

1857-8.

VICTORIA.

ELECTRIC TELEGRAPH.

CONCLUDING REPORT

OF THE

GENERAL SUPERINTENDENT OF ELECTRIC TELEGRAPH,

RELATIVE TO THE

ADVANCEMENT AND PRESENT CONDITION OF THE DEPARTMENT,
UP TO 31ST DECEMBER, 1857.

PRESENTED TO BOTH HOUSES OF PARLIAMENT BY HIS EXCELLENCY'S COMMAND.

By Authority:

JOHN FERRES, GOVERNMENT PRINTER, MELBOURNE.

REPORT

OF THE

GENERAL SUPERINTENDENT OF ELECTRIC TELEGRAPH,

UPON THE

ADVANCEMENT AND PRESENT CONDITION OF THE DEPARTMENT, FOR THE
HALF-YEAR ENDING 31ST DECEMBER, 1857.

Department of Electric Telegraph,
General Superintendent's Office,
Melbourne, 31st December, 1857.

In submitting my report for the current half-year, I have much gratification in being able to announce that my expectations relative to the early completion of the lines to the western and north-eastern boundaries of the colony have been happily realized; the line to Beechworth and Belvoir, to connect at Albury with the New South Wales division of the intercolonial scheme of lines, having been completed to the south bank of the Murray River opposite Albury on the 5th instant; and the line *viâ* Ballaarat, Fiery Creek, Hexham, Warrnambool, and Portland, to the South Australian boundary, a short distance beyond the township of Nelson, at the River Glenelg, was reported by the contractor as having been completed ready for testing on the 29th instant. The work upon these lines has been carried forward during the most unfavorable season of the year; and considering the many obstacles to be overcome at various points on their routes, on account of inclement weather, bad roads, &c., much credit is due to the contractors for the perseverance and energy they have exhibited in bringing their undertaking to a satisfactory and expeditious termination. Owing to unforeseen delay in the arrival of the instruments and batteries, I have only been enabled to open a portion of the north-eastern or Beechworth line for public communication, an office having been opened at Kilmore on the 5th October, and one at Longwood on the 3rd November last.

A sufficient number of instruments and batteries, however, having been this day delivered at my office by the contractors, Messrs. Meyer and Co., I purpose opening the line to Beechworth and Belvoir, and to Portland respectively, with the least possible delay.

The instruments supplied are of improved design and construction, and are, in my opinion, peculiarly adapted to continue in efficient working order for a lengthened period without requiring repairs, an advantage of much importance in this country, where the facilities for effecting repairs to instruments, particularly in the interior, are nearly wholly unattainable, or if present are found to be disproportionately expensive.

The batteries are known as Chester's improved patent, and designed especially for the use of telegraphs, being exceedingly simple, inexpensive, and efficient; the metals employed are zinc and platinized lead, or zinc and platina in long narrow plates placed in glass cells of unusual size, and acted upon by a weak solution (1 in 20) of sulphuric acid. The arrangement of the battery is ingenious, and the expense of maintaining it in good working order is so much less than Groves' battery that I fully anticipate being enabled to effect a considerable saving for the future in this respect, although the exorbitantly high price of imported sulphuric acid will always operate against such a result.

A sulphate of copper, local battery, possessing some new advantages, has also been supplied, and I have at present one in operation with the view of testing its cost, &c.; the expense of working it, is said to be very little less than Groves', but no fumes or unpleasant odors of any kind are emitted, and the battery is considerably more continuous in its action, besides being less troublesome to keep in order.

Contracts have been made for the erection of stations at Portland, Belfast, Warrnambool, Hexham, Streatham, Raglan (Fiery Creek), Kilmore, Longwood, Benalla, Wangaratta, and Belvoir. Beechworth has been omitted, as the most reasonable tender was so disproportionately high that the vote would not bear the charge; the erection of this station has therefore been deferred, but temporary office accommodation has been leased in order that the opening of the communication may not be delayed. I hope to be able to open offices at the several places named during the ensuing month (January), as it will not be necessary to wait for the entire completion of each building previous to opening the line, and additional facilities will thus be offered to the public as well as securing increased revenue to the department.

With reference to the construction of the remaining divisions of the intercolonial line in progress in the sister colonies, I am informed by Mr. Todd that the South Australian section will probably be completed to the boundary early in the month of March next, and that the difficulties experienced by the contractors in South Australia in carrying the line through nearly two hundred miles of country possessing no timber suitable for posts, and the absence of roads or facilities for transport, had retarded operations very much, but that the work was progressing as rapidly as circumstances would permit. We may therefore look forward with some degree of certainty to the opening of communication with Adelaide about the period mentioned.

On the New South Wales side, I regret to have to state that the progress of the work has been seriously interrupted through the contractor having failed to carry out his undertaking, in consequence of which the Government were obliged to terminate the contract, and the time lost by this untoward occurrence, as well as that consumed in re-advertising for tenders and deciding upon the offers of the several tenderers, occupied such a considerable period, that up to the present time, so far as I have learned, only a very small portion of the line has been actually constructed. I am, however, in receipt of a letter from Captain Martindale, R.E., Chief Commissioner of Railways in Sydney, by which I learn that a fresh contract has been made with a competent person, and that the work will now be pushed forward with all despatch; but even by the use of every available facility, I fear it will not be earlier than the month of July next that we shall be enabled to connect with Sydney, as the country presents occasionally heavily timbered districts through which the line must pass, and much of the route is devoid of any formed roadway or other facility for carrying materials with requisite expedition. I trust, however, that I may have over-estimated the period which I have thought likely to elapse ere the completion of the New South Wales division, the importance of establishing communication between Sydney and Melbourne as speedily as possible being too obvious to require any comment from me.

The lines contemplated for construction during the year 1858 are, an extension from Raglan (Fiery Creek) to Ararat, Castlemaine to Ballarat, embracing *en route* Maryborough, Dunolly, Creswick, &c., Sandhurst to Echuca on the River Murray, and a line from Geelong to Cape Otway to meet the submarine line to Tasmania.

The construction of these lines will, I consider, furnish great additional facilities for instant communication between all classes engaged in trade or otherwise upon the several gold fields, and will also bring many points at present considered remote, on account of the time consumed in reaching them by the ordinary medium of the mail, into immediate connection with Melbourne. Among the many advantages which will unquestionably accrue from the establishment of the lines named, may be mentioned the great aid which will be rendered in the suppression of the crime of horse and cattle stealing, by enabling the police intelligence to reach nearly every market of importance in the colony, and by timely notice to prevent the escape of persons detected in the act of offering stolen cattle for sale. The line from Castlemaine to Ballarat will also be the means of affording increased security in maintaining communication between Melbourne and important places in the interior; thus, if the communication between Melbourne and Ballarat, and places beyond that point, should be interrupted from any cause, messages would be forwarded *via* Castlemaine; and in the event of interruption between Melbourne and Castlemaine, in like manner messages would be transmitted *via* Ballarat; so that to cut off the communication entirely it would be necessary that both lines should be interrupted at the same time, an event which would not be of likely occurrence.

Having already furnished you with my report (a copy of which is annexed hereto) of the examination between Cape Otway, King Island, and the north coast of Tasmania, in selecting a line of soundings and route for the line of telegraph by submarine cable, &c., to connect the colonies of Victoria and Tasmania, I consider it unnecessary to make any further allusion to the subject here, other than to state that since writing my report my attention has been

directed to an opinion lately circulated in England, to the effect that submarine cables, after having been stowed in the hold of a ship, and exposed to tropical heat for even a limited time, would become so much affected through chemical changes which are said to take place in the gutta percha, that the insulation would be rendered ineffective, and the cable of course useless. The reasons upon which this opinion would appear to have been based are, that it is known that gutta percha undergoes a certain chemical change when exposed to an atmosphere of high temperature, by which its insulating properties are nearly or quite destroyed; and as a large portion of a quantity of gutta percha insulated copper wire forwarded to India, for use on the lines in that country, was found to be affected, as was supposed from the cause named, it was thought that submarine cables would possibly be liable to the same results; but as the incident mentioned as having occurred with insulated copper wire in India only referred to gutta percha in an unprotected state, as I am informed, I do not anticipate the slightest likelihood of a similar accident befalling a submarine cable while *in transitu* from England to Bass's Straits; for in the latter case the insulating covering of gutta percha would be almost hermetically enclosed in a strong coating, first of well tarred spun yarn, and finally of closely bound iron wires, protecting the core most effectually against the possibility of atmospheric effects, and rendering the insulation of the cable, as far as practicable, absolutely secure against all ordinary influences, either from the cause referred to, or from any other sort of actual accident to the cable through mismanagement in stowing or in paying out. I may here mention that I have at present in my possession a considerable portion of a large coil which originally contained one mile of submarine cable of precisely similar construction to that laid down in the Black Sea, between Varna and Balaklava. The coil was imported from England some two years back, and after its arrival here lay unprotected in various exposed positions for nearly twelve months, subject to the strong heat and sudden changes of our climate. Previous to concluding the purchase of this piece of cable on behalf of the Government, for which I had duly received authority, I considered it advisable to require that I should be allowed to test the continuity and insulation fully and to my satisfaction; for this purpose the coil (weighing two tons) was deposited at the bottom of the River Yarra Yarra, the ends of the cable being retained above water. After being submerged for a sufficient period, the battery and a galvanometer were applied with most satisfactory results, showing that the condition of the cable was quite perfect in every respect. Portions of this cable have since been laid down at the Saltwater River crossing near Footscray, and under the River Derwent, in Tasmania, with perfect success. I may also observe, that I have recommended a similar description of cable for the Bass's Straits service, and I have every reason to believe that it will be found to be well adapted for the purpose. From the lively interest manifested by the Government of the adjacent colony of Tasmania, in a desire to establish electric communication with Victoria at as early a period as possible, I am led to hope that the line across the Straits will be completed by the end of 1858; and as evidence of a preliminary step in that direction, I may mention that a line is now in course of erection between Launceston and Georgetown, at the entrance of the River Tamar, from which point I have, as previously reported, recommended that the line should be carried *via* Circular Head to meet the submarine section near Cape Grim; the prosecution of which latter work is, I am informed by Mr. Butcher, Inspector of Telegraphs, Hobartown, about to be undertaken, and will probably be completed during the present summer.

The following statement of the business of my department during the past six months exhibits a gratifying increase upon that shown for the previous half of the current year, and, I think I may be permitted to say, affords a cheering view of the general success of the lines already established, as well as a promising future for those now about to be opened, especially when connected with the fact that every increased facility offered will no doubt add to the income in a ratio at least equally (if not more) favorable to the outlay as that at present afforded.

STATEMENT showing the General Business of the Telegraph Department in Victoria during the half-year ending the 31st of December, 1857.

Year.	Month.	Number of Private Messages.	Number of Messages on Public Service.	Value of Messages on Public Service.	Total Cash Receipts.	Total Number of Messages transmitted.
1857	July	4,736	525	£ s. d. 251 5 0	£ s. d. 912 18 1	5,261
	August	4,876	462	230 14 7	805 17 5	5,338
	September	4,749	547	263 12 3	871 17 11	5,296
	October	5,183	741	355 5 8	941 2 11	5,924
	November	5,193	612	298 0 2	891 5 5	5,805
	December	5,384	570	272 11 0	939 13 8	5,954
TOTAL		30,121	3,437	1,671 8 8	5,362 15 5	33,578

GENERAL ABSTRACT.

The Gross Expenditure for Salaries and Expenses incidental to the working and maintenance of the lines during the period included in the foregoing Return amounts to £5,356 12s. 7d.

Dr. DEBTOR AND CREDITOR STATEMENT. Cr.

	£	s.	d.		£	s.	d.	
Total Expenditure for working and maintenance from 1st July to the 31st December, 1857	5,356	12	7	Balance 30th June, 1857	1,854	6	8	
Balance	3,531	18	2	Revenue for the transmission of Private Despatches	5,362	15	5	
				Value of the Despatches on Public Service	1,671	8	8	
	£	8,888	10	9	£	8,888	10	9

The balance shown here, £3,531 18s. 2d., will afford, upon the round cost of establishing the lines, from which the amount has been derived, interest for the current year, say upon £40,000, at the rate of nine per cent per annum; but I have no doubt that if proper office accommodation, easy of access to those who are in the habit of adopting the use of the telegraph most frequently, and who are of course most benefited by its advantages, were provided at Melbourne, the revenue of that station would receive a marked addition. While upon this subject, I would take occasion to observe, that although gratified to know that my recommendation or suggestion brought forward in my last report, relative to the propriety of establishing a central station in the new Post-office building about to be erected, has received the approval and action of Government, still I have to express my regret on learning that the accommodation proposed to be afforded will probably not be of the character which I would have desired for the benefit and advantage of the department; and I would here beg to point out the pressing necessity which exists for providing at least a portion of the office room upon the lower or ground floor, in order that every possible accessibility may be afforded for the receipt, transmission, and delivery of messages. The instruments, batteries, &c., might without disadvantage be placed upon the floor above the receiving office, and communication be maintained between the apartments by very simple means, but the public room should, in my opinion, be placed as I have already indicated, for the reasons stated; and I would beg to express a hope that the importance of the matter may be kept fully in view, and be well considered before arriving at a final decision relative to the actual extent and nature of the accommodation which shall be provided.

Danger to the lines from the ravages of bush fires having occupied a portion of my attention during the present hot summer weather, I am happy in being able to state that no damage has been sustained from that cause up to this time, and that although an extensive bush fire raged for some days in a heavily timbered section of the country through which the line is carried between Beechworth and Belvoir, and burnt the brush, &c., for many miles upon the immediate route of the line, no damage was occasioned to the posts other than to slightly scorch them in some places where the fire was more than ordinarily fierce. Although in this instance the line escaped without injury, I still have not lost sight of the fact that in spite of the precaution of clearing the timber and brushwood for a radius of forty feet around each post considerable danger yet remains, nor of the remedy which it may be possible to apply, as referred to in my last report, and when the obstacle of disproportionate expense shall have been removed, or at least partially overcome, I shall take early steps to provide the valuable preventive as already described.

In my concluding report for the year 1857, I may be excused for remarking that I look forward to the early telegraphic union of the four Australian colonies with anticipations of the most cheering character, and I would leave to those whose duty leads them publicly to record the advances of colonial progress the pleasing office of shadowing forth the very great advantages and importance of intercolonial telegraphic communication, and the almost certainty of the beneficial influence it must eventually exercise, not only amongst individual localities, but particularly in tending to advance the much wished for federation of the several colonies, a subject now occupying a large portion of public attention.

In the report of the Superintendent of the Astronomical Observatory, attached hereto, will be found a brief statement of the condition of that branch of the service, and for which I would beg a full consideration, the important aid rendered to the commercial interest by that establishment being already so perfectly understood and acknowledged as to require no lengthened allusion from me.

I have the honor to be,

Sir,

Your obedient Servant,

SAML. W. MCGOWAN.

The Honorable
The Postmaster General,
Melbourne.