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25-5-80 to 1240 w

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

CIVIL WORKS.

Telegraph.

To

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Nos. 114-30T.

Dated Simla, May 5, 1881.

Received 27th May.

G.O-No-1339

Administration Report of the Indian Telegraph Department for the year 1879-80.

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27.5.81

ADMINISTRATION REPORT

OF

# THE INDIAN TELEGRAPH DEPARTMENT

FOR

# 1879-80.

Govt. Central Press.—No. 28 D. G. T. D.—20-12-80.—300.

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# ADMINISTRATION REPORT

OF

# THE INDIAN TELEGRAPH DEPARTMENT

FOR

# 1879-80.

THE results of the operations of the Department for the year 1879-80 shew a satisfactory progressive improvement.

The total working expenses amounted to Rs. 30,25,546 and the earnings to Rs. 43,44,909, shewing a surplus of Rs. 13,19,363,* as compared with the surplus of Rs. 6,08,246 during the preceding year.

The number of paid telegrams increased from 1,371,721 in 1878-79 to 1,562,511, of which latter 1,327,952 were inland and 234,559 foreign.

The miles of lines and wires (including cables) increased respectively from 18,589 and 44,578 to 20,468 and 51,945. In addition, 1,761 miles of wire, not the property of Government, were maintained by the Department for the service of Railway Companies, as against 6,723 during the previous year.

The large increase in the mileage of lines and wires belonging to the Department, and the decrease in the mileage of wire maintained for Railway Companies, is chiefly due to the transfer of the East Indian Railway to the State on the 1st of January 1880.

The number of Departmental offices increased from 250 to 276, and at the close of the year 633 Railway Telegraph offices were technically supervised by the Department, as against 525 during the preceding year.

Notwithstanding the increase of traffic, the speed of transmission has, in the case of all the main routes, practically been maintained. Details will be found at paragraph 20.

2. A clear idea of the progress that has been made year by year will be readily obtained from the following table and from diagrams which are annexed to this Report;—

| HEADS OF FINANCIAL RESULTS. | | | 1871-72. | 1872-73. | 1873-74. | 1874-75. | 1875-76. | 1876-77. | 1877-78. | 1878-79. | 1879-80. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure per message ... ... | | | 3·69 | 3·69 | 3·44 | 3·15 | 3·11 | 2·48 | 2·30 | 2·24 | 1·93 |
| Total receipts per message ... ... | | | 2·55 | 2·67 | 2·69 | 2·66 | 2·62 | 2·48 | 2·44 | 2·68 | 2·77 |
| Total expenditure per mile of line (including rented lines). | | | 154·53 | 162·12 | 161·54 | 160·00 | 154·08 | 145·02 | 147·08 | 151·10 | 143·15 |
| Total receipts per mile of line (including rented lines). | | | 107·62 | 117·09 | 126·39 | 134·90 | 130·19 | 145·00 | 155·61 | 180·87 | 205·57 |
| Total expenditure per mile of wire (including rented wires). | | | 81·74 | 81·58 | 79·03 | 78·58 | 72·87 | 63·27 | 58 76 | 60·32 | 56·34 |
| Total receipts per mile of wire (including rented wires). | | | 56·94 | 58·92 | 61·84 | 66·26 | 61·58 | 63·26 | 62·17 | 72·20 | 80·96 |
| Number of messages per mile of line (excluding rented lines). | | | 43·04 | 44·27 | 47·56 | 52·12 | 55·40 | 65·26 | 77·47 | 76·66 | 86·80 |
| Number of messages per mile of wire (excluding rented wires). | | | 23·44 | 23·67 | 25·08 | 27·39 | 28·87 | 32·77 | 39·45 | 38·16 | 42·97 |
| Number of messages per office (*paid and pro-formâ*). | | | 3,310 | 3,396 | 3,341 | 3,752 | 4,095 | 4,774 | 5,711 | 5,520 | 5,690 |
| Message revenue only per mile of wire (excluding rented wires). | | | 58·67 | 63·14 | 65·40 | 68·29 | 71·33 | 75·68 | 89·60 | 90·40 | 107·29 |
| Message revenue only per mile of line (excluding rented lines). | | | 107·77 | 118·08 | 124·20 | 129·91 | 136·91 | 150·71 | 170·30 | 181·61 | 216·64 |
| Average cost to sender per message. | Inland ... | State ... | 3·78 | 3·33 | 3·26 | 3·33 | 3·07 | 3·24 | 3·86 | 3·55 | 4·09 |
| | | Private. | 1·77 | 1·82 | 1·72 | 1·63 | 1·58 | 1·56 | 1·51 | 1·49 | 1·48 |
| | Foreign (Indian share) ... | State ... | 13·30 | 10·07 | 9·35 | 8·47 | 9·10 | 15·08 | 15·86 | 13·17 | 15·04 |
| | | Private. | 5·75 | 6·56 | 6·24 | 5·73 | 5·69 | 4·90 | 4·51 | 4·30 | 4·24 |

* After providing for a loss of Rs. 22,091, sustained in working the Ceylon system of telegraphs.

## REVENUE AND EXPENDITURE.

3. The total net capital expenditure of the Department during the year amounted to Rs. 5,40,921.

The Capital Account of the Department (excluding Ceylon) at the end of the year stood at Rs. 3,41,02,791, including Rs. 56,39,910 for abandoned lines, buildings, and stores.

4. The following is a brief Statement of Receipts and Expenditure on Revenue Account of the whole Department, including India and Ceylon, for the year 1879-80 :—

| | | | | Rs. |
|---|---|---|---|---|
| Expenditure in India and Ceylon ... ... ... | ... | ... | ... | 30,25,546 |
| REVENUE. | INDIA. | CEYLON. | TOTAL. | |
| | Rs. | Rs. | Rs. | |
| Paid Messages ... ... ... .. | 36,58,725 | 89,805 | 37,48,530 | |
| State Railways ... ... ... ... | 3,14,053 | 900 | 3,14,953 | |
| Guaranteed Railways ... ... ... ... | 99,061 | ... | 99,061 | |
| Claims from Guarantors, &c. ... ... ... | 35,401 | 2,192 | 37,593 | |
| Minor undertakings ... ... ... ... | 15,434 | 495 | 15,929 | |
| Miscellaneous ... ... ... ... | 14,799 | 71 | 14,870 | |
| TOTAL ... | 41,37,473 | 93,463 | 42,30,936 | |
| *Add Pro-formâ* Message Revenue ... ... ... | 1,13,973 | ... | 1,13,973 | |
| TOTAL ... | 42,51,446 | 93,463 | 43,44,909 | 43,44,909 |
| Net profit of year as per para. 1 ... | 13,19,363 | ... | ... | 13,19,363 |

5. The following is an abstract Revenue Account for India only for 1879-80, with corresponding figures for 1878-79 :—

| EXPENDITURE. | 1878-79. | 1879-80. | RECEIPTS. | 1878-79. | 1879-80. |
|---|---|---|---|---|---|
| | Rs. | Rs. | | Rs. | Rs. |
| Repairs to lines ... ... | 2,77,397 | 1,61,385 | Message Revenue earned ... | 29,63,569 | 36,58,725 |
| Repairs to buildings by Public Works Department. | 32,058 | 31,684 | Receipts from State Railways for interest, line maintenance, technical supervision, &c. | 1,71,071 | 3,14,053 |
| Repairs by this Department .. | 1,907 | 1,190 | | | |
| Direction ... ... | 1,81,635 | 1,76,573 | | | |
| Accounts ... ... | 52,470 | 54,692 | | | |
| Superintendence ... ... | 6,61,748 | 6,55,252 | Receipts from Guaranteed Railways. | 2,55,386 | 99,061 |
| Line Maintenance ... ... | 1,26,654 | 1,21,546 | | | |
| Check Office ... ... | 38,129 | 41,475 | | | |
| Signalling ... ... | 14,34,905 | 15,06,059 | Claims from Guarantors ... | 33,694 | 35,401 |
| Tools and Plant ... ... | 1,97,079 | 2,12,917 | | | |
| Profit and Loss ... ... | 197 | 220 | Sales of Books, Gazettes, &c. ... | 16,850 | 15,434 |
| Printing charges by Printing Department. | 2,488 | 3,544 | Miscellaneous ... ... | 39,478 | 14,799 |
| Absentee Allowances paid in England. | 50,470 | 58,230 | News-free and other *pro-formâ* Message Revenue. | 1,16,967 | 1,13,973 |
| TOTAL EXPENDITURE ... | 30,57,137 | 30,24,767 | | | |
| DEDUCT— | | | | | |
| Value of printed forms supplied to Ceylon. | 1,023 | 1,976 | | | |
| Share of General Charges debited to Ceylon. | 10,146 | 9,714 | | | |
| Share of General Charges debited to Capital. | 75,361 | 1,02,725 | | | |
| Debits to Indo-European Department. | ... | 360 | | | |
| TOTAL DEDUCTIONS ... | 86,530 | 1,14,775 | | | |
| NET REVENUE EXPENDITURE ... | 29,70,607 | 29,09,992 | | | |
| NET PROFIT ... | 6,26,408 | 13,41,454 | TOTAL RECEIPTS .. | 35,97,015 | 42,51,446 |



The increase of message revenue earned over that of the previous year (excluding Ceylon) is Rs. 6,95,156, due partly to the natural growth of traffic, but chiefly to the increase in State messages connected with the military operations on the Frontier.

6. The receipts from Railways shew a decrease of Rs. 13,343. This is entirely due to the decrease on Guaranteed Railway receipts which are Rs. 1,56,325 less than the previous year. The major portion of this amount is, however, due from the South Indian Railway. A portion of the reduction is also due to the circumstance that from the 1st of January to the 31st of March 1880 the East Indian Railway became State instead of Guaranteed.

7. The *pro-formâ* message revenue shews a decrease of Rs. 2,994, due to a decrease in the value of free copies of Government and Press messages.

8. Summaries of the financial results obtained in working the Telegraphs in India and Ceylon for the year 1879-80 are shewn in Appendix A, together with the results of the operations for the previous five years.

## TRAFFIC.

9. A return of the Number and Value of Inland and Foreign Messages under the sub-heads "State" and "Private" will be found in Appendix B the percentage being as follows :—

| CLASS. | INLAND. | | FOREIGN. | | TOTAL. | |
|---|---|---|---|---|---|---|
| | No. | Value. | No. | Value. | No. | Value. |
| State ... ... ... | 18·60 | 31·66 | 0·20 | 1·32 | 18·80 | 32·98 |
| Private ... ... | 66·40 | 40·88 | 14·80 | 26·14 | 81·20 | 67·02 |
| TOTAL ... | 85·00 | 72·54 | 15·00 | 27·46 | 100·00 | 100.00 |

Shewing the following absolute and proportionate increase over the result of the previous year :—

| CLASS OF MESSAGES. | ACTUAL. | | | | | | | | | | | | PERCENTAGE OF | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | INCREASE. | | | | | | DECREASE. | | | | | | INCREASE. | | | | | | DECREASE. | | | |
| | Inland. | | Foreign. | | Total. | | Inland. | | Foreign. | | Total. | | Inland. | | Foreign. | | Total. | | Inland. | | Foreign. | | Total. | |
| | No. | Amount. | No. | Amount. | No. | Amount. | No. | Amount. | No. | Amount. | No. | Amount. | No. | Amount. | No. | Amount. | No. | Amount. | No. | Amount. | No. | Amount. | No. | Amount. |
| | | Rs. | | Rs. | | Rs. | | Rs. | | Rs. | | Rs. | | | | | | | | | | | | |
| State ... | 81,078 | 4,42,458 | ... | 5,664 | 81,043 | 4,48,123 | .. | ... | 35 | ... | ... | ... | 38·69 | 50·45 | ... | 13·00 | 38·07 | 56·88 | ... | ... | 1·05 | ... | ... | ... |
| Private | 73,023 | 98,556 | 36,724 | 1,42,464 | 1,09,747 | 2,41,020 | .. | ... | ... | ... | ... | ... | 7·57 | 6·87 | 18·87 | 17·01 | 9·47 | 10·60 | ... | ... | ... | ... | ... | ... |
| TOTAL... | 1,54,101 | 5,41,014 | 36,724 | 1,48,128 | 1,90,790 | 6,89,143 | ... | ... | 35 | ... | ... | ... | 13·13 | 24·84 | 18·56 | 16·82 | 13·90 | 22·52 | ... | ... | 1·05 | ... | ... | ... |

10. The total number and value of paid messages as compared with the previous year was as follows :—

| YEAR. | STATE. | | PRIVATE. | | TOTAL. | |
|---|---|---|---|---|---|---|
| | No. | Value. | No. | Value. | No. | Value. |
| | | Rs. | | Rs. | | Rs. |
| 1878-79 ... ... | 212,851 | 7,87,745 | 1,158,870 | 22,71,641 | 1,371,721 | 30,59,386 |
| 1879-80 ... ... | 293,894 | 12,35,868 | 1,268,617 | 25,12,662 | 1,562,511 | 37,48,538 |

*Inland Traffic.*

11. The growth of the inland message traffic, State and private, since the introduction of the present tariff, will be seen at a glance from the figures below :—

| YEAR. | STATE. | | | | | | PRIVATE. | | | | | | TOTAL PAID MESSAGES. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number. | Value. | Percentage of *number* compared with previous year. | | Percentage of *value* compared with previous year. | | Number. | Value. | Percentage of *number* compared with previous year. | | Percentage of *value* compared with previous year. | | Number. | Value. | Percentage of *number* compared with previous year. | | Percentage of *value* compared with previous year. | |
| | | | Increase. | Decrease. | Increase. | Decrease. | | | Increase. | Decrease. | Increase. | Decrease. | | | Increase. | Decrease. | Increase. | Decrease. |
| | | Rs. | | | | | | Rs. | | | | | | Rs. | | | | |
| 1872-73 ... | 57,448 | 1,91,213 | 9·39 | ... | ... | 3·47 | 548,846 | 9,06,150 | 4·93 | ... | 7·96 | ... | 606,294 | 11,87,363 | 5·35 | ... | 5·94 | ... |
| 1873-74 ... | 65,339 | 2,13,093 | 13·73 | ... | 11·44 | ... | 592,243 | 10,18,210 | 7·90 | ... | 2·21 | ... | 657,582 | 12,31,303 | 8·45 | ... | 3·70 | ... |
| 1874-75 ... | 77,226 | 2,57,315 | 18·19 | ... | 20·75 | ... | 658,522 | 10,73,835 | 11·19 | ... | 5·46 | ... | 735,748 | 13,31,150 | 11·89 | ... | 8·10 | ... |
| 1875-76 ... | 89,111 | 2,73,183 | 15·38 | ... | 6·16 | ... | 707,136 | 11,17,213 | 7·38 | ... | 4·03 | ... | 796,247 | 13,90,396 | 8·23 | ... | 4·46 | ... |
| 1876-77 ... | 99,003 | 3,21,472 | 11·10 | ... | 17·08 | ... | 874,348 | 13,61,173 | 23·64 | ... | 21·84 | ... | 973,351 | 16,82,645 | 22·25 | ... | 21·02 | ... |
| 1877-78 ... | 1,23,834 | 4,48,206 | 25·08 | ... | 39·42 | ... | 1,046,120 | 15,85,891 | 19·64 | ... | 16·51 | ... | 1,169,954 | 20,34,097 | 20·20 | ... | 20·89 | ... |
| 1878-79 ... | 2,09,544 | 7,44,177 | 69·21 | ... | 66·03 | ... | 964,307 | 14,34,297 | ... | 7·82 | ... | 9·55 | 1,173,851 | 21,78,474 | 0·33 | ... | 7·10 | ... |
| 1879-80 ... | 2,90,622 | 11,86,635 | 38·69 | ... | 59·45 | ... | 1,037,330 | 15,32,853 | 7·57 | ... | 6·87 | ... | 1,327,952 | 27,19,488 | 13.13 | ... | 24·84 | ... |

*Foreign Traffic.*

12. There has been an increase in Foreign traffic, State and private. The percentage of increase compared with previous years is shewn in the following figures :—

| YEAR. | Percentage of Increase, compared with previous years. | |
|---|---|---|
| | No. | Value. |
| 1873-74 ... | 12·72 | 7·33 |
| 1874-75 ... | 15·75 | 6·24 |
| 1875-76 ... | 8·87 | 8·21 |
| 1876-77 ... | 22·44 | 5·34 |
| 1877-78 ... | 38·14 | 27·28 |
| 1878-79 ... | 5·28 | 0·42 |
| 1879-80 ... | 18·56 | 16·82 |



13. Appendix C shews the percentage of number of messages between India and places to the westward, by each route, for the past nine years. The comparative results of the period under review and of the three previous years are as follows :—

| | 1876-77. | 1877-78. | 1878-79. | 1879-80. |
|---|---|---|---|---|
| *Viâ* Suez ... | 60·22 | 79·10 | 75·04 | 74·88 |
| „ Teheran ... | 37·57 | 17·72 | 23·07 | 22·64 |
| „ Turkey ... | 2·21 | 3·18 | 1·89 | 2·48 |

Details of the number and value of messages to, from, and through India by each route will be found in Appendix B.

14. The following return of foreign traffic corresponds with that given in paragraph 11 for inland traffic :—

| YEAR. | STATE. | | | | | | PRIVATE. | | | | | | TOTAL. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number. | Indian share of charge. | Percentage of *value* as compared with previous year. | | Percentage of *number* as compared with previous year. | | Number. | Indian share of charge. | Percentage of *value* as compared with previous year. | | Percentage of *number* as compared with previous year. | | Number. | Indian share of charge. | Percentage of *value* as compared with previous year. | | Percentage of *number* as compared with previous year. | |
| | | | Increase. | Decrease. | Increase. | Decrease. | | | Increase. | Decrease. | Increase. | Decrease. | | | Increase. | Decrease. | Increase. | Decrease. |
| | | Rs. | | | | | | Rs. | | | | | | Rs. | | | | |
| 1872-73 ... | 1,211 | 12,196 | ... | 48·80 | ... | 32·46 | 76,883 | 5,03,919 | 16·64 | ... | ... | 0·9 | 78,094 | 5,16,115 | 13·22 | ... | ... | 1·65 |
| 1873-74 ... | 1,203 | 11,251 | ... | 7·75 | ... | 0·66 | 86,683 | 5,40,877 | 7·33 | ... | 12·72 | ... | 87,886 | 5,52,128 | 6·97 | ... | 12·54 | ... |
| 1874-75 ... | 1,305 | 11,053 | ... | 1·75 | 8·47 | ... | 1,00,338 | 5,74,675 | 6·24 | ... | 15·75 | ... | 1,01,643 | 5,85,728 | 6·09 | ... | 15·65 | ... |
| 1875-76 ... | 1,875 | 17,076 | 54·48 | ... | 43·67 | ... | 1,09,247 | 6,21,876 | 8·21 | ... | 8·87 | ... | 1,11,122 | 6,38,952 | 9·09 | ... | 9·32 | ... |
| 1876-77 ... | 1,914 | 28,867 | 69·06 | ... | 2·08 | ... | 1,33,771 | 6,55,074 | 5·34 | ... | 22·44 | ... | 1,35,685 | 6,83,941 | 7·05 | ... | 22·10 | ... |
| 1877-78 ... | 2,259 | 35,827 | 24·11 | ... | 18·02 | ... | 1,84,801 | 8,33,778 | 27·28 | ... | 38·14 | ... | 1,87,060 | 8,69,605 | 27·14 | ... | 37·86 | ... |
| 1878-79 ... | 3,307 | 43,568 | 46·39 | ... | 21·60 | ... | 1,94,563 | 8,37,345 | 5·28 | ... | 0·42 | ... | 1,97,870 | 8,80,913 | 1·30 | ... | 5·78 | ... |
| 1879-80 ... | 3,272 | 49,232 | ... | 1·05 | 13·00 | ... | 2,31,287 | 9,79,809 | 18·87 | ... | 17·01 | ... | 2,34,559 | 10,29,041 | 18·56 | ... | 16·82 | ... |

15. Diagrams A and B give the number and value respectively of Inland and Foreign paid messages from year to year as far back as the record is available.

*Principal extensions in Foreign Lines and alterations in Tariffs.*

16. The submarine line from Penang to Singapore was duplicated in July and August 1879, the new cable being taken into the intermediate Port of Malacca.

From Singapore to Port Darwin a second cable was laid in January 1880, thus completing the double line from India to Australia.

A cable was laid from Natal to Zanzibar in September 1879, and three months later the completion of the Section Zanzibar-Aden placed the Cape Colonies in telegraphic communication with the great international system.

A new French company having laid a cable between France and the United States of America in January 1880, the competing Atlantic Cable Companies reduced their tariffs from 3Frs. 75Cts. to 60Cts. per word.

*Signal Offices.*

17. Appendix D is a classified abstract of Signal Offices according to the amount of traffic originating at each for the past seven years.

18. Appendix E shews the number of offices in each division open at the end of the year 1879-80. The following were opened and closed during the year :—

| Opened. | Date. | Closed. | Date. |
|---|---|---|---|
| Dagshai ... ... .. | 19th April. | Akot .. ... | 16th April. |
| Dalhousie ... ... | 29th Do. | Bagh ... ... | 30th January. |
| Sabathu ... ... ... | 12th May. | Dadur ... ... | 19th February. |
| Almora ... ... ... | 16th June. | Gulistan Karez ... | 26th Ditto. |
| Chakrata ... ... | 8th Do. | Ngathinegyoung ... | 6th March. |
| Barikab ... .. | 19th October. | | |
| Budeshkheyl ... ... | 20th Ditto. | | |
| Gundamuck ... ... | 1st November. | | |
| Butkak ... ... ... | 3rd Ditto. | | |
| Cabul ... ... ... | 3rd Ditto. | | |
| Pezwan Kotal ... ... | 10th Ditto. | | |
| Golaghat ... ... | 6th Ditto. | | |
| Jagdallak ... ... | 14th Ditto. | | |
| Mundoorie ... ... | 17th Ditto. | | |
| Hassan Abdal ... ... | 24th December. | | |
| Rozabad ... ... | 30th Ditto. | | |
| Latabund ... ... | 5th January. | | |
| Seh Baba ... ... | 15th Ditto. | | |
| Bhorpatar ... ... | 17th Ditto. | | |
| Bala Hissar ... ... | 22nd Ditto. | | |
| Hurriajan ... ... | 31st Ditto. | | |
| Sibi ... ... ... | 3rd February. | | |
| Dimapur ... ... | 13th Ditto. | | |
| Nichu Guard ... ... | 20th Ditto. | | |
| Killa Abdulla ... ... | 26th Ditto. | | |
| Thogh ... ... ... | 26th Ditto. | | |
| Dhunsiri Mukh ... ... | 1st March. | | |
| Pherrima ... ... | 7th Ditto. | | |
| Cawnpore City ... ... | 18th Ditto. | | |
| Piphima ... ... | 28th Ditto. | | |
| Lachipore ... ... | 31st Ditto. | | |

| | | | |
|---|---|---|---|
| Number of offices open on 31st March 1879 ... ... ... ... ... | | | 250 |
| ADD—Number of offices opened during 1879-80 | 31 | | |
| DEDUCT—Number of offices closed during 1879-80 | 5 | ... ... ... | 26 |
| Number of offices open on 31st March 1880 ... ... ... ... ... | | | 276 |

*Complaints.*

19. In Appendix F will be found particulars of all the complaints received from the public during the year, those in which this department was concerned being separated from those chargeable to Railway or Foreign Telegraph lines.

The number of complaints received from the public, in which this Department is concerned, is in excess of those received last year, the increase amounting to about 25 per cent. against an increase of traffic of about 14 per cent. Many of the complaints are concerning messages passing over lines beyond the frontier, where the service is not so efficient as in India, and where messages are delivered sometimes with great difficulty.

The increase under the head of Non-delivery does not shew a falling-off in efficiency, inasmuch as the return of all messages undelivered (see paragraph 24), shews that the increase in the number of those undelivered from causes within departmental control is less than would be explained by the increase of traffic. In fact, the absolute number of complaints of non-delivery is so small compared with the total number of messages undelivered, that no conclusion can properly be drawn.

The number of admitted complaints in which other administrations are concerned is about 13 per cent. in excess of last year, against an increase of traffic of about 17 per cent.



*Speed of Transmission.*

20. The average time occupied in the transmission of messages over the long main routes during the year under review and the three previous years was as follows :—

| | 1876-77. | | 1877-78. | | 1878-79. | | 1879-80. | |
|---|---|---|---|---|---|---|---|---|
| | H. | M. | H. | M. | H. | M. | H. | M. |
| Calcutta to Kurrachee ... ... | 0 | 47 | 0 | 41 | 0 | 55 | 1 | 10 |
| Kurrachee to Calcutta ... ... | 0 | 44 | 0 | 26 | 0 | 29 | 0 | 45 |
| Calcutta to Bombay ... ... | 1 | 13 | 1 | 14 | 0 | 57 | 1 | 13 |
| Bombay to Calcutta ... ... | 1 | 13 | 1 | 15 | 0 | 59 | 1 | 4 |
| Calcutta to Madras ... ... | 1 | 51 | 2 | 28 | 1 | 22 | 1 | 27 |
| Madras to Calcutta ... ... | 1 | 56 | 2 | 20 | 1 | 25 | 1 | 27 |
| Bombay to Madras ... ... | 0 | 46 | 1 | 16 | 0 | 33 | 0 | 40 |
| Madras to Bombay ... ... | 0 | 48 | 1 | 8 | 0 | 38 | 0 | 48 |
| Galle to Madras ... ... | 3 | 8 | 5 | 6 | 3 | 27 | 2 | 59 |
| Rangoon to Calcutta ... ... | 11 | 49 | 7 | 41 | 2 | 32 | 3 | 15 |
| Bombay to Kurrachee ... ... | 0 | 47 | 0 | 43 | 0 | 41 | 0 | 43 |
| Kurrachee to Bombay ... ... | 0 | 47 | 0 | 28 | 0 | 31 | 0 | 37 |

The working speed of the lines has for some years been so high as scarcely to admit of improvement, while any great increase of traffic, such as that which has occurred during the year under report, must result in slightly increasing the average time occupied in the transit of telegrams on the long through lines. A better idea of the immense improvement which has been effected in this respect will be obtained from an examination of Diagram C, which gives the results for the last 12 years.

*News-free Messages.*

21. Reports of the state of the weather, of the arrivals of mail steamers, &c., exhibit a slight decrease in number, but increase in length and value, *viz.* :—

| | No. | Value. Rs. |
|---|---|---|
| 1878-79 ... ... ... ... | 7,591 | 57,329 |
| 1879-80 ... ... ... ... | 7,396 | 61,328 |
| Decrease ... ... ... ... | 195 | ... |
| Increase ... ... ... ... | ... | 3,999 |

*Traffic with Railway Telegraphs.*

22. Appendix G shews the number and value of messages transferred to, and received from, State and Guaranteed Railways during the past seven years. A comparison of the figures of the period under report with those of the preceding two years shows the following result :—

| PARTICULARS. | 1877-78. | | | 1878-79. | | | 1879-80. | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. | Value. | | No. | Value. | | No. | Value. | |
| | | Rs. | A. | | Rs. | A. | | Rs. | A. |
| Traffic exchanged with State Railways ... ... | 28,985 | 32,339 | 14½ | 37,783 | 43,322 | 5 1/12 | 40,994 | 56,188 | 5⅙ |
| Traffic exchanged with Guaranteed Railways ... | 96,225 | 93,372 | 15 | 94,453 | 95,952 | 0 | 99,213 | 1,40,554 | 9 |
| TOTAL TRAFFIC EXCHANGED WITH RAILWAYS ... | 125,210 | 1,25,712 | 13½ | 132,236 | 1,39,274 | 5 1/12 | 140,207 | 1,96,742 | 14⅙ |

*Press Messages.*

23. The number and value of Press messages sent at reduced rates during the year by Reuter's Telegraph Company, and by other associations or individuals, are given in Appendix H. As compared with last year, the number is less by 47, but the value is more by Rs. 3,569.

*Undelivered Messages.*

24. The number of undelivered messages during 1879-80 was 4,992, as against 4,295 in the previous year.

The causes of non-delivery were as follows :—

| | |
|---|---|
| 1. Not found, address insufficient ... ... ... | 1,211 |
| 2. Not found at address given ... ... ... | 1,515 |
| 3. Address changed in transmission ... ... ... | 101 |
| 4. Left station, new address not known ... ... ... | 310 |
| 5. Left India ... ... ... ... ... | 145 |
| 6. Left for original station ... ... ... ... | 1,083 |
| 7. Refused ... ... ... ... ... | 167 |
| 8. Returned by Dead Letter Office ... ... ... | 239 |
| 9. Addressee, on the address given, unknown ... ... | 50 |
| 10. Other reasons ... ... ... ... ... | 171 |
| TOTAL ... | 4,992 |

There is an absolute increase of 697 undelivered messages or 16·22 per cent. over last year's figures. Of this increase, however, the net increase under items 2, 4, 5, 6, 7, and 8, which are beyond departmental control, is 574 or 13·36 per cent.; while under items 1, 3, 9, and 10, which alone can be influenced by the action of the department, the increase is only 123 or 2·86 per cent. against an increase of traffic of 13·90 per cent.

*Interruptions on Departmental Lines.*

25. Notwithstanding the increase of miles of line and wire, the following statement shews that there has been a decrease in both the number and duration of interruptions as compared with those of previous years. The statement includes interruptions due to extraordinary causes, details of which are given further on :—

| | 1877-78. | 1878-79. | 1879-80. |
|---|---|---|---|
| Total number of interruptions ... ... | 386 | 350 | 310 |
| Aggregate duration, hours ... ... | 5,790 | 4,910 | 3,900 |
| Average duration, hours ... ... | 15 | 14 | 12·6 |
| Interruptions for every 100 miles of wire ... | 0·92 | 0·80 | 0·59 |

26. The interruptions during the year, due to extraordinary causes, and included in the above figures, were as follows :—

*July 1879.*—Between Mogulserai and Benares, lasting 480 hours. Span across the Ganges river broken by mast of a large boat, river being in flood.

*August 1879.*—Between Bankipore and Somastipore, lasting 313 hours. Six miles below Dulsingserai posts on bund washed away by back-water from Ganges. Country everywhere flooded.

*October 1879.*—Between Chittagong and Ramoo, lasting 120 hours. About 60 miles of wire more or less damaged, caused by cyclone.

*November 1879.*—Between Nellore and Guntoor, lasting 274 hours. Line down for 60 miles also broken in three different places, caused by cyclone.

*Signalling Establishment.*

27. There were 903 Departmental and 205 Military Telegraph Masters and Signallers on duty on the strength of the establishment at the close of the year, as compared with 855 and 111, respectively, on the 31st March 1879. In addition there were 151 military men under training.



The casualties among Telegraph Masters and Signallers have been 31 as per margin, against 34 during the preceding year, a percentage of 3·43 against 3·97 of last year.

| | |
|---|---|
| Deaths ... ... | 16 |
| Dismissals ... ... | 5 |
| Resignations ... ... | 7 |
| Remanded to regimental duty ... | 1 |
| Services dispensed with ... | 1 |
| Struck off strength of department | 1 |
| | 31 |

The number of Military Signallers trained by the department during the year, to whom certificates of proficiency were given, was 116 as against 94 last year. 104 Military Signallers were employed in departmental offices and 101 in purely military offices.

*Electrical.*

28. From the 1st April 1879 to the 31st July 1879, Mr. C. L. Schwendler, Electrician, was in charge of the office. On the 1st of August 1879, his services were placed temporarily at the disposal of the East Indian Railway Company for work in connection with the electric light, and for the remainder of the year under report the office was held by Mr. W. P. Johnston, who had already successfully officiated as Electrician during the greater portion of the year 1878-79.

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## EXTENSIONS OF LINES AND WIRES AND LINE MAINTENANCE.

29. Appendix I is a classified list of all Telegraph lines, the property of this Department in India, Burmah, and Ceylon, on the 31st March 1880. The following are the total mileages of line, wire, and cable contrasted with those existing on the same date in 1879 :—

| | Line. | Wire. | Cable. |
|---|---|---|---|
| 1878-79 ... ... | 18,589 | 44,470 | 108 |
| 1879-80 ... ... | 20,468 | 51,834 | 111 |
| Increase ... ... | 1,879 | 7,364 | 3 |

In addition to the above, the Department maintained 667 miles of line and 1,761 miles of wire, the property of Railway Companies, particulars of which are given in Appendix J.

30. The principal works executed in each division are as follows :—

*Arakan Division.*

31. A new gutta-percha cable was laid across the Koladyne river, 20 miles north of Akyab, in place of the old India-rubber cable laid in 1870, which failed.

*Assam Division.*

32. In connection with the outbreak in the Naga Hills, the following temporary lines on bamboos and trees were erected, *viz.* :—

| | |
|---|---|
| Bokakat to Dhunsiri Mukh ... | ... 6·5 miles with 2 wires. |
| Dergaon to Golaghat ... ... | ... 15·5 „ „ „ |
| and Golaghat to Piphima ... | ... 82·5 „ „ 1 wire. |

Several river spans were improved. At Agomoni, on the west bank of the Gungadhur, the position of the mast had to be altered in consequence of the bank cutting away, which necessitated the reconstruction of a short section of the line near the Gungadhur crossing. The Teesta span was reconstructed and considerably raised. The crossing over the Kushiara was put in good order and the wooden masts of that at Sylhet were replaced by iron ones.

*Bengal Division.*

33. In the towns of Calcutta and Howrah 5·27 miles of line and 9·05 miles of wire were erected for the Port Commissioners, Messrs. Mackinnon Mackenzie and Company, Messrs. Burn and Company, and Messrs. Turner Morrison and Company. Extensive improvements were made on the East Indian Railway Telegraph between Howrah and Allahabad.

*Bombay Division.*

34. Owing to the construction of the Kattywar State Railway, a line of telegraph, 106 miles in length, was erected from Bhownuggur to Wudwan. Including one wire for the Department, there are four wires on this line from Bhownuggur to Tembi Junction and three thence to Wudwan. Short local private and public lines aggregating 13·74 miles, with 31·37 miles wire, were erected, and a wire added to the line Poona to Sattara. The following lines have been re-insulated during the year—

No. 10, Dadur to Surat.
„ 10, Surat to Ahmedabad.
Nos. 11 & 12, Dadur to Surat.
„ 11 & 12, Bombay Fort to Dadur.
„ 3 & 4, Bombay to Deolalee.

*British Burmah.*

35. The insulation of the Section Myagwin to Bassein (a portion of the Henzada-Bassein circuit) was completed during the year, and that of the Section Hlaugau junction to Pegu (a portion of the Rangoon-Shoaygheen circuit) was in progress. The system of rented wires in Rangoon and Bassein was extended by the erection of three wires for Messrs. Krüger & Co., Messrs. Diekman Barkhausen and Messrs. Todd Finlay & Co., in Rangoon, and for Messrs. Bulloch Brothers in Bassein.

*Dacca Division.*

36. Two new cables were laid across the Pudda at Goalundo to replace the two cables laid in 1877 and 1878, respectively, which were broken by an Eastern Bengal Railway steamer on the 8th of September 1879. The hill line between Silligori and Darjeeling was reconstructed along the cart-road with two wires, one for departmental use and one for the use of the Darjeeling Steam Tramway Company. The Northern Bengal State Railway Telegraph line was extended from Rungpore to Kawnia, and an additional wire erected from Sara to Julpigori.

*Ganjam Division.*

37. The re-insulation of the Main wire of the Sections Raneegunge to Cuttack, Berhampore to Bimlipatam, and Vizagapatam to Bezwarrah, was completed during the year; the suspension of a second wire from Bezwarrah to Masulipatam was in progress, and the line Bezwarrah to Hyderabad dismantled.

*Indore Division.*

38. The single-wire road line from Rutlam to Neemuch, 82·45 miles, was reconstructed along the Sindia-Neemuch State Railway, and two wires added for the use of the railway.

*Madras Division.*

39. A new line with two wires, 16·5 miles in length, was constructed for the South Indian Railway from Vellapuram to the East Bank of the Gingee river. The old Coast line from Negapatam to Ramnad, 132·5 miles, has been dismantled.

*Malabar Coast Division.*

40. The line from Mysore to Ootacamund was entirely re-constructed and insulated. The stone pillars and wooden posts on the line have been replaced by iron standards, and the serviceable wooden posts carried forward and used in the hilly country. The whole line has been brought nearer the road.



*Nagpur Division.*

41. A line of two wires for the use of the Nagpur and Chattisghur State Railway was constructed from Kamptee to Tumsar, 44 miles.

*Oudh and Rohilkhund Division.*

42. The uninsulated road line of one wire, Cawnpore to Fatehgarh, 84 miles was reconstructed for the use of and along the Furrackabad Provincial Ligh Railway with two wires, and extended to Furrackabad, 3 miles beyond Fatehgarh. A single-wire line, 57 miles in length, was constructed from Narora to Gopalpore along the Lower Ganges Canal, for the use of the Irrigation Department, and a single-wire line was put up from Ranikhet to Almora, 14·86 miles in length. The line from Narora to Rajghat belonging to the Irrigation Department was reconstructed on iron rails and insulated. The serviceable cable across the Ganges at Benares was brought into circuit for the Oudh and Rohilkhund Railway Company's use in place of the span wire carried away last July.

*Punjab Division.*

43. A new span was erected over the Indus at Attock, two extra wires, one from Rawal Pindee to Kohat and the other from Rawal Pindee to Peshawar, were erected; a third wire, Umballa to Simla, and an extra wire, for the use of the Railway from Lahore to Jhelum, were erected; a line on the Lalla Musa to Miani Salt Branch was completed to within 1½ mile of Miani. A temporary line from Simla to Naldera was also erected. The reconstruction of line Jhelum to Rawal Pindee was completed to within 10 miles of Rawal Pindee, and the changing of line from road to railway alignment from Ratyal to Rawal Pindee, was in progress.

*Rajpootana Division.*

44. A new line of two wires, 190 miles in length along the Western Rajpootana State Railway from Pahlanpore to Beawar, a branch line of one wire from Soojut Road Station to Soojut Quarries, 7 miles, and a short line of 1·5 miles, also with one wire, from the Western Rajpootana State Railway Manager's Office, Ahmedabad, to south end of Sabarmati Bridge, were constructed during the year. A branch line of 15 miles in length from Kamari Railway Station to Mount Aboo was in progress, and a fourth wire put up from Pahlanpore to Deesa.

*Rajpootana State Railway.*

45. A third wire was erected for the use of the railway between Jeypore and Ajmere, 83 miles. A single-wire line, 6 miles in length, was erected from Sambhar to Gudha, which was subsequently extended, 9 miles, to Nawah. A second wire was added to the line Phalera to Sambhar, and a short line of one wire, 1·5 miles, connecting the Railway Station at Ajmere with the District Traffic Office, was constructed.

*Sindia State Railway.*

A line of 1·15 miles, with one wire, was erected to connect the Dholepore Railway Station with the Jaraoli Engine Station.

*Sind Division.*

46. 104 miles of permanent line with three wires, and 47 miles of temporary line with one wire, along the Sukkur-Kandahar State Railway from Jacobabad to Hurnai, and 15 miles of temporary line with two wires from Sibi to Dadur, were constructed during the year.

## STATE AND GUARANTEED RAILWAY TELEGRAPHS.

47. Appendix J is a return showing the number of Telegraph Offices and extent of line and wire maintained for State and Guaranteed Railways together, with the Capital expended by this Department on behalf of each Railway.

## STORES AND WORKSHOPS.

48. The following are the principal items of expenditure under this head during the year:—

| | Rs. |
|---|---|
| Purchase of stores in India ... ... ... | 53,043 |
| London stores, including freight and landing charges ... | 4,71,187 |
| Workshop and Press ... ... ... ... | 1,74,820 |
| Store-keeping ... ... ... ... | 81,388 |
| Superintendence ... ... ... ... | 34,482 |
| Stationery received from the Superintendent of Government Stationery, and value of printing done by the Superintendent of Government Printing without charge ... ... | 31,829 |
| TOTAL ... | 8,46,749 |

49. The value of the out-turn from workshops was Rs. 3,01,445, and from the Press Rs. 51,958, against Rs. 3,51,527 and Rs. 33,075 of the previous year.

50. The total value of stores received and issued during the year amounted to Rs. 20,48,666; and the store-keeping charges, inclusive of four-fifths of the charge posted against superintendence in the above table (the proportion of division of superintendence charges being four-fifths to store-keeping and one-fifth to workshop and press) amounted to Rs. 1,06,973, or 5·2 per cent. on the total.

## CEYLON.

51. The summary of financial results, with its special attached appendix, given in Appendix A, shews the results of the operations for the past five years.

52. The total capital outlay of previous years was Rs. 67,709. The total capital outlay to the end of the year under review is Rs. 66,864. This reduction is due to writes-back amounting to Rs. 845, as follows:—

| | Rs. |
|---|---|
| Construction of line, Badulla to Batticaloa ... ... ... | 602 |
| Alteration of line, Rumbukhana to Kadaganawa ... ... | 2 |
| Opening of offices at Kulutara ... ... ... | 131 |
| 15 per cent. for establishment on works ... ... ... | 110 |
| TOTAL ... | 845 |

The net loss in working for the year is Rs. 22,091. Deducting the writes-back, this is reduced to Rs. 21,246.

53. The following is an abstract of the Revenue Account for the years 1878-79 and 1879-80:—

| EXPENDITURE. | 1878-79. | 1879-80. | RECEIPTS. | 1878-79. | 1879-80. |
|---|---|---|---|---|---|
| | Rs. | Rs. | | Rs. | Rs. |
| Repairs of lines ... ... | 12,613 | 11,920 | Message revenue earned ... | 95,817 | 89,805 |
| Repairs of buildings, departmentally. | 141 | ... | Receipts from Ceylon Railway, for maintenance of line. | 900 | 900 |
| Direction, Accounts, &c. (share) | 10,146 | 9,714 | | | |
| Superintendence ... ... | 26,685 | 24,201 | Miscellaneous ... ... | 869 | 566 |
| Line maintenance ... ... | 10,457 | 11,239 | Claims from the Colonial Government, under guarantee. | 1,822 | 2,192 |
| Signalling ... ... | 51,771 | 53,457 | | | |
| Tools and plant ... ... | 4,751 | 2,829 | | | |
| Value of printed forms supplied | 1,023 | 1,976 | | | |
| Profit and loss ... ... | ... | 218 | | | |
| TOTAL EXPENDITURE ... | 1,17,587 | 1,15,554 | TOTAL RECEIPTS ... | 99,408 | 93,463 |
| Deduct writes-back, as explained above ... ... | ... | 845 | NET LOSS ... | 18,162 | 21,246 |
| Deduct share of charges for direction, &c., debited to Capital ... | 17 | ... | (Loss not including writes-back.) | ... | (22,091) |
| TOTAL REVENUE EXPENDITURE | 1,17,570 | 1,14,709 | TOTAL REVENUE RECEIPTS | 1,17,570 | 1,14,709 |

54. The working expenses of the year are less than those of the previous year by Rs. 2,861. This is due to the writes-back of Rs. 845, and to decrease in expenditure on tools and plant, and share of direction, &c.



There is a falling-off in message revenue to the extent of Rs. 6,012. Last year there was a falling-off of Rs. 3,918. There is also a falling-off in miscellaneous revenue.

## MILITARY OPERATIONS IN AFGHANISTAN AND THE NAGA HILLS.

55. Under this head in the Administration Report of last year, the operations of the Telegraph Department in connection with the military advance on Afghanistan were detailed up to the time of the signing of the Treaty of Gundamuck or the close of the first campaign.

56. In ordinary course this report would embrace the operations of the Department from the commencement of the second campaign up to the 31st March 1880 only. But as at the time of writing it, the second campaign had practically terminated by the withdrawal of the troops from Kabul and the victory at Kandahar, I have thought it more convenient to continue the narrative of events, as connected with this Department, up to that period.

57. As in the previous campaign, the conduct of the Military Signallers has, as a rule, been admirable. The names of those who have more particularly distinguished themselves have been submitted to His Excellency the Commander-in-Chief.

58. Details will be found in the following appendices:—

APPENDIX K.—Report by Mr. Officiating Superintendent S. J. Josephs, in charge of Telegraphs with the Kurrum Field Force.

APPENDIX L.—Report by Mr. Officiating Superintendent R. Boteler, in charge of Telegraphs with the Kandahar Field Force.

APPENDIX M.—Report by Mr. Officiating Superintendent S. P. W. V. Luke, C. I. E., in charge of Telegraphs with the Khyber Field Force.

APPENDIX N.—Report by Mr. Superintendent W. McGregor, in charge of Telegraphs with the Naga Hills Field Force.

### *Kurrum Valley Field Force.*

59. At the conclusion of the first campaign the line in the Kurrum Valley was complete and working to Ali Kheyl. It was then in contemplation to extend this line to Kabul, and Mr. S. J. Josephs, who had hitherto been in charge of the line, was deputed to carry out the extension. Mr. Josephs pushed on the line in advance of our outposts and without escort. On the 4th September news was brought of the massacre of the Envoy and Mission, and on the 18th of September a telegraph Office was opened on the Shuturgurdun.

60. Mr. Josephs was indefatigable in his exertions to push on his stores over the Shuturgurdun; and although on one occasion the telegraph convoy was attacked and 20 men killed and wounded, he succeeded in completing the most difficult portion of the line and in reaching Kushi where he applied for an escort. As troops could not be spared for an escort, Mr. Josephs returned to the Shuturgurdun, arriving on the 1st October. From this date to the 15th he was engaged pushing on telegraph materials to the Logar Valley, and in endeavouring to repair the line from the numerous attacks made upon it in all directions. His parties were frequently attacked and had to work under fire, and on the last occasion, the 15th October, the Officer Commanding at Shuturgurdun thought it necessary to send out reinforcements with artillery to bring the parties in.

61. On the 20th October the Shuturgurdun office was finally closed, and on the 21st Mr. Josephs proceeded to Kabul, where he arrived on the 26th and at once commenced the erection of a telegraph line towards India to meet the party working from Peshawar.

62. By the 1st November 12 miles of line were completed and an office opened at Butkak, and on the 19th November after a delay of 10 days, owing to the uncertainty of the route to be followed, the line was finished to nearly Jagdallak, where Mr. Josephs met the line from Peshawar, and through communication between India and Kabul was established.

63. The construction of the line from Kabul to Jagdallak, through an inhospitable and very difficult country, including the crossing of two difficult mountain passes, was carried out at the rate of over 4 miles a day.

64. The services rendered by Mr. Josephs were of the greatest value, the more so as he was never a burden to the Transport Department, having with great energy and perseverance succeeded on all occasions in providing his own carriage. On leaving Kabul his services were specially brought to notice in a Field Force order issued by Lieutenant-General Sir F. Roberts, K.C.B., V.C.

65. The Kurrum Valley line, which was originally constructed as a semi-permanent line, was made permanent by Mr. Assistant Superintendent A. J. M. Reade who, after the departure of Mr. Josephs, was placed in charge.

66. On the evacuation of the Kurrum Valley and the withdrawal of the troops, Mr. Reade dismantled the line as far as Thull, and closed the several offices on the line one by one as the troops retired.

*Kandahar Field Force.*

67. Mr. Officiating Superintendent C. E. Pitman, C.I.E., who was in charge of the telegraphs with the Kandahar Field Force during the period embraced in the last Administration Report, proceeded to Europe on furlough on the 7th of January 1880, when the lines and offices were placed under the control of Mr. Officiating Superintendent R. Boteler, who carried out all the duties connected with this important charge with admirable energy, zeal, and discretion.

68. A Field line was erected from Quetta *viâ* Kach for about 45 miles.

69. On the 2nd of July 1880 orders were received from Government for the construction of a line to accompany the troops moving from Kandahar towards Girishk. Mr. Boteler had constructed about 9 miles of this line, when the disaster at Mehwand happened. The line had then to be abandoned, and when our troops retired and held the city and citadel at Kandahar, the line was entirely destroyed and carried away by the enemy.

70. At the commencement of the siege Mr. Boteler constructed a line completely round the city walls, and opened offices at the four principal gates as also in the centre of the city, connected by a loop from the nearest wall. The Signal Tower was also brought into circuit. These six telegraph offices worked all through the siege, and it is believed proved of the highest service. A line was also suspended between the Signal Tower and the north-west bastion, and was fitted with telephones. This was used in directing the fire of the heavy guns.

71. Four lines of wire entanglements were also carried entirely round the city, nearly 5 miles. During the progress of this work Mr. Boteler and his party were under fire nearly the whole time. These wire entanglements were not understood by the enemy, and were much feared, and it is believed proved of the greatest service.

72. While the siege was in progress, the line running south connecting Kandahar with Chaman had been completely destroyed, and on the 31st of August 1880, on the arrival at Kandahar of Lieutenant-General Sir F. Roberts, and the raising of the siege, steps were at once taken for reconstructing this line. The wire entanglements referred to were removed for the use of the line, but the great difficulty was to obtain posts, as on the entire route from Kandahar to Chaman, 75 miles, only three miles of posts were found, the remainder having been either destroyed or carried away.

73. It was known that the enemy had prepared a quantity of scaling ladders. These were searched for. Two hundred were found and cut up, each ladder making two telegraph poles. With these and with others obtained from villages, Mr. Boteler pushed on the line towards Chaman and opened an office at Abdulraham on the 5th September. In eight days he had finished the line to Gutai, 57 miles, and completed the distance to Chaman, 73 miles, and opened communication with Kandahar on the 14th September. The line has since been cut several times, but the country is now quieting down.

74. The part played by Mr. Boteler during the siege, and the skill and extraordinary energy shewn by him in re-erecting the line between Kandahar and Chaman, is deserving of the highest commendation, and has been publicly acknowledged by Sir F. Roberts.



75. In connection with the military operations of the Kandahar Field Force a railway, since called the Kandahar State Railway, was constructed from Ruk to Sibi. The work was commenced on the 5th October 1879, and finished on the 14th January 1880.

76. At the same time a permanent telegraph line was erected along the railway. At this period telegraphic communication with Kandahar from Jacobabad was already established along the old south line, *viâ* Dadur, the Bolan Pass, and Quettah; and on completion of the new line along the railway as far as Sibi, that station was connected by a branch line with Dadur, and the old line, Dadur to Jacobabad, was thrown out of circuit.

77. A temporary telegraph line for the use of the railway staff was subsequently extended to Hurnai and further *viâ* Kuchlak to Quetta. This extension was afterwards entirely destroyed by the Murris, and the present communication with Kandahar is *viâ* Sibi by the new railway line, and thence through Dadur and Quettah by the Bolan Pass.

78. The telegraph line along the new railway was constructed with great rapidity by Mr. Assistant Superintendent F. G. Maclean, assisted by Mr. Assistant Superintendent F. E. Dempster. The valuable services rendered by Mr. Maclean on this occasion were brought to the notice of the Government of India by the Governor of Bombay, Sir R. Temple, in his Minute dated the 10th March 1880.

79. The extension beyond Hurnai to Quettah was carried out by Mr. Officiating Superintendent Boteler, assisted by Mr. Dempster.

*Khyber Field Force.*

80. At the close of the first campaign, the Khyber Field force telegraph line was dismantled from Gundamuck to Lundikotal. At the commencement of the second campaign orders were received from Government to re-erect this line and to continue it towards Kabul.

81. This duty was entrusted to Mr. Officiating Superintendent S. P. W. V. Luke, C. I. E., who had so admirably conducted the telegraph operations through a portion of the same country prior to the treaty of Gundamuck.

82. The work was commenced on the 3rd of October 1879, and on the 19th of November Mr. Luke met the party working from Kabul, and through communication between Kabul and India was established.

83. Mr. Luke's report given in Appendix M. shews the dates when the various intermediate offices were opened, and contains a vast amount of most interesting matter regarding the events of the period to which it relates.

84. Owing to the great pressure of work on the single wire to Kabul, the Government of India sanctioned the erection of an additional wire from Peshawur as far as Jellalabad. For this duty, as well as to generally assist, two officers were sent up and placed under Mr. Luke's orders, Messrs. H. A. Kirk and G. L. Towers. The lines and offices from Peshawur to Jellalabad were placed under the latter officer, and those from Jellalabad to Kabul under the former.

85. On the 14th December 1879 the siege of Kabul commenced, Messrs. Luke and Kirk being there at the time. As was the case at Kandahar, all the important posts within the Sherpur cantonments were connected by telegraph. On the 23rd December the enemy was dispersed and on the 26th December Messrs. Luke and Kirk went out with a military escort to reconstruct the line which had been completely wrecked and carried away for about 50 miles towards Butkak. On the 2nd January 1880 the office at Butkak was re-opened, and on the 8th the line beyond reconstructed, and through communication with India was again established.

86. A line of telegraph into the Lughman Valley having been called for by General Bright, it was commenced on the 26th of January 1880 by Mr. Kirk. An office was opened at Dorunta, 9 miles, on the 28th, and another in Azmoo-toolah Khan's Fort on the 2nd February.

87. Owing to want of notice of the intended withdrawal of the troops from Lughman, this line had to be dismantled with great rapidity. The work was carried out by Mr. Towers, who succeeded under great difficulties in removing

the whole of the wire. This officer also during the period Messrs. Luke and Kirk were detained in Sherpur was placed in sole charge of the offices and lines, and rendered most excellent service, more especially in the reconstruction of tne destroyed line from Pezwan towards Jagdallak.

88. On the 9th of June 1880, when all chance of further military operations appeared to have ceased, Mr. Luke was allowed to return to India and make over charge to his Assistant Mr. Kirk. On the return of Sir D. Stewart's force to India, Mr. Kirk admirably managed the dismantlement of the line from Kabul, and succeeded beyond expectation in bringing back all his wire and stores, march by march, with the troops.

## MILITARY OPERATIONS IN ASSAM.

*Naga Hills Field Force.*

89. Information of the murder of the Political Officer, Mr. Damant, by the Nagas, was known on the 18th October 1879, and on the 19th steps were taken by Mr. Superintendent W. McGregor, the Superintendent of the Assam Division, towards the construction of a field line of telegraphs into the Naga Hills.

90. An office was opened on the main line at Dergaon on the 22nd October, whence to Golaghat, 15 miles, a system of expresses by means of ponies and runners was started. The wire which had been despatched by train and steamer from Calcutta arrived on the 4th November, and was immediately erected on bamboos by Mr. Assistant Superintendent W. Browne and an office opened at Golaghat on the 6th November.

91. This light branch line was subsequently replaced by a loop of heavier wire, and Golaghat was brought into the circuit of the main line with permanent material.

92. A bamboo line was next constructed by Mr. Assistant Superintendent W. Browne from Golaghat to Samaguting, and was afterwards extended to Piphima and Kohima. The construction commenced on the 1st of January 1880, and an office was opened at Kohima on the 30th April; but as the line advanced, temporary offices were opened as follows :—

| | |
|---|---|
| Deopani . . . . . | on 28th January 1880. |
| Huriajan . . . . . | „ 31st „ „ |
| Nowcutta . . . . . | „ 7th February „ |
| Nichu guard . . . . . | „ 20th „ „ |
| Zumba . . . . . | „ 26th „ „ |
| Piphima . . . . . | „ 28th March „ |
| Keruphima . . . . . | „ 21st April „ |

This line is at the date of this report still working with offices at Piphima and Kohima.

93. Dhunsiri Mukh being a steamer station on the river about 7 miles from Bokahat, on the Main Debroghur Line, and the actual base of supplies for the field force, it was considered advisable to bring it also into telegraphic communication; hence a temporary loop line was made from it to Bokahat. It was commenced on the 1st of March and finished on the 26th March 1880, and has since been made permanent.

94. In addition to their usual duties, the Telegraph Masters in charge of the Field Telegraph Offices undertook the duties of Post Masters and each Telegraph Office became a Field Post Office.

95. Throughout the campaign the greatest difficulties and hardships were experienced by all members of the department employed; the principal cause being the want of labour and carriage.

96. Notwithstanding these drawbacks, the work was conducted with great energy, and the services of Mr. W. McGregor, who had the immediate supervision of the telegraph operations, and of his subordinates, were officially acknowledged by the Chief Commissioner of Assam on the completion of the undertaking.



97. Mr. McGregor was ably supported by Mr. Assistant Superintendent W. Browne, the Chief Executive Officer, and by others whose names are given in the detailed report shewn in Appendix N.

*Personal.*

98. The only changes that occurred in the Direction during the year were consequent on the return from furlough, on the 7th of February 1880, of Lieutenant-Colonel H. A. Mallock, Director of Construction, when Mr. W. R. Brooke, who had officiated for him, was appointed to officiate as Director of Traffic during the absence on privilege leave of Mr. J. H. Lane till the 27th March 1880, when Mr. Brooke proceeded on furlough.

R. MURRAY, *Colonel*,

*Director General of Telegraphs in India.*

*Calcutta, 1st December 1880.*

# APPENDICES.

# APPENDIX A.

*Summary of Financial Results of the Indian Telegraph Department for the year 1879-80.*

| | | | To end of previous year. | 1879-80. | To end of 1879-80. |
|---|---|---|---|---|---|
| **INDIAN TELEGRAPH.** | | | | | |
| **CAPITAL ACCOUNT.** | | | | | |
| MILEAGE — Line | Departmental | | 11,918·30 | 1,237·83 | 13,156·13 |
| | Railway | | 5,479·06 | 1,225·63 | 6,704·69 |
| | Guaranteed | | 573·77 | 85·34 | 659·11 |
| | | TOTAL | 17,971·13 | 2,548·80 | 20,519·93 |
| MILEAGE — Wire | Departmental | | 28,977·44 | 6,254·18 | 35,231·62 |
| | Railway | | 14,168·61 | 2,564·74 | 16,733·35 |
| | Guaranteed | | 638·89 | 201·82 | 840·71 |
| | | TOTAL | 43,784·94 | 9,020·74 | 52,805·68 |
| MILEAGE — Cable | Departmental | | 105·69 | 2·24 | 107·93 |
| | Railway | | ... | ·58 | ·58 |
| | Guaranteed | | ... | ... | ... |
| | | TOTAL | 105·69 | 2·82 | 108·51 |
| OUTLAY — Lines | Departmental | | 1,89,74,794 | 6,72,849 | 1,96,47,643 |
| | Railway | | 25,01,342 | 67,807 | 25,69,149 |
| | Guaranteed | | 2,99,884 | 37,738 | 3,37,622 |
| | | TOTAL | 2,17,76,020 | 7,78,394 | 2,25,54,414 |
| OUTLAY — Buildings | Signal Offices | | 27,86,511 | 63,800 | 28,50,311 |
| | Quarters for Officers | | 10,430 | 338 | 10,768 |
| | Cable-houses and Tanks | | 27,969 | ... | 27,969 |
| | Store-houses | | 4,60,890 | 261 | 4,61,151 |
| | Workshop and Press Buildings | | 1,35,220 | 3,362 | 1,38,582 |
| | | TOTAL | 34,21,020 | 67,761 | 34,88,781 |
| OUTLAY — Tools and Plant | First fitting of Railway Offices | | 1,09,976 | 35,738 | 1,45,714 |
| | Other Tools and Plant | | 1,92,074 | 7,791 | 1,99,865 |
| | | TOTAL | 3,02,050 | 43,529 | 3,45,579 |
| OUTLAY | Stores | | 22,36,530 | 3,55,168 | 18,81,362 |
| | Suspense Heads affecting Budget Grant | | 1,87,280 | 5,465 | 1,92,745 |
| | | TOTAL PRESENT CAPITAL | 2,79,22,900 | 5,39,981 | 2,84,62,881 |
| | Abandoned— Lines | | 47,85,442 | ... | 47,85,442 |
| | Buildings | | 33,528 | 940 | 34,468 |
| | Stores | | 8,20,000 | ... | 8,20,000 |
| | | TOTAL ABANDONED | 56,38,970 | 940 | 56,39,910 |
| | | TOTAL CAPITAL EXPENDITURE | 3,35,61,870 | 5,40,921 | 3,41,02,791 |



*Summary of Financial Results of the Indian Telegraph Department for the year 1879-80.*

| | | | To end of previous year. | 1879-80. | To end of 1879-80. |
|---|---|---|---|---|---|
| **REVENUE ACCOUNT.** | | | | | |
| NUMBER OF — Divisions | | | 16 | 2 | 18 |
| Signal Offices | | | 235 | 68 | 303 |
| Messages | Private | | 80,19,210 | 12,10,841 | 92,30,051 |
| | State | | 9,36,415 | 2,91,902 | 12,28,317 |
| | Free | | 1,21,165 | 3,856 | 1,25,021 |
| | | TOTAL | 90,76,790 | 15,06,599 | 1,05,83,389 |
| REVENUE — On Messages | Private | | 2,44,69,599 | 24,26,116 | 2,68,95,715 |
| | State | | 50,14,536 | 12,32,609 | 62,47,145 |
| | Free | | 17,10,380 | 1,13,973 | 18,24,353 |
| | | TOTAL | 3,11,94,515 | 37,72,698 | 3,49,67,213 |
| | Railway Telegraphs | | 11,73,280 | 4,13,114 | 15,86,394 |
| | Guaranteed | | 1,36,734 | 35,401 | 1,72,135 |
| | Miscellaneous | | 5,02,704 | 30,233 | 5,32,937 |
| | | TOTAL | 3,30,07,233 | 42,51,446 | 3,72,58,679 |
| Working Expenses | | | 4,50,59,541 | 29,09,992 | 4,79,69,533 |
| Net Charge (difference between Revenue and Working Expenses) | | | 1,20,52,308 | 13,41,454 | 1,07,10,854 |
| Charge for Interest on Capital | | | 1,57,56,644 | 15,22,454 | 1,72,79,098 |
| Working Expenses, plus Charge for Interest | | | 6,08,16,185 | 44,32,446 | 6,52,48,631 |
| Net Charge, plus Interest on Capital | | | 2,78,08,952 | 1,81,000 | 2,79,89,952 |
| Per mile of line | Revenue | | 1,83,668 | 20,718 | 1,81,573 |
| | Net Charge | | 67,065 | 6,537 | 52,197 |
| | Net Charge, plus Interest | | 1,54,742 | 882 | 1,36,403 |
| Percentage on Capital Outlay | Revenue | | 9,834 | 1,246 | 10,925 |
| | Net Charge | | 3,591 | 393 | 3,140 |
| | Net Charge, plus Interest | | 8,285 | 53 | 8,207 |
| Value of unissued balance of stores at end of year | | | 22,36,530 | 3,55,168 | 18,81,362 |
| TOTAL EXPENDITURE, CAPITAL AND REVENUE | | | 7,86,21,411 | 34,50,913 | 8,20,72,324 |
| DEFICIT ON TOTAL EXPENDITURE | | | 4,56,14,178 | 8,00,533 | 4,48,13,645 |

## *Summary of Financial Results and Review of Telegraph Accounts for the last five years.*

### Revenue Receipts.

| Year. | Message Revenue. | | | Claims from State Railways. | Claims from Guaranteed Railways. | Claims from Guarantors. | Saleable Books, Forms, and Maps. | Telegraph Gazette. | | Miscellaneous. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Paid Messages. | Free Messages. | Total. | | | | | Calcutta. | Rangoon. | | |
| | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 1875-76 ... ... ... ... | 19,48,083 | 1,75,758 | 21,23,841 | 57,863 | 78,740 | 17,546 | 3,577 | 11,064 | 2,499 | 19,692 | 23,14,822 |
| 1876-77 ... ... ... ... | 22,74,064 | 1,57,793 | 24,31,857 | 54,296 | 1,37,544 | 21,270 | 2,736 | 10,866 | 2,681 | 17,328 | 26,78,578 |
| 1877-78 ... ... ... ... | 28,03,967 | 1,41,603 | 29,45,570 | 52,503 | 1,68,519 | 27,329 | 3,152 | 11,041 | 2,276 | 10,492 | 32,20,882 |
| 1878-79 ... ... ... ... | 29,63,569 | 1,16,967 | 30,80,536 | 1,71,071 | 2,55,386 | 33,694 | 3,499 | 11,073 | 2,278 | 39,478 | 35,97,015 |
| 1879-80 ... ... ... ... | 36,58,725 | 1,13,973 | 37,72,698 | 3,14,053 | 99,061 | 35,401 | 2,813 | 10,480 | 2,141 | 14,799 | 42,51,446 |

### Revenue Charges.

| Year. | Line Maintenance | | | | | | | Signalling. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Repairs | | Line Maintenance Establishment. | Direction Accounts and Superintendence. | Profit and Loss. | | Total. | Repairs | | Check Office. | Signal Offices. | | Direction Accounts and Superintendence. | Saleable Books, Forms, and Maps. | Telegraph Gazette. | | Profit and Loss. | Telegraph Stamps. | Total. |
| | By Telegraph Department. | By Public Works Department. | | | | | | By Telegraph Department. | By Public Works Department. | | Departmental. | Railway. | | | Calcutta. | Rangoon. | | | |
| | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 1875-76 ... | 2,49,006 | ... | 1,30,995 | 3,77,068 | 383 | | 7,57,452 | 1,783 | 28,000 | 38,924 | 15,05,016 | 1,213 | 3,77,069 | 6,966 | 5,309 | 2,010 | 327 | ... | 19,66,617 |
| 1876-77 ... | 1,80,901 | 2,602 | 1,41,520 | 3,92,305 | 1,591 | | 7,18,919 | 1,520 | 31,530 | 33,701 | 14,64,397 | 1,518 | 3,92,306 | 2,635 | 4,782 | 3,818 | 1,219 | 2,238 | 19,39,664 |
| 1877-78 ... | 2,80,248 | 597 | 1,51,771 | 4,62,237 | 875 | | 8,95,728 | 3,550 | 31,131 | 36,300 | 15,21,995 | 40,257 | 4,62,240 | 5,381 | 4,313 | 762 | 2,274 | 5,299 | 21,13,502 |
| 1878-79 ... | 2,77,414 | 660 | 1,47,174 | 4,26,054 | 197 | | 8,51,499 | 1,890 | 51,398 | 37,994 | 15,17,693 | 65,168 | 4,26,055 | 5,554 | 4,114 | 1,679 | ... | 7,563 | 21,19,108 |
| 1879-80 ... | 1,61,385 | 694 | 1,30,975 | 4,12,109 | 90 | | 7,05,253 | 1,190 | 30,990 | 41,998 | 16,37,324 | 57,623 | 4,12,110 | 8,987 | 4,139 | 1,678 | 130 | 8,570 | 22,04,739 |

### *Results of Operations for five years.*

| Year. | Capital Expenditure to end of year. | Revenue Receipts. | Revenue Charges. | Profit or Loss without Interest (Loss in antique type). | Interest on Capital at 4½ per cent. | Profit and Loss with Interest (Loss in antique type). | Miles of Line. | Miles of Wire. | Number of Signal Offices. | Number of Messages. | | | Value of Messages. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Inland. | Foreign. | Total. | Inland. | Foreign. | Total. |
| | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | | | No. | | | | Rs. | Rs. | Rs. |
| 1875-76 ... | 3,07,57,537 | 23,14,822 | 27,24,069 | **4,09,247** | 10,84,283 | **14,93,530** | 16,63,439 | 35,70,177 | 235 | 7,50,741 | 1,07,700 | 8,58,441 | 13,32,863 | 6,15,220 | 19,48,083 |
| 1876-77 ... | 3,21,12,147 | 26,78,578 | 26,58,582 | 19,995 | 11,42,039 | **11,22,044** | 17,23,152 | 39,11,229 | 222 | 9,20,677 | 1,31,342 | 10,52,019 | 16,24,683 | 6,49,381 | 22,74,064 |
| 1877-78 ... | 3,30,13,602 | 32,20,882 | 30,09,230 | 2,11,652 | 12,18,923 | **10,07,271** | 17,60,023 | 42,11,596 | 226 | 11,09,050 | 1,82,509 | 12,91,559 | 19,59,099 | 8,44,868 | 28,03,967 |
| 1878-79 ... | 3,35,61,872 | 35,97,015 | 29,70,607 | 6,26,408 | 12,44,785 | **6,18,377** | 17,97,113 | 43,89,063 | 235 | 11,15,642 | 1,92,710 | 13,08,352 | 21,10,182 | 8,53,387 | 29,63,569 |
| 1879-80 ... | 3,41,02,791 | 42,51,446 | 29,09,992 | 13,41,454 | 15,22,454 | **1,81,000** | 20,51,993 | 52,91,419 | 303 | 12,73,884 | 2,28,859 | 15,02,743 | 26,47,970 | 10,10,755 | 36,58,725 |

## *Summary of Financial Results of the Ceylon Telegraph for the year 1879-80.*

| | | | To end of previous year. | 1879-80. | To end of 1879-80. |
|---|---|---|---|---|---|
| **CEYLON TELEGRAPH.** | | | | | |
| **Capital Account.** | | | | | |
| Mileage — Lines — Departmental | | | 617·85 | 2·47 | 615·38 |
| Lines — Railway | | | ... | ... | ... |
| Lines — Guaranteed | | | ... | ... | ... |
| Lines — Total | | | 617·85 | 2·47 | 615·38 |
| Wire — Departmental | | | 685·41 | 2·52 | 682·89 |
| Wire — Railway | | | ... | ... | ... |
| Wire — Guaranteed | | | ... | ... | ... |
| Wire — Total | | | 685·41 | 2·52 | 682·89 |
| Cable — Departmental | | | 2·62 | ... | 2·62 |
| Cable — Railway | | | ... | ... | ... |
| Cable — Guaranteed | | | ... | ... | ... |
| Cable — Total | | | 2·62 | ... | 2·62 |
| Outlay — Lines — Departmental | | | 67,489 | 845 | 66,644 |
| Lines — Railway | | | ... | ... | ... |
| Lines — Guaranteed | | | ... | ... | ... |
| Lines — Total | | | 67,489 | 845 | 66,644 |
| Buildings — Signal Offices | | | ... | ... | ... |
| Buildings — Quarters for Officers | | | ... | ... | ... |
| Buildings — Cable-houses and Tanks | | | ... | ... | ... |
| Buildings — Store-houses | | | ... | ... | ... |
| Buildings — Total | | | ... | ... | ... |
| Tools and Plant — First fittings of Railway Offices | | | ... | ... | ... |
| Tools and Plant — Other Tools and Plant | | | 220 | ... | 220 |
| Tools and Plant — Total | | | 220 | ... | 220 |
| Stores | | | ... | ... | ... |
| Suspense Heads affecting Budget Grant | | | ... | ... | ... |
| Total Present Capital | | | 67,709 | 845 | 66,864 |
| Abandoned— Lines | | | ... | ... | ... |
| Buildings | | | ... | ... | ... |
| Stores | | | ... | ... | ... |
| Total Abandoned | | | ... | ... | ... |
| Total Capital Expenditure | | | 67,709 | 845 | 66,864 |

## *Summary of Financial Results of the Ceylon Telegraph for the year 1879-80*—continued.

| | | | To end of previous year. | 1879-80. | To end of 1879-80. |
|---|---|---|---|---|---|
| **Revenue Account.** | | | | | |
| Number of | Messages | Divisions | 1 | ... | 1 |
| | | Signal Offices | 15 | 1 | 14 |
| | | Private | 4,29,955 | 57,772 | 4,87,727 |
| | | State | 11,122 | 1,996 | 13,118 |
| | | Free | ... | ... | ... |
| | | Total | 4,41,077 | 59,768 | 5,00,845 |
| Revenue | On Messages | Private | 7,70,202 | 86,546 | 8,56,748 |
| | | State | 23,880 | 3,259 | 27,139 |
| | | Free | ... | ... | ... |
| | | Total | 7,94,082 | 89,805 | 8,83,887 |
| | Railway Telegraphs | | 4,500 | 900 | 5,400 |
| | Guaranteed | | 1,822 | 2,192 | 4,014 |
| | Miscellaneous | | 7,615 | 566 | 8,181 |
| | Total | | 8,08,019 | 93,463 | 9,01,482 |
| Working Expenses | | | 10,30,087 | 1,15,554 | 11,45,641 |
| Net Charge (difference between Revenue and Working Expenses) | | | 2,22,068 | 22,091 | 2,44,159 |
| Charge for Interest on Capital | | | 12,591 | 3,028 | 15,619 |
| Working Expenses, plus Charge for Interest | | | 10,42,678 | 1,18,582 | 11,61,260 |
| Net Charge, plus Interest on Capital | | | 2,34,659 | 25,119 | 2,59,778 |
| Per mile | | Revenue | 1,30,779 | 15,188 | 1,46,492 |
| | | Net Charge | 35,942 | 3,589 | 39,676 |
| | | Net Charge, plus Interest | 37,979 | 4,081 | 42,214 |
| Percentage on Capital Outlay. | | Revenue | 1,19,337 | 13,978 | 1,34,823 |
| | | Net Charge | 32,797 | 3,303 | 36,516 |
| | | Net Charge, plus Interest | 34,657 | 3,758 | 38,851 |
| Value of unissued balance of stores at end of year | | | ... | ... | ... |
| Total Expenditure, Capital and Revenue | | | 10,97,796 | 1,14,709 | 12,12,505 |
| Deficit on Total Expenditure | | | 2,89,777 | 21,246 | 3,11,023 |



## *Summary of Financial Results and Review of Telegraph Accounts for the last five years.*

### Revenue Receipts.

| Year. | Message Revenue. Paid Messages. | Claims from Railways. | Claims from Guarantors. | Telegraph Bulletins. | Miscellaneous. | Total. |
|---|---|---|---|---|---|---|
| | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 1875-76 ... ... | 81,264 | 900 | ... | 517 | 751 | 83,432 |
| 1876-77 ... ... | 92,522 | 900 | ... | 465 | 413 | 93,474 |
| 1877-78 ... ... | 99,735 | 900 | ... | 455 | 280 | 1,01,370 |
| 1878-79 ... ... | 95,817 | 900 | 1,822 | 482 | 387 | 99,408 |
| 1879-80 ... ... | 89,805 | 900 | 2,192 | 495 | 71 | 93,463 |

### Revenue Charges.

| Year. | Line Maintenance. Repairs by Telegraph Department. | Line Maintenance Establishment. | Direction Accounts and Superintendence. | Profit and Loss. | | Total. | Signalling. Repairs by Telegraph Department. | Signal Office Establishment. | Direction Accounts and Superintendence. | Profit and Loss. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. |
| 1875-76 ... ... ... | 22,786 | 10,813 | 18,566 | ... | ... | 52,165 | ... | 43,236 | 18,567 | ... | 61,803 |
| 1876-77 ... ... ... | 13,545 | 10,101 | 19,241 | ... | ... | 42,887 | 4 | 51,736 | 19,243 | ... | 70,983 |
| 1877-78 ... ... ... | 20,604 | 11,399 | 18,768 | ... | ... | 50,771 | ... | 61,353 | 18,770 | .. | 80,123 |
| 1878-79 ... ... ... | 12,754 | 10,809 | 18,853 | ... | ... | 42,416 | ... | 56,300 | 18,854 | ... | 75,154 |
| 1879-80 ... ... ... | 11,920 | 11,448 | 17,113 | ... | ... | 40,481 | ... | 57,742 | 17,113 | 218 | 75,073 |

### *Results of Operations for five years.*

| Year. | Capital Expenditure to end of year. | Revenue Receipts. | Revenue Charges. | Profit or Loss without interest (Loss in antique type). | Interest on Capital at 1½ per cent. | Profit and Loss with Interest (Loss in antique type). | Miles of Line. | Miles of Wire. | Number of Signal Offices. | Number of Messages. Inland. | Foreign. | Total. | Value of Messages. Inland. | Foreign. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rs. | Rs. | Rs. | Rs. | Rs. | Rs. | | | No. | | | | Rs. | Rs. | Rs. |
| 1875-76 ... | 63,381 | 83,432 | 1,13,968 | **30,536** | 1,934 | **32,470** | 512·84 | 572·37 | 11 | 45,506 | 3,422 | 48,928 | 57,532 | 23,732 | 81,264 |
| 1876-77 .. | 71,237 | 93,474 | 1,13,870 | **20,396** | 3,024 | **23,420** | 608·15 | 667·80 | 12 | 52,674 | 4,343 | 57,017 | 62,596 | 29,926 | 92,522 |
| 1877-78 ... | 67,578 | 1,01,370 | 1,30,894 | **29,524** | 3,142 | **32,666** | 609·35 | 679·80 | 13 | 60,904 | 4,551 | 65,455 | 74,999 | 24,736 | 99,735 |
| 1878-79 ... | 67,709 | 99,408 | 1,17,570 | **18,162** | 3,040 | **21,202** | 617·85 | 688·02 | 15 | 58,209 | 5,160 | 63,369 | 68,292 | 27,525 | 95,817 |
| 1879-80 ... | 66,864 | 93,463 | 1,15,554 | **22,091** | 3,028 | **25,119** | 615·38 | 685·51 | 14 | 54,068 | 5,700 | 59,768 | 71,518 | 18,287 | 89,805 |

# APPENDIX B.

*Return of the Number and Value of Inland and Foreign Messages "Sent" and of Foreign Messages "Received" and in "Transit" during the year 1879-80, showing also the Increase and Decrease under each head on the figures for previous year.*

NUMBER OF PAID MESSAGES AND INDIAN SHARE OF COLLECTIONS IN 1879-80.

| DIVISIONS. | Inland. State. No. | Inland. State. Value. | Inland. Private. No. | Inland. Private. Value. | Foreign. State. No. | Foreign. State. Value. | Foreign. Private. No. | Foreign. Private. Value. | Total. State. No. | Total. State. Value. | Total. Private. No. | Total. Private. Value. | Grand Total. No. | Grand Total. Value. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. |
| Arakan ... | 917 | 2,206 12 | 8,903 | 17,778 ... | ... | ... ... | 433 | 1,520 9 | 917 | 2,206 12 | 9,336 | 19,298 9 | 10,253 | 21,505 5 |
| Assam ... | 8,433 | 23,082 8 | 21,251 | 30,703 13 | ... | ... ... | 147 | 455 11 | 8,433 | 23,082 8 | 21,398 | 31,159 8 | 29,831 | 54,242 ... |
| Bellary ... | 4,733 | 10,272 7 | 24,405 | 31,757 5 | 3 | 82 12 | 249 | 712 6 | 4,736 | 10,355 3 | 24,654 | 32,469 11 | 29,390 | 42,824 14 |
| Bengal ... | 28,805 | 1,13,034 7 | 171,276 | 2,70,568 13 | 450 | 9,254 15 | 30,086 | 1,29,636 14 | 29,255 | 1,22,289 6 | 201,362 | 4,00,205 11 | 230,617 | 5,22,495 1 |
| Bombay ... | 29,76- | 1,08,637 7 | 204,884 | 2,76,628 13 | 817 | 6,355 7 | 101,957 | 4,11,017 10 | 30,585 | 1,14,992 14 | 306,841 | 7,646 7 | 337,426 | 8,02,639 5 |
| B. Burma | 9,206 | 28,563 11 | 68,537 | 1,25,140 7 | 109 | 584 5 | 13,711 | 40,663 12 | 9,315 | 29,148 ... | 82,248 | 1,65,804 3 | 91,563 | 1,94,952 3 |
| Ceylon ... | 1,931 | 2,654 8 | 52,137 | 88,188 14 | 65 | 604 3 | 5,635 | 26,826 7 | 1,996 | 3,258 11 | 57,772 | 1,15,015 5 | 59,768 | 1,18,274 ... |
| Dacca ... | 6,153 | 12,406 13 | 19,592 | 26,817 11 | 2 | 19 13 | 189 | 691 9 | 6,155 | 12,426 10 | 19,781 | 27,509 4 | 25,936 | 39,935 14 |
| Ganjam ... | 5,235 | 13,968 ... | 61,995 | 88,086 10 | ... | ... ... | 808 | 1,995 2 | 5,235 | 13,968 ... | 62,803 | 90,081 12 | 68,038 | 1,04,049 12 |
| Indore ... | 5,061 | 13,449 9 | 40,276 | 59,035 15 | 3 | 49 4 | 99 | 317 7 | 5,064 | 13,498 13 | 40,375 | 59,353 6 | 54,439 | 72,852 3 |
| Madras ... | 7,344 | 19,237 1 | 71,726 | 1,08,060 12 | 56 | 426 3 | 53,568 | 2,39,158 13 | 7,400 | 19,663 4 | 125,294 | 3,47,219 9 | 132,694 | 3,66,882 13 |
| Malabar | 4,877 | 15,407 ... | 48,026 | 68,206 12 | 46 | 268 7 | 1,457 | 4,711 6 | 4,923 | 15,675 7 | 49,483 | 72,918 2 | 54,406 | 88,593 9 |
| Nagpur ... | 5,575 | 11,110 12 | 22,565 | 24,398 1 | ... | ... ... | 86 | 226 14 | 5,575 | 11,110 12 | 22,651 | 24,624 15 | 28,226 | 35,735 11 |
| Oudh and Rohilkand | 9,711 | 21,454 5 | 32,393 | 40,383 10 | 2 | 24 3 | 225 | 709 12 | 9,743 | 21,478 8 | 32,618 | 41,093 6 | 42,361 | 62,571 14 |
| Panjab ... | 1,02,306 | 5,25,391 14 | 101,639 | 1,60,685 7 | 965 | 19,644 15 | 1,589 | 11,251 14 | 103,271 | 545,036 13 | 103,228 | 1,71,937 5 | 206,499 | 7,16,974 2 |
| Rajputana | 3,928 | 10,154 3 | 15,359 | 17,952 8 | 17 | 215 1 | 49 | 137 7 | 3,945 | 10,369 4 | 15,408 | 18,089 15 | 19,353 | 28,459 3 |
| Sindh ... | 56,609 | 2,55,604 2 | 63,366 | 98,459 8 | 737 | 11,703 3 | 20,999 | 1,09,775 6 | 57,246 | 2,67,307 5 | 84,365 | 2,08,234 14 | 141,711 | 4,75,542 3 |
| Total ... | 2,90,622 | 11,86,635 7 | 10,37,330 | 15,32,852 15 | 3,272 | 49,232 11 | 231,287 | 9,79,808 15 | 293,894 | 12,35,868 2 | 12,68,617 | 25,12,661 14 | 15,62,511 | 37,48,530 ... |

NUMBER OF PAID MESSAGES AND INDIAN SHARE OF COLLECTIONS IN 1878-79.

| DIVISIONS. | Inland. State. No. | Inland. State. Value. | Inland. Private. No. | Inland. Private. Value. | Foreign. State. No. | Foreign. State. Value. | Foreign. Private. No. | Foreign. Private. Value. | Total. State. No. | Total. State. Value. | Total. Private. No. | Total. Private. Value. | Grand Total. No. | Grand Total. Value. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. |
| Arakan ... | 735 | 1,794 8 | 8,711 | 19,696 2 | ... | ... ... | 353 | 1,502 12 | 735 | 1,794 8 | 9,064 | 21,198 14 | 9,799 | 22,993 6 |
| Assam ... | 10,383 | 19,004 1 | 25,416 | 34,761 7 | 2 | 10 15 | 172 | 660 8 | 10,385 | 19,015 ... | 25,588 | 35,421 15 | 35,973 | 54,436 15 |
| Bellary ... | 4,684 | 13,350 12 | 24,560 | 32,172 9 | 2 | 2 ... | 286 | 852 8 | 4,686 | 13,352 12 | 24,846 | 33,025 1 | 29,532 | 46,377 13 |
| Bengal ... | 22,876 | 86,042 7 | 172,333 | 2,61,779 8 | 320 | 5,818 2 | 27,138 | 1,28,423 15 | 23,196 | 91,860 9 | 199,471 | 3,90,203 7 | 222,667 | 4,82,064 ... |
| Bombay ... | 23,796 | 80,528 8 | 189,155 | 2,72,182 5 | 1,149 | 9,176 5 | 85,814 | 3,49,916 15 | 24,945 | 89,704 13 | 274,969 | 6,22,099 4 | 299,914 | 7,11,804 1 |
| B. Burma | 7,470 | 27,428 14 | 62,461 | 1,19,329 14 | 109 | 545 14 | 15,040 | 53,784 5 | 7,579 | 27,974 12 | 77,501 | 1,73,114 3 | 85,080 | 2,01,088 15 |
| Ceylon ... | 1,776 | 2,452 12 | 56,433 | 95,745 10 | 77 | 626 8 | 5,083 | 26,899 5 | 1,853 | 3,079 4 | 61,516 | 1,22,644 15 | 63,369 | 1,25,724 3 |
| Dacca ... | 1,152 | 1,455 ... | 11,573 | 19,818 8 | ... | ... ... | 129 | 642 13 | 1,152 | 1,455 ... | 11,702 | 20,461 5 | 12,854 | 21,916 5 |
| Ganjam ... | 4,710 | 13,918 4 | 57,219 | 83,633 5 | ... | ... ... | 708 | 2,277 1 | 4,710 | 13,918 4 | 57,927 | 85,910 6 | 62,637 | 99,828 10 |
| Indore ... | 4,557 | 11,175 2 | 48,619 | 59,410 13 | ... | ... ... | 104 | 538 13 | 4,557 | 11,175 2 | 48,723 | 59,949 10 | 53,280 | 71,124 12 |
| Madras ... | 8,452 | 26,334 8 | 72,462 | 1,11,446 10 | 64 | 525 14 | 40,321 | 1,81,774 6 | 8,516 | 26,860 6 | 112,783 | 2,93,221 ... | 121,299 | 3,20,081 6 |
| Malabar | 4,912 | 20,861 8 | 46,421 | 66,842 1 | 36 | 295 1 | 1,151 | 3,886 2 | 4,948 | 21,156 9 | 47,572 | 70,728 3 | 52,520 | 91,884 12 |
| Nagpur ... | 4,735 | 10,918 9 | 20,712 | 23,141 1 | 1 | 3 14 | 74 | 194 9 | 4,736 | 10,922 7 | 20,786 | 23,335 10 | 25,522 | 34,258 1 |
| Oudh and Rohilkand | 9,464 | 21,134 ... | 32,536 | 39,563 11 | 2 | 21 15 | 282 | 1,037 10 | 9,466 | 21,155 15 | 32,818 | 40,601 5 | 42,284 | 61,757 4 |
| Panjab ... | 59,334 | 2,53,743 14 | 78,523 | 1,20,436 14 | 916 | 16,895 12 | 1,167 | 4,947 15 | 60,250 | 2,70,639 10 | 79,690 | 1,25,384 13 | 139,940 | 3,96,024 7 |
| Rajputana | 3,613 | 9,288 2 | 15,524 | 18,649 4 | ... | ... ... | 46 | 163 14 | 3,613 | 9,288 2 | 15,570 | 18,813 2 | 19,183 | 28,101 4 |
| Sindh ... | 36,895 | 1,44,746 2 | 41,649 | 55,687 4 | 629 | 9,645 15 | 16,695 | 79,841 ... | 37,524 | 1,54,392 1 | 58,344 | 1,35,528 4 | 95,868 | 2,89,920 5 |
| Total ... | 2,09,544 | 7,44,176 15 | 964,307 | 14,34,296 14 | 3,307 | 43,568 3 | 194,563 | 8,37,344 7 | 2,12,851 | 7,87,745 2 | 11,58,870 | 22,71,641 5 | 13,71,721 | 30,59,386 7 |

This Return includes 840 messages on the service of French and Portuguese Governments, and of His Highness the Khan of Khelat, the value of which, *viz.*, Rs. 4,161, has not been credited to Revenue.

| Total Paid Messages. | | No. | Value. Rs. | Value. A. |
|---|---|---|---|---|
| Inland | Departmental | 1,181,188 | 25,64,132 | 4 |
| | Railway | 146,764 | 1,55,355 | 15 |
| Foreign | Departmental | 234,387 | 10,28,627 | 3 |
| | Railway | 172 | 414 | 7 |
| Total | | 1,562,511 | 37,48,529 | 13 |

| Total Paid Messages. | | No. | Value. Rs. | Value. A. |
|---|---|---|---|---|
| Inland | Departmental | 1,046,730 | 20,52,558 | 2 |
| | Railway | 127,121 | 1,25,915 | 11 |
| Foreign | Departmental | 197,679 | 8,80,407 | 14 |
| | Railway | 191 | 504 | 12 |
| Total | | 1,371,721 | 30,59,386 | 7 |



*Return of the Number and Value of Inland and Foreign Messages "Sent" and of Foreign Messages "Received" and in "Transit" during the year 1879-80, showing also the Increase and Decrease under each head on the figures for previous year.*

INCREASE.

| DIVISIONS. | Inland. State. No. | Inland. State. Value. | Inland. Private. No. | Inland. Private. Value. | Foreign. State. No. | Foreign. State. Value. | Foreign. Private. No. | Foreign. Private. Value. | Total. State. No. | Total. State. Value. | Total. Private. No. | Total. Private. Value. | Grand Total. No. | Grand Total. Value. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. |
| Arakan ... | 182 | 412 4 | 192 | ... ... | ... | ... ... | 80 | 17 13 | 182 | 412 4 | 272 | 17 13 | 454 | 430 1 |
| Assam ... | ... | 4,078 7 | ... | ... ... | ... | ... ... | ... | ... ... | ... | 4,078 7 | ... | ... ... | ... | 4,078 7 |
| Bellary ... | 49 | ... ... | ... | ... ... | 1 | 80 12 | ... | ... ... | 50 | 80 12 | ... | ... ... | 50 | 80 12 |
| Bengal ... | 5,929 | 26,892 ... | ... | 8,789 5 | 130 | 3,436 13 | 2,948 | 1,212 15 | 6,059 | 30,428 13 | 2,948 | 10,002 4 | 9,007 | 40,431 1 |
| Bombay ... | 5,972 | 28,108 15 | 15,729 | 4,446 8 | ... | ... ... | 16,143 | 61,100 11 | 5,972 | 28,108 15 | 31,872 | 65,547 3 | 37,844 | 93,656 2 |
| B. Burma | 1,736 | 1,134 13 | 6,076 | 5,810 9 | ... | 38 7 | ... | ... ... | 1,736 | 1,173 4 | 6,076 | 5,810 9 | 7,812 | 6,983 13 |
| Ceylon ... | 155 | 201 12 | ... | ... ... | ... | ... ... | 552 | ... ... | 155 | 201 12 | 552 | ... ... | 707 | 201 12 |
| Dacca ... | 5,001 | 10,951 13 | 8,019 | 6,999 3 | 2 | 19 13 | 60 | 48 12 | 5,003 | 10,971 10 | 8,079 | 7,047 15 | 13,082 | 18,019 9 |
| Ganjam ... | 525 | 49 12 | 4,776 | 4,453 5 | ... | ... ... | 100 | ... ... | 525 | 49 12 | 4,876 | 4,453 5 | 5,401 | 4,503 1 |
| Indore ... | 504 | 2,274 7 | 657 | ... ... | 3 | 49 4 | ... | ... ... | 507 | 2,323 11 | 657 | ... ... | 1,164 | 2,323 11 |
| Madras ... | ... | ... ... | ... | ... ... | ... | ... ... | 13,247 | 57,384 7 | ... | ... ... | 13,247 | 57,384 7 | 13,247 | 57,384 7 |
| Malabar | ... | ... ... | 1,605 | 1,364 11 | 10 | ... ... | 306 | 825 4 | 10 | ... ... | 1,911 | 2,189 15 | 1,921 | 2,189 15 |
| Nagpur ... | 840 | 192 3 | 1,853 | 1,257 ... | ... | ... ... | 12 | 32 5 | 840 | 192 3 | 1,865 | 1,289 5 | 2,705 | 1,481 8 |
| Oudh and Rohilkand | 277 | 320 5 | ... | 819 15 | ... | 2 4 | ... | ... ... | 277 | 322 9 | ... | 819 15 | 277 | 1,142 8 |
| Punjab ... | 42,972 | 2,71,648 ... | 33,116 | 40,248 9 | 49 | 2,749 3 | 422 | 6,308 15 | 43,021 | 2,74,397 3 | 23,538 | 46,552 8 | 66,559 | 3,20,949 11 |
| Rajputana | 315 | 866 1 | ... | ... ... | 17 | 215 1 | 3 | ... ... | 332 | 1,081 2 | 3 | ... ... | 335 | 1,081 2 |
| Sindh ... | 19,714 | 1,10,858 ... | 21,717 | 42,772 4 | 108 | 2,057 4 | 4,304 | 20,934 6 | 19,822 | 1,12,915 4 | 26,021 | 72,706 10 | 45,843 | 1,85,621 14 |
| Total ... | 84,171 | 4,58,088 12 | 83,740 | 1,16,961 5 | 320 | 8,648 13 | 38,177 | 1,56,860 8 | 84,491 | 4,66,737 9 | 1,21,917 | 2,73,821 13 | 2,06,408 | 7,40,559 6 |
| Net Increase and Decrease on the figures of the previous year. | 81,078 | 4,42,458 8 | 73,023 | 98,556 1 | ... | 5,664 8 | 36,724 | 1,42,464 8 | 81,043 | 4,48,123 ... | 1,09,747 | 2,41,020 9 | 1,90,790 | 6,89,143 9 |

DECREASE.

| DIVISIONS. | Inland. State. No. | Inland. State. Value. | Inland. Private. No. | Inland. Private. Value. | Foreign. State. No. | Foreign. State. Value. | Foreign. Private. No. | Foreign. Private. Value. | Total. State. No. | Total. State. Value. | Total. Private. No. | Total. Private. Value. | Grand Total. No. | Grand Total. Value. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. |
| Arakan ... | | | | | | | | | | | | | | |
| Assam ... | | | | 1,918 2 | ... | ... ... | ... | ... ... | ... | .. ... | ... | 1,918 2 | ... | 1,918 2 |
| Bellary ... | 1,950 | ... ... | 4,165 | 4,057 10 | 2 | 10 15 | 25 | 204 13 | 1,952 | 10 15 | 4,190 | 4,262 7 | 6,142 | 4,273 6 |
| Bengal ... | ... | 3,078 5 | 155 | 415 4 | ... | ... ... | 37 | 140 2 | ... | 3,078 5 | 192 | 555 6 | 192 | 3,633 11 |
| Bombay ... | ... | ... ... | 1,057 | ... ... | ... | ... ... | ... | ... ... | ... | ... ... | 1,057 | ... ... | 1,057 | ... ... |
| B. Burma | ... | ... ... | ... | ... ... | 332 | 2,820 14 | ... | ... ... | 332 | 2,820 14 | ... | ... ... | 332 | 2,820 14 |
| Ceylon ... | ... | ... ... | ... | ... ... | ... | ... ... | 1,329 | 13,120 9 | ... | ... ... | 1,329 | 13,120 9 | 1,329 | 13,120 9 |
| Dacca ... | ... | ... ... | 4,296 | 7,556 12 | 12 | 22 5 | ... | 72 14 | 12 | 22 5 | 4,296 | 7,629 10 | 4,308 | 7,651 15 |
| Ganjam ... | ... | ... ... | ... | ... ... | ... | ... ... | ... | ... ... | ... | ... ... | ... | ... ... | ... | ... ... |
| Indore ... | ... | ... ... | ... | ... ... | ... | ... ... | ... | 281 15 | ... | ... ... | ... | 281 15 | ... | 281 15 |
| Madras ... | ... | ... ... | ... | 374 14 | ... | ... ... | 5 | 221 6 | ... | ... ... | 5 | 596 4 | 5 | 596 4 |
| Malabar | 1,108 | 7,097 7 | 736 | 3,385 14 | 8 | 99 11 | ... | ... ... | 1,116 | 7,197 2 | 736 | 3,385 14 | 1,852 | 10,583 ... |
| Nagpur ... | 35 | 5,454 8 | ... | ... ... | ... | 26 10 | ... | ... ... | 35 | 5,481 2 | ... | ... ... | 35 | 5,481 2 |
| Oudh and Rohilkand | ... | ... ... | ... | ... ... | 1 | 3 14 | ... | ... ... | 1 | 3 14 | ... | ... ... | 1 | 3 14 |
| Punjab ... | ... | ... ... | 143 | ... ... | ... | ... ... | 57 | 327 14 | ... | ... ... | 200 | 327 14 | 200 | 327 14 |
| Rajputana | ... | ... ... | ... | ... ... | ... | ... ... | ... | ... ... | ... | ... ... | ... | ... ... | ... | ... ... |
| Sindh ... | ... | ... ... | 165 | 698 12 | ... | ... ... | ... | 26 7 | ... | ... ... | 165 | 723 3 | 165 | 723 3 |
| Total ... | 3,093 | 15,630 4 | 10,717 | 18,405 4 | 355 | 2,984 5 | 1,453 | 14,396 ... | 3,448 | 18,614 9 | 12,170 | 32,801 4 | 15,618 | 51,415 13 |
| Net Increase and Decrease on the figures of the previous year. | ... | ... ... | ... | ... ... | 35 | ... ... | ... | ... ... | ... | ... ... | ... | ... ... | ... | ... ... |

NOTE.—This Return does not include collections other than those belonging to the Government of India.

## *Abstract of Foreign Traffic for the year 1879-80.*

| CLASS OF MESSAGES. | ROUTE. WEST. Via Teheran. No. | Via Teheran. Indian Value. Rs. | A. | Via Turkey. No. | Via Turkey. Indian Value. Rs. | A. | Persian Gulf. No. | Persian Gulf. Indian Value. Rs. | A. | Via Suez. No. | Via Suez. Indian Value. Rs. | A. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIAN. | | | | | | | | | | | | |
| Sent ... | 15,818 | 97,065 | 1 | 1,471 | 6,669 | 8 | 829 | 5,310 | 5 | 48,027 | 1,87,467 | 12 |
| Received ... | 12,071 | 83,230 | 14 | 1,570 | 6,064 | 9 | 798 | 3,593 | 1 | 44,190 | 1,65,716 | 7 |
| TOTAL ... | 27,889 | 1,80,295 | 15 | 3,041 | 12,734 | 1 | 1,627 | 8,903 | 6 | 92,217 | 3,53,184 | 3 |
| TRANSIT. | | | | | | | | | | | | |
| From East to West— | | | | | | | | | | | | |
| Received — *Vid* Madras | 139 | 635 | 10 | 317 | 1,148 | 7 | 171 | 430 | 11 | 38,090 | 1,89,433 | 5 |
| *Vid* Rangoon | 1 | 1 | 14 | 4 | 9 | 12 | ... | ... | ... | 347 | 1,913 | 10 |
| *Vid* Laingha | ... | ... | ... | ... | ... | ... | ... | ... | ... | 11 | 139 | 1 |
| From West to East— | | | | | | | | | | | | |
| Sent — *Vid* Madras | 5,064 | 21,324 | 9 | 440 | 2,077 | 5 | 89 | 286 | 5 | 35,598 | 1,68,123 | 10 |
| *Vid* Rangoon | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| *Vid* Laingha | ... | ... | ... | ... | ... | ... | ... | ... | ... | 14 | 114 | 12 |
| From West to West— | | | | | | | | | | | | |
| *Vid* Bombay and Kurrachi. | ... | ... | ... | 24 | 123 | 6 | 17 | 68 | 4 | ... | ... | ... |
| *Vid* Kurrachi and Bombay. | 1 | 12 | 12 | 17 | 83 | 4 | 16 | 67 | ... | ... | ... | ... |
| From East to East. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| TOTAL ... | 5,196 | 21,974 | 13 | 802 | 3,442 | 2 | 293 | 842 | 4 | 74,060 | 3,59,724 | 6 |

| CLASS OF MESSAGES. | ROUTE. EAST. Via Amur. No. | Via Amur. Indian Value. Rs. | A. | Via Madras. No. | Via Madras. Indian Value. Rs. | A. | Via Rangoon. No. | Via Rangoon. Indian Value. Rs. | A. | Native Burma. No. | Native Burma. Indian Value. Rs. | A. | TOTAL. No. | Indian Value. Rs. | A. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIAN. | | | | | | | | | | | | | | | |
| Sent ... | 15 | 56 | 7 | 9,634 | 31,993 | 7 | 1,367 | 4,939 | 2 | 4,257 | 6,840 | 9 | 81,418 | 3,40,342 | 3 |
| Received ... | 4 | 6 | 5 | 9,124 | 31,798 | 12 | 1,426 | 4,585 | 6 | 3,145 | 5,523 | ... | 72,328 | 3,00,518 | 6 |
| TOTAL ... | 19 | 62 | 12 | 18,758 | 63,792 | 3 | 2,793 | 9,524 | 8 | 7,402 | 12,363 | 9 | 153,746 | 6,40,860 | 9 |
| TRANSIT. | | | | | | | | | | | | | | | |
| From East to West— | | | | | | | | | | | | | | | |
| Received — *Vid* Madras | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 38,708 | 1,91,648 | 1 |
| *Vid* Rangoon | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 352 | 1,925 | 4 |
| *Vid* Laingha | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 12 | 149 | 7 |
| From West to East— | | | | | | | | | | | | | | | |
| Sent — *Vid* Madras | ... | ... | ... | ... | ... | ... | 456 | 2,157 | 2 | ... | ... | ... | 41,648 | 1,93,973 | 7 |
| *Vid* Rangoon | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| *Vid* Laingha | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 14 | 114 | 12 |
| From West to West— | | | | | | | | | | | | | | | |
| *Vid* Bombay and Kurrachi. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 41 | 191 | 10 |
| *Vid* Kurrachi and Bombay. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 34 | 153 | ... |
| From East to East. | ... | ... | ... | 3 | 22 | ... | 1 | 3 | 8 | ... | ... | ... | 4 | 25 | 8 |
| TOTAL ... | 3 | 22 | ... | 457 | 2,160 | 10 | ... | ... | ... | ... | ... | ... | 80,813 | 3,88,181 | 1 |
| GRAND TOTAL ... | | | | | | | | | | | | | 2,34,559 | 10,29,041 | 10 |

## *Abstract of Foreign Traffic with India by the Indo-European and Red Sea routes for the year 1879-80.*

| ROUTE. | Number of Messages by each Route (exclusive of Transit). To India. | From India. | Total. | Percentage of Number. To India. | From India. | Total. |
|---|---|---|---|---|---|---|
| Indo-European — *Vid* Teheran ... ... | 12,071 | 15,818 | 27,889 | 20·59 | 23·92 | 22·35 |
| Indo-European — „ Turkey ... ... | 1,570 | 1,471 | 3,041 | 2·68 | 2·22 | 2·44 |
| Indo-European — Persian Gulf *vid* Kurrachi ... | 798 | 829 | 1,627 | 1·36 | 1·25 | 1·30 |
| Red Sea—*Vid* Suez ... ... | 44,190 | 48,027 | 92,217 | 75·37 | 72·61 | 73·91 |
| TOTAL ... | 58,629 | 66,145 | 1,24,774 | 100·00 | 100·00 | 100·00 |



# APPENDIX C.

## *Abstract showing Percentage of Number of Messages between India and places to the westward by each route.*

| Year. | Via Suez. Homeward. | Via Suez. Outward. | Via Suez. Total. | Via Teheran. Homeward. | Via Teheran. Outward. | Via Teheran. Total. | Via Turkey. Homeward. | Via Turkey. Outward | Via Turkey. Total. | Total. Homeward. | Total. Outward. | Grand Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1871-72 ... | 24·52 | 28·29 | 52·81 | 13·40 | 15·71 | 29·11 | 12·75 | 5·33 | 18·08 | 50·67 | 49·33 | 100·00 |
| 1872-73 ... | 32·82 | 32·23 | 65·05 | 15·85 | 14·35 | 30·20 | 2·73 | 2·02 | 4·75 | 51·40 | 48·60 | 100·00 |
| 1873-74 ... | 28·70 | 24·44 | 53·14 | 21·65 | 22·48 | 44·13 | 1·63 | 1·10 | 2·73 | 51·98 | 48·02 | 100·00 |
| 1874-75 ... | 26·43 | 24·09 | 50·52 | 24·82 | 23·09 | 47·91 | 0·87 | 0·70 | 1·57 | 52.12 | 47.88 | 100·00 |
| 1875-76 ... | 22·17 | 21·03 | 43·20 | 28·60 | 24·51 | 53·11 | 1·60 | 2·09 | 3·69 | 52·37 | 47·63 | 100·00 |
| 1876-77 ... | 29·90 | 30·32 | 60·22 | 21·43 | 16·14 | 37·57 | 1·04 | 1·17 | 2·21 | 52·37 | 47·63 | 100·00 |
| 1877-78 ... | 40·10 | 39·00 | 79·10 | 9·56 | 8·16 | 17·72 | 2·13 | 1·05 | 3·18 | 51·79 | 48·21 | 100·00 |
| 1878-79 ... | 39·40 | 35·64 | 75·04 | 13·17 | 9·90 | 23·07 | 1·12 | 0·77 | 1·89 | 53·69 | 46·31 | 100·00 |
| 1879-80 ... | 39·00 | 35·88 | 74·88 | 12·84 | 9·80 | 22·64 | 1·20 | 1·28 | 2·48 | 53·04 | 46·96 | 100·00 |

# APPENDIX D.

| Number of sent Messages per annum. | Number of Offices (including Offices opened and closed during the year). 1873-74. | 1874-75. | 1875-76. | 1876-77. | 1877-78. | 1878-79. | 1879-80. |
|---|---|---|---|---|---|---|---|
| Above 100,000 ... ... ... ... | 1 | 2 | 2 | 2 | 2 | 2 | 3 |
| „ 75,000 and under 100,000 ... ... | 1 | ... | ... | ... | 1 | ... | ... |
| „ 50,000 „ 75,000 ... ... | ... | ... | ... | 1 | ... | 1 | 1 |
| „ 25,000 „ 50,000 ... ... | 2 | 2 | 3 | 2 | 4 | 2 | 3 |
| „ 20,000 „ 25,000 ... ... | 1 | 1 | ... | 2 | ... | 2 | 2 |
| „ 15,000 „ 20,000 ... ... | 1 | 1 | 2 | ... | 3 | 2 | 3 |
| „ 10,000 „ 15,000 ... ... | 1 | 2 | 2 | 7 | 10 | 9 | 12 |
| „ 5,000 „ 10,000 ... ... | 18 | 23 | 25 | 27 | 29 | 38 | 33 |
| „ 1,000 „ 5,000 ... ... | 93 | 102 | 109 | 127 | 132 | 123 | 136 |
| „ 500 „ 1,000 ... ... | 44 | 41 | 47 | 39 | 42 | 39 | 45 |
| „ 100 „ 500 ... ... | 34 | 51 | 39 | 34 | 28 | 44 | 37 |
| „ ... „ 100 ... ... | 4 | 15 | 13 | 10 | 11 | 18 | 42 |
| TOTAL ... | 200 | 240 | 242 | 251 | 262 | 280 | 317 |

# APPENDIX E.

## *Number of Offices open on 31st March 1880.*

| Divisions. | Class 1st. | Class 2nd. | Class 3rd. | Total. |
|---|---|---|---|---|
| Arakan ... ... ... ... ... | 2 | 3 | 2 | 7 |
| Assam ... ... ... ... ... | 1 | 10 | 9 | 20 |
| Bellary ... ... ... ... ... | ... | 2 | 10 | 12 |
| Beluchistan ... ... ... ... ... | 1 | 1 | 5 | 7 |
| Bengal ... ... ... ... ... | 2 | 10 | 13 | 25 |
| Bombay ... ... ... ... ... | 4 | 9 | 13 | 26 |
| British Burma ... ... ... ... ... | 3 | 6 | 5 | 14 |
| Ceylon ... ... ... ... ... | 3 | 2 | 9 | 14 |
| Dacca ... ... ... ... ... | 2 | 1 | 5 | 8 |
| Ganjam ... ... ... ... ... | 2 | 5 | 8 | 15 |
| Indore ... ... ... ... ... | ... | 7 | 6 | 13 |
| Madras ... ... ... ... ... | 4 | 1 | ... | 5 |
| Malabar Coast ... ... ... ... ... | ... | 9 | 5 | 14 |
| Nagpore ... ... ... ... ... | 3 | ... | 8 | 11 |
| Oudh and Rohilcund ... ... ... ... ... | ... | 6 | 8 | 14 |
| Punjab ... ... ... ... ... | 8 | 7 | 22 | 37 |
| Peshawar Valley Field Force ... ... ... | 4 | 13 | ... | 17 |
| Rajpootana ... ... ... ... ... | 1 | 2 | 4 | 7 |
| Sind ... ... ... ... ... | 2 | 3 | 5 | 10 |
| TOTAL ... | 42 | 97 | 137 | 276 |

# APPENDIX F.

## *Synopsis of complaints in which this Department is concerned for the year 1879-80.*

| Nature of Complaints. | Number of Complaints received. | | | | Number disposed of. | | | | | | | | | | | Number of Paid Messages. | | | Percentage of Messages which formed the subject of Complaints. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Admitted. | | | | Rejected. | | | | | | | | | | | | | |
| | | | | | | | | | Being groundless. | | | Not investigated for want of documents. | | | Total rejected. | | | | | | | |
| | Inland. | Railway. | Foreign. | Total received. | Inland. | Railway. | Foreign. | Total Admitted. | Inland. | Railway. | Foreign. | Inland. | Railway. | Foreign. | | Inland. | Railway. | Foreign. | Inland. | Railway. | Foreign. | Total. |
| Non-delivery ... ... | 189 | 32 | 29 | 250 | 87 | 22 | 16 | 125 | 92 | 10 | 11 | 9 | ... | 3 | 125 | ... | ... | ... | ·016 | ·022 | ·012 | ·016 |
| | 154 | 17 | 39 | 210 | 70 | 12 | 22 | 104 | 75 | 4 | 15 | 9 | 1 | 2 | 106 | ... | ... | ... | ·015 | ·013 | ·020 | ·015 |
| Delay ... ... | 50 | 11 | 10 | 71 | 38 | 11 | 8 | 57 | 11 | ... | 2 | 1 | ... | ... | 14 | 11,81,188 | 1,46,764 | 2,34,559 | ·004 | ·007 | ·004 | ·004 |
| | 56 | 3 | 8 | 67 | 48 | 2 | 5 | 55 | 9 | ... | 3 | ... | ... | ... | 12 | 10,46,730 | 1,27,121 | 1,97,870 | ·005 | ·002 | ·004 | ·005 |
| Error ... ... | 108 | 4 | 21 | 133 | 98 | 4 | 18 | 120 | 10 | ... | 2 | ... | ... | 1 | 13 | ... | ... | ... | ·009 | ·003 | ·009 | ·008 |
| | 68 | 5 | 21 | 94 | 62 | 5 | 21 | 88 | 6 | ... | ... | ... | ... | ... | 6 | ... | ... | ... | ·006 | ·004 | ·011 | ·007 |
| Miscellaneous ... ... | 15 | 3 | 3 | 21 | 10 | 1 | 2 | 13 | 6 | 2 | 1 | ... | ... | ... | 8 | ... | ... | ... | ·001 | ·002 | ·001 | ·001 |
| | 6 | 2 | 1 | 9 | 4 | ... | ... | 4 | 2 | 2 | 1 | ... | ... | ... | 5 | ... | ... | ... | ·001 | ·002 | ·000 | ·001 |
| Total ... | 362 | 50 | 63 | 475 | 233 | 38 | 44 | 315 | 118 | 12 | 16 | 10 | ... | 4 | 160 | ... | ... | ... | ·020 | ·034 | ·027 | ·030 |
| | 284 | 27 | 69 | 380 | 184 | 19 | 48 | 251 | 92 | 6 | 19 | 9 | 1 | 2 | 129 | ... | ... | ... | ·027 | ·021 | ·035 | ·028 |

Increase of Traffic ... { Departmental ... 12·84 per cent. / Railway ... 15·45 „ / Foreign ... 18·54 „ / Net ... 13·90 „ }

Percentages of increase or decrease in number of admitted complaints :—
Increase ... { Departmental ... 26·63 per cent. / Railway ... 100 „ }
Decrease ... { Foreign ... 8·33 „ / Net increase ... 25·49 „ }

## *Synopsis of Complaints in which other Telegraph Administrations are concerned for the year 1879-80.*

| Nature of Complaints. | Number of Complaints received. | | | Transferred to other Telegraph Administrations. | | | | | | | | Not transferred to other Telegraph Administrations. | | | | Number of Paid Messages. | | | Percentage of Messages which formed the subject of Complaints. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Disposed of. | | | | | | | Transferred, but not yet disposed of. | | | | | | | | | | |
| | | | | Admitted. | | | Rejected. | | | | | | | | | | | | | | |
| | | | | | | | Being groundless. | | On technical grounds. | | Total rejected. | | | | | | | | | | |
| | Railway. | Foreign. | Total received. | Railway. | Foreign. | Total admitted. | Railway. | Foreign. | Railway. | Foreign. | | Railway. | Foreign. | Railway. | Foreign. | Railway. | Foreign. | Railway. | Foreign. | Total. | Railway. | Foreign. | Total. |
| Non-delivery ... ... | 45 | 57 | 102 | 19 | 24 | 43 | 25 | 17 | ... | ... | 42 | ... | 3 | 1 | 6 | ... | 7 | ... | ... | ... | ·030 | ·024 | ·027 |
| | 36 | 68 | 104 | 15 | 28 | 43 | 18 | 10 | ... | ... | 28 | 4 | 15 | ... | 10 | ... | 4 | ... | ... | ... | ·028 | ·034 | ·032 |
| Delay ... ... | 16 | 9 | 25 | 11 | 5 | 16 | 3 | 1 | ... | ... | 4 | 2 | ... | ... | 1 | ... | 2 | ... | ... | ... | ·011 | ·004 | ·007 |
| | 9 | 7 | 16 | 6 | 3 | 9 | 3 | ... | ... | ... | 3 | ... | 2 | ... | 1 | ... | 1 | ... | ... | ... | ·007 | ·003 | ·005 |
| Error ... ... | 16 | 39 | 55 | 7 | 14 | 21 | ... | 2 | ... | ... | 2 | ... | 3 | ... | 1 | 9 | 19 | 1,46,764 | 2,34,559 | 3,81,323 | ·011 | ·017 | ·014 |
| | 16 | 52 | 68 | 7 | 14 | 21 | 1 | 1 | ... | ... | 2 | ... | 3 | ... | 3 | 7 | 31 | 1,27,121 | 1,97,870 | 3,24,991 | ·013 | ·026 | ·021 |
| Miscellaneous ... ... | 6 | 20 | 26 | 5 | 17 | 22 | 1 | ... | ... | ... | 1 | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ·004 | ·008 | ·007 |
| | 3 | 16 | 19 | 3 | 14 | 17 | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ·002 | ·008 | ·006 |
| Total for the Year ... | 83 | 125 | 208 | 42 | 60 | 102 | 29 | 20 | ... | ... | 49 | 2 | 9 | 1 | 8 | 9 | 28 | ... | ... | ... | ·056 | ·053 | ·055 |
| | 64 | 143 | 207 | 31 | 59 | 90 | 22 | 11 | ... | ... | 33 | 6 | 21 | ... | 13 | 8 | 36 | ... | ... | ... | ·050 | ·072 | ·061 |
| Balance from last year ... | 6 | 24* | 30 | 5 | 19 | 24 | 1 | 3 | ... | ... | 4 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| | 10 | 19 | 29 | 10 | 14 | 24 | ... | 2 | ... | ... | 2 | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Total ... | 89 | 149 | 238 | 47 | 79 | 126 | 30 | 23 | ... | ... | 53 | 2 | 10 | 1 | 8 | 9 | 28 | ... | ... | ... | ·060 | ·064 | ·062 |
| | 74 | 162 | 236 | 41 | 73 | 114 | 22 | 13 | ... | ... | 35 | 6 | 24 | ... | 13 | 8 | 36 | ... | ... | ... | ·058 | 082 | ·073 |

* 1 Withdrawn.

Increase in number of admitted complaints ... { Railway 35·48 per cent. / Foreign 1·69 „ / Net. 13·33 „ }

The figures in heavy type are those for the last year.



# APPENDIX G.

## *Statement showing the Number and Value of Messages transferred to and received from Railways.*

| Year. | Transferred to Railways. | | | | | | Received from Railways. | | | | | | Total Traffic exchanged. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | State. | | Guaranteed. | | Total. | | State. | | Guaranteed. | | Total. | | | | |
| | No. | Value. | No. | Value. | No. | Value. | No. | Value. | No. | Value. | No. | Value. | No. | Value. | |
| | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | | Rs. A. | |
| 1873-74 ... ... | 327 | 195 10 | 22,151 | 19,038 9 1/12 | 22,478 | 19,234 3 1/12 | 484 | 690 0 | 18,246 | 19,246 3 11/12 | 18,730 | 19,936 3 11/12 | 41,208 | 39,170 7 | |
| 1874-75 ... ... | 2,689 | 2,205 6 | 24,732 | 22,686 13 11/12 | 27,421 | 24,892 3 11/12 | 3,312 | 5,488 1/8 | 23,547 | 26,156 13 1/8 | 26,859 | 31,644 14 1/2 | 54,280 | 56,537 2 5/12 | |
| 1875-76 ... ... | 6,781 | 4,608 11 1/8 | 30,187 | 24,310 12 3/4 | 36,968 | 28,919 8 1/12 | 6,071 | 9,511 11 7/12 | 26,579 | 32,870 14 7/12 | 32,650 | 42,382 10 1/8 | 69,618 | 71,302 2 1/4 | |
| 1876-77 ... ... | 11,055 | 7,124 4 5/12 | 38,654 | 32,567 8 1/12 | 49,709 | 36,691 12 1/2 | 9,994 | 23,458 3 1/12 | 36,606 | 44,638 0 3/8 | 46,600 | 68,096 3 3/4 | 96,309 | 1,07,788 0 1/4 | |
| 1877-78 ... ... | 13,568 | 7,493 6 1/2 | 51,375 | 36,743 10 3/8 | 64,943 | 44,237 1 1/8 | 15,417 | 24,846 8 | 44,850 | 56,629 4 1/8 | 60,267 | 81,475 12 1/8 | 1,25,210 | 1,25,712 13 1/2 | |
| 1878-79 ... ... | 16,595 | 11,449 1 1/8 | 51,418 | 40,633 6 1/4 | 68,013 | 52,082 7 7/12 | 21,188 | 31,873 3 3/4 | 43,035 | 55,318 9 3/4 | 64,223 | 87,191 13 1/2 | 1,32,236 | 1,39,274 5 1/12 | |
| 1879-80 ... ... | 11,692 | 14,522 9 3/8 | 55,698 | 79,019 1 1/4 | 67,390 | 93,541 11 1/8 | 29,302 | 41,665 11 1/2 | 43,515 | 61,535 7 1/2 | 72,817 | 1,03,201 3 | 1,40,207 | 1,96,742 14 1/8 | |



# APPENDIX H.

## *Abstract of Press Messages for the year 1879-80.*

| Year. | No. | Value at Press rate. | | Remarks. |
|---|---|---|---|---|
| | | Rs. | As. | |
| April 1879 ... ... ... ... ... ... ... ... | 463 | 2,766 | 8 | |
| May „ ... ... ... ... ... ... ... ... | 519 | 3,600 | 12 | |
| June „ ... ... ... ... ... ... ... ... | 466 | 3,376 | 12 | |
| July „ ... ... ... ... ... ... ... ... | 523 | 3,465 | 12 | |
| August „ ... ... ... ... ... ... ... ... | 392 | 2,299 | ... | |
| September „ ... ... ... ... ... ... ... ... | 796 | 5,364 | 8 | |
| October „ ... ... ... ... ... ... ... ... | 868 | 7,030 | 12 | |
| November „ ... ... ... ... ... ... ... ... | 655 | 5,110 | 12 | |
| December „ ... ... ... ... ... ... ... ... | 585 | 4,162 | 12 | |
| January 1880 ... ... ... ... ... ... ... ... | 718 | 5,735 | 8 | |
| February „ ... ... ... ... ... ... ... ... | 587 | 4,528 | 12 | |
| March „ ... ... ... ... ... ... ... ... | 778 | 4,[illegible]56 | ... | |
| | 7,350 | 51,497 | 12 | |

# APPENDIX I.

*Classified List of Lines of Telegraph in India, British Burma and Ceylon, as they stood on 31st March 1880.*

| No. | Sections of Lines. | Divisions. | No. of Miles of Line. | | | No. of Miles of Wire. | | Cable. | Insulated. | Uninsulated. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Along road. | Along rail. | Total. | No. | Miles. | | | |
| | **MAIN LINES.** | | | | | | | | | |
| 1 | Calcutta to Allahabad ... ... ... | Bengal ... | 286·040 | 810·024 | 1,096·064 | 1 Wire for 3·155 miles...<br>2 Wires „ 514·891 „<br>3 „ „ 2·700 „<br>4 „ „ 125·160 „<br>5 „ „ ·500 „<br>6 „ „ 355·029 „<br>7 „ „ 7·294 „<br>8 „ „ 65·194 „<br>9 „ „ 1·366 „<br>10 „ „ 5·015 „<br>11 „ „ 14·000 „<br>16 „ „ 1·760 „<br>1,096·064 miles. | 4,517·663 | ... | 4,517·663 | ... |
| 2 | Allahabad to Bombay ... ... ... | Bengal, Nagpore and Bombay. | 15·516 | 831·135 | 846·651 | 2 Wires for 152·700 miles...<br>3 „ „ 191·477 „<br>5 „ „ 240·021 „<br>6 „ „ 6·737 „<br>7 „ „ 224·215 „<br>8 „ „ ·347 „<br>9 „ „ 1·547 „<br>10 „ „ 29·577 „<br>11 „ „ ·007 „<br>13 „ „ ·023 „<br>846·651 miles. | 4,004·638 | ... | 4,001·082 | ... |
| 3 | Allahabad to Agra ... ... ... | Bengal ... | 1·420 | 277·575 | 278·995 | 4 Wires for 263·525 miles...<br>8 „ „ 12·610 „<br>11 „ „ 1·440 „<br>14 „ „ 1·420 „<br>278·995 miles. | 1,190·840 | ... | 1,190·840 | ... |
| 4 | Agra to Kurrachee ... ... ... | Rajpootana and Sind. | 538·178 | 365·550 | 903·728 | 1 Wire for ·25 miles...<br>2 Wires „ 205·168 „<br>4 „ „ 350·400 „<br>5 „ „ 232·160 „<br>6 „ „ 113·860 „<br>7 „ „ ·390 „<br>9 „ „ 1·500 „<br>903·728 miles. | 3,672·376 | ... | 3,672·376 | ... |
| 5 | Bombay to (Deesa) Kurrachee ... ... | Bombay and Rajpootana. | 21·722 | 386·753 | 408·475 | 4 Wires for 96·000 miles...<br>5 „ „ 1·500 „<br>6 „ „ 301·837 „<br>7 „ „ 1·238 „<br>8 „ „ 7·703 „<br>11 „ „ ·197 „<br>408·475 miles. | 2,274·979 | ... | 2,274·979 | ... |
| 6 | Bombay to Madras ... ... ... | Bombay and Madras | 14·058 | 776·402 | 790·460 | 2 Wires for 353·00 miles...<br>3 „ „ 301·000 „<br>4 „ „ 40·500 „<br>5 „ „ 87·000 „<br>6 „ „ 5·240 „<br>7 „ „ 1·850 „<br>8 „ „ ·570 „<br>9 „ „ 1·300 „<br>790·460 miles. | 2,266·65 | ... | 2,266·650 | ... |
| 7 | Madras to Calcutta ... ... ... | Ganjam ... | 1,054·204 | ... | 1,054·204 | 2 Wires for 1,030·794 miles...<br>3 „ „ 12·670 „<br>4 „ „ 10·473 „<br>5 „ „ ·267 „<br>1,054·204 miles. | 2,136·825 | 6·000 | 2,136·825 | ... |
| 8 | Agra (Toondla) to Lahore ... ... ... | Bengal and Punjab. | 7·097 | 446·550 | 454·247 | 2 Wires for 82·250 miles...<br>3 „ „ 254·550 „<br>4 „ „ 111·850 „<br>6 „ „ 1·247 „<br>7 „ „ 1·000 „<br>8 „ „ 1·000 „<br>11 „ „ 2·350 „<br>454·247 miles. | 1,423·882 | ... | 1,423·882 | ... |
| 9 | Calcutta (Barrackpore) to Amherst ... ... | Dacca, Arakan, and B. Burma. | 939·411 | 298·258 | 1,237·669 | 1 Wire for 239·197 miles...<br>2 Wires „ 746·672 „<br>3 „ „ 89·000 „<br>4 „ „ ·500 „<br>5 „ „ 113·770 „<br>6 „ „ 41·170 „<br>7 „ „ 2·360 „<br>8 „ „ 1·740 „<br>10 „ „ ·570 „<br>11 „ „ 2·330 „<br>12 „ „ ·360 „<br>1,237·669 miles. | 2,857·093 | 26·408 | 2,857·093 | ... |

## *Classified List of Lines of Telegraph in India, British Burma, Ceylon, &c.*—continued.

| No. | Sections of Lines. | Divisions. | No. of Miles of Line. | | | No. of Miles of Wire. | | Cable. | Insulated. | Uninsulated. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Along road. | Along rail. | Total. | No. | Miles. | | | |
| | **MAIN LINES**—*continued.* | | | | | | | | | |
| 10 | Madras to Ceylon ... ... ... | Madras ... | 154·720 | 313·000 | 467·720 | 1 Wire for 41·000 miles...<br>2 Wires „ 110·720 „<br>3 „ „ 154·500 „<br>4 „ „ 159·000 „<br>6 „ „ ·500 „<br>7 „ „ 1·300 „<br>8 „ „ ·700 „<br>467·720 miles. | 1,374·640 | 36·200 | 1,374·640 | ... |
| 11 | Ceylon (Tallamanaar) to Galle ... ... | Ceylon ... | 245·470 | 74·400 | 319·870 | 1 Wire for 188·860 miles...<br>2 Wires „ 103·830 „<br>3 „ „ 26·945 „<br>4 „ „ ·160 „<br>5 „ „ ·075 „<br>319·870 miles. | 477·750 | ·620 | 477·750 | ... |
| | **SECONDARY LINES.** | | | | | | | | | |
| 12 | Lahore to Peshawar ... ... ... | Punjab ... | 111·991 | 162·336 | 274·327 | 2 Wires for 10·000 miles...<br>3 „ „ 56·000 „<br>4 „ „ 93·650 „<br>5 „ „ 43·856 „<br>6 „ „ 69·652 „<br>7 „ „ ·919 „<br>9 „ „ ·250 „<br>274·327 miles. | 1,208·475 | ... | 1,208·475 | ... |
| 13 | Lahore to (Hyderabad) Karrachee ... ... | Punjab and Sind ... | 15·879 | 708·213 | 724·092 | 2 Wires for 205·631 miles<br>3 „ „ 3·192 „<br>4 „ „ 497·250 „<br>5 „ „ ·750 „<br>6 „ „ 16·969 „<br>7 „ „ ·300 „<br>724·092 miles. | 2,516·502 | 3·000 | 2,516·502 | ... |
| 14 | Hyderabad (Sind) (Jacobabad) to (Tul Noul) Rawal Pindee. | Sind and Punjab ... | 618·750 | ... | 618·750 | 1 Wire for 507·25 miles...<br>2 Wires „ 111·500 „<br>618·750 miles. | 730·250 | ... | 255·750 | 474·500 |
| 15 | Poona to Arconum Junction by Road ... | Bellary and Bombay. | 723·169 | 37·937 | 761·106 | 2 Wires for 676·387 miles...<br>3 „ „ 77·281 „<br>4 „ „ 4·534 „<br>5 „ „ 2·710 „<br>8 „ „ ·194 „<br>761·106 miles. | 1,617·839 | ... | 1,617·839 | ... |
| 16 | Sahibgunge (Tickreegunge) to Cachar (Silchar)... | Dacca and Assam... | 571·864 | ... | 571·864 | 1 Wire for 549·294 miles...<br>2 Wires „ 22·070 „<br>3 „ „ ·500 „<br>571·864 miles. | 583·990 | 10·944 | 583·990 | ... |
| 17 | Bangalore to (Tinnevelly) Ceylon ... ... | Malabar Coast ... | 516·6412 | 83·170 | 599·8112 | 1 Wire for 504·4187 miles...<br>2 Wires „ 94·0625 „<br>3 „ „ 1·3300 „<br>599·8112 miles. | 696·5337 | ... | 696·5337 | ... |
| 18 | Jubbulpore to Bhosawal ... ... ... | Nagpore ... | 157·460 | 259·100 | 416·560 | 2 Wires for 341·570 miles...<br>3 „ „ 61·940 „<br>4 „ „ 9·250 „<br>5 „ „ 3·000 „<br>6 „ „ ·800 „<br>416·560 miles. | 924·86 | ... | 924·86 | ... |
| 19 | Agra to Khundwa ... ... ... | Rajpootana and Indore. | 298·515 | 157·500 | 456·015 | 1 Wire for 297·761 miles...<br>2 Wires „ ·754 „<br>3 „ „ 73·750 „<br>4 „ „ 83·750 „<br>456·015 miles. | 855·519 | ... | 855·519 | ... |
| 20 | Allyghur to Benares through Fyzabad ... | Oudh and Rohilkhund. | 3·910 | 446·580 | 450·490 | 3 Wires for 399·330 miles...<br>4 „ „ 48·130 „<br>5 „ „ 1·080 „<br>6 „ „ 1·460 „<br>7 „ „ ·490 „<br>450·49 miles. | 1,408·100 | ... | 1,408·100 | ... |
| 21 | Indore to Neemuch ... ... ... | Indore ... | ·850 | 155·100 | 155·950 | 2 Wires for ·850 miles...<br>3 „ „ 130·200 „<br>4 „ „ 24·900 „<br>155·950 miles. | 491·900 | ... | 488·960 | ... |
| 22 | Belgaum to Goa ... ... ... ... | Bellary ... | 98·884 | ... | 98·884 | 1 Wire for 98·787 miles...<br>2 Wires „ ·097 „<br>98·884 miles. | 98·515 | ·466 | 97·540 | ... |

| No. | Sections of Lines. | Divisions. | No. of Miles of Line. | | | No. of Miles of Wire. | | Cable. | Insulated. | Uninsulated. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Along road. | Along rail. | Total. | No. | Miles. | | | |
| | **SECONDARY LINES**—*continued.* | | | | | | | | | |
| 23 | Bellary (Ausphee Junction) to Hyderabad ... | Bellary ... | 178·586 | ... | 178·586 | 1 Wire for 178·558 miles...<br>2 Wires „ ·028 „<br>178·586 miles. | 178·614 | ... | 126·225 | 51·540 |
| 24 | Waddi to Hyderabad ... ... ... | Bombay ... | 1·600 | 115·000 | 116·600 | 3 Wires for 112·400 miles...<br>4 „ „ 1·000 „<br>5 „ „ 1·800 „<br>6 „ „ 1·400 „<br>116·600 miles. | 358·600 | ... | 358·600 | ... |
| 25 | Dharwar (Hubli) to Coompta ... ... | Bellary ... | 119·558 | ... | 119·558 | 1 Wire for 103·558 miles...<br>2 Wires „ 16·000 „<br>119·558 miles. | 135·558 | ... | 135·094 | ... |
| 26 | Calcutta (Sealdah Junction) to Saugor Island ... | Bengal ... | 89·217 | ... | 89·217 | 1 Wire for 84·280 miles...<br>2 Wires „ 1·240 „<br>7 „ „ 3·697 „<br>89·217 miles. | 112·179 | 1·080 | 28·979 | 83·200 |
| 27 | Prome (Poungday) to Diamond Island ... | British Burma ... | 262·820 | ... | 262·820 | 1 Wire for 242·310 miles...<br>2 Wires „ 20·510 „<br>262·820 miles. | 271·460 | 11·870 | 130·620 | 140·840 |
| 28 | Mogulserai to (City Junction) Benares ... | Oudh and Rohilkhund. | 7·340 | 2·930 | 10·270 | 2 Wires for 7·110 miles...<br>3 „ „ ·230 „<br>5 „ „ 2·930 „<br>10·270 miles. | 29·560 | ... | 29·560 | ... |
| 29 | Ahmedabad to Bhawnuggur ... ... | Bombay ... | 113·200 | 80·250 | 193·450 | 1 Wire for 96·700 miles...<br>2 Wires „ 16·500 „<br>4 „ „ 74·750 „<br>5 „ „ 1·000 „<br>7 „ „ 4·000 „<br>8 „ „ ·500 „<br>193·45 miles... | 465·700 | ... | 465·700 | ... |
| 30 | Umballa to Simla ... ... .. | Punjab ... | 71·500 | ... | 71·500 | 2 Wires for 9·000 miles...<br>3 „ „ 62·500 „<br>71·500 miles. | 205·500 | ... | 205·500 | ... |
| 31 | Meerut to Chackrata ... ... ... | Punjab ... | 111·950 | ... | 111·950 | 1 Wire for 111·000 miles...<br>2 Wires „ ·550 „<br>3 „ „ ·400 „<br>111·950 miles. | 113·300 | ... | 113·300 | ... |
| 32 | Ruk I. V. S. Railway Station to Hurnai through Sibi and Dadur. | Sind ... ... | 170·500 | 138·000 | 308·500 | 1 Wire for 152·000 miles...<br>2 Wires „ 22·000 „<br>3 „ „ 96·000 „<br>4 „ „ 37·250 „<br>5 „ „ 1·250 „<br>308·500 miles. | 639·250 | ... | 592·250 | 47·000 |
| 33 | Sibi to Quetta ... ... ... ... | Beluchistan Subdivision. | 80·240 | ... | 80·240 | 1 Wire for 57·750 miles...<br>2 Wires „ 22·490 „<br>80·240 miles. | 102·730 | ... | 102·730 | ... |
| 34 | Quetta (Darwaza Junction) to Kelat... ... | Ditto ... | 69·480 | ... | 69·480 | 1 | 69·480 | ... | 69·480 | ... |
| 35 | Quetta to Kandahar ... ... ... | Ditto ... | 136·000 | ... | 136·000 | 1 | 136·000 | ... | 41·000 | 95·000 |
| 36 | Peshawar to (Sherpoor) Cabul ... ... | Peshawar—Cabul... | 199·500 | ... | 199·500 | 1 Wire for 142·500 miles...<br>2 Wires „ 57·000 „<br>199·500 miles. | 256·500 | ... | 114·000 | 142·500 |
| 37 | Kohat to Peiwar Kotal ... ... ... | Punjab ... | 121·810 | ... | 121·810 | 1 | 121·810 | ... | 10·180 | 111·630 |
| 38 | Nagpur (Wardah Junction) to Wurrora ... | Nagpur ... | ... | 44·800 | 44·800 | 2 | 89·600 | ... | 89·600 | ... |
| 39 | Madura to Tuticorin ... ... ... | Madras ... | ·25 | 116·000 | 116·250 | 2 Wires for ·250 miles...<br>3 „ „ 98·250 „<br>4 „ „ 17·750 „<br>116·250 miles. | 366·250 | ... | 366·250 | ... |
| 40 | Gowhati (Belgaria Junction) to Dibrughar ... | Assam ... | 283·250 | ... | 283·250 | 1 Wire for 256·500 miles...<br>2 Wires „ 26·750 „<br>283·250 miles. | 310·000 | ... | 276·000 | 34·000 |
| 41 | Parodha to Darjeeling ... ... ... | Dacca ... | 28·780 | 220·660 | 249·440 | 2 Wires for 37·880 miles...<br>3 „ „ 37·200 „<br>4 „ „ 174·360 „<br>249·440 miles. | 877·160 | 7·640 | 876·960 | ... |
| 42 | Lucknow to Sitapur ... ... ... | Oudh and Rohilkhund. | 53·270 | ... | 53·270 | 1 | 53·270 | ... | 6·000 | 47·270 |

*Classified List of Lines of Telegraph in India, British Burma, Ceylon, &c.* —continued.

| No. | Sections of Lines. | Divisions. | No. of Miles of Line. | | | No. of Miles of Wire. | | Cable. | Insulated. | Uninsulated. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Along road. | Along rail. | Total. | No. | Miles. | | | |
| | **TERTIARY LINES.** | | | | | | | | | |
| 43 | Manmad to Dhoolia ... ... ... | Bombay ... | 56·500 | ... | 56·500 | 1 Wire for 32·500 miles...<br>2 Wires „ 22·500 „<br>3 „ „ 1·500 „<br>56·500 miles. | 82·000 | ... | 54·400 | 27·600 |
| 44 | Cawnpore to Furruckabad ... ... | Oudh and Rohilkhund. | ... | 87·000 | 87·000 | 2 | 174·000 | ... | 174·000 | ... |
| 45 | Cawnpore to Lucknow ... ... ... | Ditto ... | ·084 | 43·773 | 43·857 | 3 Wires for 40·920 miles...<br>4 „ „ 1·527 „<br>6 „ „ ·999 „<br>8 „ „ ·411 „<br>43·857 miles. | 138·150 | ... | 138·150 | ... |
| 46 | Agra to Muttra ... ... ... ... | Bengal ... | 31·574 | ... | 31·574 | 1 | 31·574 | ... | ... | 31·574 |
| 47 | Bankipore (Mokameh Junction) to Bettiah ... | Ditto ... | 105·350 | 75·000 | 180·350 | 1 Wire for 105·350 miles...<br>2 Wires „ 23·000 „<br>3 „ „ 46·000 „<br>4 „ „ 6·000 „<br>180·350 miles. | 311·350 | 2 | 281·350 | 30·000 |
| 48 | Bankipore Tripod to Gya ... ... ... | Ditto ... | ... | 57·586 | 57·586 | 2 Wires for 57·067 miles...<br>5 „ „ ·519 „<br>57·586 miles. | 116·634 | ... | 116·634 | ... |
| 49 | Pahlanpore to Beawar ... ... ... | Rajputana ... | ... | 188·750 | 188·750 | 2 | 377·500 | ... | 377·500 | ... |
| 50 | Ajmere (Beawar Junction) to Nusseerabad .. | Ditto ... | 1·000 | 13·400 | 14·400 | 2 | 28·800 | ... | 28·800 | ... |
| 51 | Anadra to Mount Aboo ... ... ... | Ditto ... | 5·000 | ... | 5·000 | 2 | 10·000 | ... | 10·000 | ... |
| 52 | Narel to Matheran ... ... ... | Bombay ... | 5·250 | ... | 5·250 | 2 | 10·500 | ... | 10·500 | ... |
| 53 | Dhond to Manmad ... ... ... | Ditto ... | ... | 147·500 | 147·500 | 2 Wires for 146·660 miles...<br>3 „ „ ·840 „<br>147·500 miles. | 295·840 | ... | 295·840 | ... |
| 54 | Poona to Guneshkhind ... ... ... | Ditto ... | 1·250 | ... | 1·250 | 2 | 2·500 | ... | 2·500 | ... |
| 55 | Bezwarra to Masulipatam ... ... | Ganjam ... | 43·000 | ... | 43·000 | 1 | 43·000 | ... | ·500 | 42·500 |
| 56 | Cuttack (Simlibund) to False Point ... ... | Ditto ... | 56·660 | ... | 56·660 | 1 | 56·660 | ... | 56·660 | ... |
| 57 | Bimlipatam to Vizianagram ... — | Ditto ... | 10·750 | ... | 10·750 | 1 | 10·7 0 | ... | 10·750 | ... |
| 58 | Mercara to Mangalore ... ... | Malabar Coast ... | 78·950 | ... | 78·950 | 1 | 78·950 | ... | 78·736 | ... |
| 59 | Gaziabad to Bandikui ... ... ... | Punjab and Rajputana. | ·25 | 145·25 | 145·50 | 1 Wire for 134·5 miles...<br>4 Wires „ 11·0 „<br>145·5 miles. | 313·00 | ... | 313·00 | ... |
| 60 | Umballa to Pattiala ... ... ... | Punjab ... | 17·00 | ... | 17·00 | 1 | 17·00 | ... | 17·00 | ... |
| 61 | Umballa to Lahore through Ferozeporr ... | Ditto ... | 129·60 | ... | 129·60 | 1 | 129·60 | ... | 1·50 | 128·100 |
| 62 | Umritsur to Bukloh through Dalhousie ... | Ditto ... | 108·00 | ... | 108·00 | 1 | 108·00 | ... | 108·00 | ... |
| 63 | Kaldana to Baragally ... ... ... | Ditto ... | 13·50 | ... | 13·50 | 1 | 13·50 | ... | 7·75 | 5·750 |
| 64 | Prome to Laingha ... ... ... | British Burmah ... | 49·86 | ... | 49·86 | 1 Wire for 34·80 miles...<br>2 Wires „ 15·06 „<br>49·86 miles. | 64·92 | ... | 30·12 | 34·800 |
| 65 | Thayethamine to Tounghoo... ... ... | Ditto ... | 102·530 | ... | 102·530 | 1 Wire for 84·620 miles ...<br>2 Wires „ 17·910 „<br>102·530 miles. | 120·440 | ... | 120·440 | ... |
| 66 | Manaar (Tallali Junction) to Jaffna ... | Ceylon ... | 66·420 | ... | 66·420 | 1 | 64·420 | 2·000 | 64·420 | ... |
| 67 | Dambulla to Trincomallee ... ... | Ditto ... | 67·500 | ... | 67·500 | 1 | 67·500 | ... | 67·500 | ... |
| 68 | Kandy to Batticaloa ... ... ... | Ditto ... | 142·440 | 8·200 | 150·640 | 1 Wire for 142·370 miles ...<br>2 Wires „ 8·220 „<br>3 „ „ ·050 „<br>150·640 miles. | 158·970 | ... | 158·970 | ... |
| 69 | Lahore to Sealkote ... ... ... | Punjab ... | 28·500 | ... | 28·500 | 1 | 28·500 | ... | ... | 28·500 |
| 70 | Lalla Musa to Miani ... ... ... | Ditto ... | .. | 52· | 52·000 | 1 | 52·000 | ... | 52·000 | ... |
| 71 | Rangoon to Elephant Point ... ... | British Burmah ... | 30·990 | ... | 30·990 | 2 | 61·020 | ·990 | 61·020 | ... |
| 72 | Sattara to Mahableshwar ... ... ... | Bombay ... | 30·000 | ... | 30·000 | 1 | 30·000 | ... | 30·000 | ... |
| 73 | Verangaum to Kharra-Ghorra ... ... | Ditto ... | ... | 21·500 | 21·500 | 1 | 21·500 | ... | 21·500 | ... |
| 74 | Anand to Palee ... ... ... | Ditto ... | ... | 32·250 | 32·250 | 1 | 32·250 | ... | 32·250 | ... |
| 75 | Rawal Pindi to Murree ... ... ... | Punjab .. | 39·750 | ... | 39·750 | 1 | 39·750 | ... | 39·750 | ... |
| 76 | Kalaka Serai to Abbottabad ... ... | Ditto ... | 44·000 | ... | 44·000 | 1 | 44·000 | ... | 44·000 | ... |
| 77 | Nowshera to Hotimardan ... ... | Ditto ... | 15·000 | ... | 15·000 | 1 | 15·000 | ... | ... | 15·000 |
| 78 | Jubbulpore (Kureli Junction) to Saugor ... | Nagpur ... | 70·000 | ... | 70·000 | 1 | 70·000 | ... | 69·790 | ... |
| 79 | Pipariah Junction to Pachmarhi ... ... | Ditto ... | 28·500 | ... | 28·500 | 1 | 28·500 | ... | 28·500 | ... |
| 80 | Akola Junction to Akote ... ... | Ditto ... | 27·600 | ... | 27·600 | 1 | 27·600 | ... | 27·600 | ... |
| 81 | Gwalior to Morar ... ... ... | Indore ... | 4·362 | ... | 4·362 | 1 Wire for 2·300 miles ...<br>4 Wires „ 2·062 „<br>4·362 miles. | 10·548 | ... | 10·548 | ... |
| 82 | Indore to Oojeen ... ... ... | Ditto ... | 2·000 | 12·000 | 14·000 | 1 Wire for 2·000 miles ...<br>2 Wires „ 12·000 „<br>14·000 miles. | 26.000 | ... | 24·000 | 1·890 |
| 83 | Chundowsie Junction to Almora ... ... | Oudh and Rohilkhund. | 98·270 | 27·200 | 125·470 | 1 Wire for 95·270 miles ...<br>2 Wires „ 3·000 „<br>3 „ „ 25·950 „<br>4 „ „ 1·250 „<br>125·470 miles. | 184·120 | ... | 91·850 | 92·270 |

## *Classified List of Lines of Telegraph in India, British Burma, Ceylon, &c.*—continued.

| No. | Sections of Lines. | Divisions. | No. of Miles of Line. Along road. | Along rail. | Total. | No. of Miles of Wire. No. | Miles. | Cable. | Insulated. | Uninsulated. |
|---|---|---|---|---|---|---|---|---|---|---|
| | **TERTIARY LINES**—*concluded.* | | | | | | | | | |
| 84 | Hyderabad to Secunderabad ... ... | Bombay ... | ·700 | 1·700 | 2·400 | 4 | 9·600 | ... | 9·600 | ... |
| 85 | Mysore to Ootacamund and Mettapolium ... | Malabar Coast ... | 95·140 | ·130 | 95·270 | 1 Wire for 94·090 miles ... | 96·450 | ... | 76·630 | 19·476 |
| | | | | | | 2 Wires „ 1·180 „ | | | | |
| | | | | | | 95·270 miles. | | | | |
| | | | | | | 1 | 25·063 | ... | ... | 25·063 |
| 86 | Calcutta (Kidderpore) to Diamond Harbour ... | Bengal ... | 25·063 | ... | 25·063 | 2 | 56·480 | ... | 56·480 | ... |
| 87 | Calcutta to Canning ... ... | Ditto ... | ·240 | 28·000 | 28·240 | 1 Wire for 136·500 miles ... | 137·500 | ... | 137·500 | ... |
| 88 | Wudwan to Joonaghur ... ... | Bombay ... | 137·000 | ... | 137·000 | 2 Wires „ ·500 „ | | | | |
| | | | | | | 137·000 miles. | | | | |
| | | | | | | 1 | 9·000 | ... | 9·600 | ... |
| 89 | Kalka to Kussowlie ... ... ... | Punjab ... | 9·000 | ... | 9·000 | 1 | 9·000 | ... | 9·000 | ... |
| 90 | Kussowlie to Dugshai ... ... ... | Ditto ... | 9·000 | ... | 9·000 | 1 | 5·000 | ... | ... | 5·000 |
| 91 | Simla to Naldera ... ... ... | Ditto ... | 5.000 | ... | 5·000 | 1 | 19·000 | ... | ... | 19·000 |
| 92 | Roorkee to Hurdwar ... ... ... | Ditto ... | 19·000 | ... | 19·000 | 1 | 19·000 | ... | 7·500 | ... |
| 93 | Gari Hureeroo to Furrucknuggur ... ... | Rajputana ... | ... | 7·500 | 7·500 | 1 | 7·500 | ... | ... | 5·620 |
| 94 | Yoonziki to Thyetmyo ... ... ... | British Burmah ... | 6·950 | ... | 6·950 | 1 | 5·620 | 1·33 | ... | 14·000 |
| 95 | Peshawar (Cherat Junction) to Cherat ... | Punjab .. | 14·000 | ... | 14·000 | 1 | 14·000 | ... | ·500 | 26·750 |
| 96 | Nalhati to Azimgunge ... ... ... | Bengal ... | ... | 27·250 | 27·250 | 1 | 27·250 | ... | ·013 | 22·413 |
| 97 | Burhee to Hazaribagh ... ... ... | Ditto ... | 22·426 | ... | 22·426 | 1 | 22·426 | ... | 33·000 | ... |
| 98 | S. I. Railway Station Villapoorum to the East Bank of River Gingee. | Madras ... | ... | 16·500 | 16·500 | 2 | 33·000 | ... | 39·000 | ... |
| | | | | | | 1 | 39·000 | ... | ·188 | 58·982 |
| 99 | Sheally to Negapatam ... ... ... | Ditto ... | 39·000 | ... | 39·000 | 1 | 59·170 | ... | ... | 18·000 |
| 100 | Dehree to Arrah ... ... ... | Bengal ... | 59·170 | ... | 59·170 | 1 | 18·000 | ... | 67·000 | ... |
| 101 | Parbatipore to Dinagepore ... ... | Dacca ... | 18·000 | ... | 18·000 | 2 | 67·000 | ... | 77·500 | 5·000 |
| 102 | Parbatipore to Kawnia through Rungpore ... | Ditto ... | ... | 33·500 | 33·500 | 1 | 82·500 | ... | 85·000 | ... |
| 103 | Gola Ghat to Piphima ... ... ... | Assam ... | 82·500 | ... | 82·500 | 2 Wires for 38·750 miles ... | 85·000 | ... | | |
| 104 | Kanham Bridge Junction to Tamsar ... ... | Nagpore ... | ... | 41·250 | 41·250 | 3 „ „ 2·500 „ | | | | |
| | | | | | | 41·250 miles. | | | | |
| | | | | | | 1 | 11·700 | ... | 11·579 | ... |
| 105 | Tellicherry to Cannanore ... ... | Malabar Coast ... | 11·70 | ... | 11·700 | | | | | |
| | **LOCAL LINES.** | | | | | 1 | ·570 | ... | ·570 | ... |
| 106 | Lahore (Meean Meer Junction) to Meean Meer... | Punjab ... | ·570 | ... | ·570 | 1 | 2·500 | ... | 2·500 | ... |
| 107 | Bombay to Malabar Point ... ... ... | Bombay ... | 2·500 | ... | 2·500 | 1 | ·244 | ... | ·244 | ... |
| 108 | Bombay to Byculla ... ... ... | Ditto ... | ·244 | ... | ·244 | 2 Wires for ·149 miles ... | 5·077 | ... | 5·077 | ... |
| 109 | Bombay to Lighthouse ... ... ... | Ditto ... | 1·728 | ... | 1·728 | 3 „ „ 1·537 „ | | | | |
| | | | | | | 4 „ „ ·042 „ | | | | |
| | | | | | | 1·728 miles. | | | | |
| 110 | Bombay Observatory to Time Ball ... ... | Ditto ... | ·870 | ... | ·870 | ... ... ... | 1·733 | ... | 1·733 | ... |
| 111 | Church Gate Street Railway Station to Colaba Railway Station. | Ditto ... | ... | 1·250 | 1·250 | 6 Wires for 1·008 miles ... | 7·742 | ... | 7·742 | ... |
| | | | | | | 7 „ „ ·242 „ | | | | |
| | | | | | | 1·250 miles. | | | | |
| | | | | | | 1 | 4·500 | ... | 4·500 | ... |
| 112 | Nassick Road to Nassick Office ... ... | Bombay ... | 4·500 | ... | 4·500 | 1 | 4·750 | ... | ... | 4·750 |
| 113 | Ahmednuggur Station to Manager's Office ... | Ditto ... | 4·750 | ... | 4·750 | 2 | 2·100 | ... | 2·100 | ... |
| 114 | Calcutta Lower Circular Road Junction to Bengal Secretariat. | Bengal ... | 1·050 | ... | 1·050 | | | | | |
| 115 | Park Street Junction, Lower Circular Road, to 4 Middleton Row, and Time Ball, Fort William. | Ditto ... | 2·131 | ... | 2·131 | ... ... ... | 3·227 | ... | 3·227 | ... |
| | | | | | | 1 | ·025 | ... | ·025 | ... |
| 116 | Bellary to Railway Telegraph Office ... | Bellary ... | ·025 | ... | ·025 | 1 | 2·600 | ... | 2·600 | ... |
| 117 | Bellary Telegraph Office to Barracks ... | Ditto ... | ·068 | ... | ·068 | (2·532 miles of wire carried on supports of section Bellary to Godag.) | | | | |
| | | | | | | 1 | ·850 | ... | ·850 | ... |
| 118 | Bangalore to Railway Station ... ... | Ditto ... | ·850 | ... | ·850 | 2 | 4·000 | ... | 4·000 | ... |
| 119 | South Indian Railway, Igmore Junction, with Government Wire. | Madras ... | ... | 2· | 2·000 | 3 | 2·830 | ... | 2·830 | ... |
| 120 | Madras (Diversion Observatory Lines) to Observatory. | Ditto ... | ·910 | ... | ·910 | 1 | 1·200 | ... | 1·200 | ... |
| 121 | Madras, Sydapett, to Guindy Government House | Ditto ... | 1·200 | ... | 1·200 | 2 | 1·200 | ... | 1·200 | ... |
| 122 | „ to Fort St. George ... ... | Ditto ... | ·600 | ... | ·600 | 2 | 1·100 | ... | 1·100 | ... |
| 123 | „ (Main Line in Armenian Street) to Master Attendant's Office. | Ditto ... | ·550 | ... | ·550 | | | | | |
| 124 | Lucknow (Nowabgunge) to Byramghat ... | Oudh and Rohilkhund. | 21·330 | ... | 21·330 | 1 | 21·330 | ... | ·140 | 21·190 |
| | | | | | | 2 | 1·460 | ... | 1·460 | ... |
| 125 | Lucknow Ry. Office to Ry. Agent's Office ... | Ditto ... | ·730 | ... | ·730 | 1 | 1·700 | ... | ... | 1·700 |
| 126 | Lucknow Telegraph Office to Cantonment ... | Ditto ... | 1·700 | ... | 1·700 | 1 | 4·000 | ... | 4·000 | ... |
| 127 | Rajghat to Narora ... ... ... | Ditto ... | 4·000 | ... | 4·000 | 1 | 57·500 | ... | 57·500 | ... |
| 128 | Narora to Gopalpore ... ... ... | Ditto ... | 57·500 | ... | 57·500 | 1 | ·750 | ... | ... | ·750 |
| 129 | Naini Tal Hospital to Guard Room .. ... | Ditto ... | ·750 | ... | ·750 | 1 | ·200 | ... | ... | ·200 |
| 130 | Cawnpore Office to Provincial Light Railway Office. | Ditto ... | ·200 | ... | ·200 | | | | | |
| 131 | Benares River Office to Benares E. I. Railway Office. | Ditto ... | 2·470 | ... | 2·470 | 1 Wire for 2·370 miles... | 2·190 | ·580 | 2·190 | ... |
| | | | | | | 4 Wires „ ·100 „ | | | | |
| | | | | | | 2·470 miles. | | | | |
| 132 | Secunderabad Junction to Secretariat at Bolaram | Bombay ... | 2·400 | 4·700 | 7·100 | 3 Wires for 5·500 miles... | 22·900 | ... | 22·900 | ... |
| | | | | | | 4 „ „ 1·600 „ | | | | |
| | | | | | | 7·100 miles. | | | | |
| 133 | Orderly Room Line from Junction near Secunderabad Office to point of Junction with Line Secunderabad Junction to Secretariat at Bolaram. | Ditto ... | 3·000 | ... | 3·000 | 1 | 3·000 | ... | 3·000 | ... |
| 134 | Loop from Point of Junction with Line Secunderabad Junction to Secunderabad to Orderly Room, 1-21st Regt. | Ditto ... | ·220 | ... | ·220 | 2 | ·440 | ... | ·440 | ... |

## *Classified List of Lines of Telegraph in India, British Burma, Ceylon, &c.*—continued.

| No. | Sections of Lines. | Divisions. | No. of Miles of Line. | | | No. of Miles of Wire. | | Cable. | Insulated. | Uninsulated. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Along road. | Along rail. | Total. | No. | Miles. | | | |
| | **LOCAL LINES**—*continued.* | | | | | | | | | |
| 135 | Loop from Point of Junction with Line Secunderabad Junction to Secunderabad to Orderly Room, Royal Artillery. | Bombay ... | ·11 | ... | ·11 | 2 | ·22 | ... | ·22 | ... |
| 136 | Meerut Junction to Railway Station ... | Punjab ... | ... | ... | ... | 1 Wire carried on Railway supports. | ·20 | ... | ... | ... |
| 137 | Umballa to Railway Station ... ... | Ditto ... | ... | ... | ... | 1 Wire carried on Railway posts and insulator. | ·40 | ... | ... | ... |
| 138 | Sadera Station to Sadera Serai ... | Ditto ... | 1· | ... | 1· | 1 | 1· | ... | ... | 1· |
| 139 | Benares Cantonment to City ... ... | Oudh and Rohilkhund. | 2·20 | 1·18 | 3·38 | 2 Wires for 2·20 miles...<br>5 „ „ 1·18 „<br>3·38 miles. | 10·30 | ... | 10·30 | ... |
| 140 | Bhagulpore to Railway Telegraph Office ... | Bengal ... | ·20 | ... | ·20 | 2 | ·4 | ... | ·4 | ... |
| 141 | Allahabad to Kutra ... ... ... | Ditto ... | 2·31 | ... | 2·31 | ·96 mile of wire carried on main line supports. | 3·27 | ... | 3·27 | ... |
| 142 | Allahabad to City ... ... ... | Ditto ... | ·58 | ... | ·58 | ... ... ... | 1·45 | ... | 1·45 | ... |
| 143 | Allahabad to Railway Station ... ... | Ditto ... | ·27 | ... | ·27 | ... ... ... | ·32 | ... | ·32 | ... |
| 144 | Bombay Office to G. I. P. Railway Agent's Office | Bombay ... | ·028 | ... | ·028 | 1 | ·028 | ... | ·028 | ... |
| 145 | P. and O. Office, Bombay, to P. and O. Dockyard, Mazagon. | Ditto ... | 1·477 | ... | 1·477 | 1 | 1·477 | ... | 1·477 | ... |
| 146 | Graham & Co.'s Office, Fort Bombay, to Sassoon's Dock, Colaba. | Ditto ... | ·237 | ... | ·237 | 1 | ·237 | ... | ·237 | ... |
| 147 | B. I. S. N. Office to their Dockyard, Mazagon ... | Ditto ... | 1·635 | ... | 1·635 | 1 | 1·635 | ... | 1·635 | ... |
| 148 | Colaba Lighthouse to Prince's Dock, Mazagon ... | Ditto ... | 2·915 | ... | 2·915 | 1 | 2·915 | ... | 2·915 | ... |
| 149 | Mhow Railway Station to Mhow Government Office. | Indore ... | 1· | ... | 1· | 3 | 3· | ... | 3· | ... |
| 150 | Bombay Office to Boree Bunder ... ... | Bombay ... | ·114 | ... | ·114 | 1 | ·114 | ... | ·114 | ... |
| 151 | Lahore Government Telegraph Office to Punjab Northern State Railway Office. | Punjab ... | ·204 | ... | ·204 | 4 | ·816 | ... | ·816 | ... |
| 152 | Branch Lines from Main Police to Government and Police Offices. | Ditto ... | 3·1514 | ... | 3·1514 | 1 Wire for 2·7880 miles...<br>2 Wires „ ·3634 „<br>3·1514 miles. | 3·5148 | ... | 3·5148 | ... |
| 153 | Kaumpore (Ranikhet) to Chaubuttia ... ... | Oudh and Rohilkhund. | ·83 | .. | ·83 | 1 | ·83 | ... | ... | ·83 |
| 154 | Delhi to East Indian Railway Station ... | Punjab ... | ·167 | ... | ·167 | 1 Wire for ·125 miles...<br>2 Wires „ ·042 „<br>·167 miles. | ·209 | ... | ·209 | ... |



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 155 | Delhi to Rajputana State Railway Office ... | Ditto ... | ·698 | .. | ·698 | 1 Wire for ·425 miles.<br>2 Wires „ ·273 „<br>·698 miles. | ·971 | ... | ·971 | ... |
| 156 | S. P. D. Railway to E. I. Railway, Gazeeabad Junction, Gazeeabad. | Ditto ... | ·085 | ... | ·085 | 2 | ·17 | ... | ·17 | ... |
| 157 | Umritsur to Railway Station ... ... | Ditto ... | ... | ... | ... | 1 Wire carried on Railway posts and insulators. | ·7 | ... | ... | ... |
| 158 | Sambhur Junction (Phalera) to Nawah ... | Rajputana ... | ... | 19·25 | 19·25 | 1 Wire for 15·00 miles.<br>2 Wires „ 4·25 „<br>19·25 miles. | 23·5 | ... | 23·5 | ... |
| 159 | Ajmere Railway Station to District Traffic Superintendent's Office. | Ditto ... | 1·5 | ... | 1·5 | 1 | 1·5 | ... | ... | 1·5 |
| 160 | Dholepore Railway Station to Jaraoli Stone Quarry. | Ditto ... | 1·15 | ... | 1·15 | 1 | 1 15 | ... | ... | 1·15 |
| 161 | Manager's Office, Western Rajputana State Railway, Camp Ahmedabad, to south end Subramutty Bridge, Ahmedabad. | Ditto ... | 1·5 | ... | 1·5 | 1 | 1·5 | ... | 1·5 | ... |
| 162 | Soojat Road Station to Soojat Quarries ... | Ditto ... | 7· | ... | 7· | 1 | 7· | ... | ... | 7· |
| 163 | Barrh to Newadi Ghat ... ... ... | Bengal ... | ... | 2·7 | 2·7 | 3 | 9· | ... | 9· | ... |
| 164 | Bazidpore to Sultangunge ... ... ... | Ditto ... | ... | 7· | 7· | 1 | 7· | ... | ... | 7· |
| 165 | Khandwa Railway Station to Telegraph Office | Indore ... | ·125 | ... | ·125 | 3 | ·375 | ... | ·375 | ... |
| 166 | Indore Railway Station to Telegraph Office ... | Ditto ... | 1·800 | ... | 1·800 | 7 Wires for ·8 miles...<br>6 „ „ 1·0 „<br>1·8 miles. | 11·60 | ... | 11·60 | ... |
| 167 | Rutlam Railway Station to Telegraph Office ... | Ditto ... | 1· | ... | 1· | 3 | 3· | ... | 3· | ... |
| 168 | Neemuch Junction to Neemuch Railway Station | Ditto ... | ... | ·5 | ·5 | 3 | 1·50 | ... | 1·25 | ... |
| 169 | Holkar State Railway (leading in wires) ... | Ditto ... | ... | ... | ... | ... ... ... | 1·67 | ... | ... | ... |
| 170 | Neemuch State Railway (leading in wires) ... | Ditto ... | ... | ... | ... | ... ... ... | ·81 | ... | ... | ... |
| 171 | Wellington Street Junction to Talah Pumping Station. | Bengal ... | 3·47 | ... | 3·47 | 3 | 10·19 | ... | 10·19 | ... |
| 172 | Wellington Street Junction to Municipal Office | Ditto ... | 1·08 | ... | 1·08 | 1 Wire for ·65 miles...<br>2 Wires „ ·43 „<br>1·08 miles. | 1·51 | ... | 1·51 | ... |
| 173 | Store-Yard Junction to Alipore Observatory ... | Ditto ... | ·744 | ... | ·744 | 1 Wire for ·16 miles...<br>2 Wires „ ·584 „<br>·744 miles. | 1·328 | ... | 1·328 | ... |
| 174 | Port Commissioners' Junction, Hooghly Bridge, to Chitpore Railway Station. | Ditto ... | 2·52 | ... | 2·52 | 1 | 2·645 | ... | 2·645 | ... |
| 175 | Chitpore Thana to Mr. Cox's Warehouse, Cossipore. | Ditto ... | 2 30 | ... | 2·30 | ... ... ... | 4·26 | ... | 4·26 | ... |
| 176 | Chitpore to Eastern Bengal Railway ... | Ditto ... | ... | 1·875 | 1·875 | 2 Wires for 1·535 miles...<br>4 „ „ ·34 „<br>1·875 miles. | 4·645 | ... | 4·645 | ... |

## *Classified List of Lines of Telegraph in India, British Burma, Ceylon, &c.*—concluded.

| No. | Sections of Lines. | Divisions. | No. of Miles of Line. | | | No. of Miles of Wire. | | Cable. | Insulated. | Uninsulated. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Along road. | Along rail. | Total. | No. | Miles. | | | |
| | **LOCAL LINES**—*continued.* | | | | | | | | | |
| 177 | Old Tramway Line from Kirk to Palmer's Bridge, Entally. | Bengal ... | 2·20 | ... | 2·20 | 1 Wire for ·15 miles<br>2 Wires „ ·53 „<br>3 „ „ ·9 „<br>4 „ „ ·05 „<br>7 „ „ ·57 „<br>2·2 miles | 8·10 | ... | 8·10 | ... |
| 178 | The Kirk to Howrah Railway Station ... | Ditto ... | 1·76 | ... | 1·76 | ... ... ... | 7·695 | ... | 7·695 | ... |
| 179 | Burn & Co.'s, Hastings Street, to Custom House Junction, Strand. | Ditto ... | ·5 | ... | ·5 | 1 | ·5 | ... | ·5 | ... |
| 180 | East Indian Railway Junction, Howrah, to Burn & Co.'s Iron Works. | Ditto ... | 2·1 | ... | 2·1 | 1 Wire for 1·78 miles.<br>2 Wires „ ·32 „<br>2·1 miles. | 2·42 | ... | 2·42 | ... |
| 181 | Indore Railway Station to City Branch ... | Indore ... | 1·00 | ... | 1·00 | 1 | 1·00 | ... | ... | 1·00 |
| 182 | Kampti to Railway Junction ... ... | Nagpore ... | 1·25 | ... | 1·25 | 2 | 2·5 | ... | 2·5 | ... |
| 183 | Bhusawul Office Junction to Railway Station ... | Ditto ... | ·28 | ... | .28 | 1 | ·28 | ... | ·28 | ... |
| 184 | Damookdea Junction to Ghat Office,... ... | Dacca ... | ·86 | ... | ·86 | 3 | 2·58 | ... | 2·58 | ... |
| 185 | Sara Junction to Ghat Office ... ... | Ditto ... | ·09 | ... | ·09 | 3 | ·27 | ... | ·27 | ... |
| 186 | Syedpore Junction to Traffic Office ... | Ditto ... | ·06 | ... | ·06 | 2 | ·12 | ... | ·12 | ... |
| 187 | Syedpore Traffic Office to Locomotive Office ... | Ditto ... | ... | ·04 | ·04 | ... ... ... | 1·08 | ... | 1·08 | ... |
| 188 | Choonbutty Junction to Tramway Office ... | Ditto ... | ·22 | ... | ·22 | 2 | ·44 | ... | ·44 | ... |
| 189 | Ghyabarry Junction to Tramway Office .. | Ditto ... | ·17 | ... | ·17 | 2 | ·34 | ... | ·34 | ... |
| 190 | Rangoon Office to Phayree Street Railway Station. | British Burma ... | ·92 | ... | ·92 | 3 | 2·76 | ... | 2·76 | ... |
| 191 | Phayree Street Railway Station to Duneedaw Station. | Ditto ... | ·62 | ... | ·62 | ... ... ... | 2·10 | ... | 2·10 | ... |
| 192 | Leading in Lines at R. and I. V. S. Railway Station. | Ditto ... | ·64 | ... | ·64 | 4 | 2·56 | ... | 2·56 | ... |
| 193 | Private and Public Office Wires, rented in Rangoon. | Ditto ... | 11·51 | ... | 11·51 | 1 to 14 | 37·866* | ... | 37·866 | ... |
| 194 | Private Office wire rented in Bassein ... | Ditto ... | 2·65 | ... | 2·65 | ... ... ... | 2·65 | ... | 2·65 | ... |
| 195 | Sabarmutty Railway Station to Western Rajpootana State Railway Junction for Deesa. | Rajpootana ... | ... | 1· | 1· | 2 | 2· | ... | 2· | ... |
| 196 | Tuticorin Junction Post to Tuticorin Railway Station. | Madras ... | ... | ·25 | ·25 | 2 | ·50 | ... | ·50 | ... |
| 197 | South Indian Railway Junction to Sydapet ... | Ditto ... | ... | ... | ... | 1 | 4· | ... | 4· | ... |
| 198 | Delhi Police Line ... ... ... | Punjab ... | 5·50 | ... | 5·50 | 4 Wires for ·50 miles<br>2 „ „ 5· „<br>5·50 miles. | 12· | ... | 12· | ... |
| 199 | Powder-proof Range to St. Thomas' Mount ... | Madras ... | ·331 | ... | ·331 | 6 | 2· | ... | 2· | ... |
| 200 | Sherpore to Balahissar ... ... ... | Peshawar—Cabul | 3·25 | ... | 3·25 | 1 | 3·25 | ... | 1·25 | 2· |
| 201 | Line connecting Fort round Cabul ... ... | Ditto ... | 9·5 | ... | 9·5 | 1 | 9·5 | ... | ... | 9·5 |
| 202 | Gampola to Nawalapitiya ... ... ... | Ceylon ... | ·20 | 9· | 9·20 | 2 | 18·40 | ... | 18·40 | ... |
| 203 | Colombo (Mahara Junction) to Mahara Quarry... | Ditto ... | 1·50 | ... | 1·50 | 1 | 1·50 | ... | 1·50 | ... |
| 204 | Breakwater Engineer's Office to Breakwater Junction. | Ditto ... | ·25 | ... | ·25 | 1 | ·25 | ... | ·25 | ... |
| | **EAST INDIAN STATE RAILWAY LINES.** | | | | | | | | | |
| 205 | Howrah to Luckhee Serai (by Chord) ... | ... | ... | 261·75 | 261·75 | ... ... ... | 1,196· | ... | 1,196· | ... |
| 206 | Kanoo Junction to Sahibgunge (by Loop) ... | ... | ... | 143·75 | 143·75 | ... ... ... | 431·25 | ... | 431·25 | ... |
| 207 | Sahibgunge to Bankipur ... ... ... | ... | ... | 183·75 | 183·75 | ... ... ... | 660· | ... | 660· | ... |
| 208 | Bankipur to Nynee ... ... ... | ... | ... | 221·75 | 221·75 | ... ... ... | 887· | ... | 887· | ... |
| 209 | Nynee to Allahabad ... ... ... | ... | ... | 4·5 | 4·5 | ... ... ... | 31·5 | ... | 31·5 | ... |
| 210 | North Bank Jumna, Allahabad to Delhi ... | ... | ... | 389·88 | 389·88 | ... ... ... | 1,571·68 | ... | 1,571·68 | ... |
| 211 | Branches and spare wires... ... ... | ... | ... | 69·33 | 69·33 | ... ... ... | 185·61 | ... | 185·61 | ... |
| | GRAND TOTAL ... | ... | 10,769·2364 | 9,698·8172 | 20,468·0536 | ... ... ... | 51,939·7245 | 111·128 | 49,981·9735 | 1,944·338 |

* Exclusive of 9·57 miles of wire carried on supports of Section, Rangoon to Prome.



## ABSTRACT.

| | Total miles of Line. | Total miles of Wire. | Cable. |
|---|---|---|---|
| India ... ... ... | 19,852·6736 | 51,150·9345 | 108·508 |
| Ceylon ... ... ... | 615·38 | 682·89 | .2·62 |
| Total ... | 20,468·0536 | 51,833·8245 | 111·128 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Deduct—Length of wire, the property of the Ceylon Government Railway ... | ... | ... | ... | 105·9 | ... | ... |
| Net miles of Wire ... | ... | ... | ... | 51,833·8245 | ... | ... |
| | | | Line. | Wire. | | |
| Add—Lines, the property of Railway, but maintained by this Department— | | | | | | |
| South Indian Railway ... ... ... ... | ... | ... | 1·5 | 3· | ... | ... |
| Sind, Punjab and Delhi Railway ... ... ... | ... | ... | 665·75 | 1,651·75 | ... | ... |
| | | | 667·25 | 1,654·75 | | |
| Ceylon Government Railway ... ... ... ... ... | ... | ... | ... | 105·9 | ... | ... |
| | | | 667·25 | 1,760·65 | | |
| GRAND TOTAL OF DEPARTMENTAL, RAILWAY AND NATIVE-STATE LINES, &c. ... ... ... ... ... | ... | ... | 21,135·3036 | 53,594·4745 | ... | ... |

# APPENDIX J.

*Return of Telegraph Offices and Miles of Line and Wire maintained by the Telegraph Department for State and Guaranteed Railways on 31st March 1880.*

| Name of Railway. | Capital expended on behalf of Railway by Telegraph Department up to 31st March 1880, including Office fittings. | No. of Offices maintained. | Property of Telegraph Department. | | | Railway Property. | | Total mileage of posts maintained for Railways. | Total mileage of Wire maintained for Railways. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Miles of posts in joint use of Department and Railways. | Miles of posts only used by Railways. | Miles of Wire in use by Railways. | Miles of posts maintained by Telegraph Department. | Miles of Wire maintained by Telegraph Department. | | | |
| | Rs. A. P. | | | | | | | | | |
| **INDIA.** | | | | | | | | | | |
| **Guaranteed Railways.** | | | | | | | | | | |
| Bombay, Baroda and Central India Railway. | 4,07,934 0 0 | ... | 395.475 | 32·25 | 1,146·925 | ... | ... | 427·725 | 1,146·925 | The capital cost is made up of the purchase money of the Bombay, Baroda and Central India Railway lines, the cost of taking over those lines, the cost of constructing the line Anand to Pali, and 15 per cent. for Establishment and Tools and Plant on the latter two works. The offices are not fitted nor supervised by the Government Telegraph Department. |
| Eastern Bengal Railway ... ... | 1,062 0 0 | ... | ... | 1·875 | 1·875 | ... | ... | 1·875 | 1·875 | The capital cost is of the line from Chitpore to Eastern Bengal Railway Junction ; offices not fitted nor supervised by the Government Telegraph Department. |
| Oudh and Rohilkund Railway ... | 3,43,177 0 0 | 75 | 523·703 | 23·8* | 1,080·784 | ... | ... | 547·503 | 1,080·784 | The offices are not fitted up by the Government Telegraph Department. |
| Sind, Punjab and Delhi Railway ... | ... | 70 | ... | ... | ... | 665·75 | 1,651·75 | 665·75 | 1,651·75 | The lines belong to the Company, but are maintained by the Government Telegraph Department. Offices fitted up by the Company, but supervised by the Government Telegraph Department. |
| South Indian Railway ... ... | ... | ... | 427·5 | 18·75 | 892·5 | 1·5 | 3· | 447·75 | 895·5 | No agreement yet made, and capital account not yet made up. |
| Total Guaranteed Railways ... | 7,52,173 0 0 | 145 | 1,346·67 | 76·675 | 3,122·084 | 667·25 | 1,654·75 | 2,090·603 | 4,776·834 | |
| **State Railways.** | | | | | | | | | | |
| Amraoti State Railway ... ... | ... | 1 | 5·35 | ... | 5·35 | ... | ... | 5·35 | 5·35 | The cost of the wire and of its erection was paid for in full by the State Railway. Line maintained and office supervised by the Government Telegraph Department. |
| Calcutta and South-Eastern State Railway. | 359 0 0 | 7 | ... | 28·24 | 56·48 | ... | ... | 28·24 | 56·48 | |
| Dhond and Manmad State Railway ... | 1,33,683 0 0 | 21 | ... | 152·25 | 300·59 | ... | ... | 152·25 | 300·59 | Account of office fitting not yet made up. |
| Patna and Gya State Railway. ... | 49,970 0 0 | 8 | ... | 57·586 | 117·767 | ... | ... | 57·586 | 117·767 | |
| Holkar State Railway ... ... | 53,645 0 0 | 14 | 82·5 | ... | 166·67 | ... | ... | 82·5 | 166·67 | |
| Indus Valley State Railway ... | 3,94,036 0 0 | 52 | 508·25 | 1·75 | 1,025·5 | .... | ... | 510· | 1,025·5 | |
| Khamgaon State Railway ... ... | ... | 1 | 7·45 | ... | 7·45 | ... | ... | 7·45 | 7·45 | The cost of the wire and of its erection was paid for in full by the State Railway. Line maintained and office supervised by the Government Telegraph Department. |
| Sindia—Neemuch State Railway ... | 62,776 0 0 | 11 | 167·6 | ... | 324·01 | ... | ... | 167·6 | 324·01 | |
| Nizam's State Railway ... ... | 1,10,082 0 0 | 12 | 124·3 | ... | 248· | ... | ... | 124·3 | 248· | |
| Nagpur and Chattisgarh State Railway... | 5,361 0 0 | 5 | 12·04 | 41·25 | 112·08 | ... | ... | 53·29 | 112·08 | The capital is the cost of the Section Nagpore to Kamptee completed on 9th March 1879. Capital account of the section completed since not yet made up. |
| Northern Bengal State Railway ... | 2,01,122 0 0 | 33 | 248·28† | 53·48 | 549·531‡ | ... | ... | 301·76 | 549·531 | |
| Nulhatti State Railway ... ... | 4,172 0 0 | 3 | ... | 27·25 | 27·25 | ... | ... | 27·25 | 27·25 | The lines belong to the Railway. The amount is the value of posts supplied by the Government Telegraph Department for reconstructing the line. It includes value of first fitting, stores also. |
| Patri State Railway ... ... | ... | ... | ... | 21·5 | 22·5 | ... | ... | 21·5 | 22·5 | The capital cost has been transferred to Public Works Department, Bombay, under orders of the Government of India, No. 72 A.T., dated 26th August 1879. |
| Punjab Northern State Railway ... | 81,996 0 0 | 19 | 162·54 | 53· | 481·22 | ... | ... | 215·54 | 481·22 | |
| Rajputana State Railway ... ... | 4,35,291 0 0 | 56 | 246·7 | 162·75 | 1,020·8 | ... | ... | 409·45 | 1,020·8 | |
| Rangoon and Irrawaddy Valley State Railway. | 1,10,911 0 0 | 20 | 163·86 | ... | 329·86 | ... | ... | 163·86 | 329·86 | |
| Western Rajputana State Railway ... | 96,800 0 0 | 32 | 299·00 | 9·5 | 609·35 | ... | ... | 308·5 | 609·350 | |
| Sindia State Railway ... ... | 63,357 0 0 | 13 | 75·000 | 1·150 | 151·150 | ... | ... | 76·150 | 151·150 | |
| Tirhoot State Railway ... ... | 57,975 0 0 | 13 | 46·000 | 38·700 | 178·000 | ... | ... | 84·700 | 178·000 | |
| Wardah Coal State Railway ... | 34,019 0 0 | 4 | ... | 44·800 | 89·600 | ... | ... | 44·800 | 89·600 | |
| East Indian State Railway (Main Line)... | ... | 145 | ... | 1,274·718 | 4,963·040 | ... | ... | 1,498·018 | 5,632·94 | The capital cost of the main line is not yet made up. The capital shewn is the cost of the works adding three extra wires, Nynee to Jubbulpore, and cross staying Nynee to Jubbulpore, plus 15 per cent. for establishment, &c. The offices are supervised and instruments maintained by the Government Telegraph Department. |
| Ditto ditto (Jubbulpore Line) | 1,14,751 0 0 | 18 | 223·300 | ... | 669·900 | ... | ... | | | |
| Sukkur—Kandahar State Railway ... | ... | ... | 133·000 | 54·000 | 327·000 | ... | ... | 187·000 | 327·000 | |
| **Provincial Light Railway.** | | | | | | | | | | |
| Cawnpore—Furruckabad Provincial Light Railway. | ... | 384 | ... | 87·000 | 174·000 | ... | ... | 87·000 | 174·000 | |
| Total State Railway ... | 20,10,306 0 0 | 488 | 2,505·170 | 2,108·924 | 11,957,098 | ... | ... | 4,614·094 | 11,957·098 | |
| **Ceylon Government.** | | | | | | | | | | |
| State Railway ... ... ... | ... | ... | 93·500 | ... | ... | ... | ... | 105·900 | 93·500 | 105·900 |
| GRAND TOTAL ... | 27,62,479 0 0 | 633 | 3,945·348 | 2,185·599 | 15,079·182 | 667·250 | 1,760·65 | 6,798·197 | 16·839·832 | |

* Includes ·58 mile of Cable across the Ganges at Rajghat (Benares).
† Includes 3·82 miles of Cable crossing at Sara.
‡ Includes 3·981 miles of Cable across the Ganges at Sara for the use of the Northern Bengal State Railway. This also includes 34·06 miles of Wire erected and maintained for the use of the Darjeeling Steam-Tramway Company.

## Appendix K.

*Extract from a Report by S. J. Josephs, Esq., late Officiating Superintendent, Telegraphs, Kabul Field Force, to the Director General of Telegraphs in India.*

On 4th September 1879, the Telegraph Party under my charge for construction of Kabul extension line, under provisions of Treaty of Gundamuk, marched from Alikheyl into camp at the mouth of the Hazar Darakhat defile, and within one hour of my arrival a messenger, bearing a report of the mutiny of the Kabul troops, came in, and the following day the sad news of the massacre of our embassy was confirmed by one of Yakub Khan's confidential servants, bearing letters addressed to His Excellency the Viceroy.

General Massy, Commanding at Alikheyl, doubted the expediency of permitting my small party to remain ahead of the force in the disturbed state the country was in, but I urged on him that, so long as I did not proceed beyond our original frontier, I considered the telegraph line more important than ever, that I would accept all responsibility, and, in the event of being attacked, we should be able to hold our own until he could push out reinforcements to our assistance.

My remonstrances had due effect, and not only was I able to continue my own duties and wire the occupation of the Shutar Gurdan within two hours of its occurrence, but the presence of the small party working peacefully reassured the people that we meant no reprisals on them so long as they behaved well, and enabled me to get in much local carriage, assemble and forward tribal councils, &c.,—all which facilitated the advance of the army, and have been kindly acknowledged in letters, orders and telegrams from Sir F. Roberts, copies of which have been furnished to your office.

It was decided, owing to the very difficult nature of the country, its great elevation above the sea-level, and proportionately rigorous climate, not to attempt a military flying line, but to construct a specially strong permanent one, and the poles throughout were of the best selected pine and deodar, six inches square as a minimum.

On 17th or 18th idem, work was completed to the crest of the Shutar Gurdan Pass, and an office opened, for which Sir F. Roberts again publicly thanked me.

The next proceeding was to arrange for further work, and it must be borne in mind that from Karateeja (half way up the Hazar Darakhat defile) to Kabul not a stick of timber is to be found, so all had to be lumbered over the Surkai, Shutar Gurdan, and Shinkai Passes,—without exception the worst and probably most difficult defiles in the world. The poles were all 18 feet long and averaged 1·5 cwt.

All proceeded well until 21st September, when a number of mules escorted by a small guard were attacked on the Surkai Kotal by a large gang of Mangals and Ghilzais, and I regret to state over 20 men killed and wounded (see special report on subject) and all the animals driven off.

This untoward accident naturally retarded, although it did not stop, my work. Sanction was at once accorded for the purchase of other animals, but they were almost unobtainable even on hire, as the owners were all most lucratively engaged as carriers by the Commissariat.

I managed, however, to get on and join Sir F. Roberts at Khushi with the line completed over all the difficult passes, when the day prior to his advance he sent for me and said he was reluctantly obliged to order me back for a few days to join Colonel Money on the Shutar Gurdan, as it was impossible to detach troops for my escort.

I countermarched and joined Colonel Money on the evening of 1st October, my rear guard narrowly escaping from the tribesmen who were collecting to attack us.

The morning following the line was cut into pieces, both east and west. After the enemy was beaten off it was repaired to the east, and during the afternoon communication re-established with India, and on the following day the portion destroyed in the opposite direction renewed.



The telegraph operations were now necessarily confined to getting the poles down into the Logar Valley, purchasing baggage animals and keeping up communication with Kurram.

Telegraphic correspondence was successfully maintained with India (occasionally cut) until midnight of 12th. The following day, owing to reports of attacks, it was impossible to detail escorts from camp to cover the working parties, but on the 14th I proceeded to restore the line, on which occasion we were smartly attacked below the Surkai Kotal, and my services were requisitioned by Major Griffiths for combatant duties.

My men worked on under fire, and before we returned to camp at night a wire was temporarily run up from the Surkai Kotal to the Shutar Gurdan, but communication remained interrupted, showing faults to the east of the Surkai post.

On the morning of the 15th I started, putting up the line which I found almost entirely pulled down as far as Karateeja Fort which had been abandoned, looted and burnt by our levies the spare stock of telegraph poles having been utilised for the latter purpose. I had also engaged to bring up some ammunition stored there to assist Colonel Money, but excepting a few empty shells nothing could be found.

The men repairing the line were fired on, despite assistance given by the Surkai Kotal detachment in crowning the heights, and so disturbed was the country, and the gathering of tribesmen so numerous, that the Officer Commanding the Shutar Gurdan deemed it advisable to send out reinforcements accompanied by artillery, to cover my retreat on camp, which was effected by evening without casualty.

Damage had been done to the line further east, and telegraphic communication continued interrupted.

From this date, 15th, until the receipt of His Excellency the Viceroy's and your telegrams desiring me forthwith to proceed to Kabul, we were besieged in camp on the Shutar Gurdan, and the duties on which I was engaged have been acknowledged in General Roberts' and Colonel Money's despatches.

During the whole of this period I was, by paying secret messengers highly, able to get the telegrams as received from Head-Quarters carried into Alikheyl, to be wired from there.

General Roberts ordered the Shutar Gurdan office to be closed, as he intended entirely abandoning the route, and it was accordingly done on 20th.

On 21st, having previously visited Karateeja and found the line utterly wrecked, even the poles cut down and burnt, I marched on to Khushi to find similar havoc as far as the line was completed.

The carriers who had been paid to carry the poles had secreted a large number to rebuild their houses with, burnt and wantonly cut up others.

I occupied the halts on 22nd and 23rd in purchasing baggage animals, and in forcing the carriers to complete their contracts, but the latter to small avail, as I could only leave a stock of about 400 instead of 1,000 at Khushi.

On 24th General Gough detached a cavalry regiment to escort Dr. Bellew and myself, and we arrived in Kabul on 26th.

On 27th I commenced collecting, purchasing and distributing willow poles from Sherpur towards Butkhak.

On 1st November I marched to Butkhak, 12 miles, completing line and opening an office there and at Kabul.

On 3rd idem, there being divergence of opinion as to which route to Gundamuk should be kept open, Sir F. Roberts desired me to return to Kabul until the question could be settled. And it was the 10th before he would allow me to move out again.

On 18th I met Mr. Kirk, which completed telegraphic communication between India and Kabul *viâ* the Khyber.

The construction from Kabul to Jagdalak, crossing two difficult kotals through an uninhabited country, also totally unknown to us, was carried on at the rate of over 4 miles per working day.

I now beg specially to bring to notice that during both campaigns the Telegraph Department under my charge worked independently of the Transport Service, with the exception of the occasional loan of a few animals, and to state it is absolutely necessary that such plan should be invariably persevered in.

It secures the independence of a department which is always looked upon with more or less jealousy from its peculiar functions and difficulty of entirely assimilating the civilian officers to their military confrères.

It ensures further that rapidity of action which is the whole mainspring of the telegraph in the field.

It would, in my opinion, be economy to keep a small train belonging to the department somewhere on the frontier; they could always be utilised in one or other of the sub-divisions during 8 out of 12 months, and the cost of feeding, when off work, the fourth quarter, would be inconsiderable.

I regret being unable in this report to add any traffic items, as I have no records at my disposal; but I must again specially bring to notice the following signallers:—.

Lance-Corporal Smith, 72nd Highlanders.
Ditto Hoare, 17th „
Private Collins, 17th Foot.
„ Saimms, 17th „
„ Bourne, 81st „

These men often worked on the Shutar Gurdan through the night when the thermometer fell to 7° Fahrenheit, with no protection but that afforded by a lineman's canvas pal, and were always equally ready when required as combatants to turn out and take their share of duty.

When constructing both from Alikheyl and from Kabul, I often had them for hours in the open, receiving and despatching messages in very nasty places, and, owing to paucity of escort, could not afford them more than a couple of rifles as protection.

I have, in connection with Kurram line, to bring to your notice a subject which was demi-officially brought to mine, namely, the very gallant behaviour of Mr. A. J. Reade, who, when the whole of the Jogi tribes were in arms against us, positively went with almost no escort into and about their villages below the plateau at Alikheyl to repair the line.



## Appendix L.

*Report by Mr. R. Boteler, Officiating Superintendentof Telegraphs, Beluchistan Sub-Division, to the Director General of Telegraphs in India, No. 601R, dated Kandahar, 20th September 1880.*

I have the honor to report on the work of this Department in Southern Afghanistan from the beginning of July 1880 to the date of completion of the re-erection of the line of telegraph from Kandahar to Chaman.

2. On the 3rd of July, when I was at the Chuppar Mountain, just having finished the construction of a field line from Quetta *vid* Kach, about 45 miles, I received your orders to arrange for an extension of the telegraph from Kandahar to Girishk. I proceeded at once to Kandahar by double marches, arriving there on the 14th July, having stayed two days in Quetta to send off wire and other stores.

3. On arrival in Kandahar I found I could do nothing. General Burrows' Brigade had fallen back from Girishk to Khushk-i-Nakhud, and the whole country was evidently in a very disturbed state; it was utterly impossible to obtain either labor or carriage, and Kandahar was so weak in troops that the General could not give me a working party from a Native regiment. The Commissariat was as badly off as I was: no carriage was obtainable for the conveyance of supplies; twice carriage was hired and twice the drivers, after proceeding a short distance, threw away their loads and bolted. The 28th Bombay Native Infantry were expected in Kandahar on the 28th July, when the General promised me a working party of sepoys and Government carriage. However, on the 25th, I managed to make a start, having obtained some local labor to construct the line as far as Kokeran, 7 miles from Kandahar. At Kokeran I should have to collect fresh labor from the villages in the Argandab Valley by the assistance of some Sardars the Political Officer was sending with me. By the 27th I had constructed 9 miles, and was going into camp the next morning, when at 2 A. M. came the news of the disaster at Maiwand and all the troops about Kandahar retired into and held the city and citadel. I need hardly say that the 9 miles of line I constructed has been entirely destroyed and carried away.

4. For some time previous to the 28th July the wire from Kandahar to Chaman was almost nightly cut and stolen about 6 or 7 miles from Kandahar. I had made continual representation to the military and political authorities as to the necessity of taking steps for the better protection of the line, and it was at last decided that the village nearest to the place where the wire was cut should be destroyed, and on the 28th some troops would have probably gone out for that purpose. On the news of the defeat reaching Kandahar, it was found, as usual, that there was interruption on the line. Without waiting for daylight I at once started out a sub-inspector, line-rider, and a pony with wire. Seven miles from Kandahar the wire was cut, and about a mile of it stolen. Communication was restored by 7 A. M. One of the first orders General Primrose gave was for the withdrawal of the military posts between Kandahar and Chaman, and I recommended him to make every use of the wire while it was all right, as immediately the troops had passed it would be certain to be again interrupted, and sure enough it was so: directly the detachmment at Mundi Hissar was withdrawn and marched towards Kandahar, telegraphic communication ceased at about 11 A. M. During these four hours, however, all important work was got through, and General Primrose, at my suggestion, called General Phayre to the instrument at Quetta, and had a long talk with him.

5. When the Abdul Rahman post was abandoned, owing to want of carriage, the military signaller in charge of the telegraph office was unable to take away any of our stores, so he buried the instruments, &c., in the ground. On re-opening the office, however, I found they had been dug up, so we have lost all the instruments, furniture and office stores. The conduct of military signallers Private Sawers of the 92nd Highlanders and Private McKenna of the 100th Regiment during the withdrawal of the troops to Chaman was very highly spoken of, and their names have been favorably mentioned in despatches.

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6. As before said, the troops in and about Kandahar moved into and held the city and citadel (the latter being within the former) on the 28th July. That evening General Primrose directed me to connect the gates of the city by wire. By 3 o'clock the next afternoon a wire had been erected round the city walls about 4 miles, and offices opened at the four principal gates. The next day an office was opened in the centre of the city, connected by a loop from the nearest wall, and on the 1st August the signal tower was also brought into circuit. These six offices were working all through the siege without the slightest hitch, and proved most useful. The instruments were joined up in closed circuit, and worked day and night, sentries being placed over the instruments at night-time to wake up the signallers should any station call. There were, however, only two or three night alarms. This was the only purely telegraph work during the siege, except that on the 8th August a wire was suspended between the signal tower and the north-west bastion, and fitted with telephones, as flag-signalling was found to be too slow to direct the fire of the 40-pounders.

7. At the commencement of the siege, Mr. Pinhey and myself volunteered for any work there might be, and on the 1st August a field force order attached Mr. Pinhey to the 4th Bombay Rifles with the rank of lieutenant, and he served with that regiment during the siege. I was myself attached to the 19th Bombay Native Infantry, to serve with them when my own duties allowed. I did not, however, join them for some time, as the Commanding Royal Engineer applied for my services, and I was ordered to surround Kandahar with wire entanglements. I commenced the work on the 3rd August, and on the 6th four lines of entanglements were carried the whole way round nearly 5 miles, while the gates and corner bastions were especially protected by wire entanglements. With reference to this work, I may state that Ayub Khan's Private Secretary states that the reason that the Ghazis would not attack Kandahar was that they feared the wire entanglements which they did not understand. On the 11th August I was appointed an Assistant Field Engineer. On the 16th August, owing to the death of two officers of the 19th Regiment during the sortie to Deh Gwaja, I joined my regiment for duty with them at night on the south wall of the city, having charge of the same wall during the day as Field Engineer. On the arrival of General Sir F. Roberts on the 31st August, Mr. Pinhey and myself reverted to our civilian duties. I wish to bring to your most favorable notice Sub-Inspectors Jubbur Khan and Mahomed Bux, and Military Operations Line-man Dussoondlee, for their work on the wire entanglements. We were under fire during nearly the whole of the work, and these three men worked exceedingly hard and behaved most coolly, setting an admirable example to the coolies; and had they not done so, it would have been impossible to have completed the entanglements in the time they were finished. Only two of my coolies were wounded.

8. On General Roberts' arrival on the 31st August, he sent for me and ordered me to hold myself in readiness to start the reconstruction of the line of telegraph to Chaman which we supposed was entirely destroyed, as was afterwards proved, but about which we had no certain information. The same afternoon the General's head-quarters were connected by wire with the city, a distance of about 2 miles. On the 1st September Ayub Khan's force was beaten, and on the 2nd came the order for the telegraph line and for me to leave with the troops on the 3rd, proceeding to re-establish the military posts on the road to Chaman. On the afternoon of the 2nd, I obtained a small working party of the 7th Fusiliers, and Mr. Pinhey erected about two miles of line so as to get well clear of the city. I started the work on the 3rd, leaving Mr. Pinhey in Kandahar to forward me wire and poles as quickly as possible, and in this work he did very well, taking up the entanglements and sending off the wire at once. Poles were our difficulty, as I had only about 550 which I took out with me. We knew, however, that Ayub Khan had prepared a quantity of scaling ladders, and these were hunted for and found. Mr. Pinhey went out and cut up two hundred of them, making 400 poles which reached me at Abdul Rahman, together with about 100 more which he collected from villages round about Kandahar. I reached Abdul Rahman and opened an office there on the 5th. At Abdul Rahman I met General Phayre, and was disappointed to hear from him that the line had not been started from Chaman. Regarding this a



separate report will be forwarded. The line was completed from Kandahar to Gatai, 57 miles, in 8 days, and here my material ran short: more wire was coming from Kandahar, but poles could not be bought in time to help us. We had not found a single pole standing on the line, and only about 4 miles of wire, most of it tangled and useless for rapid construction. On the 11th I had to take my working party from Gatai into Chaman, 18 miles, hoping to find material there, but there was none, so I was obliged to send my camels over the Khojak Pass into Killa Abdulla, where Mr. Dempster had 200 poles, thereby losing two valuable days. On the 13th we managed to get 4 miles constructed from Chaman towards Gatai, as there were 20 poles in Chaman, and we found nearly three miles of poles still standing near Chaman, the only place on the whole line where there were any. There was also a certain amount of serviceable wire lying on the ground. The next day, the 14th, we completed the line, and this was the best day's work, 14 miles of entirely new line being erected, the men working from 2 A.M. to 6 P.M. Mr. Dempster was able to send me 150 more poles which just arrived at Chaman in time. The whole 75 miles was constructed in 12 days, and had it not been for the unfortunate delay of two days, the work would have been carried out in 10. During the day lost, while I took my camels to Killa Abdulla, the working party jointed and coiled the tangled wire in half-mile lengths, and it was a good deal owing to this that we were able to construct as much as 14 miles in one day.

9. I started with a working party of 75 men of the 19th Bombay Native Infantry which at Abdul Rahman was kindly increased by the Officer Commanding to 100, as they, besides working, had to act as covering party, baggage guard and to forage for food for the animals. The Native officers and men worked very well and willingly the whole time; they knew me well from my having served with the regiment during the siege.

10. Since the work was started, the wire has been cut several times, but the country is quieting down now. I was lucky enough one day to receive information that a man was destroying the line a mile off. I had my horse with me, and after a short chase I caught him just in time as he was running into a village. He will not annoy us again. The line is now regularly patrolled.

11. The line over the Khojak was continually cut, and it was only through the exertions of Major Westmacott and the military signallers that it was kept working at all. Major Westmacott had a deal of hard work in connection with this portion of the line, and on arrival I found it joined up the greater part of the distance with insulated wire of which there was luckily a large quantity in Chaman. This line has now been properly repaired by Mr. Dempster.

12. Regarding the construction of the new line, Kandahar to Chaman, I again wish to bring to your favorable notice Sub-Inspectors Jubbur Khan and Mahomed Bux, and temporary Line-man Dussoondlee, who were previously mentioned in paragraph 7 of this letter, and in addition to these Line-rider Mozuffir Khan and temporary Line-man Maida Khan. Two coolies, Akbar Khan and Khairoo, worked very well, and I shall try and find them places as line-riders or line-men. The working party commenced each day before daybreak, and were seldom in camp till dusk.

13. On the completion of the line, I received the following telegram from the Chief of the Staff:—

"To Mr. Boteler, from Colonel Chapman:—Sir F. Roberts congratulates you on your work successfully carried out, and thanks you and all working under your orders for your exertions."

and the following from the Assistant Quarter-Master General, Kandahar Field Force:—

"To Boteler, from Adam:—We all owe you many thanks for your exertions. Accept them from us all."

## Appendix M.

*Report by Mr. S. P. W. V. Luke, C.I.E., on 2nd Telegraph Operations with the Khyber Field Force, to the Director General of Telegraphs in India.*

1. On the 26th September I reached Peshawar from Calcutta, and under instructions from the Director General at once took over charge of line from Peshawar to Lundi Kotal, and made preparations for continuing it towards Kabul.

2. All the wire, office equipment, and other stores which were brought back from the line Gundamuk to Lundi Kotal, dismantled at the end of the first campaign, were in Peshawar and ready for use. So there was no delay waiting for stores. Some wire and tools had already been sent on to Lundi Kotal by Mr. Nigel Jones. And in four days I was able to get off the rest and arrange a small working party.

3. Having received instructions from General R. O. Bright to commence the extension of the line as soon as possible, I left Peshawar on the 1st October, and commenced putting up the line from Lundi Kotal to Dakka on the 3rd. Fortunately some of the poles which had been collected for strengthening the line during the first campaign were still at Lundi Kotal, Kotal, Ali Musjid, and Jamrud, enough at any rate to begin work with. A contractor was at once sent on to Dakka to arrange for more. By this means I was able to finish the line to Dakka (12 miles) by the 8th, and on to Basawal (11 miles) by the 12th. There was a day's delay in opening the office at Basawal owing to no signaller having come up. But one arrived on the 13th, and the office was opened.

4. Difficulty was now experienced in getting any poles, and a day was lost in moving the office at Basawal into an old fort some ¾ mile off. On the 19th an office was opened at Barikab. The route followed by the wire from Basawal to Jelalabad this year was the old road *viâ* Barikab, not as last year by the river route by Girdi Kas.

5. While at Barikab I received a telegram saying that the Viceroy desired the line might be pushed on as fast as possible, "sparing no labor day or night." And I heard from the Assistant Quarter-Master General at Jelalabad that the Telegraph Company of Sappers had been ordered to lay their line from Jelalabad to meet me. On the evening of the 21st I met the Sapper line 4 miles from Ali Boghân, and 9 from Jelalabad, and through communication was established between Peshawar and Jelalabad. As the Sapper line was only temporary, I continued my line, and completed it into Jelalabad on the 26th, and opened the Government office on the morning of the 27th.

6. At Jelalabad the Telegraph Company of the Sappers and Miners was placed at my disposal, and we commenced to work together towards Rozabad on the 28th. But on the 30th the Sappers Company was ordered to go to Fort Battye, and lay their line thence into Gundamuk. This put me rather in a fix, for counting on the Sappers I had no coolies to make up my working party, and added to this there was great difficulty and delay in getting any poles. Many of the poles of the old line, which had been looted by the villagers when the wire was dismantled in June, were in the different villages, but the men were afraid to produce them for some time. But eventually I succeeded in buying back a good many of my old poles, but had to pay more than I gave for them in the first instance.

7. On the 1st November I opened a temporary office at Fort Battye; the same day the Sappers completed their line onwards from Fort Battye, thus establishing through communication between Peshawar and Gundamuk. My own line was finished into Gundamuk on the 3rd November, 80 miles having been completed in the month.

8. By the exertions of Colonel Lockhart, Road Commandant, to whom I had written on the subject, I found 1,000 small poles ready for me at Gundamuk, and was able to continue on the line without any delay, and to open an office at Surkhpul (10 miles) on the 6th.

9. On the 7th I began working on towards Jagdalak, but on the 8th received orders that the line was to go no further than Surkhpul for the present.



On the 9th, however, I received orders to go on with the line, and to move the office from Surkhpul to Pezwan. This was done, and the office just re-opened, when orders were received to again move it to Pezwan Kotal. This stopping work and shifting offices caused a delay of at least two days, and the wire did not reach Jagdalak Kotal till the 14th. There was no question of continuing the line beyond Jagdalak Kotal, as no posts were at that time established beyond. Indeed, I was doubtful whether it was advisable to open an office at Jagdalak Kotal or not, as the following extract from telegram to Colonel Lockhart, dated 11th, will show:—"Am hesitating about sending signallers and opening office there (Jagdalak). Colonel Jenkins seems to think it improbable troops will remain there long. Please telegraph instructions. Can open office day after to-morrow if wished." In reply to this I received a telegram from Chief of the Staff, requesting me to open an office at Jagdalak Kotal, which was accordingly done on the 14th. The cold at this time was very severe.

10. Having, as I considered, finished my work by taking the line to the limit of General Bright's charge, and to a point beyond which there were none of his troops, I returned to Gundamuk. Here I met Mr. Kirk, who had come up to assist me. On the 15th I received orders to push on the wire beyond Jagdalak, and on the 16th Mr. Kirk left for this purpose, and on the 19th he met Mr. Josephs' line at the village of Jagdalak, 3 miles beyond the Kotal, completing through communication with Kabul. If the line had been continued steadily from my side, the junction with Mr. Josephs' line might have been made two or three days earlier. At this time there was no office between Jagdalak, Kotal, and Butkhak.

The post at Lataband was held by Colonel Hudson, but there were no troops at Seh Baba, the next stage to Jagdalak.

11. The foregoing is a short account of the construction of the line from Lundi Kotal to Jagdalak. Mr. Josephs began working from the Kabul end on the 29th or 30th October, and the whole line was completed, and various offices opened as under:—

| Office. | Miles. | Date. | |
|---|---|---|---|
| Dakka | 12 | October | 8th |
| Basawal | 11 | „ | 13th |
| Barikab | 10 | „ | 19th |
| Jelalabad | 17 | „ | 27th |
| Gundamuk | 29 | November | 1st |
| Pezwan | 13 | „ | 10th |
| Jagdalak Kotal | 8 | „ | 14th |
| Butkhak | 35 | „ | 2nd |
| Kabul | 12 | „ | 2nd |
| TOTAL | 147 | | |

12. After meeting Mr. Josephs Mr. Kirk went on to Kabul, while I returned with the former to Jelalabad to meet the Officiating Director of Construction, then on his way up. At Jelalabad I took over Mr. Josephs' working party, transport animals, and tools, and then accompanied Mr. Brooke to Kabul.

13. About the end of October, Mr. Towers was sent from Kohat to assist me, and was placed in charge of the reconstruction and duplication of line from Peshawar to Lundi Kotal, and of the existing line and offices up to Jelalabad, called the Jelalabad Sub-Division, while Mr. Kirk had the line and offices from Jelalabad to Kabul in his charge.

14. With the exception of frequent wire cutting between Basawal and Jelalabad, in the neighbourhood of Barikab, the line worked well between Kabul and Peshawar. It was quite unmolested in the Khyber, and also between Jelalabad and Kabul. The only difficulty was to dispose of the number of messages which soon became so great that it was necessary, in order to avoid delay to through traffic, to limit the period during which small offices should be open. Orders were therefore issued that, with exception of Kabul, Gundamuk, Jelalabad and Lundi Kotal, offices should only be open for two hours

a day, *viz.*, from 10 to 11, and from 15 to 16. It also became apparent that a second wire would be necessary as far as Jelalabad, and with the sanction of the Officiating Director of Construction orders were given to continue the doubling after the completion of the new two-wire line to Lundi Kotal.

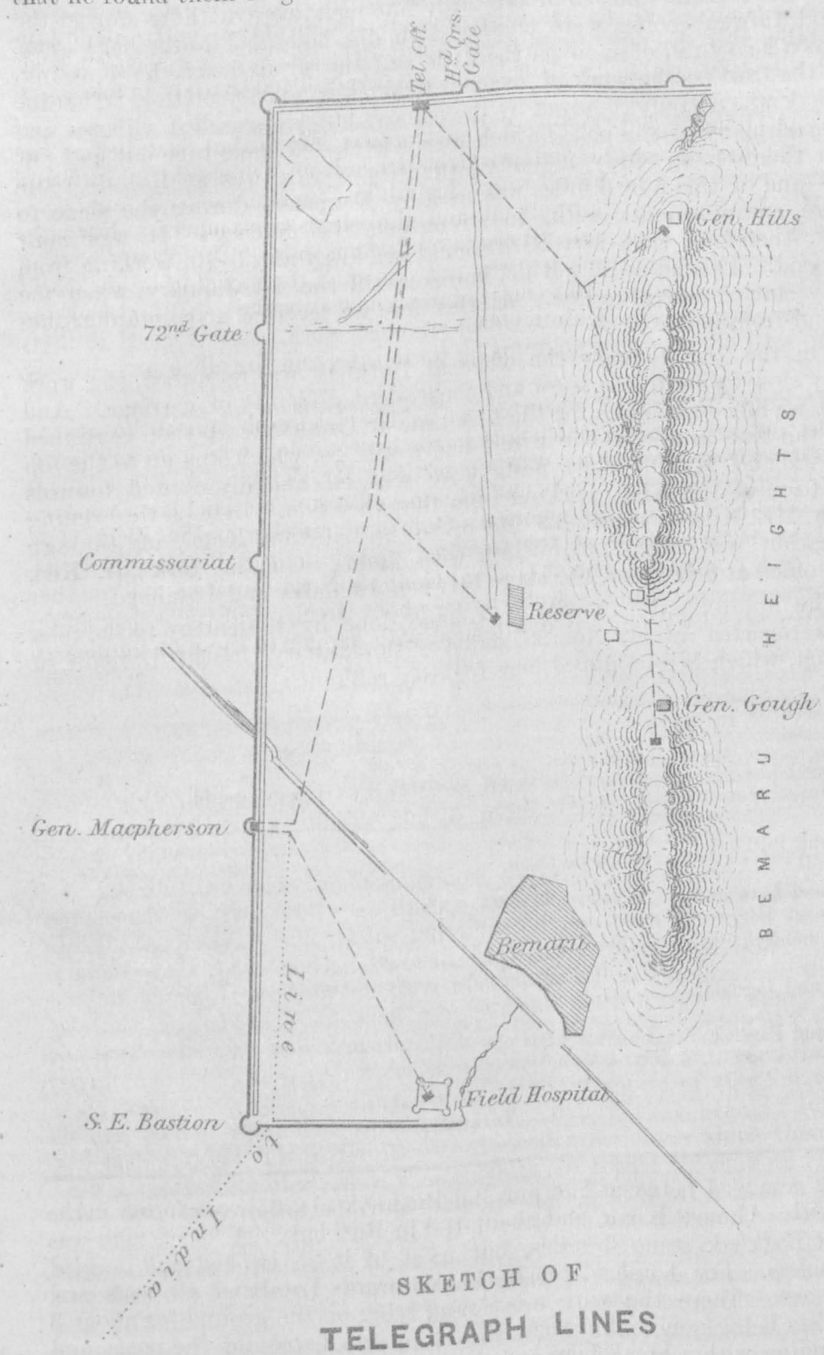
15. The new line to Lundi Kotal was constructed with a 300 and a 150-lb. wire, on elongated iron posts either B. C. D. E. or terminal lowers, and intermediate uppers and lowers, insulated on Robinson W. H. insulators. Beyond Lundi Kotal one wire only was insulated, the existing wooden posts (replaced where necessary by stronger ones) being fitted with a bracket and back.

16. The Officiating Director of Construction left Kabul just before the outbreak, which commenced on the 11th December. On the 11th, 12th and 13th there was heavy fighting all round Kabul, and on the 14th all our troops retired into the Sherpur Cantonment and the siege commenced. Notwithstanding the fighting going on all round, and thousands of the enemy passing under the telegraph line, the wire was not cut until the morning of the 15th, owing, probably, to the fact that they did not know its value. All night of the 14th the signallers in the Kabul Office were at work, and General Roberts was able to send off all the telegrams he wanted to, and the office was entirely cleared.

17. During the siege it occurred to us the telegraph might be used to connect the different strategical points in the cantonment, which is very large, and the General approving of the suggestion, Mr. Kirk and I set about connecting all the important posts and opening offices. On the 17th we opened two offices—one at General Macpherson's Gate and another at the Field Hospital; on the 18th another at the Goorkha picket on the Bemaru Heights, and on the 19th two more—one at General Gough's Head-Quarters and another at the reserve camp. Bullets were flying about freely, and the construction of these lines was by no means unattended with danger to the men employed.



A sketch showing the positions of the offices is attached. The Butkhak garrison, and with it the telegraph office, had been withdrawn to Sherpur on the 14th, so that we had in all six signallers available, and we kept six offices working. A great many messages passed between these offices, and Lieutenant-General Sir Frederick Roberts has been good enough to say in his despatches that he found them of great use to him.




SKETCH OF
TELEGRAPH LINES
IN
SHERPUR
during Siege

*Scale 4 Inches = 1 Mile.*

Telegraph Lines
Do. Offices

18. On the 23rd the final attack was made by the enemy, who, by the evening of that day, had all dispersed. General C. Gough's brigade marched in on the 24th, and I then learnt that the line was entirely wrecked as far as Pezwan, some 50 miles. Having received the General's permission, Mr. Kirk and I commenced reconstructing the line on the 26th with a guard of 50 infantry and 4 sowars. For a working party we had a havildar and 20 men of the 23rd Pioneers (only 3 of our own line-men were with us during the siege), and Hazara coolies were employed to dig holes and do the hard work. There was a heavy fall of snow on the 24th, and the ground was hard as iron owing to the frost, so the work of reconstruction was no easy matter. The line to Butkhak was entirely removed by the enemy, but we searched villages and found a good many of the poles, which we made the villagers turn out and put up again themselves. Only a limited quantity of wire was at Kabul—some 25 miles—and of this 5 or 6 miles was used by Engineers during the siege to make wire entanglements with, to strengthen the defences. It was most important, therefore, that Mr. Kirk should get away and begin working from the other end. This he could not do, however, till the 1st January, when the first party started down the line. All this time we received no communication of any kind from below.

19. On the 2nd January the office at Butkhak was re-opened, the work being very slow owing to the snow and consequent difficulty of carriage. And on the 5th an office was open for the first time at Lataband. I then continued repairing the line as far as the wire I had would go, which was up to the top of the Lataband Kotal, while posts were sent on and distributed towards Seh Baba to meet Mr. Kirk, working from the other side. Late on the evening of the 8th Mr. Kirk brought his line up to the Lataband Kotal, and through communication was again established with India. On the 15th Mr. Kirk opened an office at Seh Baba, the stage between Jugdalak and Lataband.

20. The approximate amount of damage done by the enemy to the telegraph was reported in my No. 26, dated 27th January, to the Director of Construction, which is reproduced here for easy reference:—

| Between what places. | No. of miles of posts removed. | No. of miles of wire taken. |
|---|---|---|
| 1. Sherpur and Butkhak | 9 | 9 |
| 2. Butkhak and Lataband | 7 | 4 |
| 3. Lataband and Seh Baba | 6 | 8 |
| 4. Seh Baba and Jagdalak | 7 | 9 |
| 5. Jagdalak and Pezwan | 10 | 10 |
| TOTAL MILES | 39 | 40 |

Of the posts removed between Sherpur and Butkhak (1), 35 were found in the village of Killa Ahmed Khan, and about 100 in Butkhak. A lot of wire was also found at Butkhak, some 3 miles, but most of it so twisted and tangled as to be useless. For 4 miles from Butkhak towards Lataband all posts and wire were gone. There the wire was found lying on the ground for about 3 miles, the posts being gone. For the last 4 miles into Lataband the posts and wire all standing with a break here and there. Part of this last piece is where the line goes so far from the road for about 2½ miles. From Lataband towards Seh Baba the posts and wire were standing, with a few breaks for about 2 miles; then posts and wire mostly gone for 6½ miles. Then the last 2 miles into Seh Baba, posts and wire mostly standing. First mile from Seh Baba towards Jagdalak nothing left; then 1 mile posts and wire standing; then 2½ miles nothing left; then 3 miles of posts remaining with a few spans of wire;



then 3½ miles into Jagdalak totally destroyed. From Jagdalak to Pezwan Kotal the line was totally destroyed, except about 400 yards on Jagdalak Kotal.

21. Whilst the line was being reconstructed from the Kabul side, Mr. Towers, who had been ordered up by the Director General from Jelalabad, was hard at work pushing up wire, procuring posts, and repairing from Pezwan towards Jagdalak, assisted by Lieutenant Stafford, R.E., and the telegraph company of sappers who were at Jagdalak. He had the wire up again between Pezwan and Jagdalak Kotal by the 1st January, but it was again destroyed on the night of the 1st, and had to be put up a third time. In spite of all difficulties, however, he succeeded in re-opening the office at Jagdalak on the 4th January.

22. An office was opened at Rozabad, between Jelalabad and Gundamuk, in January, thus completing the required number of telegraph stations between Peshawar and Kabul, which on the 31st March stood as under:—

| | Miles. |
|---|---|
| 1. Jamrud | 10·00 |
| 2. Ali Musjid | 8·50 |
| 3. Lundi Kotal | 10·50 |
| 4. Dakka | 12·00 |
| 5. Basawal | 11·00 |
| 6. Barikab | 10·00 |
| 7. Lachipur, an alternative line | ... |
| 8. Jelalabad | 17·30 |
| 9. Rozabad | 13·00 |
| 10. Gundamuk | 16·00 |
| 11. Pezwan | 11·50 |
| 12. Jagdalak | 12·00 |
| 13. Seh Baba | 11·00 |
| 14. Lataband | 11·00 |
| 15. Butkhak | 10·00 |
| 16. Kabul | 12·00 |
| 17. Bala Hissar | 3·25 |
| | 178·75 |

Add to this the alternative line from Basawal to Ali Boghán *viâ* Girdi Kas, 24 miles, and we have a total of 202·75 miles of line with 259·75 miles of wire and 17 offices.

23. Putting aside the damage done during the siege, the wire has not been cut nearly so frequently as during last campaign. The worst, and in fact almost the only, place where wire-cutting has been practised to any extent, is in the neighbourhood of Barikab, between Basawal and Jelalabad. In this section alone, from the 1st November to the 20th January, the wire was cut 34 times, and about 11 miles of wire stolen. On the 18th January a fortunate bag was made by a patrol of the 27th Native Infantry sent out to try and catch the marauders. The wire-cutters happened to come that night and the patrol had a skirmish with them, killing, according to the report of the Native officer in charge, two of them and wounding 12. Anyhow they brought into Basawal two bodies. For full particulars see Appendix A. Ever since then there has been a marked diminution in wire-cutting. A report showing all the interruptions that have occurred from the 1st October to 31st March is given in Appendix C. It is a curious fact, and one for which I cannot account, that on several occasions when the enemy were actually on the road, the wire was not cut by them. For instance, when Lieutenant Thurlow was murdered near Jagdalak, again when Fort Battye and Rozabad were attacked. The only supposition I can make is that the marauders came from a distance and did not know about the telegraph.

24. General Roberts having expressed a wish for a line to connect Sherpur with the Bala Hissar, one was put up and an office opened at the Bala Hissar on the 22nd January. The length of this line is 3¼ miles.

25. Towards the end of January an expedition started for the Lughmán Valley, and General Bright asked for a telegraph from Jelalabad to Azmatoolah

Khan's Fort. Mr. Kirk began this line on the 26th, and on the 28th openedan office at Dorunta, a distance of 9 miles, and on the 2nd February moved the office to Azmatoolah Khan's Fort, 12½ miles from Jelalabad. This line was constructed with the military strand wire, a reserve of 60 miles of which was in store at Jelalabad. The Lughmán office remained open till the 15th March. Colonel Wemyss, chief of General Bright's staff, promised me two days' notice when the line was to be dismantled; but on the evening of the 14th March I received information that the troops were to be withdrawn from Lughmán next morning. Fortunately Mr. Towers was at Jelalabad, and hurried arrangements were made to roll up the wire. But it was impossible to save the poles, which were looted before the guard was out of sight.

26. During the time Mr. Towers was employed in the repairs of the line destroyed by the enemy between Pezwan and Jagdalak, Mr. Hare was sent up to make the permanent two-wire line from Peshawar to Lundi Kotal, and had nearly completed it by the time Mr. Towers got back to his sub-division and took over the work from him. Mr. Towers finished the permanent line into Lundi Kotal on the 27th January, and at once continued putting up a second wire towards Dakka. He completed the second wire to Dakka on the 13th February, and to Basawal on the 20th. From Basawal General Bright had determined to adopt the river route to Ali Boghán—the same the wire followed last year *viâ* Chardeh, Láchipur, and Girdi Kas. From Basawal to Ali Boghán, therefore, a distance of 24 miles, an entirely new line had to be constructed. Later on, when the fort at Barikab is given up, it is intended to shift the wire from the posts *viâ* Barikab on to the river line, and for this purpose brackets have been fitted to the posts. In the meantime both lines are kept up, and an alternative route is secured in this the most notorious district for wire-cutting. On the 21st March Mr. Towers had the second wire completed to Jelalabad.

27. The second wire to Jelalabad afforded immediate relief to the very heavy message traffic now passing over the wires, but its utility has been somewhat marred by the removal of General Bright's head-quarters to Gundamuk, and it is a question, in the event of the campaign lasting much longer, whether it will not be necessary to continue the second wire on to Gundamuk. But it is to be hoped not. An idea of the number of messages will be gained from the table below, showing traffic of Kabul, Gundamuk and Jelalabad offices during January, February and March:—

| | January. | February. | March. |
|---|---|---|---|
| MESSAGES OF ALL KINDS— | | | |
| Kabul . . . . . | 2,856 | 3,498 | 5,309 |
| Gundamuk . . . . . | 650 | 750 | 2,900 |
| Jelalabad . . . . . | 3,188 | 3,297 | 3,347 |
| TOTAL . | 6,694 | 7,545 | 11,516 |

Nearly all business is carried on by telegraph, and notwithstanding orders on the subject, the wire is frequently used most unnecessarily. Endeavour is being made to restrict the number of useless messages as much as possible, and General Roberts' last orders for the use of the telegraph are given in Appendix B. With all the heavy traffic, as long as the wire is not cut, the speed is very fair; precedence messages from Calcutta coming in a few hours, while Reuter's telegrams give us the London news of the day previous.

28. Owing to the hurried manner in which the line was put up in the first instance and again reconstructed after the siege, many very inferior poles had to be used, in fact any sticks that could be got. These it was necessary to replace, and to strengthen the line generally between Jelalabad and Kabul. This work has been carried out by Mr. Kirk. Some fairly good poles were



purchased at Jelalabad, others were procured for me by Colonel Blair, R. E., at Gundamuk, and 250 good poplar poles were sent out from Kabul to Jagdalak. The line may now be considered quite strong and good to last for several years. Considering all things, the line has stood through the snow and frost of the winter remarkably well, only two or three interruptions having occurred from the wire breaking or poles coming down.

29. A good deal of delay and trouble was experienced in fitting out our baggage animals such as they are. When Mr. Kirk got back to Jelalabad after the siege, and had time to examine the mules and yaboos, a large number of them were suffering from sore-backs. They had only common country saddles, and it was with great difficulty we could get some old Otago pattern ones from the Transport Department. Altogether there only remained 38 animals fit for anything at all, and of these 10 are still in hospital. Mr. Kirk worked hard at fitting them out, and they are now with us in Kabul, but they are only sufficient to move the working party and their tents and tools, quite apart from any stores. We shall be quite dependent on the transport or country carriage to lift the wire, office equipments, &c. If the Telegraph Department is to have a field equipment, the transport animals will be a most important item, and the question should be gone into.

30. Comparing the work done this campaign with that of last year, it will be noticed that the line was put up far more speedily. This is due, in the first place, to the rapid advance of the troops, and not having to wait for permission to go on; secondly, to the stores from last campaign being ready and available at Peshawar; and lastly, to the experience and knowledge of the country acquired before the treaty of Gundamuk. The result of this construction confirms the conclusion arrived at after last campaign, *viz.*, that for a semi-permanent line in an enemy's country, where you cannot camp out between posts, and where you have to get poles from local sources, and a good deal of labor and carriage as well, the average rate of 3 miles a day is as much as can be done by one ordinary working party.

31. I consider I have been particularly fortunate in having such able assistants as Messrs. H. A. Kirk and G. L. Towers, to whose exertions the successful working of the line since its construction is mainly due. Both these gentlemen had exceptionally arduous work, and ran great risks in restoring the line destroyed by the enemy in December between Pezwan and Kabul; and I wish to bring their names prominently to your notice. Having constantly to travel up and down the line of communications, which is frequently infested by marauders, they cheerfully accept the risk attending duties which are far more of a military than a civilian character.

32. That the work done by the Department has been appreciated both by the Viceroy and the Lieutenant-General Commanding, the following copies of telegrams will show:—

(1) From Director General to Mr. Luke, from Simla to Jelalabad—"The Viceroy is very pleased with the rapid manner in which the telegraph wire has been pushed on up to and beyond Jelalabad, and desires me to convey to you an expression of His Excellency's appreciation of the good work you have done."

(2) From Director General to Mr. Luke, from Simla to Gundamuk—"Viceroy desires me to convey His Excellency's congratulations on establishment of through communication with Kabul."

(3) From General Roberts to Superintendent, Telegraphs, from Kabul to Lataband—"Accept my congratulations on the rapidity with which you have restored the line to Lataband."

(4) From General Roberts to Mr. Luke, from Kabul to Lataband—"I congratulate both you and Mr. Kirk on so rapidly re-establishing telegraph communication with India."

(5) From General Roberts to L. Luke, Esq., from Kabul to Lataband—"Following message received to-day from Viceroy. Begins—Accept my hearty congratulations on completion of telegraph to Kabul, and convey the same to Mr. Luke. Message ends."

33. Right good service has been rendered to the department by the military signallers employed in field service, and I propose submitting at the end of the campaign a list of their names, that they may be brought to the notice of His Excellency the Commander-in-Chief.

34. At the end of March General Roberts desired me to connect all the forts recently constructed round Kabul by wire. This was accordingly done, partly by a party of the 23rd Pioneers and partly by Ali Muhammad's working party which came in with Mr. Kirk on the 28th. The length of this line is 9½ miles, and a sketch of it is given in Appendix D. It is proposed to communicate with the different forts by means of telephones which are coming up from India for the purpose.

35. Excellent work has been done by Sub-Inspectors Ali Muhammad and Barkur, and by the line-men under them, both in constructing the line and in repairing it when destroyed. A list of the men whose services deserve mention will be submitted at the end of the campaign.

P. V. LUKE,

*Offg. Supdt., Telegraphs.*

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## Appendix A.

*Account of shooting of marauders cutting the Telegraph wire.*

After many unsuccessful attempts, the patrol sent out from Basawal to try to catch the men cutting the wire succeeded under the following circumstances:—

On the evening of the 18th January a party consisting of 24 men of the 27th Punjab Native Infantry, and six men of the 30th Native Infantry, under the command of Jemadar Mohamad Sadik, of the former regiment, went out from Basawal. On arrival at the place, about half-way between Basawal and Barikab, where the wire was so frequently cut; the Native officer disposed his party as follows:—Some 20 yards from each of four successive posts four men were stationed, lying down behind stones, while the rest of the party remained concealed a little distance off. About 8 P.M. the marauders came, rolling up the wire and pulling down the posts from the Basawal side, till they came to the spot where the sepoys were concealed. The first party of four allowed some of the robbers to pass, but when the next lot reached the post opposite to them they fired, the other three parties according to orders closing in upon the first. The robbers then seemed to have retired to a nullah close by, whence they kept up a fire upon the soldiers. The Native officer with his reserved party now moved round and took the robbers in flank, whereupon they all bolted, leaving two dead on the ground. The night was very dark, and it was difficult to tell how many men there were; but the Native officer estimates about 50 or 60, and they had two or three ponies with them to carry off the wire. One hundred and fifty rounds of ammunition were expended by our men. They managed to bring in the bodies of the two men killed to Basawal. Information was subsequently received that, in addition to the two men killed, about 12 others were wounded. The Native officer in charge, Mohamad Sadik, deserves great credit for the success of his expedition. The moral effect was excellent, for the wire has hardly been cut since in that locality, and I hope his name may be brought to the notice of the Commander-in-Chief as having rendered good service to the Telegraph.

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## Appendix B.

*Kabul Field Force Division Order No. 730, dated 24th March 1880.*

The following rules for the use of the field telegraph are published in supersession of all previously issued on the subject:—

It has been brought to the notice of the Lieutenant-General Commanding that the wire is frequently used when post would quite answer the purpose. Particular attention is therefore called to Rule 1.

No. 1. All messages must be worded as briefly as possible, and the field telegraph is only to be used in urgent cases, when the ordinary post would be too slow a means.

No. 2. Private messages of an urgent nature will be sent, but only when the wire is quite unoccupied by State messages. State messages will always take precedence of private ones.

No. 3. Messages may be sent either "paid" or "bearing." Telegraph stamps can be obtained from officers in charge of treasure-chests, in quantities of not less than five rupees value at a time.
Postage stamps are also accepted in payment for messages.

No. 4. Messages addressed to a newspaper, or intended for publication in any form, or relating in any way to the movements of troops, must be countersigned by the Deputy Assistant Quartermaster General (or one of his assistants in either department) before they can be despatched. No other messages require countersignature.

No. 5. The undermentioned officers have the power to claim precedence of their State messages:—
(1) All General Officers commanding, and all officers in command of detached posts, or their staff officers.
(2) The heads of the following departments:—Political, Engineer, Ordnance, Medical, Commissariat, and Transport. Messages for which this privilege is claimed should be distinctly marked "Precedence."

No. 6. The Lieutenant-General Commanding and Chief Political Officer alone have power to clear the line.

No. 7. Messages to and from Kabul, Gundamuk, Jelalabad, and Peshawar can be sent at any hour. They can also be exchanged at any hour by offices between Jelalabad and Peshawar, where there are two wires.

No. 8. Messages can only be sent to and from the offices in the margin at 6 A.M., between 10 and 11 A.M., and 3 and 4 P.M., local time. In case of emergency, the officer commanding at one of these stations can order a message to be sent out of hours, but he will be held personally responsible that the urgency of the case justifies the infringement of the rule.

Butkhak, Lataband, Seh Baba, Jagdalak, Pezwan, and Rozabad.

## Appendix C.

*Statement of Interruptions on the Lines of the Kabul Field Force Division from 1st November 1879 to 31st March 1880.*

| Between what stations. | No. of times cut. | Quantity of wire stolen. | Remarks. |
|---|---|---|---|
| | | Miles. Yards. | |
| 1. Jamrud and Ali Masjid | 1 | *Nil* | |
| 2. Dakka and Basawal | 4 | 880 | |
| 3. Basawal and Barikab | 23 | 10 190 | |
| 4. Barikab and Jelalabad | 7 | 2 130 | |
| 5. Pezwan and Kabul | 1 | 40 | |
| Total | 36 | 52 1200 | |
| | | Or nearly 53 miles. | |

*Statement showing number of times cut in each month.*

| Month. | No. of times cut. | Remarks. |
|---|---|---|
| November 1879 | 7 | |
| December „ | 15 | |
| January 1880 | 11 | |
| February „ | *Nil* | |
| March „ | 3 | Owing to effect produced by shooting the two men near Barikab. |
| Total | 36 | |

An inspection of the interruption report will show that nearly all the wire-cutting this campaign, with the exception of the destruction of the line near Kabul in December, has been confined to one place—the neighbourhood of Barikab. The worst place last campaign was between Lundi Kotal and Dakka, where it was cut 34 times, and 31 miles of wire stolen, whereas this campaign the line has not been touched in that section. The inference to be drawn from this is that the arrangements made by the Political Officers with the Afridis for the protection of the line in the Khyber are far better than those made with the Shinwaris. There is no aparent reason why this should be the case.

## Appendix D.

*Statement comparing wire-cutting during first and second campaigns.*

| Between what stations. | 1st Campaign.* | | 2nd Campaign.† | |
|---|---|---|---|---|
| | No. of times cut. | Quantity stolen. | No. of times cut. | Quantity stolen. |
| | | Miles. | | Miles. |
| 1. Peshawar and Jamrud | 4 | 1·5 | *Nil* | *Nil* |
| 2. Jamrud and Ali Musjid | 12 | 11·6 | 1 | *Nil* |
| 3. Ali Musjid and Lundi Kotal | 4 | 2·5 | *Nil* | ... |
| 4. Lundi Kotal and Dakka | 34 | 30·9 | ... | ... |
| 5. Dakka and Basawal | 13 | 3·1 | 4 | ·50 |
| 6. Basawal and Girdikas‡ | 23 | 8·8 | 23 | 10·00 |
| 7. Girdikas and Jelalabad‡ | 6 | ·9 | 7 | 2·25 |
| 8. Jelalabad and Gundamuk | 2 | ·2 | *Nil* | *Nil* |
| Total | 98 | 59·5 | 35 | 12·75 |

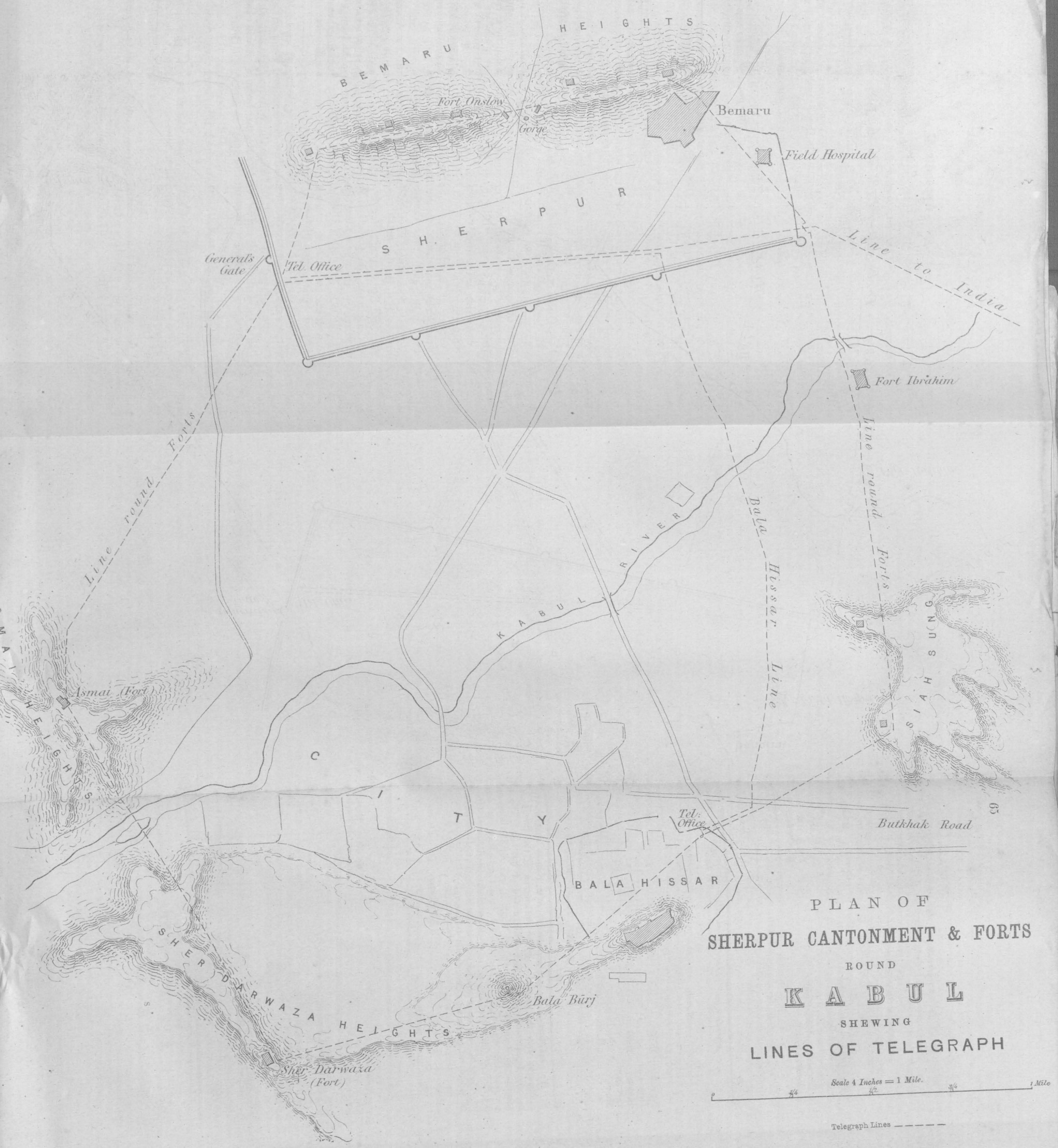
* 1st campaign, a period of 6 months.
† 2nd ditto, ditto 5 ditto
‡ Present line goes *viâ* Barikab, with alternative route *viâ* Girdikas. The line *viâ* Barikab is the one cut so frequently this campaign.

*Kabul, April 18th, 1880.*

P. V. LUKE,
*Superintendent, Field Telegraphs.*

## Appendix D.

*Sketch of Lines round Kabul.*




PLAN OF

# SHERPUR CANTONMENT & FORTS

ROUND

# KABUL

SHEWING

## LINES OF TELEGRAPH

Scale 4 Inches = 1 Mile.

0 ¼ ½ ¾ 1 Mile

Telegraph Lines ------

depending, as we then had to, entirely on a few Goorkha coolies, who volunteered along with the line-men and line coolies of the permanent establishment, Dibrugarh sub-division, who had to be detached from their legitimate duties to carry out the work of temporary men. Not only these, but the sub-inspectors also were ordered up by me to swell the number of our small gang. With this little band we have done the chief work, both Assamese labour and that found in the Naga Hills being to the telegraph but a drop in the ocean.

20. When the offices commenced to be opened, from our little band we had to leave behind line-men and coolies to patrol and look after the working of the wire when erected; so you can easily guess how the party was hampered as it dwindled down. A look at the muster roll will show the strength of our band, consisting as it did of men mentioned above. With this party the work was continued and carried into Kohima.

21. The Officiating Sub-Inspector, Ram Kissore, following with a gang of six men, putting up insulators, a work quite as difficult as that of stretching the wire. When the work was in the neighbourhood of Nichuguard, the place was twice attacked at night, showing that the Nagas were lying in ambush close by, and hence within easy distance of the telegraph working parties; but neither the fear of Naga ambush rifles nor malaria stopped the work; but, as stated before, in the matter of labour and transport we were helpless.

22. The wire had, however, reached Piphima, an important point in regard to the operations against the Nagas, and the ultimate surrender of the Chucka forts, which event the telegraph was able to communicate a few hours after.

23. Immediately on the surrender of these forts, it was determined to withdraw the large field force, but the retention of a whole regiment, with its strength of camp-followers, made it imperative that the line should be completed into Kohima.

24. A few days previously, when at Golaghat, I waited upon Sir Steuart Bayley, when the Chief Commissioner thought it to be still necessary to maintain the telegraph line for another year, as a whole regiment was to be quartered in the Naga Hills, and the difficulties of their supplies and transport would be largely increased by the abolition of telegraphic communication.

25. Closely connected with the extension of the telegraph into Naga land, came the question of field post offices. Immediately on my arrival at Bhorpatar, I put myself in communication with the Chief Inspector of Post Offices in Assam. Finding that covers containing telegrams to or from our field offices were being carried by open or outside dâk, I suggested to Mr. Pillington whether it would not assist his department if my signallers opened and closed mail bags at telegraph offices. This suggestion was at once accepted, and field post offices established at each field telegraph office; the telegraph masters doing this extra (honorary) duty of deputy post master without demur, and for which they deserve great credit, as the combined offices facilitated the transmission of messages, while giving the public the benefit of both postal and telegraphic communication at outposts intermediate between Golaghat and Kohima.

26. I am glad to find that all the authorities—Political, Civil, and Military—have expressed the same opinion regarding the difficulties the telegraph had to contend against, and the rapidity with which outposts were connected by wire, and offices opened.

27. Under date the 18th February 1880, the Secretary to the Chief Commissioner, Assam, addressed the following to me:—

"I am directed to convey the Chief Commissioner's acknowledgments to you and your subordinates for the energy with which the extension of the telegraph line to the Naga Hills has been carried out, in spite of the special difficulties which attended the undertaking."

28. To the above I have only to add that whatever I personally did to carry on my own duties in addition to those of the Dibrugarh sub-division, supervision of the Dergaon-Golaghat loop, and, lastly, the Bokahat-Dhunserimookh loop, and to direct generally the supply of material, labour, &c., for the Naga Hills, the credit of the field telegraph lines and offices is mainly due to those who have for months toiled in the Terai forests and hills of Naga land; and I cannot therefore think of closing my report without bringing to favourable notice Mr. Assistant Superintendent W. J. Browne, Telegraph Masters G. H. Cowper and A. W. Russell, and Signallers Denisue and Bowling, who all

deserve well-merited praise and my thanks. I wish that I could mention a few more names, but, in justice to those who have worked willingly and hard, without giving cause for complaint, I cannot do so.

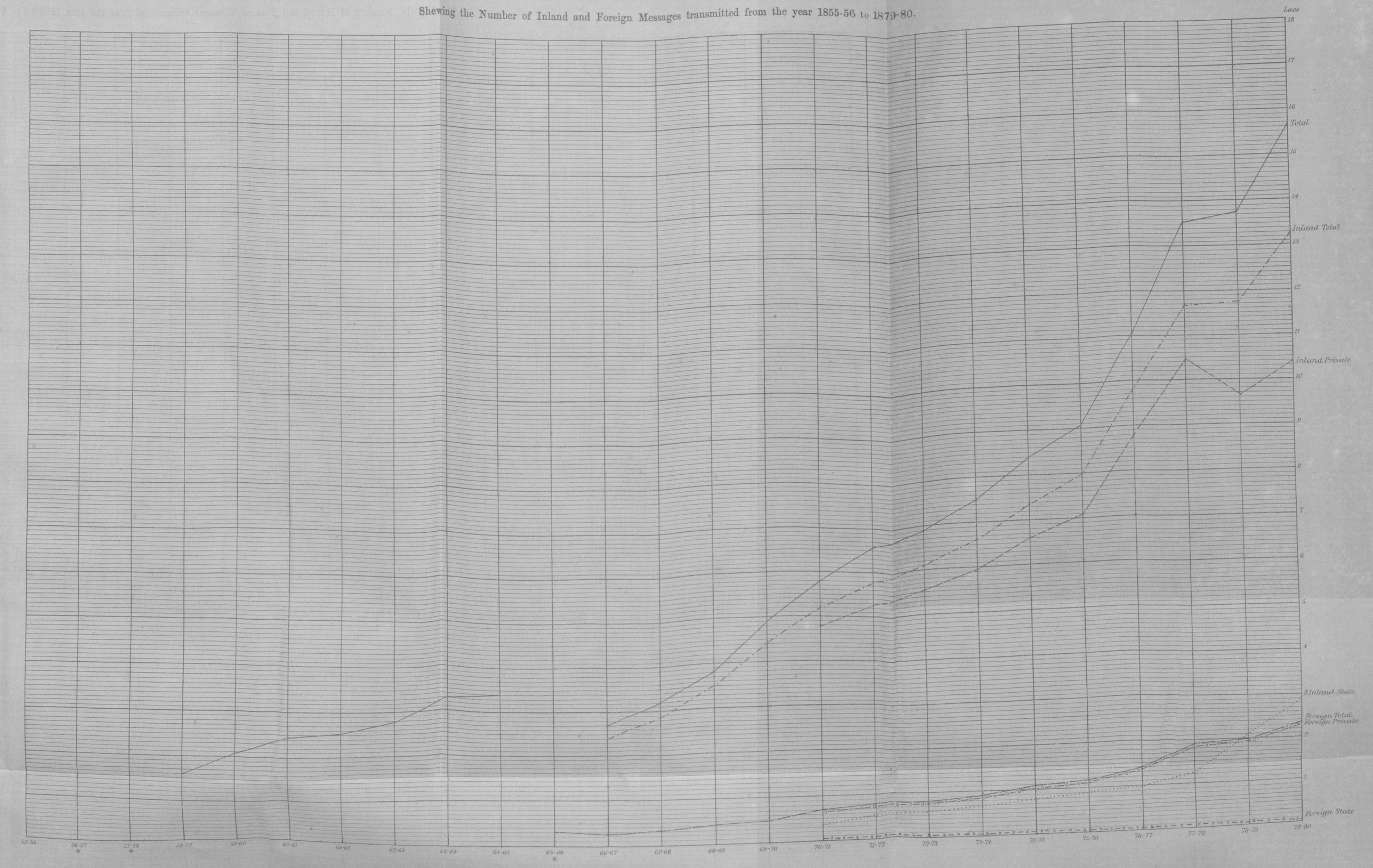
29. The spirit of loyalty and pluck exhibited by the native establishment—sub-inspectors and line-men who volunteered for the service—cannot be too highly commended, one and all pushing to the front till work was completed. Individual names will be brought to notice on receipt of the Assistant Superintendent's report.

30. I did my best to meet the demands from my local resources, and all hands took up extra duties without a murmur, and in a praiseworthy manner. Two of my telegraph masters had to take up line duty. The telegraph masters at some stations, notably Dibrugarh, Shillong, Gauhati, and Dhubri, took up the duties of signallers in addition to their own work, so as to co-operate with and assist me in giving effect to the wishes of the authorities in opening up telegraph communication in the Naga Hills. My task has been much lightened by the addition of signallers who have joined my division from elsewhere, and I beg respectfully to offer my sincere thanks to yourself for so kindly acceding to my recommendations, and so readily supplying my wants with regard to both establishment and material.

Govt. Central Press—No. 28 D. G. T. D.—23-12-80.—300.

# DIAGRAM A.

Shewing the Number of Inland and Foreign Messages transmitted from the year 1855-56 to 1879-80.

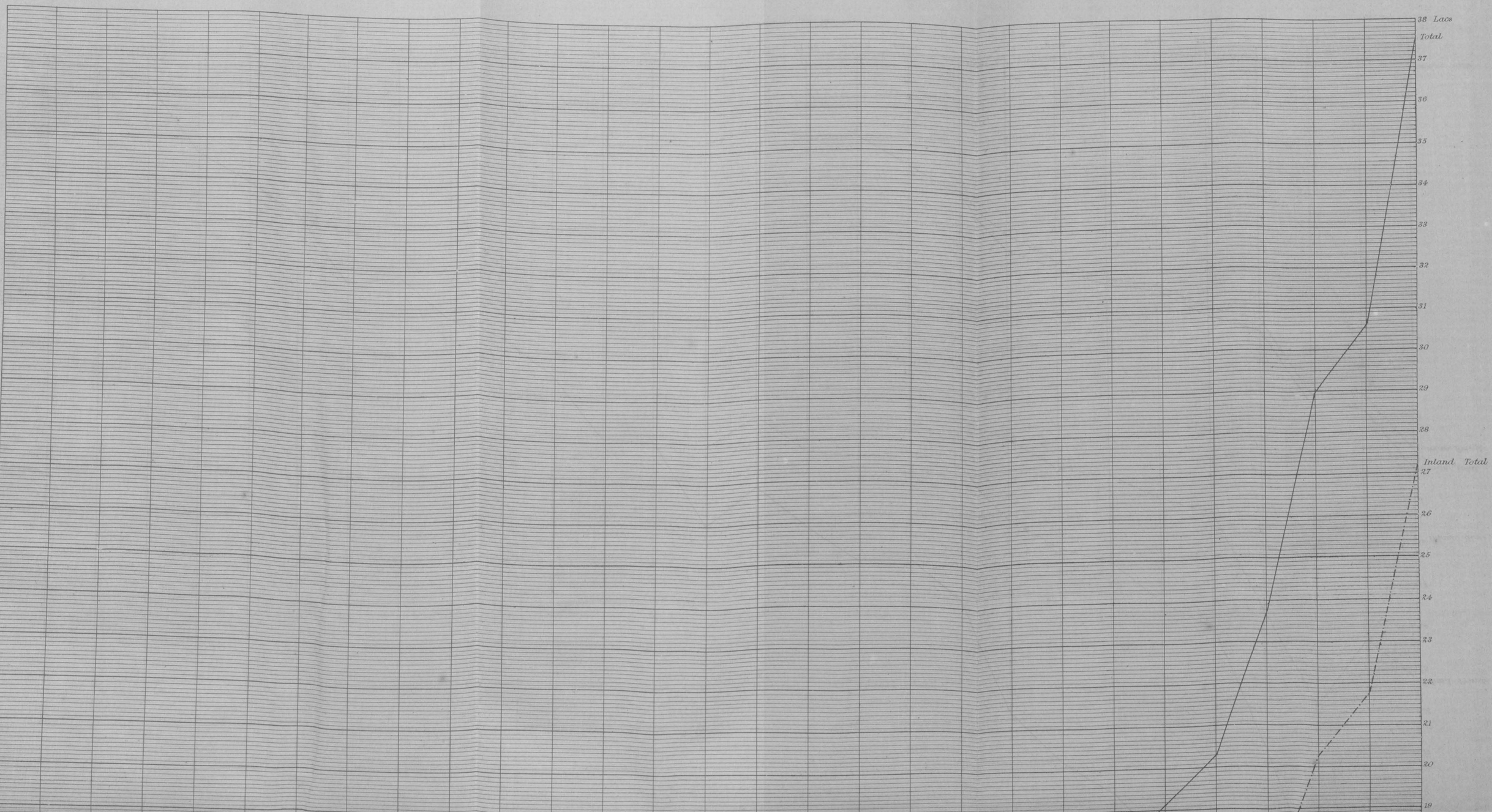


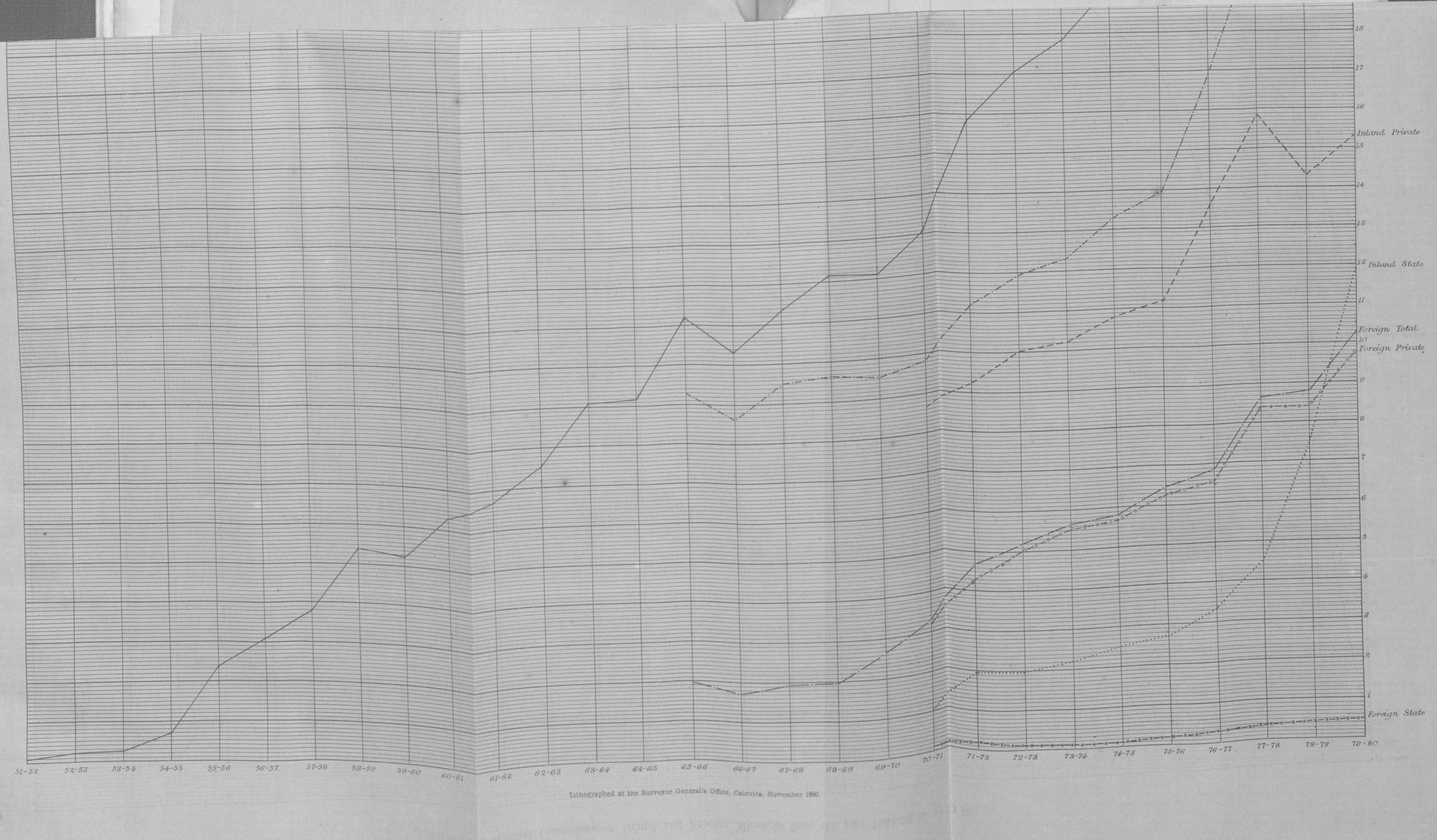

* No record of Inland Messages

Lithographed at the Surveyor General's Office, Calcutta, November 1880.

# DIAGRAM B.

Shewing the Annual Collections on Inland and Foreign Messages from the year 1851-52 to 1879-80.

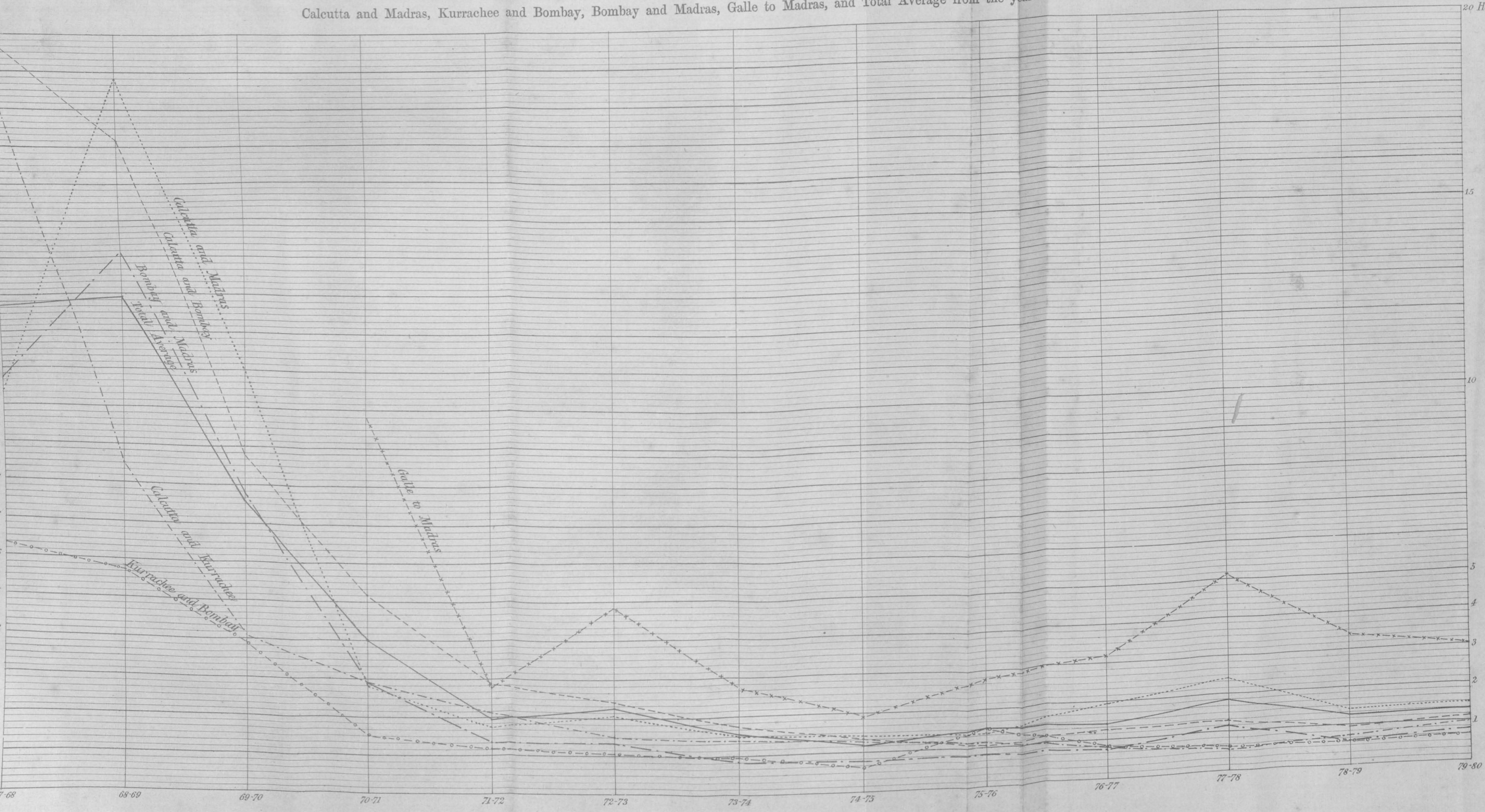





Lithographed at the Surveyor General's Office, Calcutta, November 1880.

# DIAGRAM C.

Shewing the Yearly Average Time of Transmission of Messages between Calcutta and Kurrachee, Calcutta and Bombay,
Calcutta and Madras, Kurrachee and Bombay, Bombay and Madras, Galle to Madras, and Total Average from the year 1867-68 to 1879-80.




*N.B. Total Average includes Galle to Madras.*

Lithographed at the Surveyor General's Office, Calcutta, November 1880.