. For instance, if a subscriber gives his telephone to-day we cannot let that line to another subscriber to-morrow. To do so would create confusion. The original subscriber's name would still be in the telephone directory. Compared with 7,583 subscribers in 1928, there are actually to-day not more than 7,498 subscribers, connected with the Perth exchange. Actually, there are about 5,000 lines available for subscribers' purposes. In normal conditions the limit of 8,000 would be reached in January, 1931. In January of the present year there was an increase of 28 in the number of subscribers connected to the Perth exchange. In February and March there was a decrease of 33, due mainly to the fact that a number of the Perth subscribers came within the area of the newly opened Cottesloe exchange. In April, there was an increase of eight subscribers; May also showed an increase of twelve; but June and July showed decreases of 28 and 62 respectively. In August, there was a decrease of 39. I attribute the decrease to the depression generally. Many large firms have been forced to economize; they have been watching closely every item of expenditure. Where possibly in busy years a firm required ten telephones, it may have decided that five lines would meet its requirements at the present time. Again, firms who have had extensions to employees have possibly adopted the practice of making one extension meet the requirements of two employees. There are people who are going out of business. Some firms have provided their managers with

private lines; these have been cut out. Where firms may have branches close to one another, they may have gone in for having an extension put in from one branch to the other, instead of adopting the usual method of communicating with one another through the automatic exchange. I attribute a good deal of the falling off in telephone subscribers to the close scrutiny which all sections of the community have been obliged to exercise in regard to expenditure. When we are dealing with the need for a telephone exchange, we follow a curve showing the extent of operations during the previous four or five years. At the present time the development is negative and to extend the curve would bring us down to nil. Everything depends on how soon the financial position will improve. The department will not establish an exchange at Maylands until an exchange is justified in the light of the financial position. Some of the existing subscribers to the Perth exchange who are living in the Maylands area will be suffering a disability, if no exchange is built at Maylands, because they are beyond the two-mile radius from the Perth exchange and the £5 10s. a year flat rate does not apply to them. They have to pay an additional rate per mile. The estimated revenue of £10 6s. a year from each subscriber to the Maylands exchange is based on the actual revenue obtained from the previous year's operations on the Perth exchange. That figure is supplied by the Chief Accountant. It certainly covers the subscribers who are outside, as well as inside, the two-mile radius. I have great faith in Western Australia. I am certain that its recovery will be quicker than that of any other State. All the business people seem to think that the position will improve in the near future. The site selected for the Maylands exchange is suitable from the departmental point of view. We are rather tied in the matter of sites for telephone exchanges. Unless the exchange is as near as possible to the actual telephone centre of an area, long lengths of costly cable have to be run to get to the points of congestion. To arrive at the telephone centre of an area, a development officer spots a map. He puts a dot down for each existing subscriber and for each possible subscriber. From the type of property occupied he estimates the type of house likely to be developed in the neighbourhood and calculates whether the occupants are likely to be potential subscribers to the telephone exchange. The dots on the map give you preliminary information as to where the greatest number of subscribers will be located, and that is the point where the heaviest cables will be required. It also gives us an idea as to where the exchange should be located. It is not necessary to have the building in a main street. If land is £1,000 a foot the saving in cables is rapidly lost by having the exchange situated on that costly land, even though it be the telephone centre. You therefore move to a site where the land is cheaper and you balance that against the extra cable cost. In Maylands there is a lot of low-lying ground. It would be disastrous for us to have a telephone exchange in a hollow where water is likely to lodge. It would have a disastrous effect on the plant. Damp brings about low insulation, which in its turn brings about over-heating between subscribers. Dampness also has a corrosive effect on the switching gear. It is therefore necessary to have the exchange on high ground. The site selected at Maylands is one of the highest points in the area. The land has been acquired within the last eighteen months at a cost of £450. It is not proposed to have an air-conditioning plant in the Maylands exchange. There is not a great amount of dust trouble there, but the big factor is that there is no salt in the air. At Cottesloe it was necessary

to have an air-conditioning plant because of the salt air in the locality affecting the switching plant and bringing about corrosion. Of course, at Maylands we shall have vacuum cleaners. An air-conditioning plant is an expensive item unless it is really necessary, but if we spend £5,000 on an exchange costing £41,000 in an area where corrosion is likely to take place, it is money well spent; because maintenance costs would otherwise be high and the exchange would deteriorate at an alarming rate, and in a comparatively few years would need to be renewed in every part. If we are wrong in our anticipations in regard to there being no need for an air-conditioning plant at Maylands, we can quite easily provide the necessary equipment. It will be quite an easy matter to add a small building at the side. It is true that there is an air-conditioning plant in the Perth exchange, two miles away from the proposed site of the Maylands exchange, but that exchange was built many years ago, and I do not think that if we were putting up a new Perth exchange we should provide an air-conditioning plant for it. The plant in the Perth exchange is serving a useful purpose because the trunk exchange requires a number of female operators. The plant is capable of keeping the exchange reasonably cool. At Maylands, there would be only three men at the outside, and it would not be necessary to provide an air-conditioning plant for their comfort, or to improve their efficiency. There is not in Perth the humidity found in Sydney. Immediately the air becomes damp in a humid atmosphere, there is a deposit on the switches which sets up low insulation, which is a serious source of trouble in Sydney. In Perth, humid days are few and far between. In Sydney, you may have a heavy shower of rain followed by brilliant sunshine, leaving you in a bath of vapour. That has a disastrous effect on an automatic telephone exchange. We do not have these conditions in Perth. We find the portable vacuum cleaners in use in the Perth and Cottesloe exchanges very satisfactory. At Cottesloe, we have also a power vacuum plant. It is easy to add one of these to an air-conditioning plant. A portable plant is handy in getting between the bays and switches.

15. *The Mr. Martin.* Where there is an air-conditioning plant it costs very little more to install fixed vacuum cleaners; but where the air-conditioning plant is not required, the portable system of vacuum cleaning is perfectly satisfactory. At the opening of the Maylands exchange the margin between the revenue and the total annual charges would be about £20, but in five years we estimate that the margin of revenue over total annual charges would be £650. If we attempted to serve the Maylands area from the Perth exchange we should be doing so at a loss. Instead of spending £41,000 in establishing an automatic exchange, we should be expending almost as much on the cable required to meet the needs of Maylands subscribers, and in addition to that we should be compelled to extend the existing Perth exchange to accommodate additional apparatus. It would be a very costly matter to put additional conduits in Murray-street. It is proposed to have an automatic telephone exchange at Victoria Park. The purpose is the same as that in regard to Maylands—to relieve the Perth exchange. It is 2½ miles from the Perth exchange to the end of the Causeway across the Swan. The department considered the question of having a combined exchange to serve South Perth and Victoria Park, but the geographical lay-out of that part of Perth would make the proposition a costly one. You have to run long distances in South Perth for one subscriber; there is no development in one direction.

We decided that it would be more economical to have two exchanges, one at South Perth and one at Victoria Park. It is also proposed ultimately, with normal development, to have an exchange at Nedlands—a satellite exchange from Cottesloe—and an automatic exchange for Subiaco-Leederville. Presently, something would have to be done at Midland Junction and Guildford. The Guildford telephone exchange would be situated closer to the city, because it is too close now to the Midland Junction exchange, but we should not touch either place for some time to come. The development does not justify any alteration in the two small exchanges already operating in those two areas. The real development in the neighbourhood of Perth is at Maylands and Nedlands. If the Subiaco-Leederville exchange were established it would cut off 900 to 1,000 subscribers from the Perth exchange. With the subscribers cut off and connected with Victoria Park and Maylands, Perth could carry on for at least another ten years.

16. To Mr. Gregory.—If the proposal to erect a telephone exchange at Maylands is not approved, it will have no effect at the present time, but if normal development is resumed a heavy capital expenditure on the Perth exchange would be involved. If approval is given for the work, plant could be ordered and installed in about eight months. It all depends upon the time of the year when the approval is given. If approval is given in January, we are then in a position to place orders for the delivery of the material from the new financial year's Estimates; if approval is given in September, there is no money on the Estimates for the work, and there is no possibility of getting any money until the 1st July of the following year. That explains why in some cases there has been a delay of from eighteen months to two years in getting an exchange established after approval has been given. Tenders for automatic equipment are called all over the world. Specifications for automatic equipment are standardized. It is a comparatively easy matter to draw up specifications; all we require to know is how many units are wanted. Quite a lot of the material can be obtained in Australia. A successful tenderer must guarantee that his apparatus will work satisfactorily with the apparatus in existing exchanges. We detail the type of plant we require. The annual cost of a manual exchange is very much higher than that of an automatic exchange. The departmental policy is not to make a profit, but to give service to the public. The item of £18,852 for exchange equipment, including that necessary at other exchanges, is low, because people who are already automatic subscribers would be connected with the Maylands exchange. The sub-station equipment already in existence can be used. It was different at Cottesloe. There the system had to be entirely changed from manual to automatic subscribers. It is uneconomical from an engineering point of view to utilize manual equipment where automatic apparatus can be installed. We do not establish an automatic exchange where there is an existing manual exchange until the economic life of the latter has passed. In my proposal to recondition manual equipment, it must be borne in mind that it is frequently impossible to get renewals because of the obsolete nature of the plant in use, and it is exceedingly uneconomical to install second-hand apparatus. From the Cottesloe exchange we recovered cords and plugs, but the jacks were absolutely worn out. The state of the exchange equipment is generally the deciding factor. A new exchange is installed when the existing exchange has reached the end of its useful life. If there is in Melbourne or Sydney manual gear available, it might be possible to

make use of it at Maylands, but the general development of telephonic-engineering practice to-day all tends to the use of the automatic, because of the low cost of maintenance. If there is sufficient manual plant available that would give eight or nine years' service for Maylands, and possibly effect a saving of £18,000, I should be prepared to make use of it, but I cannot think of any manual exchange where that plant is likely to be available. Hawthorn is the only manual exchange in Melbourne which might possibly be in a condition to warrant its installation elsewhere. I think that there are 210 subscribers in the Victoria Park district outside the two-mile radius from the Perth exchange. If we were to establish a temporary manual exchange at Maylands, making use of manual plant made available from some area in which an automatic exchange has been installed, it would be necessary for us to change over automatic subscribers to manual exchange subscribers. We do not need a Maylands exchange at the present moment, at any rate not until things become normal again, but rather than have no exchange at all I would have a manual exchange to provide for the development that must come about with the reversion to normal conditions. The public does not regard a manual exchange as being as good as an automatic exchange. The Melbourne and Central Adelaide exchanges, although manual, are giving remarkably good service, but with manual exchanges the maintenance costs rise because you must have many additional operators. A manual exchange requires far more room space than an automatic. You must have additional retiring rooms and lavatory accommodation for the operators. A manual exchange fitted with good material ought to last for ten or twelve years, but if you install manual apparatus it makes it necessary to get a new site for a new building in which automatic apparatus is subsequently installed. To make the cut-over from a manual equipment to an automatic takes a long time. Thousands of wires have to be identified and soldered on to tags. That work takes two or three months. It would pay to have another building for a temporary manual equipment. There is a tremendous amount of noise, which interferes with the telephone operators, when automatic equipment is being installed in an exchange where the operators are still carrying on with the manual equipment. Our costs are based on the existing system which has been extended from information obtained over a period of years.

(Taken at Perth.)

WEDNESDAY, 10TH SEPTEMBER, 1930.

Present:

(SECTIONAL COMMITTEE.)

Mr. Lacey, Chairman;

Mr. Curtin | Mr. Gregory.

Sidney Lawrence Monaghan, Superintendent of the Telephone Branch, Western Australia, sworn and examined.

17. To the Chairman.—The proposal to erect an automatic telephone exchange at Maylands is an engineering one which we were prepared to support as originally submitted, but such a change has come over the growth, or really the decrease of telephone applications within the last month or so, that we are now of opinion that the matter should be held up in-

definitely. The decrease in applications for telephones set in early this year. We are not getting the growth we could reasonably have anticipated. The following figures show the telephone development:

TELEPHONE DEVELOPMENT—WESTERN AUSTRALIA.

Year.	Number of lines connected (State).	Actual Increase.	Percentage Increase.	Number of lines connected (Metropolitan).	Actual Increase.	Number of lines connected (Perth Exchanges).	Actual Increase.	Percentage Increase.
As at the 30th June								
1925.	14,607	1,728	..	8,694	467	5,138	..	..
1926.	16,398	1,731	11.8	8,907	543	5,470	338	6.5
1927.	18,232	1,834	11.1	9,389	762	5,983	487	8.8
1928.	20,659	1,807	9.9	10,337	908	6,937	974	11.3
1929.	21,662	1,222	7.4	11,260	913	7,338	916	12.2
1930.	22,558	906	4.6	11,859	600	7,599	346	4.7
At present time 31st August, 1930	22,303	..	..	11,717	..	7,498	..	..

Present capacity Perth Exchange, 8,000 lines.  
Ultimate capacity Perth Exchange, 8,900 lines.  
Work is now in progress to provide for the ultimate capacity.

The actual number of lines connected with the Perth exchange on the 31st August last was 7,498, compared with 7,659 on the 30th June, showing a decrease of 101 or 1.3 per cent. Under ordinary circumstances, the subscribers should have increased by at least 300; thus we have lost 300 plus the actual decrease of 101. The Maylands proposal was to relieve the Perth exchange, which was reaching its full capacity. It would have done so within eighteen months, but we now suggest that the proposition should be allowed to stand over judiciously because the Perth exchange will carry us over the next five years. The capacity of the Perth exchange is 8,900 lines, but several hundred of these are necessary for testing lines and for apparatus purposes. For the next five years, 8,000 lines on the Perth exchange will take care of Maylands and a few other areas we had in mind to serve with automatic exchanges. There is always a certain amount of wastage on a telephone exchange, but we have been so keen that we have been able to induce persons to retain their telephones. We have been successful in about 20 per cent of these cases. I should say that the present decline in numbers is due to the adverse trading position. Many people are putting their houses in order. Some business people who were running several lines have had one or two disconnected temporarily, but with the wonderful harvest we are to have within the next few months, I am prepared to say that it will be necessary for all the merchants who gave up some of their lines to have them re-installed. I do not think that with a return to normal conditions the rise in applications for telephones will be in the same proportion that we have had in the past. Our increase has always been greater than the increase in population because the department has engaged in a campaign of placing before the public the usefulness of the telephone service. I think the point of saturation has been reached in Perth in respect of people who consider the telephone is a necessary adjunct to the home, but I think we shall maintain an increase of about 6 or 7 per cent. If there is an immediate reversion to the normal increase, the Perth exchange will reach saturation point in from eighteen months to two years. With a return to normal conditions, Victoria Park will be the first automatic exchange to be erected, particularly because we desire to utilize that exchange as a trunk line exchange, thus leaving the Murray-street building wholly available for local switching apparatus. Victoria Park will also be utilized for the purpose of improving transmission from the country districts. The number of subscribers in the Victoria Park district is now 300, of whom about 240 are outside the two-mile radius from the Perth exchange. When the Victoria Park exchange is opened it will add another year to the capacity of the Perth exchange to take new subscribers. About eighteen

months ago subscribers in the Maylands area asked for a local exchange, with a view to a reduction in their rentals, but since the depression has come about there has been no demand for that. The people here are most loyal; they stand by their public utilities in every possible way. I presume that some of them think it is useless at the present moment to press for a separate exchange at Maylands. The department, in the matter of telephones, is trading without profit; it is a public utility, all it can sell is service. On the figures, at the opening of a Maylands exchange, the expenses would be covered by revenue to the extent of about £80 a year. After five years, however, the profit would be about £650. If a manual system were obtained from one of the suburbs of Sydney or Melbourne and erected at Maylands, our working expenses would be increased. The exchange would need to be staffed with operators and supervisors, and the cost would be an additional £2,000 a year, which is avoided by having an automatic exchange. It would also necessitate an alteration of the outside equipment. Although part of it would serve the automatic system, when ultimately built, it would be an expense which at the moment could reasonably be avoided. At any rate, it would not be an economical proposition. No great disability would result from postponing the Maylands proposal for five years. The public would not suffer, and, if the circumstances required it, the department could approach the Government with another proposal for the erection of an exchange at Maylands. The subscribers likely to be applying from the Maylands area could be provided for by the Perth exchange for the next five years, particularly if the Victoria Park exchange were built. If the Maylands exchange were built, the revenue from the existing subscribers in the Maylands area would be slightly less. Some of the subscribers in the area are now paying 47 1/2d a year instead of 57s. 6d. I think there are 324 subscribers in Maylands who are paying the additional rental. The policy is to establish exchanges in districts as soon as development justifies their erection. But it is all a question of economies. The man who buys land cheaply can possibly afford to pay a greater rental for his telephone than the man who lives within the two-mile radius of an existing exchange and pays a greater price for his house site. If we are to continue bringing Maylands subscribers into the Perth exchange, it means a heavier expenditure on cables, but development is at a standstill for the moment. A stage arrives when it pays the department to establish a new exchange and avoid the expense of running cables into a central exchange. When that stage is reached, the department will call attention to it. We are watching the position from day to day.

18. To Mr. Gregory.—The apparatus within the exchange and the line construction outside are the main

items of cost in an automatic exchange. It was not until 1912, when a start was made in the Postal Department to bring out a balance-sheet, that the financial position of the department was understood. It is nearly a long day since there has been a profit on telephones. There is only one satisfactory telephone system, and that is the automatic. Once you adopt the manual system you begin to increase operating expenses. The automatic system does very well in the metropolitan area. The profits made in metropolitan areas enable the department to keep the country services going. I know that Mr. Hesketh expected to be able to reduce the telephone rates by £1 a year, and I believe that the reduction would have been brought about if his programme had been carried out, but no chief engineer in the Postal Department has been able to carry out to the full any programme he has laid down.

19. *To Mr. Curtin.*—It is not an economic proposition to bring cables long distances, when you can get the wires aggregated to a certain point and have means of communication between those points. Instead of having all the subscribers' lines coming into a given point, you aggregate them at certain points and have a few connecting lines. That is how you have the various exchanges in a network of automatic exchanges. A lot of the cables now used to provide connections with the Perth exchange for Maylands and Victoria Park subscribers would remain in position to provide ultimate services between the Victoria Park and Maylands exchanges and the Perth exchange. Those lines are now serving a useful purpose. The real point arises when it becomes necessary to provide additional cables for subscribers in the Victoria Park and Maylands districts. It may then be more economical to establish new exchanges. The subscriber in Victoria Park or Maylands gets no more extensive circuit of connections than the man in Murray-street, Perth, but it has been more sought to provide the service for him. The method adopted by the department, that of having a two-mile radius, is a system which applies throughout the world. We charge 10s. for each additional quarter mile in the metropolitan area, and 7s. 6d. for each additional quarter mile in country districts. It is the policy of the Government to develop country districts, but we must also remember that the man in the metropolitan area can communicate with so many thousand points, whereas the man on a country exchange can communicate with a limited number of points only. The annual rental paid by the subscriber is in proportion to the number of subscribers one can communicate with. I understand that the estimated total annual charges on the proposed Maylands exchange includes interest and depreciation. I would certainly think that the telephone system should be made self-supporting and that it should eventually cover capital costs. That, however, is a matter for the central administration.

(Taken at Perth.)

THURSDAY, 11TH SEPTEMBER, 1930.

Present:

(SECTIONAL COMMITTEE.)

Mr. Lacey, Chairman;

Mr. Curtin | Mr. Gregory.

Walter Ernest Stockdale, Secretary, Perth Road Board, sworn and examined.

20. *To the Chairman.*—The proposal to establish an automatic telephone exchange at Maylands has not come officially before the Perth Road Board. The Lugewood, Lawley and Peninsula wards, with a population of approximately 15,676, come within the Perth Road district. Telephone subscribers in these wards are now connected with the Perth automatic telephone exchange.

The Perth Road Board has received no complaints from the public that the existing facilities are not adequate. From 1924 to 1929, inclusive, the Perth Board has issued 1,183 building permits for new houses and shops. That represents a very big increase in population. The district is undoubtedly a progressive one, and the increase in population is likely to be maintained when we get over the depression from which Australia is now suffering. The residents of the Lawley ward are largely professional and business men who would probably have telephones in their homes. Lugewood is most of a mixed suburb, the population consisting partly of business men and partly of civil servants, clerks and workers on low salaries. The Peninsula is more of a working man's ward, and there is not likely to be a big demand for private telephones in that locality. The demand for telephones in the Lugewood ward is moderate. I am acquainted with the proposed site of the exchange. I think it is very central for the whole of the three wards. The district in the neighbourhood of the exchange is well reticulated. The building as designed would be in keeping with the type of residences in the neighbourhood. I can see no objection from the Road Board point of view to having the exchange on the site proposed. It is in a quiet area. The local fire brigade station is a little less than a mile away. The site is about 2½ miles from the Perth Fire Brigade station. During the summer months the hilly sections around Perth have a low water pressure in the mains. The area in which the exchange would be located is not served. At the present rate of progress I think it would take about 50 years for it to be served. The Perth Road Board is really out of touch with the requirements of the public in regard to desire on the part of the residents of Maylands for a telephone. There have been no representations made to the board in regard to the matter. In the absence of complaints I should say that the people in the area are already well catered for.

21. *To Mr. Curtin.*—If anything goes wrong the board is bound to hear of complaints. Beaufort-street is the shopping area of Maylands, and as the district extends so will the business places and require telephones. As the district extends there should be an increase in the number of medical men, but there would not be too many of them. We have had no complaint from the Maylands area about lack of postal facilities generally. A fair price to pay for the site on which the exchange is proposed to be erected would be between £250 and £350.

22. *To Mr. Gregory.*—I was not aware that a subscriber more than two miles from an exchange has to pay an increased rental. With reasonable telephones charges nearly every section of the community, even workers, would have telephones being made. I am sure there would be an increase in the demand for telephones in the Maylands area. A brick building with a tiled roof would be an ornament to the district.

George Sydney Cook, Works Director for Western Australia, sworn and examined.

23. *To the Chairman.*—The plans for the proposed automatic telephone exchange at Maylands were prepared by the central office of the Works Department, in conjunction with the central office of the Postmaster-General's Department. The estimate of £4,200 for the building was prepared by the principal designing architect of the Works Department. I have taken out my figures and come to the conclusion that, with a tiled roof, the building should cost £4,208. I could not say that the building costs are lower in Western Australia to-day than they are in Melbourne or Sydney. Two years ago,

giving evidence before this committee, I expressed the opinion that they were, but I have not been in touch with the eastern States for some time, and I do not know that I am in a position to express an opinion at the present time. The eastern States, however, have experienced the depression longer than Western Australia has. It has really only been felt here within the last six months. That factor would possibly bring down the cost in the eastern States. In conversation with builders outside I gather that building costs are now lower in Western Australia than they have been in the past. The other day a building was quoted at a price which was 10 per cent. less than that quoted for a similar building last year. Possibly there is a desire on the part of builders to keep their staffs together. So far as I can see, there has been no great reduction in the cost of material with the exception perhaps of cement. In one or two cases there has been an actual increase in price. I believe that imported galvanized iron has gone up in price, but Australian iron is quoted at a price equivalent to that which was obtained for it about two years ago. In Perth it is £1 a ton less than that of imported iron.

As to the ceiling joists and roofing timbers. We have allowed for steel principals. The rafters that carry the tiles would necessarily be a timber. A septic tank would be installed with a soak well. The estimated cost is £25. A 24-in. water main runs along Carrington-street. The electric lighting mains are handy to the site. The fire brigade chief agrees that there is an adequate water pressure available to deal with a possible outbreak of fire. The fire risk is confined almost wholly to a risk from outside, and that is comparatively small. I do not think there would be any great danger if wired-glass windows were used. The only possible danger would come from the adjoining houses in Central-avenue, and that would be about 10 feet away from the exchange. Not more than £2 would be saved by having plain glass instead of wire reinforced glass on the windows facing the adjoining premises.

24. *To Mr. Gregory.* The walls would be of brickwork in cement up to floor level, and lime mortar thereafter. Cement bands would relieve the brickwork. Otherwise the building would rely principally for its architectural effect on the proportioning of piers and openings. The buildings immediately surrounding the site have a greater proportion of iron roofs than the site has. As the proposed exchange would be visible from a great distance, and be a prominent feature, I think that a tiled roof is justified. It would help the design of the building, and increase its attractiveness. Internally the walls would be cement rendered with a plaster floor above dado height. The ceilings would be of finished above dado height. The ceilings would be asbestos cement sheets, and in the switch-room would be 10 ft. 6 in. above floor and in all other rooms would be 10 ft. 6 in. The concrete floor of the switch-room would be covered with tile-slab to enable constant cleaning to prevent accumulation of dust. There are several flooring preparations on the market, and during the last sixteen years telephone exchanges have been floored with various preparations, but recently the Postmaster-General's Department in conjunction with the Works Department has returned to linoleum covering. I think that the parapet would extend all round the building. If it did not, the eaves would be protected by asbestos sheets. The cost about £4 5s. in Perth, and galvanized iron £3. There are 28 squares in the proposed building. I could not justify the use of wired glass on the street frontage. The site is, particularly fortunate for the establishment of a septic tank with a soak well. Some of the municipal authorities insist upon the provision of septic tanks, particularly Cottesloe and South Perth; the latter in regard

to new buildings. I understand that it is proposed to clean the exchange with an ordinary portable vacuum cleaner. The entrance will be at the side of the building to prevent dust getting into the switch-room. There is always a risk of water dripping on the machinery through lantern lights on the roof, but they can be made watertight. I should expect some reduction, but not much on the estimated cost of the building if tenders were invited for its construction under present conditions. I should expect a bigger reduction in smaller buildings, because cottages are principally put up by builders who work for themselves, sometimes assisted by their sons. These men set a good deal of their work by sub-contract. It is possible that even if a contract were let for the building of the exchange, strenuous efforts would be made to secure sub-contractors, and keep the work as low as possible. From what I can hear, the price of brickwork is being cut. In a building of this type I ought to be able to do the work by day labour as cheaply and as efficiently as I could have it done by contract.

25. *To Mr. Curtin.*—My department carried out the negotiations for the acquisition of the site after it had been selected by the officers of the Postmaster-General's Department. I would not like to say without consulting my files that an actual offer was made to the owner of the ground. I think the price, £450, was a good one. When the owner was approached he was very loath to let the block go. He maintained that he wanted to build on it. The department was instructed to let the Postal Department decide whether or not the site could be obtained. At least a dozen other sites were inspected, but when consideration was given to the cost of the extra cabling, and in some instances to the extra cost of waterproofing the cable ways, it was decided that it was a more economical proposition to acquire the site selected at £450. It is a good block of land for a residence, and if I had it I should be very loath to part with it. When men have picked sites, an extra pound or two a foot will not tempt them to sell. I had no knowledge of the road board valuation of the site, and I do not know whether the outside valuator took it into consideration when he made his valuation. Proceedings did not reach the stage of arbitration. Once a site had been selected and I have reported on it as to its suitability from the point of view of building on it, and the Postal Department has reported on it with a view to the relative cable costs, the reports go to the Director of Land and Surveys in Canberra. His next move is to obtain from a sworn valuer in Perth a valuation of the block. My next knowledge of the matter is that I have been told that the land has been acquired at a certain price, and that it was well worth that price. The other blocks available were well worth obtaining. The other blocks available were too low-lying or on steep slopes. There was no alternative open to the department but to pay the £450. The other sites would have involved extra cable costs and extra provision for waterproofing.

(Taken at Perth.)

FRIDAY, 12TH SEPTEMBER, 1930.

Present:

(SECTIONAL COMMITTEE.)

Mr. Lacey, Chairman;

Mr. Curtin | Mr. Gregory.

Edward Arthur Parker Timms, Secretary, Bayswater Road Board, sworn and examined.

26. *To the Chairman.*—As there are many people in the Bayswater-road district who are interested in telephone communication, the Bayswater Road Board has

asked me to make representations to this committee in regard to the proposal to erect an automatic telephone exchange at Maylands. The area of the Bayswater-road district is 102 square miles, the unimproved value, £185,220, the population, 3,875, and the number of dwellings, 1,002; factories, 5; and business places 30. Of these business places only ten have the telephone. When others have heard of the rent they are likely to be charged for connexion to the Perth exchange, that has been the end of their application for connexion with that exchange. In May 1928, when I required my telephone transferred from Subiaco to Bayswater, I was advised that my increased rental would be £4 10s. a year. I promptly asked what it would cost me to be connected with the Guildford exchange, and finding that it would be £1 10s. less, I was connected with that exchange. I believe that the Cresco factory is the only other subscriber in the Bayswater district connected with the Guildford exchange. My residence is within a quarter of a mile of the Bayswater Road Board office, yet I pay £1 10s. a year less for my telephone than I paid for my office telephone. The proposed automatic exchange at Maylands would bring my office well within the two miles radius. The Cresco factory would not be within that radius. There would be very few people in the Bayswater area not within the two miles radius of the Maylands exchange with the exception, of course, of the outer limits of the district. I have not been able to speak in regard to this matter to other than business people, but I am convinced that if an exchange was established closer to Bayswater than the Perth exchange, which of course would involve paying a smaller annual rental, the number of business people connected with the exchange would be doubled. Half a dozen of them have been discussing the matter quite recently at a meeting of the Progress Association, and they said quite definitely that they would have telephones if there was an exchange in Maylands. I am quite convinced that the number of telephone subscribers in the Bayswater district would be doubled. One reason that keeps people in our district from connecting with the Perth exchange is the overcrowding apparent particularly between 9 and 10 o'clock in the morning. I do not think that any hardship would be imposed on a large section of the community by postponing the establishment of an exchange at Maylands. I get better service through the Guildford exchange between 9 and 10 o'clock in the morning than I get through my office telephone which is connected with the Perth exchange. Bayswater is practically a working-man's suburb. I do not think that one-third of the residents would be telephone subscribers.

27. To Mr. Curtin.—When the Bayswater Progress Association heard that this committee was coming to Western Australia to make this investigation it held a meeting and supported a request to the Bayswater Roads Board that representation should be made by the board to this committee. The request came before the board on Wednesday night, and I was deputed to seek an opportunity to give evidence. It is the opinion of the Bayswater residents that the exchange should be built, but of course they fully appreciate the general financial position. I suppose the overloading in the early morning is due to the fact that people have just opened their mails. I put it down mostly to the fact that business people desire to get rid of their telephone calls before settling down to the routine work of the day. I have no complaint to make in regard to the working of the manual exchange at Guildford except that there is only one man on duty between 9 o'clock at night and 9 o'clock in the morning. Bayswater subscribers are not more numerous because of the high cost of being connected with the Perth exchange. It is not generally understood that they can get connected

with the Guildford exchange. If they were connected with the Guildford exchange, the disability would disappear to a certain extent, but there would be the other disability of being dependent on a manual exchange. On an automatic exchange one gets in touch with the person one is calling up without delay. Many people do fear the delays that take place when they are connected with manual exchanges. My board feels that the establishment of a Maylands exchange would be followed by a great increase in the number of Bayswater subscribers.

28. To Mr. Gregory.—My home is situated four miles 25 chains from the central exchange. I am quite close to the Road Board office, whose telephone rental last year was £11 10s. If the telephone rental were lower I am sure that phones would be installed in a lot of the better class workers' houses. The following statistics are interesting:—

#### BUILDING ACTIVITIES—BAYSWATER DISTRICT.

Permits. 1927-28.		Value.
60 permits for dwellings	.. ..	£ 31,074
Cresco Fertilizers Factory	.. ..	20,000
59 additions	.. ..	3,451
Total	.. ..	54,525
Permits. 1928-29.		Value.
74 permits for dwellings	.. ..	50,079
83 additions	.. ..	2,778
1 addition to factory	.. ..	4,180
Total	.. ..	57,037
Permits. 1929-30.		Value.
82 permits for dwellings	.. ..	46,204
108 additions	.. ..	3,307
Total	.. ..	50,010

The growth of houses is 50 per cent. weatherboard and 50 per cent. brick. Practically the whole of the Bayswater district, as settled, would be within two miles of the proposed exchange. Some of the people in the area are three miles from the Guildford exchange. The greatest development is adjoining the Perth Road Board district in the Maylands direction. There is plenty of room for development in Bayswater because Maylands is now practically filled up.

(Taken at Melbourne.)

MONDAY, 3rd NOVEMBER, 1930.

Mr. Lacey, Chairman;

Senator Dooley	Mr. Gregory
Senator Reid	Mr. Holford
Senator Smapton	Mr. Long
Mr. M. Cameron	

John Murray Crawford, Chief Engineer, Postmaster-General's Department, Melbourne, recalled and further examined.

29. To the Chairman.—I am aware of the fact that since my last appearance before this committee, a sectional committee took evidence in Perth in regard to the proposal to install an automatic telephone exchange at Maylands; and your secretary was good enough to send me a proof copy of the evidence taken there. I agree that from the figures now available as to the falling off in the number of telephone subscribers to the Central Exchange, Perth, there is not

now the same urgency for the Maylands exchange, which was required partly to relieve the Central Exchange. I gather from a perusal of the evidence sent me that one of the proposals made was, that in order to give greater facilities to residents of Maylands, and relieve them of the higher telephone charges under which some of them now labour, it might be possible to install a manual exchange with apparatus thrown spare from another centre, or a small unit of an automatic exchange. I have therefore prepared the following short statement dealing with that suggestion:—

#### MAYLANDS PROPOSED TEMPORARY EXCHANGE.

I understand the committee desires the department to consider the practicability of establishing a temporary exchange on the Maylands site with a view to serving the Maylands area until such time as the financial situation eases and the permanent exchange can be erected. I therefore submit the following statement in which the economic position is broadly examined, for the committee's consideration.

As indicated in my former evidence, the necessity for immediately proceeding with the erection of the Maylands exchange is not now so pronounced as it was when the statement was prepared and forwarded to the committee, and the suggestion which I then made was that, if the committee would approve the proposal, the department would proceed with the scheme as soon as the development figures justified this course. In such circumstances, we would, of course, have regard to the time which necessarily elapses between proceeding with the proposal and the cutting into service of the exchange.

It will be seen from the following statement of development that in the Maylands area itself, only 61 additional subscribers have been obtained during the last twelve months, and during the last six months only 37. The proposal for temporary accommodation could, therefore, be confined to a 100-line unit which would meet development at Maylands for approximately two years.

#### STATEMENT OF DEVELOPMENT.

The development for the past twelve months in the Perth Central and Maylands areas is as follows:—

Month.	Perth Central, including Maylands.	Maylands area only.
September, 1929	7,413	891
October, 1929	7,467	808
November, 1929	7,430	900
December, 1929	7,383	915
January, 1930	7,612	923
February, 1930	7,603	925
March, 1930	7,607	926
April, 1930	7,618	932
May, 1930	7,627	937
June, 1930	7,599	933
July, 1930	7,537	938
August, 1930	7,498	947
September, 1930	7,508	938
Net increase over twelve months	93	61
Position for nine months of 1930	76	37
	(decrease)	(increase)

There are sufficient cable pairs available to meet development for some three or four years at the present rate of increase, and probably for two or more years, even if the financial position improves and the normal rate of development is obtained.

To put in a temporary arrangement, we would require, assuming an automatic exchange was erected, a building which could later be used as accommodation for linemen. The cost of this would be about £300. Sufficient spare automatic equipment is held in Perth, but no battery of charging equipment is available. These would have to be purchased. The installation could be done by permanent mechanics. The same sort of accommodation would be required if a temporary manual exchange were put in, but in this case, additional lavatory accommodation would be required, and difficulty would be experienced in having one female telephonist on the site alone. There would also be no supervision of her work.

The heaviest cost of a temporary arrangement would be the diversion of the line plant. The estimated cost would be approximately £1,850, of which the material would be nearly £1,000. The value of the cable on recovery would be

about £600. If automatic equipment were temporarily installed, then, including the building and the diversion costs plus the equipment, the total is estimated to exceed £2,500. If a magnet installation were installed, then, including similarly the building and line diversion costs, the cost would be £2,750.

It is difficult to give any close statement of annual charges, but a rough approximation has been made based on the annual charges of the automatic as £330 and the manual, £500. Of the latter figures, operating charges amount for approximately £260.

A very important factor in considering any temporary arrangement is the loss of revenue from existing subscribers. This is estimated (vide accountant's certificate, page 3 of proof copy of evidence) as 11s. 2d. per line, and, as 1648 lines are connected, this amounts to approximately £569 per annum.

There is no essential difference between the Maylands position and several other districts in the Commonwealth. For example, at Preston, in the Melbourne Metropolitan District, an automatic exchange, when erected, would operate to reduce the rentals of the existing Preston subscribers. Similarly, Pascoe Vale, another Melbourne suburb, could be cited, but the department's policy hitherto has been that any justification exists for the erection of a permanent automatic exchange, these isolated areas suffer the disability of a higher rental charge.

Summarized, it may be stated that the minimum loss on a temporary exchange would be in the first year of an automatic, £600, approximately, and on a magnet, £770; and for the second year it would be £300 on an automatic, and £200 on a manual.

It will therefore be seen that in the present state of the national finances, we would not be justified in establishing a temporary exchange either of the automatic or the manual type.

I know of no case in the Maylands area where application has been made for a telephone, and service refused. There may be, and doubtless are, cases in large centres like Sydney and suburbs where we have not been able, immediately to give service, probably because of the existing cables being taken up—but such service would always be given within a reasonable time. The policy of the department is to give service wherever possible. No application for service in the Maylands area has been refused, and none will be, even if this proposal is not approved. If the proposed installation be delayed for a year or two, the only factor to be considered is that some residents in the outlying portions of the district may be called upon to pay a higher rental than the usual £5 10s. per annum; they may even have to go as high as £6 10s. Obviously, the lower the telephone rental the more applications for telephones we are likely to get; but I cannot conceive of any one allowing the small higher rental to stop them having a telephone if they wanted the service. A man's water rate may easily go up £2 a year, and he still has the water, and I do not think the difference between a rental of £5 10s. per annum and £6 10s. per annum would operate to prevent any large number of persons from having a telephone.

30. To Mr. Gregory.—You mention having heard of complaints from residents of Maylands and Victoria Park as to the higher telephone charges in those areas. If they were very much higher they might possibly have an effect on the number of telephones installed, but I doubt if a difference of £1 or £2 a year would make much difference. There are no cases in the Maylands area where one man would be paying a rental of £5 10s., and his next door neighbour would be paying £6 10s., because all those outside the two-mile radius would be paying the extra rate. Beyond that, charges are made on a radial basis, and it may be that you might have an exceptional case where one man is paying 10s. more than another—but he would have to be some distance further away from the exchange. It might be thought possible to select the site for the automatic exchange and save expense by installing a manual exchange as a temporary measure, until it is realized that you would have to run your cables to that point from all parts of the district. Even if you could hire a residence adjacent, you would still have

to divert your cables. In the statement I submitted, I was taking the most favorable case; as we have an area of 160 feet by 66 feet, we could place a line-man's shed at the back, or somewhere close—certainly closer than any adjacent residence—and later on we could utilize that building for business's quarters. In my statement, I have presumed a rather better case than the one you set out, and still the wastage is very high. We were not proposing to install the automatic exchange until we have to. There are 260 spare pairs in the existing cables, therefore, for some time to come, we can still give service. When we have to lay extra cables it will be cheaper to put in an automatic exchange. If you put in a manual service, the losses will be heavier than in the case of an automatic as I have shown. An additional item of £300 would have to be incurred annually for operating costs which would not be necessary if an automatic exchange were installed. If we wanted to provide temporary accommodation, it would be cheaper to put in a 100 or 200 line unit. We would not even have to purchase that equipment as we are actually holding those in Perth. An extra 100 lines would probably carry us on for two years. We would not disturb existing subscribers, but leave them connected to Perth. In that case, however, we would immediately experience a drop in revenue, as we could not charge those subscribers connected to Perth a higher rental than those who would be connected to the local exchange. I think you may dismiss, at once, the idea of installing a temporary manual exchange, as we would have to change all the existing apparatus. I gave very careful consideration to the advisability of putting in a temporary automatic exchange, but the extra cost of the cabling, and the immediate loss of revenue, make it undesirable. I think it would be far better to wait until we actually need the exchange and install a permanent one. As previously mentioned, I only recommend, at the present time, that if the committee is satisfied that, under normal circumstances, the exchange is warranted, they approve of the work, and the department will undertake not to go on with it until it is economically justified. It really does not matter to the residents of Maylands whether they are connected to Perth or to a temporary exchange, so long as they get service, but we are anxious to give them a permanent exchange as soon as we possibly can.

31. *To Senator Reid.*—I mentioned that Preston and Pascoe Vale, Victoria, are similarly situated, and that applies also to some of the suburbs of Sydney and other places; so that the Maylands residents are simply suffering from this disadvantage in common with other centres. The subscribers in the Maylands area are partly within and partly without the two-mile radius; I cannot say whether the greater number is within or without that radius. The increase in the number of subscribers has been 61 in twelve months and 37 in the last nine months—that is, about four per month. Within a two-mile radius of the central exchange their rental is at the usual rate of £5 10s. per annum. For every additional quarter mile an extra charge of 10s. per annum is made in the metropolitan area, and 7s. 6d. in the country. Taking the situation as it exists at present, the departmental view is that the project should be delayed, and the department will undertake to do the best it can for the district, as indeed it does in all other cases.

32. *To Mr. Holloway.*—In the metropolitan area telephones are installed on request, even if we know they will be a distinct loss, because we cannot differentiate. All metropolitan areas extend for a radius of ten miles, but we generally allow half a mile beyond that. Outside that we will still connect to exchanges within the metropolitan area if required. There is an advantage in being

connected to the metropolitan area, because a subscriber has continuous service, and access to perhaps 50,000 other subscribers. For instance, a Blackburn subscriber would have to pay 3d. for a trunk line call to Melbourne, but if connected to Box Hill, although he would be called upon to pay a higher rental, he could get his calls for 11d. If a Blackburn subscriber so desires we might connect him to Box Hill if he agrees to pay the higher rental. Cases you mention like Fern Tree Gully district, where the department has refused to establish a telephone until a number of persons have agreed to become subscribers to prevent loss to the department, operates only in country districts. Fern Tree Gully is about 24 miles away, and is regarded as the country. There is no doubt that in future the rural automatic system will meet cases like that. Under that system, if we get a group of subscribers, we would give continuous service as in the metropolitan area; but the present state of the finances does not admit of a rapid extension of the Rural Automatic Systems. I am aware of the fact that thousands of people in the country are wanting telephones, but I have been referring to the metropolitan area.

33. *To Mr. M. Cameron.*—I cannot say whether subscribers in the metropolitan areas are still cancelling their telephones at the same rate as earlier in the year. I have not yet seen the October figures, but from what I have gathered from some of the returns, I do not think October will be as bad as September. September was disappointing. Perhaps the figures I have given you for Perth may be taken as fairly representative of the Commonwealth. In June, we had 7,599 subscribers, and in July, the number dropped to 7,537. From August to September, we increased from 7,498 to 7,508. I have not any later figures than that, but perhaps this month we will do better. We find that telephones are being cancelled more by business houses than by the residential subscriber. Take the figures I have given as regards Maylands subscribers: In May, we had 937; from May to June, we lost 2; from June to July, we increased 3; from July to August, we increased 9; from August to September, we increased 11. Although I do not suggest that holds throughout the Commonwealth, I regard it as indicative. The business houses to-day have to look at every penny, and as business declines they may, in cases where they have, say, five telephones, decide to make three do. In other cases, we find that they utilize extensions now instead of having extra telephones. "Every mickle makes a mickle", and in the aggregate we get a large decrease. Of course, we still get new subscribers; in Melbourne, for instance, we may cut off 500 lines, but get 495 new subscribers, so that our net loss is only five.

34. *To Mr. Long.*—Those Maylands subscribers within the two-mile radius are at present all catered for from the Perth exchange. If there is any call for more lines, under present conditions we can connect to Perth indefinitely. Under normal circumstances, we could give service for, say, two or three years, as we have 260 spares. Even if we revert to normal conditions very quickly we cannot well be caught, because a building could be erected in nine months and equipment obtained in six months. If this proposal be delayed for three years, it will prevent some of the subscribers obtaining service for a rental of £5 10s. per annum—they may have to pay a little more rental.

35. *To Mr. Gregory.*—When this proposal was submitted, we were nearly up to our maximum capacity at Perth, but we are better off now than we were twelve months ago. Perth exchange has a capacity of 3,900, or, say, 8,000 effective lines; we still have available 260 pairs of cable, so could still serve another 500 applicants. When we use up those spares, however, it

will be necessary to run extra cables. No inconvenience would be caused by not having the Maylands exchange for another two or three years. We estimate the cost of connecting a subscriber beyond the two-mile limit at 10s. extra per annum for each quarter mile. Sometimes, of course, we may have actually to incur an expenditure of £300 or £400 to give that service; but, by and large, the extra charge of 10s. extra per annum per quarter mile covers our cost.

36. *To Senator Dooley.*—We actually have on hand sufficient apparatus for a small automatic installation at Maylands; it was ordered for Perth but we have not needed it. By this time, we expected to have 100 or 200 more subscribers—we never expected 100 less. The value of the equipment we are holding in Perth would be about £2,000. We are not in that position in all the other States; it does, however, apply to Sydney, because we are holding apparatus in readiness for Jodgecliff, which it has been decided to postpone for the present. Like many other people, we were unable to forecast what happened. The apparatus we hold would have been ordered about December last or January of this year. We have to order in advance because it takes four or five months to get delivery. The automatic equipment was purchased in England; there is no Australian automatic material manufactured. We give preference to Australian material if suitable and available, and we get a lot of material here for manual equipment—switchboards, &c., but there has been no effort to make automatic equipment locally.

37. *To the Chairman.*—If the committee in its wisdom agrees in principle to the installation of the Maylands exchange, and entrusts the department with approval to proceed with the work when it considers fit, we will undertake not to commence until the proposition is economically justified, but at the same time will see that applicants are not held up for service.

38. *To Mr. Gregory.*—If the committee reject the proposal now, it will mean that we will have to bring it up again at a later date. A considerable number of business houses and residents too have cancelled their telephones, when improvement takes place it might happen that they will decide to put their telephones back, and if there is a sudden demand for a large number we might be caught on the hop. It takes some time to submit a proposal, have it inquired into, and reported upon by the committee and passed by Parliament. I consider we were justified in submitting the proposal when we did, because if the normal rate of applications for telephones had continued, Perth exchange could have been given service only until next year.

39. *To the Chairman.*—If we get back to normal within twelve months, we would have to act very quickly, otherwise the people would not be able to get service. My view is that the department should be entrusted with the authority to proceed with this exchange as soon as ever it is considered necessary.