

1925.



THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA brought up  
by Senator Lynch

Pursuant to Statute

By Command

In return to Order

PARLIAMENTARY STANDING COMMITTEE  
ON PUBLIC WORKS.  
H. W. Allen  
Actg. Clerk of the Senate.  
24th June, 1925

# REPORT

TOGETHER WITH

## MINUTES OF EVIDENCE

RELATING TO THE PROPOSED ESTABLISHMENT OF AN

## AUTOMATIC TELEPHONE EXCHANGE

AT

## LAKEMBA, NEW SOUTH WALES.

Printed and Published for the GOVERNMENT of the COMMONWEALTH of AUSTRALIA by H. J. GREEN,  
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MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

(Fourth Committee.)

The Honorable HENRY GREGORY, M.P., Chairman.

Senate.

Senator John Barnes.†  
 Senator Hattil Spencer Foll.†  
 Senator Patrick Joseph Lynch.†  
 Senator John Newland.†  
 Senator William Plain.\*  
 Senator Matthew Reid.†

House of Representatives.

Arthur Blakeley, Esq., M.P.  
 Robert Cook, Esq., M.P.  
 David Sydney Jackson, Esq., M.P.  
 George Hugh Mackay, Esq., M.P.  
 James Mathews, Esq., M.P.

\* Ceased to be a member of the Senate, 30th June, 1923. † Appointed 5th July, 1923. ‡ Resigned 28th June, 1923.

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COPY OF EXECUTIVE COUNCIL MINUTE No. 14 DATED 16TH MARCH, 1925.

Dept. No. 14.

Department of Works and Railways,  
 13th March, 1925

Exec. Council,  
 No. 14

MINUTE PAPER FOR THE EXECUTIVE COUNCIL.

Subject:—Reference to Parliamentary Standing Committee on Public Works.

Recommended for the approval of His Excellency the Governor-General in Council that, in accordance with the Commonwealth Public Works Committee Act 1913-1921, the following work be referred to the Parliamentary Standing Committee on Public Works for its investigation and report thereon to the House of Representatives, viz. :—

Lakemba, New South Wales.—Establishment of Automatic Telephone Exchange.

Approved in Council.  
 (Sgd.) FORSTER,  
 Gov.-General,  
 16th Mar., 1925.

(Signed) W. G. HILL,  
 Minister of State for Works and Railways.

Filed in the Records of the Council,  
 (Signed) J. H. STARLING,  
 Secretary to the Executive Council.

LIST OF WITNESSES.

Fanning, Lawrence Bede, Superintendent of Telephones, Central Administration, Postmaster-General's Department .. .. .	1
Butler, Victor Edward, Telephone Manager, Postmaster-General's Department, New South Wales .. .. .	5
Crawford, John Murray, Chief Electrical Engineer, Central Administration, Postmaster-General's Department .. .. .	3
Miller, William Giles, Town Clerk, Municipality of Bankstown, New South Wales .. .. .	5
Murdoch, John Smith, Chief Commonwealth Architect, Department of Works and Railways .. .. .	6
Oakeshott, George John, Commonwealth Works Director, New South Wales .. .. .	5
Sutton, James Lane, Town Clerk, Municipality of Canterbury, New South Wales .. .. .	4
Taylor, Benjamin, Builder, Lakemba, New South Wales .. .. .	5

LAKEMBA AUTOMATIC TELEPHONE EXCHANGE.

REPORT.

The Parliamentary Standing Committee on Public Works, to which His Excellency the Governor-General in Council referred, for investigation and report to the House of Representatives, the question of the proposed establishment of an Automatic Telephone Exchange at Lakemba, New South Wales, has the honour to report as follows :—

INTRODUCTORY.

1. Lakemba is a rapidly developing suburb of Sydney, and is now telephonically served by the Lidcombe, Burwood, Homebush, Ashfield, and Kogarah exchanges. It is represented that the greater portion of the Lakemba area is outside the 2-mile limit of the exchanges mentioned, and over 300 existing subscribers are required to pay excess mileage charges. The new exchange as proposed within the area would enable these subscribers to obtain service at the minimum ground rent.

PRESENT PROPOSAL.

2. A proposal is submitted to erect a new exchange building on a site which has already been acquired at the corner of Railway-crescent and Croydon-street, Lakemba, and to install therein an automatic telephone switching system having an initial capacity of 900 subscribers' lines and an ultimate capacity of approximately 3,500 subscribers' lines. It is proposed that the initial capacity shall be capable of extension to the ultimate capacity named, thereby affording sufficient accommodation to meet the anticipated development of the area for a period of twenty years.

ESTIMATED COST.

3. The estimated immediate cost of the proposal as submitted to the Committee is as follows :—

Site .. .. .	£300
Building .. .. .	4,600
Air-conditioning, heating, ventilating, vacuum-cleaning and air-compression plant .. .. .	3,000
Exchange equipment, including that necessary at other exchanges .. .. .	16,475
Sub-station equipment .. .. .	151
Diversion of line plant and cut-over of equipment .. .. .	1,280
	<hr/>
	£25,806

COMMITTEE'S INVESTIGATIONS AND RECOMMENDATIONS.

4. The Committee visited Lakemba, inspected the site of the proposed building and portion of the area which would be served by the new exchange, scrutinized the plans, and took evidence from the Chief Commonwealth Architect, the Commonwealth Works Director, New South Wales, the Chief Electrical Engineer, and other officials of the Telephone Department, and from the Town Clerks of Canterbury and Bankstown, and others.

## SITE.

5. The site of the proposed exchange adjoins the existing post office building, and comprises an area of approximately 93 feet frontage by a depth of approximately 66 feet, and was acquired at a cost of £300. It is centrally situated and appears to be good building land, and eminently suitable for the purpose for which it is intended.

## BUILDING.

6. The building proposed to be erected is on simple lines and designed on the latest fire-resisting principles. It is to be of similar architecture to the post office, so that the two buildings shall be in harmony. The exchange will be approximately 30 feet by 60 feet, and the height from floor to ceiling will be 14 ft. 6 in. It is proposed to have brick external walls, a solid concrete floor, a reinforced concrete ceiling, an iron roof, and a parapet wall all around.

7. To avoid as far as possible interference with the air in the frame-room, the Committee recommends that the external door of the frame-room be kept closed except when it may be necessary to install extra equipment, &c., and that an entrance for employees should be made by cutting a passage-way off the store-room, thus forming an air-lock between the frame-room and the outer air.

8. The Committee also fails to see the necessity for a reinforced concrete roof for the whole of the building other than the frame-room. It was informed that if the roof for this portion be of timber with a corrugated iron ceiling a saving of about £200 could be effected, and it is recommended that this be done.

9. During the course of its investigations, the Committee was unfavourably impressed with the fact that the blank wall of portion of the subsidiary buildings connected with the proposed exchange would be facing Railway-crescent, and recommends that it be treated sympathetically with the design of the post office, to avoid anything in the nature of an eyesore.

## FINANCIAL ASPECT.

10. It was stated in evidence that the total annual charges, including interest and depreciation, for the proposed automatic system as at 31st December, 1926, the proposed date of cut over, are estimated at £6,735, and five years later at £7,850. The estimated revenue at 31st December, 1926, is set down at £5,956, and five years later at £9,404. The assets thrown spare if the automatic exchange be established at 31st December, 1926, are estimated to have a recoverable value of £5,628.

11. The above figures show that there will be in the early stages a loss on the Lakemba exchange, but it was explained to the Committee in evidence that there would be a greater loss if it were necessary to continue connecting subscribers in the Lakemba area with their respective existing exchanges, because of the heavy expenditure necessary on cable, brought about by the fact that each subscriber is at present on an average 3 miles from an exchange. Furthermore, although the establishment of the exchange at the present time means a loss, it was held that the loss would be greater if the establishment of the exchange were left to a later period; and that at any rate the loss would be converted to a substantial profit at the end of five years.

## COMMITTEE'S RECOMMENDATION.

12. Under these circumstances, the Committee recommends that, subject to the amendments indicated above, the proposed installation of an automatic telephone exchange at Lakemba as recommended by the Department be proceeded with.

*H. Gregory*  
H. GREGORY,  
Chairman.

Office of the Parliamentary Standing Committee on Public Works,  
Federal Parliament House, Melbourne, 29th May, 1925.

## MINUTES OF EVIDENCE.

(Taken at Melbourne.)

THURSDAY, 16th APRIL, 1925.

## Present:

Mr. GREGORY in the Chair;

Senator Barnes           |   Mr. Cook  
Senator Lynch           |   Mr. Mathews.

Lawrence Bede Fanning, Superintendent of Telephones, Central Administration, Postmaster-General's Department, sworn and examined.

1. To the Chairman.—The proposal before the Committee is to erect a new telephone exchange building on a site which has already been acquired at the corner of Railway-crescent and Croydon-street, Lakemba, and to install therein an automatic telephone system having a capacity at the outset of 900 lines and an ultimate capacity of approximately 3,600 lines. The initial equipment will be capable of extension to the ultimate capacity of 3,600 lines, and will afford sufficient accommodation to meet the anticipated development within a period of 20 years. The area to be served by the proposed exchange is at present served telephonically by Lidcombe, Burwood, Homebush, Ashfield, and Kogarah exchanges. The greater portion of the area to be served by the new exchange is outside the 2-mile limit of the exchanges mentioned, and over 300 existing subscribers are required to pay excess mileage charges. The new exchange will enable these subscribers to obtain service at the minimum ground rent. The district to be served, which is indicated on the map placed before the Committee, is one that is rapidly developing, and the opening of the new exchange is essential to meet the needs of the growing community. Unless the new exchange is opened, it will become necessary to extend the plant and equipment at several existing exchanges, and this would ultimately prove a much more expensive arrangement than the establishment of a new exchange. The proposed exchange will, in accordance with the policy of development that is being followed in Sydney, be of the automatic switching type. It will facilitate the handling of traffic and generally improve the quality of service in the network. The estimated immediate cost of the work is:—

Site	£300
Building	4,600
Air conditioning, heating, ventilating, vacuum cleaning, and air compression plant	3,000
Exchange equipment, including that necessary at other exchanges	16,475
Substation equipment	151
Diversion of line plant and cutover of equipment	1,280
	£25,806

The revenue which it is estimated will be obtained on the date of opening, viz., 31st December, 1926, and the £5,953.—2

position at the expiration of five years will be as shown hereunder:—

Estimated number of subscribers lines, 31st December, 1926 (date of opening)	Estimated annual revenue, 31st December, 1926 (date of opening)	Estimated number of subscribers lines, 31st December, 1931 (five-year date)	Estimated annual revenue, 31st December, 1931 (five-year date)
570	£ 5,956	600	£ 9,404

The building which it is proposed to erect will be of simple design and built on the latest fire-resisting principles. It will generally accord with the type of building usually provided to house automatic switching plant. The building is designed so as to accommodate the development which it is anticipated will be reached within a period of, say, 20 years. The financial aspect of the proposal is as follows:—

Item.	As at	
	31.12.1926.	31.12.1931.
	£	£
1. Capital cost—new	26,806	28,598
2. Capital cost—new and in situ	62,537	65,329
3. Annual working expenses of proposed automatic system	1,580	2,174
4. Total annual charges of proposed automatic system	6,735	7,850
5. Annual revenue	5,956	9,404
6. Assets recoverable or thrown spare if an automatic exchange is established on 31st December, 1926—		
(i) Book value in position	6,401	—
(ii) Recoverable value	5,628	—
(iii) Cost of recovery	707	—

Regarding item 6 of the foregoing statement, the difference between sub-items (i) and (ii), viz., £773, is an amount which will have to be written off in the departmental accounts. It represents 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 estimated number of subscribers' lines at 31st December, 1926, is 570, but the number of existing lines in the area of the new exchange is about 450. I have no information regarding the amount of the revenue received from the subscribers at present connected, but the revenue figures in the statement I have given are based on the revenue received at the present time. When the new exchange is opened and the existing subscribers' lines are transferred to it, there will be, of course, a corresponding decrease in the number of lines connected to the existing exchanges. The opening of the new exchange will assist in developing a new area. The subscribers at present connected to the existing exchanges are charged a higher rate where their lines exceed the 2-mile limit fixed by the regulations for the minimum ground rent. The increase is at the rate of 10s. for

every quarter of a mile beyond the 2-mile radius. Although there is at present only a small number of subscribers, a new automatic exchange is recommended as it is necessary to provide for future development. Unless a new exchange is opened it would be necessary to increase the plant and equipment at existing exchanges. The cost of the unnecessarily long lines and other equipment would probably exceed the expenditure involved in the erection of a new exchange. The annual revenue set out in the statement is based on the present charges, and the sum of £7,850 set against item 4 includes interest charges.

2. To Senator Lynch.—The ultimate capacity of the exchange, viz., 3,500 lines, is based on an estimate of the development of the district during the next 20 years. It is not likely that the estimate will be exceeded, but if necessary the building could be further extended. The plant proposed to be installed will deal with 3,500 subscribers only. The date on which the exchange will be opened is governed, to a great extent, by the time taken to obtain material. The normal period for the delivery of material is from nine to twelve months, but should the Committee desire further information in that direction it could best be obtained from the Chief Electrical Engineer, Mr. Crawford. The total annual charges of the proposed automatic system as at 31st December, 1926 and 31st December, 1931, include both interest and depreciation. The proposed exchange will show a loss at first, but that loss, it is anticipated, will disappear before five years have expired. The estimates have been calculated on the average rental per subscriber received during the last three years. The item, £26,806, being the capital cost now, represents the existing building and internal equipment, whereas the Capital Cost of new and old plant, as well as the internal equipment. The system followed by the Department is the same as that adopted in New York, London, and other large cities. In New York they are gradually converting the manual system to the automatic, and the same thing is proposed in London. In those cities they open new exchanges as we do. Throughout the world the manual system is giving place to the automatic. Greater developments are taking place in the automatic system than in the manual system.

3. To Mr. Cook.—The site for the exchange was acquired by the Department some time ago. The whole of the figures set out in the statement I have submitted have been carefully prepared, and are based on the existing costs of providing services and installing plants. Since the proposals which were last before the Committee there has been no material alteration in prices, but that also is a matter concerning which Mr. Crawford could give more detailed information. The basis of calculation is much the same as in the case of the Elsternwick, Northcote, and Brisbane exchanges.

4. To Mr. Matthews.—I do not think that wireless broadcasting will duce the use of telephones. Up to date it has not done so, and I do not think that the new system is flexible enough to take the place of the land line system of telephonic communication. The difficulty with wireless is to link up with the existing system so that every subscriber can secure communication as readily as at present. In connection with the Melbourne Cup and the Test cricket matches there was no diminution of the number of trunk-line calls, and I do not think there is any risk of wireless adversely affecting the telephone system. I could not say offhand whether the existing exchanges at Lidcombe, Burwood, Homebush, Ashfield, and Kogarah are paying concerns, but it is essential that they be relieved of further work. If this new exchange is not established the plant at the existing exchanges must be increased. It is really a case of shifting the expenditure from those places to one new point. The provision of a new exchange will mean a cheaper and more efficient service to the pub-

lic. At present the demand for new lines is more than the Department can cope with, as the area in which the Lakemba exchange will be situated is developing very rapidly. The date for the completion of the installation is only approximate. It may even be two months later than the date anticipated.

5. To Senator Barnes.—Telephone exchanges are not necessarily established to deal with all subscribers within a radius of two miles, but they are placed wherever the population is most dense. It may be necessary to establish a new exchange within one mile of an existing exchange. The question is determined by the cost of the necessary outside plant. Every new exchange shortens the length of the line, with a corresponding reduction in cost. Cable costs from £5,000 to £6,000 per mile. In estimating the population 20 years hence, past development has been considered, but it has not been the sole determining factor. The Department surveys the area, confers with local bodies, and ascertains the intention of the railways and tramways authorities regarding extensions of existing facilities. The building and plant could, if necessary, be extended to accommodate 10,000 lines, but it is not economical at present to accommodate more than 3,500 lines. If there is a tendency for development to take place towards Puntahowit it may be considered advisable to open a new exchange there, but the tendency at present is for the population to extend towards Geelong River.

6. To the Chairman.—The type of building proposed is similar to those dealt with previously. In preparing estimates of cost, the nature of exchanges which have been established are taken into consideration. The estimates are constantly being reviewed, and the latest figures available are used as the basis for future calculations. The Department could furnish information as to the cost of existing exchanges. I have not noticed whether the estimates have been exceeded in recent years, but I do not think that they have to a great extent. It is difficult to make comparisons with the cost in other countries, but the cost is probably less in countries where the plant is cheaper. I have no figures sufficiently recent to say what the percentage of difference between the cost of exchanges in Australia and Great Britain would be. Figures could be supplied to show the cost of material, but that also is a matter with which Mr. Crawford could deal better than I can. I am responsible for the quality of the telephonic services in Australia, and my work begins when the plant is installed. I am, however, satisfied that this plant at Lakemba is necessary. It will give an impetus to development, and will reduce the rentals to subscribers. I cannot say whether the anticipation of Mr. Heathcote, the Chief Electrical Engineer of the Department in 1915, that there would be a saving of £1 per subscriber on the then cost when 40,000 lines have been working on the automatic system, has been realized. If we were to buy manual switching plant at the present time it would probably cost as much as automatic equipment. Apart from the increase in the cost of plant and equipment, costs are increasing, but since every new exchange increases the cost of every existing exchange, as junction lines have to be provided. At the same time the establishment of new exchanges is less costly from the subscribers' point of view than to continue the erection of long lines to existing exchanges. I am not sure whether the modern automatic exchange is costing more for upkeep than one which is not, but Mr. Crawford could no doubt supply figures to show the position. I think that air-conditioning plant is essential in some localities.

7. To Senator Lynch.—Although I do not think that any residents in the area to be served by the proposed exchange have been refused telephonic connections to their premises, there has been considerable congestion, but that has, however, recently been overcome. The position of the Sydney network to-day is fairly satisfactory, and there is no undue delay in provid-

ing services. The existing exchanges which will be relieved by the Lakemba exchange have not been over-taxed, but the time is fast approaching when without the new exchange the plant would require extension.

(Taken at Sydney.)

MONDAY, 20th APRIL, 1925.

Present:

Mr. GAZDOVY, Chairman;  
Senator Barnes | Mr. Blakeley  
Senator Reid | Mr. Cook.

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

8. To the Chairman.—The proposal is to erect a telephone exchange building on a site, already acquired, at the corner of Railway-avenue and Croydon-street, Lakemba, and to install therein an automatic telephone switching system having an initial equipment for 900 subscribers' lines and an ultimate capacity of approximately 3,500 lines. It is proposed that the initial equipment shall be capable of extension to the ultimate capacity named, thereby affording sufficient accommodation for the anticipated development in the proposed Lakemba automatic exchange area. The area which will form the Lakemba telephone exchange area is comprised of the outlying portions of the present Ashfield, Burwood, Homebush, Lidcombe, and Kogarah telephone exchange areas. In order to provide a cheaper and more efficient service for the subscribers resident in the extreme limits of these areas, it will be necessary to erect a new building on the site acquired, and install therein new telephonic exchange plant. The proposal will enable subscribers' lines to be constructed of shorter length, and, as a result, better service will be provided.

#### ESTIMATED COST.

The estimated immediate cost of the work is:—	
Site .. .. .	£ 300
Building .. .. .	4,600
Air conditioning, heating, ventilating, vacuum cleaning, and air-compression plant .. .. .	3,000
Exchange equipment, including that necessary at other exchanges .. .. .	16,475
Substation equipment .. .. .	151
Division of line plant and cut-over of equipment .. .. .	1,280
	<b>£25,806</b>

The revenue it is estimated will be obtained on the date of opening, viz., 31st December, 1926, and with five years' development is shown hereunder:—

Estimated number of subscribers' lines (date of opening).	Estimated Annual Revenue, 31st December, 1926 (date of opening).	Estimated number of subscribers' lines (five-year date).	Estimated Annual Revenue, 31st December, 1931 (five-year date).
870	£ 6,586	900	£ 6,404

#### BUILDING.

It is proposed that the building shall be of simple design, and built on the latest fire-resisting principles. The immediate installation in this exchange is for an equipment of 900 subscribers' lines, but it is proposed that the building be designed sufficiently large to accommodate an equipment having a capacity of approxi-

mately 3,500 subscribers' lines. The financial aspect is as follows:—

Item.	As at	
	31 12 26	31 12 31
	£	£
1. Capital cost—new .. .. .	25,806	28,698
2. Capital cost—new and <i>in situ</i> .. .. .	62,637	65,329
3. Annual working expenses of proposed automatic system .. .. .	1,580	2,174
4. Total annual charges of proposed automatic system .. .. .	6,736	9,780
5. Annual revenue .. .. .	5,956	9,404
6. Assets recoverable or thrown spare if an automatic exchange is established on 31st December, 1926—		
(i) Book value in position	6,401	
(ii) Recoverable value	5,628	
(iii) Cost of recovery	707	

Regarding Item 6 of the foregoing statement, the difference between sub-items (i) and (ii), viz., £773, is an amount which will have to be written off in the departmental accounts. It represents 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. This is a sub-circumstance which does not connect direct through switches in its own building with the other exchanges in the network. It will only communicate with one other exchange, and from that main exchange the sub-exchange subscribers get connexion with all other exchanges. We have previously recommended the establishment of an exchange of as few as 570 subscribers. At Deewy we have already established a small exchange similar to the Lakemba proposal. It is on the outskirts of the network. Its cost came below £26,000, and was not referred to this Committee. Although we shall show an immediate loss on the Lakemba exchange we would have had a larger loss if we had continued to connect the Lakemba subscribers with their respective existing exchanges. Although we actually show a loss by establishing the exchange now, the loss would be greater if we left it to a later period. It will be noticed that in five years the loss is estimated to be converted into a profit. Each subscriber in this area who is connected with the existing exchange will cost us a considerable amount because of the length of line necessary, seeing that on the average each subscriber is about 3 miles from an exchange. This heavy expenditure is avoided by the establishment of a new exchange. It will not interfere with the expenditure of money to provide telephonic facilities in country districts. When Parliament allocates a certain amount to the Postal Department for telephones we have them to decide which are the more urgent works. It does not necessarily follow that this particular work will be gone on with. I do not say that it is not necessary to carry it out, but if Parliament does not give the money of course we cannot proceed with it. The plan provides for a concrete roof not only over the frame room but also over the air-conditioning plant and battery room. Although we are providing for an ultimate capacity of twenty years, no one suggests that we may not need a larger telephone exchange at Lakemba at the end of that period. Our policy in building exchanges is to provide that if the telephonic development is greater than we estimate it is likely to be we can add another story to the existing building very easily. However, there is no real reason why we should have a concrete ceiling over the air-conditioning plant. Any ordinary roofing would satisfy us, but I should imagine that if all the material is there for putting a concrete ceiling over it for the extra fourft.

9. To Mr. Blakeley.—It will be cheaper for the Telephone Department to provide a new exchange for subscribers resident in the extreme limits of Ashfield, Burwood, Homebush, Lidcombe, and Kogarah. The

mately it will be cheaper for the subscribers themselves, because at present if they are over 2 miles from their exchange they have to pay so much per radio quarter mile, so that if a man is 3 miles from his exchange he pays an extra £2 in rental.

10. *To the Chairman.*—The minimum number of subscribers for whom it would pay the department to establish an exchange depends on circumstances. You may come to a point where you have to run a new main cable for many miles. At that point it pays the department to establish a satellite exchange. Dewby is a little exchange 5 miles north of Manly. It was a rapidly developing district. We knew we would have to put an exchange there. The point came, therefore, whether we should run a lot of subscribers' cabling and a lot of junction cabling for the subscribers' lines, or build a new exchange. In an outer area you can get a site cheaply, your building does not cost very much, and your attendance is not continuous. At Dewby a man is in attendance about three days a week. The advantage is first to the subscribers. In the Dewby district they were paying from £8 10s. to £9 a line for rent, whereas now they are paying only £5. On the other hand we would have been running long subscribers' junction cabling of heavy copper to keep within our stipulated resistance, therefore it would have been very expensive to provide for 200 subscribers in that area. At that point it paid us to put in what we call a little satellite exchange. Our exchanges in the western suburbs cover narrow areas, which run a long way back. At Lakemba a very thriving suburb has sprung up within the last few years. The establishment of this exchange will relieve other exchanges. Instead of providing new equipment at Burwood, to provide for 400 new subscribers, we take 400 Lakemba subscribers off that exchange, obviously making room on their own exchange for 400 subscribers in the Burwood district. The other exchanges in this district are nearly up to their limit, and without the establishment of a Lakemba exchange we would have been obliged to provide additional equipment for them.

11. *To the Chairman.*—The accountant of the Postmaster General Department, Sydney, has supplied the following certificate:—

(a) The average revenue received from the five exchanges now contributing to the Lakemba area for the year ended 30th June, 1924, was as under:—

	Per Line.
Including revenue from trunk conversations ..	£10 0 0
Excluding revenue from trunk conversations ..	£10 0 0

(b) The estimated annual revenue for the proposed Lakemba Automatic Exchange area as at proposed date of cut-over, and at a date five years after, based upon the number of subscribers' lines being 570 and 900 respectively at those dates:—

	No. of Lines.	Rectang. Cabs.	Miscellaneous Charges.	Trunk Business.	Current Allowances.	Total.
		£	£	£	£	£
At cut-over	570	5,645	136	175	5,956	9,912
Five years later...	900	8,513	215	228	9,454	13,410

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

(Taken at Sydney.)

TUESDAY, 21st APRIL, 1926.

Present:

Mr. Gregory, Chairman;  
 Senator Barnes | Mr. Blakeley  
 Senator Reid | Mr. Cook.

James Lane Sutton, Town Clerk, Municipality of Canterbury, sworn and examined.

12. *To the Chairman.*—I have been acquainted with this district for eleven years. Its development has been

phenomenal. The following figures show the increase in value and population within the municipality.

	Unimproved Capital Value.	Improved Value.	Assessed Value.
1921 ...	£2,185,386 ...	£6,315,523 ...	£432,022
1922 ...	2,558,594 ...	7,770,296 ...	567,954
1923 ...	2,635,167 ...	Not supplied by Valuer-General.	
1924 ...	3,284,363 ..	10,001,596 ...	767,925

*Building Applications Approved.*

	No.	Value.
1920 ...	971 ...	£265,279
1921 ...	556 ...	383,904
1922 ...	1,002 ...	676,122
1923 ...	1,272 ...	869,127
1924 ...	1,220 ...	867,679

*Population.*

Census, April, 1921—37,621.

Assuming that 3,600 buildings were erected out of 4,050 approved in the last four years, the population should now be in the vicinity of 53,000.

These are the latest returns compiled in the books of the municipality. I am under the impression that the 1925 valuation will add at least 25 per cent. to the values for 1924, which were based on a valuation taken at the latter end of 1922, supplemented by the State Valuer-General's Department by supplementary lists taken as necessity arises, and not provided as a general review of valuation. Within the next five years the values will double. Many areas have recently been thrown open for subdivision. The development promised by the extension of railway lines and the rapid and ready sale for all subdivisions thrown on the market justify me in that prediction. Quite recently, on the Canary-road, a subdivision between Hurstville and Canterbury contained 1,800 allotments, and within twelve months every allotment was sold. There were certainly speculative purchases, but the rapid sale could only be accounted for by the fact that the Government had promised to extend the railway from Tempe to East Hills, developing all the southern portion of Canterbury. The subdivision I speak of would be 6 miles from the General Post Office, Sydney, in a direct line. There is no industry attracting settlement in Canterbury. It is a residential suburb. I have just signed the plan of the 520th building proposed to be erected in the municipality during the current year. The district to be served by the Lakemba exchange contains a large area not yet reached by dwellings. Canterbury will carry a population of 150,000 people in the next fifteen years. I do not hesitate to say that there will be 200,000 people in the area to be supplied by the Lakemba exchange. When the railway is continued there will be a tremendous development at Bankstown. The percentage of persons who are likely to apply to have the telephone installed depends upon the departmental charges. There are two areas in this district, where the subscribers now pay a rental of £8 10s. I think there will be a vast addition to the users of the telephone if it can be got at the flat ground rental charge, viz., £8.

13. *To Senator Reid.*—The increase in the population has been brought about by the fact that people are crushed out from the inner areas. We have a good railway service. One portion of our district is being rapidly settled by an extension of the Marrickville tram. I do not attribute the great increase in population to the motor bus traffic. I do not think that the fares charged on the buses are attractive to industrial settlement.

*The witness withdrew.*

William Giles Miller, Town Clerk, Municipality of Bankstown, sworn and examined.

14. *To the Chairman.*—The district of Bankstown has developed at an extraordinary rate during the last few years, as shown by the following figures. The unimproved capital value has increased as follows:—

1920—£1,070,916.
1923—£1,475,530.
1925—£1,904,288.

The improved capital value has increased as follows:—

1920—£1,943,431.
1923—£2,761,387.
1925—£3,829,279.

The population has increased from 2,000 persons in 1910 to 18,000 persons in the current year. The revenue of the municipality has grown accordingly. The establishment of the Lakemba exchange will confer a boon upon Bankstown, because the majority of the Bankstown subscribers is paying a rental of £9 a year for each of its four lines. The present service is very unsatisfactory. The exorbitant charge for rental is a big factor in preventing people from becoming subscribers. I do not think that a building providing for 3,500 subscribers in twenty years will be sufficient at the rate at which the district is now developing. At any rate, the progress of the area is sufficient to warrant incurring the expenditure without delay. Bankstown is purely a residential suburb, but there is every possibility of industries being established, because the land is available.

*The witness withdrew.*

Benjamin Taylor, Builder, residing at Lakemba, sworn and examined.

15. *To the Chairman.*—I urge the early construction of the telephone exchange at Lakemba. When it is established there will be a large increase in the number of subscribers. That increase should be fully 25 per cent. on the number of subscribers now connected in the district for a few years. There is a very large population within three-quarters of a mile of the proposed site. Within the next ten years it will be very thickly populated. As a matter of fact, this area provides the only outlet to the city at the present time. There will be another outlet soon, when the new railway line is constructed from Tempe to Saltpan.

(Taken at Sydney.)

WEDNESDAY, 22nd APRIL, 1925.

Present:

Mr. Gregory, Chairman;  
 Senator Barnes | Mr. Blakeley  
 Senator Reid | Mr. Cook.

Victor Edward Butler, Telephone Manager, Postmaster-General's Department, Sydney, sworn and examined.

16. *To the Chairman.*—I have not seen the actual site of the proposed automatic telephone exchange at Lakemba, nor have I made personal inquiries among the people in the district; but I know the area well. It is not the rule in my office at present to make inquiries from the public generally and local authorities in connexion with any proposal to establish a telephone exchange in the metropolitan area. The centres are determined by the development, and as agreed to

by the State Engineer and myself. It might be advisable for the district inspector or other officer first sent out to consult the local authorities, but as not done by me, I think it would be a good thing to do so. The district inspectors do consult the local authorities on sites. I have been aware of the progress made during the last few years in the Lakemba district. It has been very considerable, and I have no doubt that the area to be served by the exchange will be fairly thickly populated in the next five or ten years. However, I do not anticipate very heavy telephone development. The increase in the population has to a certain degree been reflected by the number of people seeking new telephones; but a good deal depends upon the class of building that is being erected. Residents of houses costing £1,000 need a telephone in the ratio of about one to ten. On the other hand, residents in houses costing £10,000 would always need a telephone. Generally speaking, the houses in the Lakemba district are not very expensive. Therefore, while there may be a very fair increase in the population, it will not be reflected in the demand for telephones. When the new exchange is established we propose to take over subscribers from Kogarah, Ashfield, Burwood, Homebush, and Lidcombe. It will slightly increase the revenue of the department in these exchanges. In all about 570 subscribers will be transferred to the new exchange. A considerable portion of those subscribers are now paying an increased rental because of the distance they are from their respective exchanges. Their rental will be automatically reduced as they get connected with an exchange within 2 miles of the house. Of course, with a decrease in the annual rental, there is no doubt there will be an increase in the number of subscribers. Undoubtedly Lakemba has been retarded because of the high telephone charges, which must be paid by people outside the 2-mile radius. I am of opinion that the building proposed for Lakemba will be ample for the requirements of the district for a considerable number of years. It is useless to go and find the local authorities very sanguine about a considerable increase in population in the very near future. Their views have been given consideration in compiling the departmental figures. I have a great opinion that the district will enlarge and develop, just as the local authorities anticipate, and I do not think that the department is under-estimating the telephone development in that locality. The building will have an ultimate capacity of 3,500 lines. If the development at Lakemba goes beyond our anticipations, I can conceive the possibility of establishing a sub-exchange later on.

17. *To Senator Reid.*—I cannot say what the department regards as the average value of a house that would need a telephone other than the figures already quoted. We have general figures upon which we work. It is really now a matter for the engineering section. They have figures regarding property values which are carefully considered by the surveyors in estimating the number of subscribers that will be connected to an exchange. Those figures are based on actual experience, and I think that the surveyors are fairly accurate in their estimates.

*The witness withdrew.*

George John Oakeshot, Commonwealth Works Director, New South Wales, sworn and examined.

18. *To the Chairman.*—The plans of the proposed automatic exchange at Lakemba were prepared in my office. I have brought with me drawings of the Lakemba Post Office in order to show its relative position to the proposed exchange, and to show how the two buildings will appear in juxtaposition. We have maintained the same style of architecture to keep the two buildings in harmony. The exchange will be roughly, 80 feet by 50 feet, and the height from floor to ceiling will be 14 ft. 6 in. It will have brick external walls, a solid concrete floor, a concrete ceiling, an iron roof, and a parapet wall all round. There will be ordinary glass

windows. The external door leading into the frame room will be kept closed until it is necessary to install extra frames. I should feel inclined to make an entrance for the employees by cutting a passage way off the store room, and I shall consult with the Telephone Department to that end. The concrete roof is more expensive than an iron roof. A concrete ceiling is necessary in the air conditioning room in order to provide a cushion of air. I have provided a concrete ceiling over the luncheon room, because the Telephone Department have asked for a continuous concrete ceiling throughout. If the roof over the portion of the building beyond the frame room be constructed of timber with corrugated iron ceiling instead of reinforced concrete, the reduction would be £200.

18. *To Senator Reid.*—The object of the design of the building is to show in the most charming way possible the purpose for which it has been erected. The post office is more or less residential, but a telephone exchange is of the factory type, and is not for residential purposes. We want to express the type of building in the outside design. If I put eaves on this exchange I would make it look residential.

19. *To Mr. Blakeley.*—Provision is made for £110 for a fire service in the building. The service will consist of hydrants and extinguishers, with a 3-in. water-pipe. I might increase the height of the walls adjoining the post office in order to hide the outbuildings in the yard.

(Taken at Melbourne.)

FRIDAY, 1st MAY, 1925.

Present.

Mr. Gairney, Chairman;

Senator Barnes.	Mr. Cook
Senator Reid	Mr. Mathews.
Mr. Blakeley	

John Smith Murdoch, Chief Architect, Department of Works and Railways, sworn and examined.

20. *To the Chairman.*—On the suggestion that in the Lakemba Automatic Exchange a door could be provided opening on to the lane farthest from the post office, I would say that in the frame-room the large door of the end of the room is only opened on certain occasions to take in or send out equipment. The only way to prevent interference with the air-conditioning plant is to keep this door locked as much as possible. It would appear to me that to provide a door such as Mr. Oakeshott suggested is to take a bit off the frame-room or air-conditioning room and make an air-lock with the door outside. We would have to consult the electrical engineers about that, but it is a mere detail that can be arranged easily. It is essential that we should have double doors always. Unless that is so, every time a door is opened it upsets the condition of the air, and makes liable the entrance of dust. As to the suggestion that by having a small tinted galvanized-iron ceiling in all the rooms, except the battery-room, in which a plastered ceiling could be put, a saving of more than £200 would be effected, I would say that it ought not to be necessary to have a reinforced concrete ceiling over the whole of the building. You could have a joisted floor, and on top of the joists either old or new galvanized iron could be laid. On top of that could be laid a layer of 12 to 14 coke breeze concrete, and over that put the usual bituminous roof covering of malthoid. We intend using rock in the future, as it seems to be better than the American article. It is made in Belfast,

and I think we should use it. That would make a good and cheap roof, and it would be well insulated. The longest span for the joists would be 20 feet, which would mean 12-in. x 2-in. joists. The effect of that would be also that you could cut down the height of the parapet shown on the plan. It goes around the part of the building that contains the accessory rooms. If that were done I should say that the saving would be probably £200. I do not know that an ordinary galvanne-iron ceiling with an iron roof outside and without any in between would be satisfactory. Between the two layers of iron on a roof of that kind there would be very little space. On a hot day the outer iron would become very warm, and the heat would be transmitted to the ceiling below. That would make working conditions pretty bad. The other way of doing it which I have suggested would be inexpensive, for the iron that I would lay on the joists could be old iron. It would not matter if it were dented or had nail-holes in it, or even if it were somewhat rusty. The layer of coke breeze concrete would be quite inexpensive. It is very light. The roof of Parliament House, Canberra, is done like that. If Parliament House had been intended to be a permanent structure it would have had a concrete roof, but by using this coke breeze concrete we have been able to effect some economy. The biggest strain it would be put to would be simply the weight of a man walking about in top of it. We are employing coke breeze concrete grounds in all our work now. We never do any plugging these days. I think the battery-room had better have a plastered ceiling. Probably an iron ceiling coated with enamel paint would be all right, but we might do it with fibrous plaster. An interesting thing about this double roof that we are employing now for the frame-rooms is that it was evolved from this Committee's inquiry into the Elsternwick and Northcote exchanges. We came to the conclusion that for the sake of assisting air-conditioning it would be a good thing to have a second roof so far as the switch-room is concerned. There is a kind of plaster coming on the market now which seems to me to be very promising. In the process of setting this plaster assumes a cellular character. Millions of little air cells are created in it. There is a sort of effervescence in the setting. The insulating properties of a material like that are very great. If we had a layer of three-quarters of an inch of this on a roof it ought to be a very fine insulation, cheaper and probably quite equal to the double roof. We think of making an experiment with it in one of our exchanges. The material has not yet been used in this country, but a man in Melbourne intends to import some of it. Incidentally, I may say that I think we shall use it to plaster the legislative chambers in Parliament House, Canberra, above the height of 10 feet. It will be remembered that the chamber is to be panelled up to 10 feet. If this cellular plaster is used above that right up to the ceiling it will be out of the touch of everybody, and in consequence of its peculiar formation ought to assist the acoustic properties of the chambers. It could be made any colour. It gives a surface about the same texture as rubbed freestone—a sort of granular surface, with the granules not very deep. Of course, it would carry dust, but in a modern building the walls of which are thoroughly cleaned with a vacuum cleaner once a fortnight, I do not think that would be any drawback. I think the appearance would be good. The blank wall of the Lakemba exchange, which will be facing the main street, might be a bit of an eyesore if it were built according to the plan, but it can be treated sympathetically with the post office.

21. *To Senator Reid.*—In the air-conditioning room the walls are simply lime-washed. Even if they were plastered it would be only one coat of cement plaster. I do not think that we have plastered any of these rooms. A fibrous plaster ceiling would be a little cheaper than iron, but there would not be much dif-

ference. The plaster, of course, would not be painted. I suppose plaster would retard fire even more than iron. The bedrooms at the Canberra hotel were given one coat of plaster. Of course, you cannot get such a smooth surface as with ordinary plaster, but the appearance of the walls appeals to me very much. For that are finely plastered, and that is a consideration in an hotel. The one coat of cement plaster would probably cost 2s. per yard, as against 4s. 8d. per yard for fine plaster work.

22. *To Mr. Blakeley.*—If fibrous plaster were used in the ceiling of the battery-room the nails could be punched and the heads covered. That would prevent any trouble from the acid. Lath and plaster would

not be much more expensive than fibrous plaster in the city; but outside the city, where there might be carting to be done, that factor might just turn the scale in favour of fibrous plaster. Lath and plaster work is going out of use. The time taken in fixing it is one of the factors. The fibrous plaster used in Canberra is made locally, and it is a very good article.

23. *To Mr. Cook.*—The design of the Lakemba exchange is very good and economical. There is no extravagance about it. We will plaster the frame-room, but for the necessary rooms there is no need

The witness withdrew

The Committee adjourned