



1922.

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA. *Read on the 16th by
Hon. Senator [unclear]*

Pursuant to Statute
By Command
In return to Order

PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS. *Geo. Thompson
Clerk of the Senate.
5-2-21*

REPORT

TOGETHER WITH

MINUTES OF EVIDENCE

RELATING TO THE PROPOSED

ESTABLISHMENT OF AN AUTOMATIC TELEPHONE EXCHANGE

AT

SOUTH BRISBANE, QUEENSLAND.

MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

Third Committee.

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

Senate.

Senator Hattie Spencer Foll. *
Senator George Henderson.†
Senator John Newland, Vice-Chairman.††
Senator Edward Needham.‡
Senator William Plain.‡

House of Representatives.

Llewelyn Atkinson, Esquire, M.P.‡
The Honorable Frederick William Bamford, M.P.‡
David Sydney Jackson, Esquire, M.P.‡‡
George Hugh Mackay, Esquire, M.P.‡‡
James Matthews, Esquire, M.P.‡‡
Parker John Moloney, Esquire, M.P.‡‡

* Appointed 28th July, 1920. † Resigned 22nd July, 1920. ‡ Re-appointed 28th July, 1920.
§ Ceased to be a Member of the Senate, 30th June, 1920. †† Resigned 12th May, 1921. ‡‡ Appointed 19th May, 1921.

AUTOMATIC TELEPHONE EXCHANGE, SOUTH
BRISBANE, QUEENSLAND.

R E P O R T.

The Parliamentary Standing Committee on Public Works to which the House of Representatives referred for investigation and report the question of the provision of Automatic Telephone Exchange and Equipment at South Brisbane, Queensland, has the honour to report as follows:—

PROPOSAL,

1. The proposal submitted is to erect a telephone exchange building on a site at the corner of Stanley and Vulture streets, South Brisbane, and to install therein an automatic telephone switching system having an immediate equipment of 3,600 subscribers' lines, with an ultimate capacity of approximately 6,600 subscribers' 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 South Brisbane area.

REASONS FOR THE PROPOSAL.

2. The chief reason for the proposal is the necessity of providing telephone service for new subscribers in the South Brisbane Exchange area, and thus saving large expenditure on external line plant. It is stated that, if an exchange be established where proposed, it will be possible to construct subscribers' lines of a shorter length and, as a result, it is claimed better transmission will be provided.

3. The Common Battery Switchboard in the Central Exchange which serves subscribers in the South Brisbane Exchange area was placed in operation in 1909, and is reported to be now nearing the end of its economic life.

4. The capacity of the existing Central Manual Exchange equipment is stated to be practically exhausted, and action is in train to extend it, thus enabling estimated development to be dealt with in the Central Manual Exchange area until the end of 1922. Beyond that date, the officials assert that it will be necessary to provide building and exchange accommodation elsewhere if the growth is to be met.

5. The establishment of the South Brisbane Automatic Exchange will result in the transfer of approximately 2,700 subscribers from the Central Manual Exchange on the 1st June, 1923, thus affording relief and enabling development in the Central Manual Exchange area to be met until early in 1924, but it is represented that it is necessary to provide, at the earliest possible moment, a modern service for the subscribers in the South Brisbane Exchange area.

EXTRACT FROM VOTES AND PROCEEDINGS OF THE HOUSE OF REPRESENTATIVES.

NO. 204 OF 6TH DECEMBER, 1921.

18. PUBLIC WORKS COMMITTEE—REFERENCE OF WORK—AUTOMATIC TELEPHONE EXCHANGE, SOUTH BRISBANE.—
Mr. Groom moved, pursuant to notice, That, in accordance with the provisions of the Commonwealth Public Works Committee Act 1913-1914, the following work be referred to the Parliamentary Standing Committee on Public Works for its investigation and report thereon, viz.:—Automatic Telephone Exchange and Equipment at South Brisbane, Queensland.
Mr. Groom having laid on the Table plans, &c., in connexion with the proposed work—
Question—put and passed.

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Question—put and passed.

ESTIMATED COST.

6. The estimated cost of the work as submitted to the Committee is set down at:—

	£
Site (portion already acquired at a cost of £1,281)	3,431
Building	9,000
Air conditioning plant—heating, ventilating, vacuum cleaning, and air-compression plant	3,500
Exchange equipment, including that necessary at other exchanges	83,324
Equipment for subscribers' premises	19,622
Line Plant (conduit cables and aerial lines)	2,089
Cost of cut-over of exchange equipment and diversion of line plant	120
Total	£121,086

COMMITTEE'S INVESTIGATIONS.

7. To expedite consideration of this matter, the General Committee constituted four members a sectional committee, which visited the site and inspected portion of the area which the new exchange is designed to serve; took evidence from the Deputy Postmaster-General, the State Engineer, the Manager of Telephones, the Commonwealth Works Director of Queensland, and the Town Clerk of the City of South Brisbane.

8. *Site.*—The proposed site at the corner of Stanley and Vulture streets, South Brisbane, comprises a total area of 1 rood 24 1/2 perches. Of this area 20.27 perches is already Commonwealth property, having been purchased in 1913 for £1,281, and it is proposed to acquire the remaining 1 rood 4 1/2 perches on which is erected a wooden dwelling, the price mentioned being £2,150.

9. The Committee is satisfied that the site is suitable for the purpose for which it is intended, is high and well-drained, and the price mentioned is not unreasonable. The wooden building thereon will be sold for removal, and may be expected to realize approximately £200, which will be a set-off against the purchase price of the land.

10. *Building.*—The Committee examined the plans and had them explained by the Commonwealth Works Director for Queensland. The proposed structure is of a substantial fire-resistant character, and has been designed with due regard for appearance and economy.

11. *Financial Aspect.*—It was ascertained in evidence that the total annual charges for the proposed automatic system as at 1st June, 1928, or five years after the proposed cut-over, have been estimated at £31,465, and that the revenue on the same date is expected to be £41,400. The assets recoverable or thrown spare if the automatic exchange be installed are set down at a recoverable value of £17,205.

COMMITTEE'S RECOMMENDATION.

12. From the evidence placed before it, the Committee is satisfied that there is urgent need for a telephone exchange at South Brisbane, and the establishment of the proposed exchange may be expected to represent a substantial reduction in charges to subscribers in that area because of the shorter distance to the exchange. It will also be economical from a departmental point of view, because instead of having long lengths of cables over the Victoria Bridge, it will be necessary to have only sufficient cable for junction purposes.

13. In these circumstances, the Committee has no hesitation in recommending that the proposal as submitted be adopted, and that the work be put in hand at the earliest possible moment.

H. GREGORY,
Chairman.

Office of the Parliamentary Standing Committee on Public Works,
Parliament House, Melbourne, 31st May, 1922.

MINUTES OF EVIDENCE.

(Taken at Brisbane.)

WEDNESDAY, 25TH JANUARY, 1922.

SECTIONAL COMMITTEE.

Present:

Mr. Bamford, in the Chair;
Senator Foll, Mr. Mackay.
Mr. Jackson,

Henry Barkly Templeton, Deputy Postmaster-General, Queensland, sworn and examined.

therefore, to provide, at the earliest possible moment, a modern service for the subscribers in the South Exchange area. The estimated cost of the work is—Site (portion already required at a cost of £1,281), £3,431; building, £9,000; air-conditioning, heating, ventilating, vacuum cleaning, and air-compression plant, £3,500; exchange equipment, including that necessary at other exchanges, £83,324; equipment for subscribers' premises, £19,622; line plant (conduit, cables, and aerial lines), £2,089; cost of cut-over of exchange equipment and diversion of line plant, £120; total, £121,086. The estimated annual revenue, as at 28th February, 1921, and the annual revenue it is estimated will be obtained on the date of transfer and with five years' development, is shown hereunder:—Number of lines connected on 28th February, 1921, 2,105; estimated annual revenue received as at 28th February, 1921, £21,559; estimated number of subscribers' lines, 1st June, 1922, 3,790; estimated annual revenue, 1st June, 1922, £32,085; estimated number of subscribers' lines, 1st June, 1928, 3,800; estimated annual revenue, 1st June, 1928, £41,400. The proposed site is at the corner of Stanley and Vulture streets, South Brisbane. The original site (representing 20.27 perches), which was acquired in 1913, is now insufficient in area to meet requirements, and arrangements have been made by the acquisition of an additional area, representing 1 rood 4 1/2 perches, in Vulture-street, adjoining the site already acquired. It is proposed that the building shall be of simple design, and built on the latest fire-resisting principles. The immediate installation in the exchange is for an equipment of 3,600 subscribers' lines and an ultimate capacity of approximately 6,000 subscribers' 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 south area. Ultimately it may be necessary to establish exchanges at Yeronga and Bulimba, but meanwhile the proposed plant will accommodate subscribers' services that develop in these areas. The chief reason for the proposed establishment of an exchange at South Brisbane is the necessity to afford a means of providing telephone service for new subscribers in the South Exchange area, and thus save large expenditure on external line plant. If an exchange be established in South Brisbane, it will enable subscribers' lines to be constructed of shorter length, and, as a result, better transmission will be provided for the subscribers' lines in the proposed South Exchange area. The common battery switchboard in the Central Exchange, which serves the subscribers in the South Brisbane Exchange area was placed in operation in 1909, and is nearing the end of its economic life. The capacity of the existing Central Manual Exchange equipment is now practically exhausted, and action is in train to extend it, enabling estimated development to be met in the Central Manual Exchange area until the end of 1922. We have received a large number of applications for telephone connexions, but are unable to meet them owing to the lack of cables.

2. *To Mr. Jackson.*—The lack of cables is our principal difficulty. Contractors overseas will not undertake to supply us. As soon as we get sufficient cable there will be no difficulty in giving a service to new subscribers. We placed orders for cables four years ago, but have not yet been supplied. The contractors cater for services on the other side of the world, where there is a larger business. To that extent we are neglected, as they will not undertake to supply us at any specified date, and object to be penalized.

3. *To Mr. Bamford.*—A firm established in Sydney recently, for the purpose of manufacturing cables entered into a contract with the Postmaster-General, but up to the present have not supplied any of our requirements. The original Telephone Exchange, Melbourne-street, South Brisbane, was closed, and the lines (102) connected to Central Exchange with amended rentals as from 1st January, 1901. Immediately afterwards, the Department was approached by the Mayor

of South Brisbane to consider the re-establishment of an exchange in some central position in the South Brisbane district. At various times up to June, 1918, further representations were made on behalf of the Town Council, Belmont, Coorparoo and Stephens Shire Councils for the establishment of an exchange at either South Brisbane or Woolloongabba. In June, 1908, the question of rentals was brought forward by these interested, and representations were duly made to the Central Office on the subject, but the charges were not altered until April, 1911, when it was approved they should be based on radial distances in all cases where submarine cables or other special arrangements were required in construction of telephone lines. The site acquired in 1913, representing 20.30 perches, cost £1,281. The additional area represents a road 4.47 perches, with a house thereon valued at £2,150; provision (£2,500) has been made on current year's Estimates. Delivery of automatic exchange equipment may be expected to commence about May or June, 1923. The building will, therefore, need to be ready by 1st May, 1923, at the latest, and hence building operations should be commenced early in the financial year 1922-3. The Department of Home and Territories was recently advised by Central Office that the land should be acquired before 30th June, 1922, and it is stated that negotiations are about to be conducted with the owner and the lessee for the acquisition of the property. The following reasons may be advanced in favour of an automatic as against a manual exchange:—(1) Subscribers obtain inter-connexion without intervention of operator; (2) elimination of delays and errors inevitable in any system which depends upon the human factor for its operation; (3) absolute privacy of service; (4) completion of connexion under 7.5 seconds (five-figure system); (5) instantaneous advice if called subscriber engaged; (6) instantaneous clearing on completion of call; (7) constant and uniformly quick and accurate service over the 24 hours of the day; (8) savings in operating, supervision, and administration charges, training expenses, and accommodation; (9) economy of building space; a manual plant requires 30 per cent. more space than an automatic system of similar capacity; (10) economy in line plant, since the system readily lends itself to subdivision, enabling any number of exchanges to be established at the theoretical centres determined by survey; (11) no limit to size of exchange or system in a multi-office automatic network; automatic equipment facilitates extension and is flexible in meeting exceptional traffic demands; (12) lower working cost and relative immunity from faults affecting service, automatic switches being interchangeable and readily substituted from reserves tested out ready for use; (13) no new and fundamental equipment changes are necessary to meet changing conditions associated with traffic growth, nor is existing trunking arrangement affected by establishment of new offices; (14) no premature disconnections, since subscribers do their own disconnecting; (15) greater immunity from interruption owing to epidemics and industrial disturbances; (16) improved transmission resulting from economy's use of a larger number of exchanges, permitting shorter subscribers' loops; (17) increasing modern tendency towards substitution of mechanical devices for human labour and the general adoption of automatic equipment throughout the world; (18) higher efficiency of automatic trunk groups resulting from lower manipulative time.

4. **To Senator Foll.**—The establishment of the South Brisbane Exchange is an absolute necessity, because we have reached the end of our tether with regard to any extension at the Central Exchange. We are now making structural alterations with a view to putting in two additional sections to carry on until we get the automatic exchange at South Brisbane. If this exchange is not established, we shall have to re-organize the whole system in Brisbane at immense cost. Country

mail services will not suffer in any way by expenditure for the establishment of the South Brisbane Exchange. If the Treasurer will provide us with the money that was knocked off the Estimates by the late Treasurer, we shall be able to go on with our developmental policy in regard to country mail services. The expenditure on the automatic exchange will appear on the Estimates for 1922-3, and will not be incurred until the beginning of 1923. In my opinion, it is unjust that subscribers at South Brisbane should have to pay rental on the mileage basis with the Brisbane Exchange. Residents at Albion, for instance, would feel that they had a substantial grievance if they were required to be connected at Central Exchange, and were charged rental on the same basis as are residents of South Brisbane. The establishment of the exchange will lead to increased business. I may mention that when I came to Queensland, thirteen years ago, the telephone revenue for the whole of the State was £46,000. Last year, it was over £300,000, and I am satisfied that we shall have no difficulty in obtaining copper wire for new services. Recently I saw a representative of the Mount Kembla Company, and he assured me that they could turn out all our requirements, and were only waiting for orders. This wire will be quite satisfactory for our purposes. It is always tested before being accepted.

5. **To Mr. Jackson.**—The establishment of an exchange at South Brisbane will relieve the Central Exchange to the extent of nearly 3,000 lines. We are making provision for 3,600 lines in the immediate future. It is essential that relief should be provided, as it is estimated that our board will not carry any new subscribers after 1923, and the position will be disastrous. It is not anticipated that the scheme at the outset will provide sufficient revenue to meet interest on capital expenditure, sinking fund, and working expenses, but in five years' time with 3,600 subscribers, as estimated, the revenue should represent a return of over 16 per cent. on this outlay. I am not in a position to make any comparison of the working of an automatic with a manual exchange, because I have had no experience of the former, but I believe it is urged that the operating charges will be less. The automatic also insures a more perfect service. The advantage will not be so much a saving in working expenses as in an improved service, which will encourage intending subscribers to make application for connexion with the exchange.

6. **To Mr. Mackay.**—I selected the site for the proposed exchange and also the additional site. Rent is based on the mileage from the exchange. For the first 2 miles the charge is 25 per annum, and for each additional 1/2 mile, 10s. This additional charge is necessary, because the Department has to provide poles and wires and maintain the line. Subscribers living farther away from the exchange naturally pay a higher rental. The establishment of the proposed exchange at South Brisbane will represent a substantial reduction in charges to subscribers in the area, because of the shorter distance to the exchange. It will also be more economical from a departmental point of view, because, instead of having long lengths of cables over the bridge, it will only be necessary to have sufficient cable for junctioning purposes.

7. **To Mr. Bamford.**—I am not in a position to say what will be the difference in price between imported cables and cables manufactured in New South Wales, because the New South Wales firms have not yet delivered any cables to the Department, but I understand they made an agreement with the late Postmaster-General (Mr. Wise). I have not seen the particulars, and, therefore, I can give no opinion as to the price. Quotations for imported cables vary from day to day, according to the price of copper. It is not proposed to utilize the South Brisbane site for post-office purposes. It is intended for an automatic telephone exchange exclusively, but there will be room for a pole yard.

I have seen the design of the proposed building. It meets with the approval of the technical officers of the Department. I have had no experience of the proposed air-conditioning system. The site of the proposed exchange is a suitable centre for distribution, both towards the bridge and in the opposite direction. The price paid for the original site was reasonable, and, so far as the additional site is concerned, I think we made a bargain.

8. **To Mr. Jackson.**—I have seen the references in the press to a suggested postal loan in order to provide funds for the development of postal, telegraphic, and telephonic services. If the Department is to provide for the great accumulation of arrears, some such policy should, in my opinion, be adopted, because the present position is burdensome to the Department and entails endless correspondence with people who have grievances. If only we had the money we could put up a number of trunk lines in Queensland that would give a return of at least 15 per cent. to 20 per cent. from the date of installation. We are not putting in any non-paying propositions, except those mentioned in the circular memorandum issued by the late Postmaster-General, in which the Department undertakes to provide for 75 per cent. of the loss. All our trunk lines are good revenue-producing propositions. I am afraid that the automatic telephone system could not be applied to outlying districts with a limited number of subscribers, because it is specially designed for closer settled areas, where the demand is heavy.

9. **To Mr. Bamford.**—Because of the fire risk, the proposed automatic exchange building must be of concrete or brick. This is why the original intention to put the exchange over the Post Office was departed from. The situation for the building at South Brisbane is high and well drained.

(Taken at Brisbane.)

THURSDAY, 26TH JANUARY, 1922.

SECTIONAL COMMITTEE.

Present:

Mr. BAMFORD, in the Chair;
Senator FOLL, | Mr. MACKAY.

Edwin Evan Smith, Commonwealth Works Director, Queensland, sworn and examined.

10. **To Mr. Bamford.**—I prepared the plan for the proposed automatic telephone exchange at South Brisbane after consultation with the officers of the Department, and after having ascertained their views in regard to layout and other requirements. They are perfectly satisfied with the plan now before the Committee. The desire is for an exchange of fireproof construction, namely, brick with reinforced concrete ceiling. The building will be 100 feet by 35 feet, and the estimated cost £9,100, exclusive of the estimated cost of the air-conditioning plant, £3,500, or a total of £12,600. The reinforced concrete ceiling will be carried on rolled steel girders spaced 12 feet apart. There is to be a battery room adjoining, facing the front street, 20 ft. 6 in. by 30 feet, and also a luncheon room, with all necessary conveniences for the staff. At the rear of the main building, and connected with it by a closed-in corridor, there will be the air-conditioning room, 30 feet x 15 feet, also a line-instructors' room, 20 ft. 6 in. x 11 ft. 3 in., and all the necessary lavatory accommodation for the staff, as well as a bin store and a room for the linemen. The lavatory accommodation will be connected with a septic tank. This is necessary, because the sewerage scheme for South Brisbane appears to be a long way off yet. However, when the sewerage scheme is in operation, the only additional cost,

as far as the proposed exchange is concerned, will be the necessary connexion with the main sewer. It is proposed to turn the effluent from the septic tank into the street sewer that empties into the river. There is ample provision for lighting in the proposed new exchange. It is intended to put in windows to the fullest extent on the southern side, between the piers, thus giving the maximum amount of light. I have seen the Krautine system in operation, but I do not approve of it at all. It may be all right for isolated cottages, but not for a building of this nature. It was proposed to adopt that process in the Ordinance Store, but I cut it out in the plan. I have not consulted with the fire brigade authorities with regard to the fireproof construction of the proposed exchange, but I know it will be a very good proposition from that point of view. I have not had much experience of the air-conditioning system proposed to be introduced. The system was employed in the Castlereagh-street Exchange, Sydney, before I came to Brisbane. I understand that this matter has been thoroughly investigated by the engineers, and that the plant will be similar to that which is being installed in Victoria.

11. **To Mr. Jackson.**—The floor of the proposed exchange will be of wood blocks, and the ceiling of reinforced concrete treated to a smooth surface in order to prevent accumulation of dust. There is considerable variation in the temperature in Brisbane. Owing to the humidity of the atmosphere the installation of an air-conditioning plant is essential. Humidity affects considerably the mechanism of an automatic exchange, hence the necessity for this provision. Considerable trouble was experienced in the Vauchelle Exchange in Sydney, especially in the hotter weather. In a colder atmosphere there is less moisture in suspension, and therefore less need for special treatment. I made up my estimate for the exchange in November of last year. I would not like to say that it would be possible, at the present time, to carry out the work for less than the estimated cost. Labour conditions, when this work is undertaken, may be more acute than to-day. The wages award itself is not necessarily the governing factor in the cost of a building like this. The labour output determines the cost. If a bricklayer who gets 55s a week lays only 240 or 250 bricks a day, his work instead of costing £5, will cost £20. There is a decided tendency on the part of bricklayers to restrict the output. I had experience of this at Enggora some time ago, where we could only get 240 bricks laid per day, instead of at least 1,000, with the result that I dismissed the lot. That is our trouble. We get a better class of bricks, and I believe, a better class of bricklayer than in any other State, but the output is not sufficient. I will not be content with less than 600 bricks per day. That is not asking too much, because in New South Wales, where some of the construction is done on the piece-work system, bricklayers lay up to 1,500 bricks per day.

12. **To Senator Foll.**—The piece-work system is not allowed on Queensland public buildings.

13. **To Mr. Mackay.**—I cannot say if the additional site for the proposed exchange has yet been acquired, but I understand that negotiations have been in progress for some time. The area owned by the Department is 20.27 perches, and the area proposed to be acquired is 1.30 perches, or 4.47 perches. The building will be erected on the area to be acquired, and will cover practically the whole of it. The land adjoining will, I understand, be used for a pole yard. There is a wooden dwelling-house on one side, but I do not think this will affect the fire risk of the proposed new exchange. I think ample provision is being made for future expansion of business.

14. **To Mr. Bamford.**—Generally speaking, the design for the exchange is on the same lines as those adopted for the Albion and Newmarket exchanges.

15. *To Mr. Jackson.*—We have not provided for the erection of a second story to the proposed new building, but I have no doubt this could be done if necessary.

16. *To Senator Fall.*—The foundations will be in concrete, and, judging by the nature of the ground there, I should say that it would be possible to erect a two-story building on the site if required.

(Taken at Brisbane.)

FRIDAY, 27TH JANUARY, 1922.
SECTIONAL COMMITTEE.

Present:

Mr. Bamford, in the Chair;

Senator Fall, | Mr. Mackay.

Mr. Jackson.
Joseph William Sutton, State Engineer, Postmaster-General's Department, Queensland, sworn and examined.

17. *To Mr. Bamford.*—The increase in business warrants the proposed expenditure on an automatic exchange at South Brisbane. My knowledge of the automatic is theoretical. I have had no practical experience of the system. If the automatic installation is put in at South Brisbane, it will be possible to link up all subscribers with the existing exchange. The equipment proposed to be put in is expected to provide for all the needs of the Department for the next five years, and it may be extended indefinitely. We usually allow for a period of development extending over fifteen years, and this practice has been followed in the present instance. Accommodation for very many years beyond that period could be insured by adding another story to the proposed building. I approve of the general design for the exchange. A portion of the site has already been acquired by the Commonwealth, and negotiations are in progress with the object of acquiring an additional area for the building. The proposal is to install a machine-switching system with an immediate equipment for 3,600 subscribers' line, and an ultimate capacity of approximately 6,000 lines. Subsequently it may be necessary to establish exchanges at Yeronga and Bulimba, but, meanwhile, the proposed exchange will meet all requirements that may develop in that area. It is essential to establish an exchange at South Brisbane in order to provide an adequate service for new subscribers there, and save a large expense on external line plant. The proposed new exchange will enable subscribers' lines to be constructed of shorter length, with the result they will get better transmission. The common battery switchboard in the Central Exchange, which serves the South Brisbane Exchange area, has been in operation since 1909, and it is now nearing the end of its economic life. The capacity of the existing Central Manual Exchange equipment is practically exhausted. It is anticipated that if normal development is to be met it will be necessary, after the end of this year, to provide building and exchange accommodation elsewhere. The South Brisbane Exchange will result in the immediate transfer of approximately 2,700 subscribers, and to that extent the Central Exchange will be relieved and requirements met until early in 1924. The present board will not provide for subscribers who are already waiting. The temptation was to recommend a new Central Exchange, but it was considered to be better policy to give relief by establishing branch exchanges, and thus enable the equipment at Central Exchange to be employed to the limit of its economic life.

18. *To Mr. Mackay.*—Central Administration has been aware for the last seven years of the state of affairs in Brisbane.

19. *To Mr. Bamford.*—The capacity of the present manual telephone switchboard serving subscribers in the Central area is practically exhausted, and, in order to afford relief, acceptance of a tender for the supply of eighteen additional multiple manual positions was recommended in June last. Arrangements have since been made to accept a tender. It is anticipated the plant will be delivered and erected at the end of the year. This additional equipment will not provide for the connexion of the whole of the subscribers who will be waiting at the completion of its installation. If it is agreed to establish a telephone exchange at South Brisbane, it will be possible to transfer 2,700 lines from the Central Exchange, and thus provide room for expansion at Central until early in 1924. A further reason for providing a new telephone exchange at South Brisbane is that the fire risk in the Central Exchange is abnormally great owing to the unsuitability of the building. Therefore, it is desirable to proceed further with the scheme for remodelling the telephone system in the Brisbane network on modern lines as quickly as possible. The establishment of an automatic exchange at South Brisbane is one of the first proposed steps towards that end. The reason for locating the proposed exchange at South Brisbane is that by doing so considerable economies will be effected in line plant in connexion with the subscribers in this locality. Instead of bringing the circuits of the subscribers who are located on the south side into the Central Exchange, they will be terminated at a more economical centre—the proposed South Brisbane Exchange. They will obtain connexion to the Central Exchange by a comparatively small number of junction lines, which will be commonly used by the whole of the subscribers in the South area. Incidentally, the establishment of an exchange as proposed will greatly extend the area in which subscribers will have the advantage of the minimum ground rent, that is, the area in which the subscribers are within a 2-mile radius of the exchange to which they are connected. Another matter for consideration—automatic working *versus* manual—is one in which the officers in this State have had little practical experience, and in supporting the proposal we have been guided to a great extent by the opinions of telephone engineers who are in a position to furnish reliable advice on this point. Sir William Noble, Engineer-in-Chief, Post Office Engineering Department, Great Britain, and his assistant engineers, Messrs. Hart, Hadley, and Anson, after a careful investigation, in 1919, of the telephone system of the United States of America, strongly recommend the adoption of machine switching. The fire risk at the Central Exchange is increased owing to the fact that a large number of telephone lines cross the tramway and electric-lighting transmission cables. There is a liability of contact at any time, thus delivering a very heavy current into the exchange, with a possibility of fire. The building is unsuitable for exchange purposes, but we have instituted a very modern method of fire fighting, including the thermostatic fire alarm system, which may be set in operation by the mere lighting of a match within 3 or 4 feet of the indicator. The building is also lined with fireproof asbestos sheeting, and we have chemical extinguishers and asbestos blankets, as well as fire hoses on reels that are provided with a hollow-trunnion, so that the water pressure is on the hose-end while it is being pulled along. The men and operators receive training in fire drill, and at frequent intervals we give alarms and have a "turn-out" for fire. The location of the proposed exchange is in every way suitable. The 2-mile radius, which now extends almost to the Dutton Park Railway Station, will, by the establishment of the proposed exchange, extend more than half-way between Dutton Park and Yeronga. In my opinion, the automatic system is the only method by which an efficient and up-to-date telephone exchange may be operated.

In order that we might be equipped with the latest advice upon the subject of the acquisition of the additional area of land for the exchange site, I addressed a memorandum to the Deputy Postmaster-General on 7th January, and, in reply, received advice that the Secretary of Home and Territories Department recently advised that his Department was about to conduct negotiations with the owner and with the lessee for the acquisition of the property. Unless unforeseen delay occurs, the delivery of the automatic exchange equipment may be expected to commence about May or June, 1923. The Exchange building will, therefore, need to be ready by 1st May, 1923, at the latest, and hence building operations will require to be commenced early in the financial year 1922-23.

20. *To Mr. Mackay.*—I have here a plan of the site upon which the proposed exchange is to be erected. The Department has already acquired 20.39 perches, and the site which it is proposed shall be acquired comprise 1 rood 4.47 perches. The building is to be erected on the latter area, and for the reason that the original site is too small. The locality is conveniently close to the five-year telephonic centre, South Brisbane area. The plan shows three telephonic centres, namely, the present centre, the five-year centre, and the fifteen-year centre. The five and fifteen-year period centres are somewhat to the east of the proposed site, but sufficiently close for all practical purposes. The land already held by the Department is irregular in shape, having a frontage of 23 ft. 1 inch, and on the other side 41 feet. The proposed new site will have a straight frontage of 58 ft. 6 in. by a depth of 147 feet. The estimated cost of the land and building to be acquired is, I understand, £2,150. I did not inspect the building. That is a matter for the Works Department. Some considerable time ago officers of the Department were sent down to Sydney to get experience in the automatic-exchange system. Their reports were favorable, machine switching, in their opinion, being a great improvement on the existing system in Queensland, but the difficulty in Sydney was that there was not a full working of the automatic, the engineers having to work the old system in with the new. As the officer responsible for the smooth working of the Telephone Branch in Brisbane, I think the South Brisbane Exchange should be provided as soon as possible, because the greater the delay there is in providing relief, the longer will new subscribers be denied the convenience of telephone-communication.

21. *To Mr. Jackson.*—The question of cheaper rentals following the establishment of automatic exchange is a matter of policy to be determined by Central Administration. I would have nothing to say in that matter.

22. *To Senator Fall.*—The installation of the automatic exchange will make for slightly cheaper working.

23. *To Mr. Jackson.*—With the installation of the automatic exchange there should be an opportunity to provide a flat rate charge without any limit as to number of calls, as under the present system, because under the automatic a subscriber does his own work, and the little extra expenditure of current should be a negligible factor in overhead expenses, even if a subscriber is switching all day. As a matter of fact, one of the reasons why the automatic has the advantage over the manual system is that a flat rate works in well with the former. I have examined the plans of the proposed building carefully, and approve of them. The question whether the foundations will carry a second story is one for the Works Department to determine. I should recommend provision to be made for a second story. The plans now before the Committee are only tentative. Our policy is to wait till we accept tenders for the equipment before finalizing building plans, because we do not know what type of equipment we may have. It may be the panel, the relay, the

Strowger, or some other type. I spoke yesterday to Mr. Smith, the Works Director, about the possibility of erecting a second story on the site. He raised the question as to whether the ground would carry it, but I pointed out that the valley should be able to carry a second story.

24. *To Mr. Bamford.*—Developments in telephony have been so rapid of late that it is almost impossible to say what system may be in vogue fifteen years hence. I endorse what Mr. Templeton said about the capacity of the existing Central Exchange. Our plant there has reached the limit of its economic life. The cost of the Automatic Exchange at South Brisbane is estimated at £244,089 in 1923, and the cost of a manual exchange of similar capacity at the same date would be £228,000. We have not contemplated the erection of a post-office in connexion with this exchange. There is no reason why postal work should be associated with a telephone exchange.

25. *To Senator Fall.*—The question of compensation for land compulsorily acquired is one that is dealt with by the Home and Territories Department. There is no advantage to be gained by amalgamating postal and telephonic work. If a post-office were established on this site, and the exchange portion of the building were moved back a short distance, it would cause no inconvenience, so far as telephonic work is concerned, but I understand that the Deputy Postmaster-General has in mind a better site for a post-office, nearer the bridge.

The witness withdrew.

Stewart Rankin, Manager of Telephones, Brisbane, sworn and examined.

26. *To Mr. Bamford.*—I am familiar with the proposal to establish automatic telephone exchange at South Brisbane. We have not experienced any great difficulty in keeping a competent staff together, but necessarily there are many changes during the course of a year. This is one of the difficulties associated with the manual system. Last year we had 38 new telephonists out of a staff of 115. There is no limit as to the number that may be trained for this class of work. We get a sufficient number of applicants. The girls are trained for one month in a school of instruction, during which time they pass through the various stages, and then they are allowed to take their places at the switchboard, and answer calls; but, obviously, a telephonist new to the work is not so expert as one who has had six months' or a year's experience. I was assistant manager in Melbourne in 1914, when the cutter was made at Brighton. At first we had some trouble in adjusting the automatic apparatus, but after a few days the system worked satisfactorily. The Central Exchange common-battery multiple switchboard comprises eighteen sections, or 64 operating positions, each of which is practically fully loaded, and all are staffed by telephonists during the busy hours of the day. Scattered throughout the local field there are approximately 194 spare local jacks equipped for connexion of new subscribers, and a further 60 spare jacks not equipped with associated apparatus, but which is, I understand, being obtained. These 254 local jacks represent the additional number of new lines that can be connected to the Central Exchange, and they are insufficient to satisfy the number of applications on hand. At the present time there are approximately 469 intending Central subscribers on the waiting list held up for the want of underground cable pairs, &c. Most of these applicants are in the proposed South auto area. I am advised by the State Engineer that cable supplies are being delivered, or are on the way, with the exception of the main cable required to span the Victoria-bridge. The latter cable, however, according to the latest advice, will be delivered within a few weeks. When this cable is connected the position will be that the whole of the

Central Exchange switchboard equipment will be absorbed and no further growth will be possible until additional switchboard provision is made. The matter of extending the Central Exchange local equipment from a capacity of 6,840 lines to 8,290 is in hand. This will make for a little further development, but beyond that it will be impossible to meet growth unless a new exchange is established. It has been estimated that by the installation of an exchange at South Brisbane 2,790 subscribers could be transferred thereto from the Central Exchange. The equipment thus released at Central would meet the estimated growth, Central Exchange, up to the end of 1924. To keep pace with the requirements of the public it is therefore necessary to open new exchanges, and the establishment of one at South Brisbane is an urgent necessity. The opening of an exchange would lead to greater telephonic development in that district by reason of the fact that a larger number of possible subscribers would be brought within the 2-mile radius, and would obtain service at the minimum rental—an important factor in the rapid growth of the exchange. The automatic system has many advantages over the manual, particularly where, as in Brisbane, direct intercommunication is required between exchanges in the same network. In manual working this is done by order wires between telephonists, a call from one exchange to another requiring the service of two, and sometimes three, operators. As the subscriber's request is repeated from one operator to the other, the time lost is considerable, and errors must be very carefully guarded against. Under automatic working the caller dials the required exchange and number direct, thus eliminating the delays of the manual system. Instantaneous advice if the called subscriber is engaged, instantaneous clearing on completion of a call, a quicker service from caller to called party, and a uniform service over the 24 hours are also advantages of the automatic system. I fully concur in the proposal to install automatic at South Brisbane. It has already been approved for Albion and Newmarket, and adopted as the most up-to-date method of handling local calls. All other exchanges in the Brisbane network and proposed new exchanges must, therefore, be automatic, as it is not possible to obtain the best service when a mixture of systems is attempted in the same network. It is considered that, provided the exchange is designed to take the maximum traffic load, the maintenance of the plant is efficient, and the automatic apparatus is kept properly adjusted, an automatic exchange will give a better local service to the public than will a manual. There will not immediately be a great saving in staff at Central Exchange if an automatic is opened at South Brisbane, as the retention of Central Exchange as a manual switchboard necessitates installation at Central of automatic "A" positions to handle the traffic coming from South to Central Exchanges. Automatic "B" positions or other apparatus will also be required to complete calls from Central to South. The proposal, therefore, does not involve a big reduction in telephonists. However, there will be no difficulty in absorbing staff released by the change of system. This will be done by transferring officers to other exchanges or other suitable vacant positions, and by employing temporary telephonists to fill vacancies prior to an cut-over, instead of filling same by the appointment of permanent officers. I quite approve of the proposal to install the automatic system at South Brisbane.

27. To Mr. Jackson.—A flat-rate system would work in easily with the automatic, but I do not agree that we should change over from the existing to a flat rate because we are introducing the automatic exchange in South Brisbane. I am not sufficiently well versed in the system to say whether a big user would involve the Department in higher maintenance charges than a small user, but I think it is likely that the time of a mechanic would be more taken up by the operations of a big user.

28. To Senator Foll.—The strength of our staff is determined entirely by the number of calls, not by the number of lines. Each telephonist has a maximum load.

29. To Mr. Jackson.—I think the public get a much better service under the automatic than under the manual system, but the difficulty, if there is any difficulty about the former in Sydney and Melbourne, is due to the fact that they are trying to work the two systems in the network. Until the whole of the metropolitan area is under the automatic system, it is likely that trouble will be experienced occasionally. Very slight difficulty is experienced by subscribers at first when dialling numbers on the automatic.

(Taken at Brisbane.)

SATURDAY, 28TH JANUARY, 1922.

SECTIONAL COMMITTEE.

Present:

Mr. Bamford, in the Chair;
Senator Foll, Mr. Mackay.
Jonathan Herbert Pamplin, Town Clerk, South Brisbane, sworn and examined.

30. To Mr. Bamford.—I know the site that has been selected for the proposed automatic telephone exchange at South Brisbane. It is suitable, but I think a locality along towards the Fiveways would be more suitable if land could be obtained there. The selected site is too valuable from a business point of view for a telephone exchange. If some portion of the Brisbane Cricket Ground could be secured, the same purpose could be achieved for less expenditure, and the spot would be ideal for a telephone exchange.

31. To Mr. Mackay.—The cricket ground is a little less than a mile distant from the selected site.

32. To Senator Foll.—I think the land there is less valuable than the site at the corner of Vulture and Stanley streets.

33. To Mr. Bamford.—I am aware that the locality was selected by the departmental experts after the careful consideration of all the circumstances, but I think some portion of the Brisbane Cricket ground would be just as suitable and prove more economical, because at that point five important roadways meet, namely, Ipswich-road, Logan-road, the connecting centres of Stanley-street, and Main-street. The selected site is very valuable from a commercial point of view. Adjoining land is valued at £25 per foot. South Brisbane is not very well provided for in the way of post-offices. There is one at Woolloongabba, and another in South Brisbane, towards the Victoria-bridge. The accommodation at South Brisbane is totally inadequate. In fact, when I came here, about three years ago, I had some difficulty in finding the post-office. I passed it three or four times before I could locate it. The office at Woolloongabba is more up to date, and meets the needs of the locality pretty well. A post-office associated with the exchange on the selected site would be convenient for the people only in the immediate neighbourhood, as it would be about midway between the existing offices, which are, I should think, less than a mile and a half apart. In the circumstances, I hardly think expenditure on a post-office at the corner of Vulture and Stanley streets, assuming that the existing offices are maintained, would be justified. I do not think there would be any difficulty in the way of securing a portion of the land controlled by the Cricket Club trustees and set apart for recreation purposes, because the Council has previously advocated that the street frontages should be used for business purposes.

34. To Senator Foll.—The use of that portion of the cricket reserve for business premises would not encroach upon the playing area, and there would be still ample room for the convenience of the general public. The only alteration necessary would be removal of the entrance gates to the ground. They could easily be shifted. Up to the present, there have been no negotiations between the South Brisbane Council and the cricket trustees along the lines of my suggestion, but there is a proposal before the Council to secure control over the cricket ground, and I have no doubt that, if the change is made, the suggestion I have outlined will receive consideration. I certainly think that an automatic telephone exchange is essential at South Brisbane in order to insure an improved service. As an officer of the South Brisbane Council, I am a large user of the telephone, and I have no specific complaints to make, except that the service is not so efficient as one might desire, and I have had a good deal of trouble in getting extensions. Since I have been in Brisbane I have made application for four extensions, and invariably have had to wait for three or four months. When the present mayor was elected, prior to the visit of the Prince of Wales, he did not have telephone connexion with his private dwelling-house. We made application for an extension, and I think three months elapsed before anything was done, because wire was not available. By continued application we were able eventually to get some temporary accommodation. I am living at Coorparoo, and I had to wait four months before I could get a telephone. We had similar trouble in connexion with the service for Mowbray Park. About four months ago, when there was trouble with the larrikin element in the park, it was decided to install the telephone service, and we have just been advised that a cable is available. We have also been told, if we do not accept it within seven days it will be made available to the next subscriber on the waiting list. This indicates that there are a large number of applicants waiting for telephones. The area of South Brisbane is about 4½ square miles. Within that limited area the population has not increased very appreciably, but during the last three years there have been considerable developments in Stephens, Coorparoo, Belmont, and Balmoral shires. I think, therefore, that expenditure for an improved telephone service in South Brisbane is fully warranted.

35. To Mr. Mackay.—I have discussed the matter of the site with the mayor and one or two of the older men, and, so far as I can gather, they are unanimously of opinion that it is too valuable for commercial purposes to be used as an exchange, though, perhaps, I ought to say that hitherto it has not been generally known that an additional area was about to be acquired. The prevailing opinion was that the area held by the Department was in itself insufficient for the purpose of a telephone exchange. I cannot say what areas could be made available from the Brisbane Cricket Ground Reserve if that proposal should be entertained. There are several important buildings, including the Commonwealth Bank, Police Station, the Woolloongabba Railway Station, and the East Brisbane State School, which is the largest in Queensland, in the vicinity of the cricket ground. Land there would also be valuable, but not so costly as on the selected site.

36. To Mr. Bamford.—I do not say that the Vulture and Stanley streets site is unsuitable, but I think there are other sites that are more suitable. This matter, however, has not been discussed by the Council, and I do not think it is likely any action will be taken by that body to protest against the site selected. We would be inclined rather to accept the opinion of the departmental experts, as it is more likely they would be conversant with the needs of the Department than we, as a Council.

37. To Mr. Mackay.—The valuation of land in the vicinity of the cricket ground would be about £17 or £18 per foot, as compared to £25 per foot for land adjoining that selected for the exchange.

38. To Senator Foll.—The view we take is that, from a business point of view, it is not necessary for a telephone exchange to be located in a main street. Provided the locality is central and otherwise convenient, an exchange could be erected on a less expensive site than the one selected.

39. To Mr. Bamford.—The fact that the land owned by the Department was so small constituted one of the objections we had to the Vulture and Stanley streets site. The tendency is for the population in the city end of South Brisbane to become industrial in character. I do not know whether that would affect the proposition before the Committee very materially, but I take it that business premises would be more likely to be large users of telephone service than private residences.

40. To Senator Foll.—In Coorparoo, prior to the depression in the building trade, not long ago, the developments were very rapid; it was said that, on the average, a new house was finished every third or fourth day. It is likely that the people settling in that neighbourhood would also be large users of an improved telephone service.