

REPORT

ON THE

POSTAL TELEGRAPH SERVICE

IN

FOREIGN COUNTRIES.

COMPILED BY

ROBERT B. LINES.

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## LETTER OF TRANSMITTAL.

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WASHINGTON, D. C., *September 15, 1882.*

Hon. CHAS. W. SEATON,  
*Superintendent of Census.*

SIR: I have the honor to transmit herewith a compilation of statistical and other information relative to the condition of telegraphs in various countries in the year 1880.

Very respectfully, your obedient servant,

ROBERT B. LINES.

## CONDITION OF THE POSTAL TELEGRAPH SERVICE IN VARIOUS COUNTRIES IN 1880.

The following report, prepared under the direction of the Census Office, has been mainly compiled from the replies of the heads of foreign telegraphic administrations, transmitted through the diplomatic representatives of the United States, to a circular letter of inquiry addressed them by the Secretary of State, at the instance of the Postmaster-General, in accordance with a resolution of the House of Representatives, introduced by Hon. William M. Springer, of Illinois. In addition to the answers of the separate governments to the questions proposed in that circular letter, the telegraphic convention of Saint Petersburg, the regulations founded thereon, and two tables of international tariffs adopted in accordance therewith, are hereto appended, to show the relations of the different European countries to each other as regards telegraphic communication. The general statistics of European telegraphs for the year 1880, published by the International Bureau of Telegraphs at Berne, Switzerland, have been put in shape for comparison with the statistics for the United States collated by the Census Office, and a table of similar statistics for 1872, taken from the report of the commissioners to the Vienna exhibition of 1873, is republished for the purpose of showing the progress of the telegraphic systems of the world in the eight years prior to 1880. In that report will be found tables showing the classification of dispatches in several European countries according to their nature (commercial, social, etc.) and the increase in the number of messages which followed marked reductions of the rates in Belgium, Switzerland, Austria-Hungary, Germany, Italy, and France; also separate papers upon the relations borne by the European telegraphic administrations to other branches of the public service and to the railway companies, and upon the regulations for the establishment of new offices and the appointment, promotion, removal, and retirement of employés, which subjects are not touched upon in the present report. The condition of the telegraphic system of the Dominion of Canada appears, from statistics taken from the report of Sir Hugh Allan, president of the Montreal Telegraph Company, for 1880, and published herewith.

The circular letter of the Department of State asked for information under the following heads:

1. Copies of all existing laws as to postal telegraphs.
2. When and how did the government acquire the telegraphs?
3. If the government purchased the lines of private telegraph companies, how was the price paid for the same determined? If by appraisers, how were they appointed?
4. If the telegraphs have been purchased by the government; what was the original cost of constructing them, and what price did the government pay for the same?
5. What were the annual receipts and expenditures of the telegraphs under private management, and what have been the annual receipts and expenditures of the same under government management?
6. At the time of the transfer of the telegraphs to the government, how many offices and how many miles of wire were there, and how many offices and miles of wire are there now?
7. How does the cost of the extensions of telegraphs which have been made by the government compare with the original cost of the construction of the telegraphs by private companies?
8. Does the government sell telegraph stamps for the convenience of the public in paying for the transmission of telegrams, and if so, how many denominations of such stamps are issued?
9. What system has been adopted for accounting for the sale of telegraph stamps by the postal authorities and for the cancellation of such stamps?
10. To how many words is the ordinary message restricted, and what is the charge for such messages?
11. What is the general internal tariff for private telegrams, as regulated by the number of words and distances?
12. What is the tariff for press telegrams?
13. What is the average number of words sent daily for the press?
14. What is the annual value of the work performed by the telegraph for the government?

## POSTAL TELEGRAPHS.

15. What increase in the number of employes and in the expenses of the post-office department has been caused by the additional labor required for the management of the postal telegraphs?

In addition to making the foregoing inquiries, the Department of State requested the representatives of the United States abroad to furnish such information as might be obtainable from private sources, or as they might possess as the result of their own observation as to the practical working of the postal telegraphs.

## GREAT BRITAIN AND IRELAND.

The following information was forwarded by Mr. Lowell in a dispatch to the state department dated May 9, 1882:

1 and 2. The laws of which copies are transmitted are the acts 26 and 27 Vict., c. 112; 29 Vict., c. 3; 31 and 32 Vict., c. 109; 32 and 33 Vict., c. 73; 33 and 34 Vict., c. 88; 34 and 35 Vict., c. 75; 36 and 37 Vict., c. 83; 39 Vict., c. 5; 40 and 41 Vict., c. 30, and 41 and 42 Vict., c. 76. Of these statutes the two first named, enacted in 1863 and 1866 respectively, regulated the rights of way, erection, removal, and working of the telegraphs by the private companies which then owned them, and provided that government messages should have priority; that the companies should establish telegraphs for government use whenever required, and that, in case of an emergency, the government might assume temporary control of the transmission of messages, and should compensate the companies for any resulting losses, the amounts to be settled by agreement or arbitration.

The third-named statute is known as the "Telegraph act, 1868". It was passed on the 31st of July of that year, and is entitled "An act to enable her majesty's postmaster-general to acquire, work, and maintain electric telegraphs". Such clauses of the acts of 1863 and 1866 regulating the relation of the telegraphs to the railways, canal companies, local boards controlling highways, etc., as were applicable were continued by this act, until they were amended in 1878 by the act of 41 and 42 Vict., c. 76, last above named. This latter act provided for arbitration in case of differences with regard to rights of way, etc. Penalties for obstruction, and for the various offenses against the workings of the telegraphs, are also provided.

In accordance with the various acts above named (of which the four commencing with 34 and 35 Vict. are merely "money-bills") the whole inland system of telegraphs, together with the cables connecting the different parts of the United Kingdom, became the property of the state. Before any undertaking was purchased the consent of two-thirds of the shareholders had to be obtained. In view, however, of the unexpectedly large price to which the government had been committed in the agreements made with the companies the act of 32 and 33 Vict., c. 73, passed in 1869, provided that the government should have the exclusive right to transmit messages for hire. The actual date of the transfer of the undertakings of the companies to the state was January 29, 1870.

3. The price was ascertained by the accounting officers of the post-office, who had access to the books of the companies whose undertakings were to be purchased, and who examined the claims made by the companies. The price paid by the government was twenty years' purchase of the net profits during the year ending June 30, 1868.

4 and 5. The following is a statement of the construction accounts of some of the larger private telegraph companies up to the year 1869, but similar particulars as regards railway and other private companies cannot be obtained:

## CONSTRUCTION ACCOUNT OF VARIOUS TELEGRAPH COMPANIES, WITH THEIR RECEIPTS AND EXPENDITURES, UP TO THE YEAR 1869.

Name of company.	Cost of construction.	Receipts for 1869.	Expenses for 1869.
The London and Provincial Telegraph Company.....	£45,595	£10,250	£0,953
The Electric and International Telegraph Company.....	1,041,435	a 379,395	a 184,990
The British and Irish Magnetic Telegraph Company.....	720,336	167,376	90,393
The United Kingdom Electric Telegraph Company.....	351,594	b 64,975	b 42,578
The Universal Private Telegraph Company.....	122,737	c 18,303	c 10,418

a The last published balance-sheet was for the seven months ended January 28, 1870. One-seventh has therefore been deducted from the figures shown therein, and the remainder has been added to the figures for the previous half year in order to show the amounts for twelve months.

b The figures are for the year to June 30, 1869, no balance-sheet to a later date having been published by the company.

c The company's accounts were made up for the thirteen months to January 31, 1870. One-thirteenth has therefore been deducted from the figures.

The following returns show the gross amount received and the gross amount expended under government in respect of the telegraph service from the date of the transfer of the telegraphs to the state to March 31, 1881, together with the capital account for the year ended March 31, 1881.

An account on commercial principles is also inclosed, showing what interest on capital the revenue would have produced in the year to March 31, 1881, if the capital expenditure, etc., had been dealt with on commercial principles.

POSTAL TELEGRAPHS.

POST-OFFICE TELEGRAPHS—CAPITAL ACCOUNT.

Account of the sum expended, compared with the sum authorized to be raised and the sum actually raised, under the telegraph acts, 34 and 35 Vict., c. 75; 36 and 37 Vict., c. 83; 39 Vict., c. 5; and 40 and 41 Vict., c. 30; also with the amount issued to the post-office in respect thereof in the years ended March 31, 1874, 1875, 1876, 1877, 1878, 1879, and 1880, inclusive, and March 31, 1881, showing the surplus or deficit under each head.

Service.	Acts under which amounts are authorized.	Amounts authorized to be raised.	Amounts raised.	Amounts issued to the post-office.	AMOUNTS EXPENDED IN YEARS ENDED 31ST MARCH.			EXPENDITURE, COMPARED WITH SUMS AUTHORIZED.		EXPENDITURE, COMPARED WITH SUM RAISED.		EXPENDITURE, COMPARED WITH SUM ISSUED TO POST-OFFICE.	
					1874, 1875, 1876, 1877, 1878, 1879, and 1880.	1881.	Total.	Less than authorized.	More than authorized.	Less than raised.	More than raised.	Less than issued to post-office.	More than issued to post-office.
Fees to witnesses...	34 and 35 V., c. 75.	1,039 19 1	1,039 19 1	1,039 19 1	1,039 19 1		1,039 19 1						
Balance of account on March 31, 1873.	36 and 37 V., c. 83.	812,800 0 0		808,691 4 5	808,691 4 5		808,691 4 5						
Extensions.....	do.....	120,000 0 0		81,907 0 0	81,907 0 0		81,907 0 0						
Commuted annuities.....	do.....	230,000 0 0	1,750,000 0 0	132,835 5 0	132,835 5 0		132,835 5 0	126,976 17 9		16,976 17 9			
Undertakings.....	do.....	87,200 0 0											
Do.....	39. V., c. 5	500,000 0 0		1,099,589 12 10	1,099,828 10 5	238 17 7	1,099,589 12 10						
Do.....	40 and 41 V., c. 30.	500,000 0 0	390,000 0 0										
		2,251,039 19 1	2,141,039 19 1	2,124,063 1 4	2,124,301 18 11	238 17 7	2,124,063 1 4	126,976 17 9		16,976 17 9			

a This is a balance of the sum of £1,000,000 authorized to be raised under the act of 34 and 35 Vict., c. 75, the remainder of which had been raised and accounted for previously.

	£ s. d.
b Costs recovered and repaid to paymaster-general.	386 3 11
Expenditure of year 1880-'81.....	147 6 4
	238 17 7

c This amount includes the sum of £24,589 19s. 8d. paid for interest on the purchase money of undertakings prior to April 1, 1876.

F. E. SMITH,  
for Principal Bookkeeper.  
GEO. CHETWYND,  
Receiver and Accountant-General.  
ALGERNON TURNOR,  
Accounting Officer.

I certify that this account has been examined under my directions, and is correct.

WM. DUNBAR,  
Comptroller-General of Her Majesty's Exchequer,  
and Auditor-General of Public Accounts.

Examined.  
GENERAL POST-OFFICE, October 31, 1881.

R. J. WILLIAMS.

Report of the comptroller and auditor-general on the post-office telegraph capital account for the year ended March 31, 1881; prepared and submitted for the information of the house of commons, in pursuance of the acts 36 and 37 Vict., c. 83, 39 Vict., c. 5, and 40 and 41 Vict., c. 30.

- The transactions included in the account for this year call for no observations.
- Appended to this report is an account prepared in my department, showing the receipts and payments on the telegraph capital account from the commencement to March 31, 1881, as ascertained and allowed:

	£ s. d.
Receipts.....	10,125,568 18 7
Payments.....	10,125,568 18 7

- The balance remaining at the disposal of the postmaster-general on March 31, 1881, was, as shown by the account, £16,976 17s. 9d.

WM. DUNBAR,  
Comptroller-General of the Receipt and Issue of Her Majesty's  
Exchequer, and Auditor-General of Public Accounts.

EXCHEQUER AND AUDIT DEPARTMENT,  
January 26, 1882.

## POSTAL TELEGRAPHS.

Abstract account of receipts and payments by the postmaster-general in respect of telegraph undertakings, extensions, etc., from the commencement, viz, August 1, 1868, to March 31, 1881.

[NOTE.—The figures in this abstract account show the amounts as ascertained by the comptroller and auditor-general.]

DR.			CR.				
Charge.		Audited amount.		Discharge.		Audited amount.	
£.	s. d.	£.	s. d.	£.	s. d.	£.	s. d.
To amounts received from the national debt commissioners, or paid by them on account of the postmaster-general, under the provisions of the acts 32 and 33 Vict., c. 73, and 34 and 35 Vict., c. 75, viz:				By telegraph undertakings, viz:			
From 1st August, 1868, to 31st March, 1874...		7,998,960	0 11	From 1st August, 1868, to 31st March, 1874 ..		6,781,170	1 0
From 1st April, 1874, to 31st March, 1875 .....		1,039	19 1	From 1st April, 1874, to 31st March, 1875 .....		52,914	16 5
		8,000,000 0 0		From 1st April, 1875, to 31st March, 1876 .....		290,124	0 1
To cash placed to the credit of the postmaster-general by the lords commissioners of her majesty's treasury, under the provisions of the 36 and 37 Vict., c. 83. (See account 1873-'74.)		800,000 0 0		From 1st April, 1876, to 31st March, 1877 .....		226,098	14 9
				From 1st April, 1877, to 31st March, 1878 .....		287,570	4 5
To cash issued by the paymaster-general, under the provisions of the same act, and under the provisions of the 39 Vict., c. 5, and 40 and 41 Vict. c. 30.				From 1st April, 1878, to 31st March, 1879 .....		212,382	7 10
				From 1st April, 1879, to 31st March, 1880 .....		3,550	0 7
From 1st April, 1873, to 31st March, 1874 .....		177,767	8 11	From 1st April, 1880, to 31st March, 1881 .....		147	6 4
From 1st April, 1874, to 31st March, 1875 .....		81,154	0 7	Less:		7,808,957 11 5	
From 1st April, 1875, to 31st March, 1876 .....		293,364	7 11	Refund on account, 1875-'76 .....		568	8 5
From 1st April, 1876, to 31st March, 1877 .....		254,919	16 11	Amount received as costs of the crown in case of Manchester South Junction and Altrincham Railway Company in the present year.		386	3 11
From 1st April, 1877, to 31st March, 1878 .....		294,135	17 0			954	12 4
From 1st April, 1878, to 31st March, 1879 .....		218,730	2 3	By special cable extensions .....		74,847 4 6	
From 1st April, 1879, to 31st March, 1880 .....		3,923	9 7	By telegraph extensions, viz:			
From 1st April, 1880, to 31st March, 1881 .....		147	6 4	See account to 31st March, 1875 .....		2,051,492	5 6
Loss:		1,324,142 9 6		From 1st April, 1876, to 31st March, 1877 .....		6,713	12 6
Amounts repaid to paymaster-general, as explained in former accounts.		733	3 4			2,058,205 18 6	
Cash paid to the paymaster-general, being the amount received as costs of the crown in the case of the Manchester South Junction and Altrincham Railway Company v. the Queen.		386	3 11	By pensions to 31st March, 1874 .....		55,574 1 0	
		1,119 7 3		By gratuities to 31st March, 1874 .....		1,593 1 0	
To sale of premises .....		1,030	0 0	By commutation of pensions, viz:			
To sale of old fittings .....		865	16 4	From 1st August, 1868, to 31st March, 1874 ..		73,381	12 6
To sale of steamer Monarch .....		650	0 0	From 1st April, 1874, to 31st March, 1875 .....		29,156	6 6
		2,545 16 4		From 1st April, 1875, to 31st March, 1876 .....		1,100	4 6
Total charge .....		10,125,508 18 7		From 1st April, 1876, to 31st March, 1877 .....		18,412	19 6
				From 1st April, 1877, to 31st March, 1878 .....		3,619	4 6
				From 1st April, 1878, to 31st March, 1879 .....		6,801	18 6
				From 1st April, 1879, to 31st March, 1880 .....		373	9 0
				Total discharge .....		182,845 15 0	
						10,125,568 18 7	

## POST-OFFICE TELEGRAPH SERVICE.

An account showing the gross amount received and the gross amount expended in respect of the telegraph service from the date of the transfer of the telegraphs to the state to March 31, 1881.

	AMOUNTS RECEIVED BY THE—				Total.			
	Post-office in respect of telegrams, private wire rentals, etc.	Office of works, London, and office of public works, Dublin, for old telegraph materials.	Stationery office for waste paper.	Cost of telegraph services performed for other public departments without remuneration.				
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.			
Year ended December 31, 1870 .....	609,734	19 1	1,100	0 0	1,466	11 1	612,301	10 2
Year ended December 31, 1871 .....	732,365	11 2	1,250	0 0	1,774	8 11	735,390	0 1
Year ended December 31, 1872 .....	970,083	6 9	1,409	0 0	1,839	19 4	973,322	6 1
Year ended December 31, 1873 .....	1,045,543	19 4½	1,268	0 0	2,350	8 7	1,049,162	7 11½
Year ended December 31, 1874 .....	1,160,538	0 1	1,350	0 0	5,854	15 8	1,167,745	0 10
Quarter ended March 31, 1875 (a) .....	242,505	7 ¼	326	0 0	3,518	19 6	1,533,932	5 11½
Year ended March 31, 1876 (a) .....	1,276,662	8 8	8	9 11	9,694	1 7		
Year ended March 31, 1877 .....	1,313,106	17 6½	1,252	0 0	13,845	15 3	1,328,315	2 7½
Year ended March 31, 1878 .....	1,333,542	8 2½	1,335	0 0	17,417	3 8	1,352,608	18 5½
Year ended March 31, 1879 .....	1,346,892	6 10	1,688	0 0	20,603	13 11	1,369,467	19 7
Year ended March 31, 1880 .....	1,452,489	3 6	1,830	0 0	15,382	1 11	1,469,795	6 6
Year ended March 31, 1881 .....	1,610,908	5 1½	1,417	0 0	19,478	16 5	1,633,886	14 9½
Total .....	13,094,372	13 4½	17,032	0 0	113,225	15 10	13,226,047	13 ½

a By the fourth section of the act 39 Vict., c. 5, the period for which the parliamentary account of the receipts and expenditure of the telegraph service is to be rendered was altered from the year to December 31 to the year to March 31.

POSTAL TELEGRAPHS.

An account showing the gross amount received and the gross amount expended, etc.—Continued.

	AMOUNTS EXPENDED BY THE—								Total expenditure.	Balance to meet interest on stock created on account of the telegraph service and the redemption of debt.	Total.
	Post-office in respect of salaries, wages, maintenance, etc.	Office of works, London, in respect of the telegraph service. (a)	Stationery office in respect of the telegraph service. (b)	Office of works, Dublin, in respect of the telegraph service.	Inland revenue department in respect of stamps for telegrams.	Treasury in respect of rates, and contributions in lieu of rates.	Exchequer and audit department in auditing the accounts of the telegraph service.				
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Year ended December 31, 1870.	347,058 11 4½			2,213 13 2	1,004 0 0		100 0 0	350,376 4 6½	261,925 5 7½	612,301 10 2	
Year ended December 31, 1871.	487,544 12 1			6,509 4 2	1,462 0 0		1,110 0 0	496,094 16 3	238,695 3 10	735,390 0 1	
Year ended December 31, 1872.	825,275 16 6½			5,521 7 9	1,781 0 0		1,330 0 0	833,908 4 3½	139,424 1 9¾	973,332 6 1	
Year ended December 31, 1873.	949,587 6 4¾			2,621 14 2	2,001 0 0		1,960 0 0	956,170 0 6¾	92,992 7 4¾	1,049,162 7 11½	
Year ended December 31, 1874.	1,052,626 12 2½	20,334 11 1		5,489 2 4	1,490 0 0		1,996 16 10	1,081,937 2 5½	85,807 18 4½	1,167,745 0 10	
Quarter ended March 31, 1875. (c)	310,544 2 7½	10,130 2 9		2,315 7 11	345 0 0		402 14 10	323,797 8 1½	103,272 4 2	1,533,982 5 11½	
Year ended March 31, 1876. (c)	1,031,526 10 9½	24,555 0 0	39,968 0 0	3,501 8 9	5,550 0 0		1,811 5 2	1,108,912 13 8½			
Year ended March 31, 1877.	1,123,787 14 10¾	41,572 8 7	32,248 0 0	6,008 13 10	3,293 1 9		1,491 18 4	1,208,401 17 4¾	119,913 5 2¾	1,328,315 2 7½	
Year ended March 31, 1878.	1,164,113 19 10½	32,688 8 4	24,836 3 1	2,174 19 8	2,129 12 5		1,617 9 4	1,227,560 12 8½	125,108 5 9	1,352,668 18 5½	
Year ended March 31, 1879.	1,089,392 3 3	39,169 16 10	25,810 0 0	1,998 5 10	2,122 12 0	1,744 17 3	1,378 8 4	1,101,551 3 3¾	207,916 16 3½	1,309,467 19 7	
Year ended March 31, 1880.	1,111,483 11 6	37,024 13 11	18,885 0 0	2,021 13 2	1,993 7 4	716 18 9	1,162 1 8	1,173,287 6 4	296,508 0 2	1,469,795 6 6	
Year ended March 31, 1881.	1,242,092 4 3½	36,684 13 10	23,911 0 0	1,977 12 4	1,938 9 1	703 14 4	1,146 5 5	1,308,453 19 3½	325,432 15 6½	1,633,886 14 9½	
Total.....	10,735,033 5 6¾	242,100 4 4	165,658 3 1	42,413 3 1	25,110 2 7	3,165 10 4	15,570 19 11	11,229,051 8 10½	1,996,996 4 2	133,226,047 13 ¾	

a The telegraph expenditure of the office of works, London, was partly charged to the telegraph capital account, and partly to the telegraph vote, prior to April 1, 1874.

b The telegraph expenditure of the stationery office was charged to the telegraph vote prior to April 1, 1875.

c By the fourth section of the act 39 Vict., c. 5, the period for which the parliamentary account of the receipts and expenditure of the telegraph service is to be rendered was altered from the year to December 31 to the year to March 31.

GEORGE CHETWYND,  
Receiver and Accountant-General.

JAMES J. CARDIN,  
Principal Bookkeeper.

GENERAL POST-OFFICE, January 13, 1882.

Statement of the application of the balances of telegraph revenue shown in the above account toward the interest and redemption of the stock created on account of the telegraph service.

	Years ended December 31—					Total.
	1870.	1871.	1872.	1873.	1874.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Balances to meet interest on stock created on account of the telegraph service, and for the redemption of debt, brought down.	261,925 5 7	238,695 3 9¾	133,424 1 10	92,992 7 4½	85,807 18 4½	
Amount of interest on the stock.....	214,500 0 0	*233,081 7 1	258,390 16 11	270,980 18 9	293,705 18 9	
Amounts applicable to a sinking fund.....	α 47,425 5 7	β 5,613 16 9				
Deficiencies.....			118,966 15 1	177,988 11 4	207,898 0 5	
Total.....	261,925 5 7	238,695 3 10	139,424 1 10	92,992 7 5	85,807 18 4	

  

	Fifteen months ended March 31, 1876.	Year ended March 31, 1877.	Year ended March 31, 1878.	Year ended March 31, 1879.	Year ended March 31, 1880.	Year ended March 31, 1881.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Balances to meet interest on stock created on account of the telegraph service, and for the redemption of debt, brought down.	103,272 4 2	119,913 5 2¾	125,108 5 9	207,916 16 3½	296,508 0 2	325,432 15 6½	1,996,996 4 2
Amount of interest on the stock.....	294,905 18 9	307,172 6 2	314,174 13 11	322,036 8 8	326,417 2 9	326,417 2 9	3,201,782 14 6
Amounts applicable to a sinking fund.....							58,039 2 4
Deficiencies.....	191,633 14 7	187,259 0 11	189,066 8 2	114,119 12 5	29,909 2 7	984 7 3	1,217,825 12 9
Total.....	103,272 4 2	119,913 5 3	125,108 5 9	207,916 16 3	296,508 0 2	325,432 15 6	

α The sum of £54,771 17s. 8d. stock was canceled with £50,869 7s. 8d., the surplus shown by parliamentary paper No. 69, of 1872.

β The sum of £12,830 3s. 3d. stock was canceled with £11,739 12s., the surplus shown by parliamentary paper No. 386, of 1872.

TREASURY CHAMBERS, February 2, 1882.

F. CAVENDISH.  
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## POSTAL TELEGRAPHS

## POST-OFFICE TELEGRAPHS.

An account showing the gross amount received and expended on account of the telegraph service in the year ended March 31, 1881, and the balance of the receipts over expenditures (pursuant to act 39 Vict., c. 5, s. 4).

	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	
Gross amount received by the post-office in respect of telegraphic messages, private wire rentals, special wire rentals, etc., in the year ended March 31, 1881, as per finance accounts, page 19.				1,829,766	11	14				Amount expended by the post-office in respect of salaries, rent, maintenance of telegraphs, etc., as per appropriation account, in the year ended March 31, 1881.	1,242,092	4	3½
Less amount paid to submarine telegraph companies, etc.	234,102	13	11							Amount expended by office of works, London, from the grant for revenue department buildings in respect of the telegraph service, as per appropriation account, sub-heads S. T., V., and W.	36,684	13	10
Message moneys refunded, etc.	2,716	1	11¼							Amount expended by the stationery office in respect of the telegraph service (not shown separately in the appropriation account).	23,911	0	0
				236,818	15	10½				Amount expended by the office of public works, Dublin, from the grant for public buildings, Ireland, in respect of the telegraph service (not shown separately in the appropriation account).	1,977	12	4
Amount of extra receipts, as per appropriation account							1,592,947	15	3	Amount expended by the inland revenue department in respect of the manufacture of telegraph stamps (not shown separately in the appropriation accounts).	1,938	9	1
Amount received by the office of works, London, in respect of telegraph, old materials, etc.										Amount expended by the exchequer and audit department in auditing the accounts of the telegraph service.	1,146	5	5
Amount received by the stationery office in respect of telegraph waste paper.							17,960	9	10½	Amount expended by the treasury for rates, and contributions in lieu of rates, in respect of the telegraph service.	703	14	4
Cost of telegraph services performed for other public departments without remuneration.							692	13	3	Balance to meet interest on stock created on account of the telegraph service, and the redemption of debt.	325,432	15	0½
							2,807	0	0				
							19,478	16	5				
							1,633,886	14	9½				
											1,633,886	14	9½

JAMES J. CARDIN,  
Principal Bookkeeper.

GEO. CHETWYND,  
Receiver and Accountant General.

GENERAL POST-OFFICE, January 13, 1882.

Statement additional to the foregoing account, prepared in accordance with the following paragraph of section 4 of 39 Vict., c. 5, viz: "There shall be added to such account a statement of the amount expended during the said year on account of the annual charge for the securities created for the purpose of the telegraph acts, 1868 to 1870, and any acts amending the same, and of the surplus, if any, which, after deducting from the said balance the amount of such annual charge, remains as a sinking fund for the redemption of the said securities, and a statement of the mode of application of such surplus".

	£	s.	d.	£	s.	d.
Capital stock (consols) created in respect of money raised for the purchases of telegraphs, etc., viz:						
Under 32 and 33 Vict., c. 73	7,588,757	0	0			
Under 34 and 35 Vict., c. 75	1,079,043	0	0			
Under 36 and 37 Vict., c. 83	1,347,152	2	11			
Under 39 Vict., c. 5	525,486	0	5			
Under 40 and 41 Vict., c. 30	407,735	2	9			
	10,948,173	6	1			
Less stock purchased and canceled on account of surplus balances:						
Period to December 31, 1870	54,771	17	8			
Year to December 31, 1871	12,830	3	3			
	67,602	0	11			
Capital stock	10,880,571	5	2			
Interest for one year to Jan. 5, 1881.				326,417	2	9
Amount expended on account of the charge for the year ended March 31, 1881.				326,417	2	9
Balance of receipts over expenditure, as shown by the foregoing account.				325,432	15	6
Deficiency of telegraph revenue in the year ended March 31, 1881, to meet interest on telegraph stock created				α 984	7	3

α The total of the deficiency to March 31, 1881, was £1,217,825 12s. 9d., as shown below, viz:

	£	s.	d.
Deficiency for the year to December 31, 1872 (vide parliamentary paper No. 65, of 1877)	118,966	15	1
Deficiency for the year to December 31, 1873 (vide parliamentary paper No. 65, of 1877)	177,988	11	4
Deficiency for the year to December 31, 1874 (vide parliamentary paper No. 65, of 1877)	207,898	0	5
Deficiency for the fifteen months to March 31, 1876 (vide parliamentary paper No. 67, of 1877)	191,633	14	7
Deficiency for the year ended March 31, 1877 (vide parliamentary paper No. 30, of 1878)	187,250	0	11
Deficiency for the year ended March 31, 1878 (vide parliamentary paper No. 35, of 1879)	189,066	8	2
Deficiency for the year ended March 31, 1879 (vide parliamentary paper No. 61, of 1880)	114,119	12	5
Deficiency for the year ended March 31, 1880 (vide parliamentary paper No. 23, of 1881)	29,909	2	7
Deficiency for the year ended March 31, 1881, as shown above.	984	7	3
	1,217,825	12	9

# POSTAL TELEGRAPHS.

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## POST-OFFICE TELEGRAPHS.

*Accounts of the post-office telegraphs for the year ended March 31, 1881.*

### I.—CAPITAL ACCOUNT.

To amount of capital raised to March 31, 1881. ....	£10, 140, 000	By amount paid for good will and plant of old telegraph companies, extensions by the post-office, preliminary expenses, etc., and charged to the telegraph capital account, up to March 31, 1881.	£10, 125, 260
To further capital required, if all expenditure in the nature of capital had been charged to the capital account.	515, 371	By cost of extensions charged to telegraph vote to same date.	279, 655
		By cost of sites and buildings charged to telegraph vote to same date.	128, 308
		By cost of buildings, etc., charged to vote for revenue departments buildings to same date.	101, 204
		By cost of buildings, etc., charged to vote for public buildings, Ireland, to same date.	20, 944
<b>Total</b> .....	<b>10, 655, 371</b>	<b>Total</b> .....	<b>10, 655, 371</b>

### II.—ACCOUNT OF REVENUE AND WORKING EXPENSES FOR THE YEAR ENDED MARCH 31, 1881.

REVENUE.		WORKING EXPENSES.	
To message receipts, private wire rentals, etc., as per finance accounts, 1880-'81.	£1, 592, 948	By salaries, wages, maintenance, etc.....	£1, 181, 324
To value of services rendered to government departments without payment.	19, 479	By contribution to a depreciation fund to replace submerged cables.	12, 102
To extra receipts.....	21, 459	By balance of profit (equal to 4.13 per cent. on a capital of £10, 655, 371), being the full amount available on commercial principles for dividend on capital, or for a reserve fund.	440, 460
As per telegraph appropriation account .....	£17, 960		
Amount received by office of works, London, and by office of public works, Dublin, for old material sold, etc.	692		
Waste paper sold by stationery office.....	2, 807		
	21, 459		
<b>Total</b> .....	<b>1, 633, 886</b>	<b>Total</b> .....	<b>1, 633, 886</b>

### III.—EXPLANATORY NOTES.

The sum of £10,125,260, entered in the capital account as expended to March 31, 1881, is the amount actually brought to account in the books of the post-office as expended on capital account to that date. The amounts of £279,655 and £128,308, entered as expended in respect of extensions and the cost of sites and buildings, are the sums which have been expended under these heads and charged to the telegraph vote since September 30, 1873.

The amount entered as salaries, etc., in the account of revenue and working expenses is exclusive of capital expenditure charged to the telegraph vote, but it is inclusive of the telegraph expenditure borne on the votes of the office of works, stationery office, inland revenue, exchequer and audit department, and the treasury, as under—

Amount charged to telegraph vote, as per appropriation account .....	£1, 242, 092
Amount charged to vote for revenue department buildings .....	18, 360
Amount charged to vote for public buildings, Ireland .....	1, 861
Amount charged to vote of stationery office.....	23, 911
Estimated cost of the manufacture of stamps, charged to vote of inland revenue .....	1, 938
Estimated cost of auditing telegraph accounts, charged to vote of exchequer and audit department. ....	1, 146
Amount expended by the treasury for rates, and contributions in lieu of rates.....	703
	1, 290, 011
Less:	
Telegraph extensions charged to the telegraph vote.....	£103, 488
Purchase of sites and buildings charged to the telegraph vote.....	4, 104
Cost of replacing the Wexford and Slaney, Shapinsay, and Isle of Wight and Yar cables....	1, 095
	108, 687
	<b>1, 181, 324</b>

The expenditure charged in the account of revenue and working expenses is inclusive of the sum of £23,000 paid to railway companies in respect of their telegraph rights and the sum of £8,641 paid to officers of the late telegraph companies in respect of annuities granted to them under the telegraph acts. Had the payments to the railway companies in respect of their telegraph rights been commuted for a fixed capital sum calculated at 20 years' purchase, and the payment to the officers of the late telegraph companies commuted for a fixed sum calculated at 10 years' purchase, the balance of profit would in that case have been increased, and thereby made equal to a dividend on the capital outlay of 4.21 per cent.

JAMES J. CARDIN,  
*Principal Bookkeeper.*  
GEO. CHETWYND,  
*Receiver and Accountant-General.*

6. The telegraph companies at the time of the transfer of the telegraphs to the government had 1,992 offices of their own in addition to 496 railway offices at which telegraph work was performed. On March 31, 1881, there were 4,015 post-offices and 1,423 railway stations open for telegraph work, making the total number of telegraph offices within the United Kingdom 5,438, as compared with 2,488 under the telegraph companies.

On taking over the telegraphs, the post-office commenced with 5,651 miles of telegraph line, embracing 48,999 miles of wire, and these numbers have been increased to 26,319 miles of line, embracing 121,052 miles of wire.

7. On the whole, works that can be at all compared have cost more since the telegraphs were taken over by the government than they did when in private hands. The reason is this: If the private companies constructed a main line, they were usually content that the poles should be sufficient to bear 8 wires, and the timber was of a moderate size and the staying and other modes of strengthening were in proportion. As an average, the trunk-road systems of the department will carry from 15 to 17 wires.

No comparison can be made as to the cost of light lines, *i. e.*, extensions of branches carrying one or two wires. The companies had hardly any of these lines, because they only extended their system to important towns. The post-office has many thousand miles of light lines; and the practical officers of the department (who came over from the service of the companies) consider that it would not have been possible for the companies to erect these lines cheaper than they are now erected, supposing material of the same quality had been used.

The department uses creosoted red-fir timber and the best materials of other kinds, in the expectation that the lines will last from fifteen to twenty years without renewal; but the companies were content if their lines lasted from seven to ten years, and they used larch timber.

8. The use of distinctive stamps in payment of telegrams has now been abolished, and payment for telegrams is made by means of postage-stamps.

The denominations of these stamps are  $\frac{1}{2}d.$ ,  $1d.$ ,  $1\frac{1}{2}d.$ ,  $2d.$ ,  $2\frac{1}{2}d.$ ,  $3d.$ ,  $4d.$ ,  $5d.$ ,  $6d.$ ,  $1s.$ ,  $5s.$ ,  $10s.$ , and  $\pounds 1$ .

9. The stamps are obliterated at once, before the forms are transferred from the counter to the instrument room. The telegraph revenue is subsequently ascertained by an examination of the telegraph forms at the metropolitan office of accounts.

10 and 11. The charge for telegrams throughout the United Kingdom is  $1s.$  for the first 20 words and  $3d.$  for every additional 5 words or part of 5 words. The names and addresses of the sender and receiver are sent free. When the addressee resides beyond the free delivery (*viz.*, one mile, or within the town postal delivery if that extends more than a mile from the office), postage is charged at the rate of  $6d.$  per mile or part of a mile, calculated from the limit of free delivery. If the distance is more than 3 miles, delivery is by a mounted messenger at the rate of  $1s.$  per mile from the office door, except in Ireland, where the charge is usually only  $8d.$  per mile.

12. The charges for press telegrams are  $1s.$  for every 100 words or portion of 100 words handed in between 6 p. m. and 9 a. m., and  $1s.$  for every 75 words or portion of 75 words handed in between 9 a. m. and 6 p. m., with an additional charge of  $2d.$  per 100 or  $2d.$  per 75 words, as the case may be, for every additional address.

13. No record is kept of the number of words of news sent daily for the press. The number of words delivered in the year ended March 31, 1881, was 327,707,407. A press message is frequently addressed to several newspapers, and the number of words handed in, or sent, would therefore be less than the number delivered.

14. For the year to March 31, 1881, the value of the work performed by the telegraph for the government was  $\pounds 19,479$ . This includes not merely transmission of messages, but certain wires and operators placed at the disposal of government departments.

15. The total number of telegraphists employed by the companies was 2,514, of whom 479 were women, and the number of messengers was 1,471. The total number of telegraphists employed by the post-office during the year ending March 31, 1881, was 5,611, of whom 1,536 were women, and the number of messengers was 4,648; but besides these many persons are employed on telegraph work who hold no appointment in the establishment, being paid by postmasters out of allowances for assistance.

#### GERMANY.

1. The telegraphs in Germany are regulated by the provisions of article 48 of the imperial constitution, and by sundry laws passed in accordance therewith, which appear under the head of "Telegraphenwesen" in the postal and telegraphic hand-book, published in Berlin in 1879. Numerous minor regulations also exist which were codified and published in August, 1880.

2, 3, 4, 5, 6, 7. Telegraphy has from its beginning been a state institution in Germany, and has always been administered as such.

8 and 9. It is permitted to pay the duties for telegrams which are handed to a telegraph office of the realm by means of postage-stamps. In general, the stamps are of the value of 5, 10, 20, 25, and 50 pfennige. Those of 2 marks are also to be used, but no objection exists to the use of the several kinds of postage-stamps which were issued some time ago for the purpose of paying for telegrams. As regards the use of the latter, the same ordinances exist as for the regular postage-stamps.

Postage-stamps are sold at all public offices in such amounts as are indicated by their stamp value

Should the amount of stamps upon a telegram prove insufficient, the missing amount is to be collected in cash. If it cannot be collected at the time the message is first received, the telegram must remain without being sent until said amount has been collected.

Postage-stamps used for franking telegrams are canceled by means of a line drawn with ink, which the proper official has to affix to each postage-stamp thus used. This line must be as near the middle of the stamp as possible, and extend beyond either end of the canceled stamp. Such offices as are in possession of canceling stamps are authorized to use their stamps instead of the line drawn with ink. The print of the canceling-stamp should cover the largest part of the postage-stamp. If several postage-stamps are pasted side by side, each one must be canceled separately if a round canceling stamp is used; if a square canceling-stamp is used, two stamps adjoining each other may be canceled by one print of the canceling-stamp.

Whenever the examination regarding the proper transmission of telegrams takes place, as ordered in the regulations of the general service instructions, the official who is in charge of said examination has to particularly satisfy himself whether such postage-stamps as have been used for the purpose of franking telegrams have been canceled, and has, as an indication of this second examination, to draw a red line through every such postage-stamp, without considering whether the original canceling has been effected by means of the canceling stamp or by a line drawn through the stamp by means of black ink.

Before the postage-stamps are canceled they should be thoroughly inspected, with a view to ascertaining whether they are real or counterfeit or whether they have not been used before. This examination is not only to be conducted through the officials and subofficials who cancel the stamps, but all the superintendents and comptrollers have to participate in the same.

Telegrams which, when received, bear postage-stamps which show any kind of canceling are not to be sent until the sender has been heard relating to the condition of the stamps. Should suspicions arise that postage-stamps already used have been utilized a second time, the original telegram, with its stamp affixed in the same condition as received, is to be handed to the principal post-office department for further investigations. The sender is at liberty, however, after having been informed why said telegram cannot be sent, and after having paid the proper due, to send a second copy of the first retained message.

The postage-stamps are printed at the expense of the imperial post-office department in the government printing office at Berlin. This office attends to the transmission to the various post-office departments, which in their turn forward the necessary quota to the minor postal districts upon requisition. These requisitions are to be made only for entire sheets of one hundred stamps each.

In case a deficiency occurs, all parts of the packing of the package in which such deficiency has been found, together with the sworn statement, are to be returned to the post-office department, to be used there in its application to the government printing office for reimbursement.

Every minor post-office has to keep a register, regarding receipts and expenditures of postage-stamps. In this register every receipt of postage-stamps, immediately after their arrival and according to the contents of the letter of transmittal, is to be entered.

Upon the last day of each month the remainder of the postage-stamps is to be deducted from the total receipts of the month, whereby the amount of expenditures of stamps will be established. The amount of stamps remaining at the end of the month is to be carried over to the account of the next month.

Based upon this register, all minor post-offices have to furnish every month a statement regarding the receipts and expenditures of postage-stamps, and have to add this statement to their monthly account with the post-office department.

At the extraordinary revisions of the minor post-offices the receipts for postage-stamps sold and the amounts remaining on hand are to be included in the proceedings of such revisions.

The principal post-offices have to keep the following books relating to the expenditures and receipts of postage-stamps:

- A. The day-book, for the receipts of postage-stamps.
- B. The day-book, for the expenditures of postage-stamps.
- C. The journal, for receipts and expenditures of postage-stamps.

In the day-book for the receipts of postage-stamps every transmittal of such stamps by the government printing office is booked according to the accompanying letter of transmittal, and the entry is made according to the time when said stamps are received. The day-book, as to the expenditures of postage-stamps, serves to enter the natural expenditure of the office of such postage-stamps. The entry is also made in accordance with the time when stamps are expended.

In the journal for the receipts and expenditures of postage-stamps an account on the first pages is opened with the government printing office regarding the natural receipts of stamps, and then follow the accounts of the various minor post-offices. These offices are entered alphabetically. The natural expenditure is deducted from the natural receipt on the last day of each year, and the remainder carried over to the next year's account. Each expenditure must be covered by the receipt from the receiving minor post-offices.

At each ordinary and extraordinary revision of the post-office department the revision regarding the condition and the amount of postage-stamps must take place, based upon the books kept with relation thereto, and the result of such revision is specially to be entered in the proceedings of said revision. If deficiencies occur, the "rendant" of the post-office department has to represent and correct the same.

10 and 11. The number of words in all ordinary private telegrams is unrestricted in Germany.

The rates for ordinary telegrams are as follows :

a. An initial charge of 0.20 marks for every telegram, irrespective of the number of words.

b. Rates for words: 1. Within the empire, 0.05 marks for each word, irrespective of the distance; 2. For city telegrams, 0.02 marks for each word.

For urgent telegrams, to which precedence in forwarding is given, the triplicate amount is paid; for compared telegrams, which are entirely repeated from the dispatching station to insure against mutilation, one and one-half times the ordinary rate is paid.

12. For press purposes telegraph lines are let. The cost of a line during the day (from 7 a. m. to 9 p. m.) is, if Morse's apparatus is used, 20 marks; if Hughes' apparatus is used, 40 marks per hour; during the night (from 9 p. m. to 7 a. m.), half of these rates. The telegraph administration guarantees with Morse's apparatus 400 and with that of Hughes 800 words per hour; in reality, however, a considerably larger number of words is always forwarded.

13. The average number of words of the press telegrams forwarded under special arrangement (see 12) amounts per day to 27,500.

14. The annual value of work performed without charge for the government is estimated at about 100,000 marks.

15. The circumstance that no private telegraph lines have been acquired disposes of this question.

#### FRANCE.

1. The ministry of posts and telegraphs will soon publish a general code of instructions relating to the service of that department. This document will contain the laws and regulations controlling the postal and telegraphic service, and a copy will be addressed to the minister of the United States.

2. Since the invention of aerial telegraphs by Claude Chappe, the first official trial of which took place July 12, 1793, the telegraphs in France have been the property of the state, which has had a monopoly of the same since that date, and is charged with their construction and maintenance. The substitution of electric for aerial telegraphs in 1850 made no change in that state of affairs, since by existing laws no line of telegraph can be constructed or used for the transmission of correspondence except by the government or with its authorization. Questions 3 to 7, therefore, cannot be answered.

8 and 9. Stamps were used for telegrams in France from 1868 to 1870. Their use was discontinued after the Franco-German war, but their re-establishment is now under consideration.

10. There is no limit to the number of words in a private message. The tariff is 5 centimes per word, with a minimum rate of 50 centimes.

11. The above tariff is applicable to every telegram exchanged between two points within French territory, without regard to the distance between them.

12. By the terms of the law of April 5, 1878, special arrangements are permitted to the press, which arrangements vary according to whether the newspapers contribute or not to the construction of the lines used. The price per hour is 24 francs for a wire erected with the assistance of the newspaper, and 50 francs per hour for ordinary wires. In Paris the normal tariff is reduced 70 per cent. for press dispatches transmitted either by the pneumatic tubes or on wires established and maintained by the newspapers. These arrangements are subordinate to the exigencies of the service.

13. Aside from the arrangement above referred to, there is no distinction made either as regards tariff or method of transmission between press and ordinary telegrams. There being no special account kept, it is impossible to indicate the average number of words transmitted for the press by the ordinary wires. With regard to press dispatches sent over rented wires, the number of words is not counted, as the tax is based upon the time for which the wires are used.

14. The nominal value of the telegrams sent free in 1879 was 1,688,271 francs, and in 1880 1,722,683 francs.

## AUSTRIA-HUNGARY.

## AUSTRIA.

1. The laws relative to the telegraph system are in course of compilation, but have not yet been published. The erection and conduct of telegraphic works form a matter of state monopoly, as appears from the note of the imperial cabinet of January 16, 1847, and the decree appertaining thereto of the court of chancery in connection with it. Based on this principle, the following private telegraphs received concessions:

*a.* The railway telegraphs, pursuant to the law on railway concessions of September 14, 1854.

*b.* The Vienna private telegraph company for local telegraphs and telegraph offices, in pursuance of the acts on concession of April 3, 1869, and of June 3, 1881.

*c.* Several other telegraph companies in the capitals of Austrian provinces, subject to analogous conditions.

*d.* Sundry smaller telegraph works, such as fire telegraph lines.

*e.* The laying of the cable between Trieste and Corfu, pursuant to the concession of August 19, 1881.

The penal law enactments relative to the telegraph system are of two classes, namely: Such as refer to the peculiar nature of telegraph management, and such as refer to criminal acts, which do not especially belong to the telegraph system, but may be committed upon telegraph apparatus, or by means of the same.

To the former category belong the enactments of the penal law of May 27, 1852, which are still in force:

§ 89. Malicious damage to the state telegraph lines; willful interruption of the business; deliberate misuse of the same.

§ 318. Acts mentioned in § 89 committed through wantonness, heedlessness, or culpable negligence.

§ 175, I lit. *b.* Theft of objects enumerated in § 89.

§ 432. Endangering of bodily safety, even when no actual harm shall occur, through the fault of any person employed at the government telegraphs.

The remaining penal enactments refer to criminal acts not exclusively affecting telegraphs, as for example: Official misuse and fraud, perpetrated by means of the telegraph.

Inasmuch as the above enactments, especially in the present development of the telegraph system, no longer fully suffice for their intended purposes, the Austrian government was compelled to supply, as far as practicable, the deficiencies in the new projected penal law, now under consideration in the lower house of the reichsrath, as is shown in the copies of the §§ 290, 333, 334, 335, 336, 337, 373, 417, F. 4 and 422 of the projected law.

The organization of the state telegraph offices may be learned from the statute of organization of March 12, 1872.

The rules and tariffs for the inland telegraph communication are in general identical with those which were fixed by the convention held at Saint Petersburg the 22d (O. S. 10th) July, 1875, and the telegraph regulations appertaining thereto, dated London, July 28, 1879, for international telegraphic communication. A short statement of it is contained in the tariff of charges of April 15, 1881, appended.

In the communication with other states the aforementioned international telegraph convention is in force; also the special telegraph agreements concluded with neighboring countries. It may be remarked that the conclusion of a similar agreement with Turkey is now under negotiation.

2-7. The telegraph, as already stated, is a state monopoly. Those questions which refer to the acquisition of private telegraphs cannot, therefore, be answered.

8 and 9. The use of stamps in payment for telegrams was discontinued after a short trial.

10 and 11. The tariff for internal telegrams, in the Austro-Hungarian empire is 28 kreuzer for the first two words of not more than fifteen letters or five numerals, and 2 kreuzer for each additional word. Between offices in the same city the charge is one-half of the above. To Bosnia and Herzegovina the charge is 34 kreuzer for the first two words, and 5 kreuzer for each additional word. For repeated (*collationirte*) messages one-half of the above rates is charged in addition. For "urgent" telegrams, to which precedence is given, the charge is three times the ordinary rates. For a notice of delivery the additional charge is the same as that for a ten-word message. The sender of a message may prepay the answer at ordinary rates. Telegrams may be forwarded if the addressee is not at the place of address, and the charge for forwarding is collected from the addressee.

12. The tariff for press telegrams sent at night is 5 florins for the first 500 words and 1 florin for every additional hundred words or portion thereof.

(For statistics, see table at the end of this report.)

## HUNGARY.

1. The administration of the telegraphic and postal service exists in Hungary wholly separated from that in Austria. The telegraph, with all the institutions relating thereto, is, in pursuance of the decree of the imperial royal cabinet of January 16, 1847, a state monopoly. The other existing telegraph conditions are regulated under the laws contained in the articles G. A., LVI, 1875, of the international telegraph convention, held at Saint Petersburg July 22, 1875, as also by the regulations and tariff charges appertaining thereto and subsequently revised in London, and further by the special agreements hereupon concluded with the neighboring states; finally by several enactments of the penal law.

The management of the railway telegraphs, as also that of particular communities and of public and private undertakings, formed for special use, of authorized telegraph lines and stations, is under the control of the state telegraph administration; they are subject to the appointed rules and conditions of the latter, and they can at any time be taken possession of by the state, without payment, upon assuming the entire or partial cost of maintenance.

2, 3, and 4. As is shown from the foregoing, an acquisition, under purchase, of private telegraphs by the Hungarian government was not hitherto possible. This event may, however, in future take place, whenever the state may desire, before the expiration of the term conceded, to possess the telephonic lines conceded two years ago in certain large towns. In regard to the act of taking possession under purchase, it is prescribed in the fundamental conditions for the grant of telephonic establishments for public and private use.

5. The following table contains the desired data for the last ten years:

Years.	Receipts.		Disbursements.	
	Florins.	Kr.	Florins.	Kr.
1871.....	1,278,933	04	1,544,377	22½
1872.....	1,475,429	51½	1,871,598	75½
1873.....	1,582,116	01½	1,876,318	71
1874.....	1,467,009	07½	1,938,595	08
1875.....	1,682,075	76	2,115,823	00½
1876.....	1,776,189	25½	2,021,885	53½
1877.....	1,550,145	67½	1,857,865	40½
1878.....	1,772,964	79½	1,927,895	11½
1879.....	1,826,561	26½	1,973,324	94
1880.....	1,670,236	23	1,856,966	99½

6. After the assumption of telegraphs throughout the whole territory of the Hungarian crown by the royal Hungarian telegraph administration, independently established in the year 1867, there were in existence 650 stations and 12,271 kilometers of telegraphic communication, with a length of wires of 36,311 kilometers, while at the present time there are 1,083 stations in operation and 15,525 kilometers of communications, with a length of wire of 55,137 kilometers.

7. The cost of construction at the present time amounts to 300 florins per station; per kilometer communication, inclusive of posts, to 130 florins, and per kilometer of wire extension to 50 florins.

8. Up to the introduction of the tariff per word, April 1, 1880, stamps of 5, 10, 20, 25, and 30 kreuzer, and further of 1 and 2 florins, were sold to the public for the obligatory prepaying of telegrams. Since then, however, the charges are paid in money at the counter.

9. Telegraph stamps were sold at the time also at the telegraph offices, and the obliteration of the stamp was accomplished by the impression of the station seal with black ink.

10 and 11. Telegrams with the address only, and without text, cannot be received unless they contain three words; the number of words of telegrams are not otherwise limited. The charge for all telegrams exchanged between two stations within the frontiers of the monarchy is one and the same, and consists of a fixed charge of 24 kreuzer, and per each word of a charge of 2 kreuzer; so that, for instance, for a telegram of ten words, exchanged between two given stations in Austria-Hungary, there are to be levied  $24 + (2 \text{ times } 10) = 44$  kreuzer.

12. Newspaper telegrams, as a rule, are to be received as ordinary telegrams, but only during the night, when the lines are less taken up with other correspondence, and, by previous notice, up to 7 o'clock p. m., upon payment of the reduced charges of 5 florins for 1,500 words, and of 1 florin for every additional 100 words. In so far, however, as the disposable lines may be sufficient, they can be placed at the disposal of newspapers for definite hours during the day. A special wire from Buda-Pesth to Vienna is used by the *Vienna Neue Freie Presse*.

13. The average number of words daily under the reduced tariff for newspapers is now 2,500.

14. Government telegrams are subject to tariff charges in the same way as private telegrams.

Reduced charges are accorded, besides the newspaper telegrams as above, to the weather prognostications, which are admitted at half price, and to the telegrams of the Hungarian correspondence bureau at one-quarter of the normal charge. Finally, meteorological telegrams, messages concerning incidents of general public interest, and those on telegraphic service alone, are admitted free.

15. It can only be mentioned that the *personnel* of the royal Hungarian telegraph administration consists of—

a. Seventy-seven employés and 13 servants in the central department and the subordinate, administrative, and controlling authorities.

b. Of 528 employés, 446 manipulators, and 36 servants at the various stations; and, finally,

c. Of 28 employés and 171 overseers for the proper maintenance of the lines.

In the manipulation of government and private telegrams at the 618 railway offices duly authorized a special *ersonnel* of such railways attend to the telegraphic service.

#### RUSSIA.

1. The laws relating to telegraphs in Russia comprise three volumes, entitled, respectively, "Telegraphic regulations," "Arrangements for telegraphic correspondence," and "Regulations of the bureaus of deposit of loans in the interest of the employés". These banks, in virtue of regulations approved by the minister of the interior, are founded for the employés of the telegraphic stations, with the object of preserving their savings, and, in case of need, to lend to them at the lowest possible rate of interest. The capital of the bank is made up from obligatory payments of 2 per cent. per month of the amount of the pay of each of the members, and of 5 per cent. of the amounts received for the service from any source. As regards voluntary deposits, they can in no case exceed 300 rubles (*a*) for each member. The obligatory deposits increased by the interest are not returned until the employé leaves the service, but the voluntary deposits may be reclaimed at any time.

2-7. Since their institution in 1853 the Russian telegraphs are the property of the state.

8 and 9. The system of telegraphic stamps is not in use. Telegrams are paid in cash.

10 and 11. In its telegraphic system all Russia, as regards the application of the tariff of prices, is divided into three parts. The first, embracing Russia in Europe as far as the meridian of Ekatérimbourg, including the Caucasus; the second, Russia in Asia as far as the meridian of Strelinsk, including Turkestan; and the third, extending from that meridian to the extreme limits of the empire. Each of these three parts is subdivided into three zones. The first measures a distance of 200 versts; the second 1,000 versts, and the third comprises all the space beyond the second.

The tax is based on a minimum of ten words; for this minimum the charge is 30 copecks in the first zone, 60 copecks in the second, and 1 ruble 20 copecks in the third. For each supplementary word the charge is 2½ copecks in the first zone, with this peculiarity, that to avoid fractions the supplementary tax must always be increased to an even number; in the second zone, 5 copecks for each supplementary word, and in the third 10 copecks. For the transmission of telegrams from one of the three parts of Russia to one of the others there is charged a sum made up of the charges belonging to each part.

As regards international correspondence the rules adopted at London are followed, except with those countries with which there are special conventions, such as Austria, Roumania, and Sweden.

12. Press telegrams are subject to the ordinary charges; but special agencies, at present two in number, "the international telegraphic agency" and the "agency Petersburg, Moscow", enjoy a reduction of 50 per cent. Besides these two agencies, special privileges are accorded to a daily paper at Moscow, called the *Telegraph of Moscow*. The editors of this paper have contracted for the use of a wire between Saint Petersburg and Moscow every night between eleven in the evening and four in the morning. The price agreed upon was based upon the charge per word between the two capitals, which is 5 copecks. The number of words for five hours being computed at 5,000, the application of this rate would give a total of 250 rubles a night, or 91,250 rubles per annum. The administration has accepted under the contract a round sum of 20,000 rubles per annum, or about a quarter of the tax.

13. The telegrams of the Russian press amount to about 9,000 words a day. As regards the number of words of the telegrams sent by the correspondents of foreign journals, it would be difficult to estimate it.

14. The revenue from the telegraphic correspondence of 1880 amounted to 7,696,661 rubles.

15. The administration of the telegraphs in 1879 numbered for the department 78 employés, and for the 21 telegraphic divisions 127. The care or supervision of the bank requires no special employés, but is managed by the members themselves.

*a* The dollar is worth 1 ruble 31 copecks (metallic).

## POSTAL TELEGRAPHS.

## SWITZERLAND.

1. The laws regulating telegraphs in Switzerland commence with the act of the federal assembly of December 20, 1854, organizing the service as a branch of the post-office. The ordinance of the federal council of November 29, 1880, regulating the establishment of telephone lines, is the last in point of time.

2-7. The public telegraphs of Switzerland were built originally by the government, beginning in 1852, and have since been operated as part of the national postal system. There were in operation in that country at the close of 1880 telegraph lines 6,555 kilometers in length, having in service 16,017 kilometers of wires. Besides these postal or public lines, the railways, which are operated by private corporations, have in service for their own purposes 328 kilometers of telegraph, with 2,825 kilometers of wire in actual use. In a few cases, where the railways pass through villages which the postal telegraph does not reach, the railway telegraphs form a connection between such points and the postal lines for the transmission of general messages. There are, besides these, 125 kilometers of private telegraph lines, operated by individuals or firms for the convenience of business; but no private or corporate telegraph company as such organizations are understood and organized in the United States has ever existed in Switzerland. There are in service throughout the year in Switzerland 932 telegraph offices, besides 73 provisional offices, located principally at high points, and used only during the summer season. The railway telegraph offices number 103.

## RECAPITULATION.

	Length.	Length of wires.
Postal telegraph lines.....kilometers..	6,555	16,017
Railway telegraphs.....do.....	328	2,825
Private lines.....do.....	125	194
Postal telegraph offices in continuous service.....		932
Postal telegraph offices during the summer only.....		73
Railway telegraph offices.....		103
Total.....		<u>1,108</u>

Of these offices there are only five which are open for business continuously day and night. Sixty-five are open from 7 a. m. to 9 p. m. The remainder are kept open during hours more or less limited by the requirements of business and local circumstances.

8 and 9. The Swiss government sells telegraph stamps for the convenience of the public, and all telegrams not thus stamped, when presented, are stamped by the receiving clerk before transmission. At the close of each month the stamped telegrams are all sent to the central office at Berne, where they are used in auditing the revenue returns of the telegraph department.

The denominations of these telegraph stamps are: 5 centimes, 10 centimes, 25 centimes, 50 centimes, 1 franc, 3 francs, 20 francs.

10 and 11. There is no minimum limit of words in a telegram; for each message, of whatever length, there is charged a state tax (grundtaxe) as follows:

For each message to points in Switzerland, grundtaxe, 30 centimes; for each message to a foreign country, grundtaxe, 50 centimes. Besides this there is charged a word tax of 2½ centimes per word for domestic telegrams, and for those addressed to foreign countries the tax per word is as follows:

	Francs.
To Norway.....	0.40
To Italy.....	0.10
To Holland.....	0.27
To Portugal.....	0.42
To Russia.....	0.57
To Great Britain.....	0.40
To Austria.....	0.08
To Germany.....	0.12½
To New York.....	2.80
To New Orleans.....	3.85

As will be seen from this, neither in domestic nor foreign telegrams is any *exact* discrimination made with reference to distance of transmission.

12. There are no special rates for press telegrams. They are charged the same as private messages.

13 and 14. Telegrams are classified according to their nature, as follows:

	Percentage.
Private miscellaneous messages.....	54.16
Financial.....	7.54
Commercial.....	35.96
Official.....	0.67
Press.....	1.17
	<u>100.00</u>

It will be apparent from this statement that the item of "press telegrams" in Switzerland is not sufficiently important to require any extended analysis or comparison.

All official telegrams, of which there were 75,102 sent and 71,086 received, except those relating to the immediate management of the postal telegraph service, are paid at ordinary rates.

In general, it may be said that the Swiss telegraphs are remarkably well managed and efficient. The rates charged are low, but, on the other hand, the distances to be compassed are short, labor is cheap, and the lines, being generally built through valleys, protected from high winds, under a mild and uniform climate, are easily kept in repair. All telegraphs here are carefully and substantially built, wrought-iron posts 2.12 inches in diameter and about 15 feet high being used on several of the principal lines. The insulators are generally of white porcelain, and it would seem that only a small proportion of galvanized iron wire is used. Although the telegraph management does not secure the promptness of transmission and delivery to which Americans are accustomed at home, the whole service is remarkably careful in its methods and accurate in results.

German and French are the principal languages used, although messages in English and Italian are frequent, and first-class operators are required to have a practical knowledge of all these tongues.

#### BELGIUM.

1. The text of the law and royal decrees relative to the management of the telegraph in Belgium is published in the *Règlement Spécial* of June 1, 1881, a volume of 241 pages. An *Official Guide for Telegraphic Correspondence*, containing 130 pages, is also printed and sold to the public at all telegraphic, postal, and railway offices at the price of 1 franc.

2 and 3. The Belgian government possesses the monopoly of the telegraph, which it established with funds voted by the legislature, excepting always the line from Brussels to Antwerp, conceded in 1846 and rebought by the state in 1850. The line was 44 kilometers in length, and comprised four wires.

4. By mutual consent the company ceded to the Belgian government, in consideration of 60,000 francs, all the interests and privileges which had been guaranteed to the company and were comprised in their charter.

5. The receipts and expenditures of this private enterprise cannot be stated. In 1850, after the repurchase of this line by the Belgian government, its receipts and expenditures were confounded with those of the general system covering other sections of the country.

6. At the time of the repurchase of the line from Brussels to Antwerp there existed 176 kilometers of telegraph wire and three offices. On January 1, 1881, the complete telegraphic system comprised 823 offices accessible to the public for the transmittal of telegrams and 26,153 kilometers of wire. These lines included 22,279 kilometers of wire constructed along the railroad managed by the state, 1,883 kilometers of wire along the highways, 601 kilometers of wire along the water-courses, for the use of navigation and for the announcement of the rising of the waters, 1,158 kilometers of wire attached to the poles belonging to the state by chartered railroad companies for use in their business, and 232 kilometers of underground wire.

7. A comparison cannot be made in this regard. The sums invested by the company in the establishment of the line from Brussels to Antwerp, which the Belgian government repurchased for 60,000 francs, are not known. On January 1, 1881, the funds employed in the construction and development of the telegraph lines of the state amounted to 4,161,000 francs.

8. Telegraphic stamps were introduced into Belgium December 1, 1865, upon the reduction of internal tariff to 50 centimes, in order to give the public all the facility possible for the depositing of telegrams and to simplify, at the same time, the bookkeeping of the office accounts.

9. The use of telegraphic stamps is obligatory for all telegrams, internal as well as international. The offices are, however, authorized to receive in specie dues exceeding 500 francs.

The Belgian administration has the monopoly of the sale of stamps, which are in denominations of 5 francs, 1 franc, and 50, 25, 10, and 5 centimes.

The public may obtain them not only at the telegraph stations, properly speaking, but also at all the tax offices and inferior passport offices, as well as the state railroad stations which are not provided with telegraph apparatus.

Telegrams properly stamped may be deposited in all these offices or placed in letter-boxes, boxes affixed to the omnibuses and street-cars in the towns of Antwerp, Brussels, Ghent, Liège, and Louvain, and given to telegraph messengers and letter-carriers, to be telegraphed at the neighboring office.

When messages are not deposited in the telegraphic office charged with their transmittal they must bear the following superscription :

"To the telegraphic office of ——— ; telegram to be transmitted."

Telegraphic stamps are canceled at the telegraph stations by the agent in charge in the usual manner, by a canceling machine, bearing the date of the dispatch, with which all Belgian bureaus are furnished.

The regulations touching the stamp account are as follows :

The first supply to the bureaus is made from the principal depot at the request of the comptroller. The succeeding orders are given periodically to the comptroller every month by the most important bureaus, every two months by the second-class offices, and every three months by the offices of least importance.

Nevertheless, any bureau or office agent may make at any time a demand addressed to the comptroller, justifying his urgency by letter. The orders are annexed to the monthly account, which will be hereafter explained.

The comptroller transmits all orders verified and certified to, when the occasion presents itself, to the stamp office, supported by a recapitulated statement in duplicate. One of these duplicates is returned to the comptroller after the order has been filled, in order that he may assure himself that the accounts rendered by the bureaus show exactly the number of stamps received.

Stamps of less than 50 centimes are ordered in whole sheets of 200 stamps; those of greater value than 50 centimes are ordered in one-fourth, one-half, or three-fourth sheets of 50, 100, or 150 stamps, as desired.

The bureaus receive the different denominations of stamps ordered in special locked boxes or in packages properly enveloped, tied, and sealed. These remittances of stamps are made with the most minute precaution, in order to assure their arrival in good condition. They are accompanied by an invoice describing the number and value of each denomination of stamps sent. The receiver of the stamps verifies the invoice in the presence of two witnesses, signs the bill as a receipt, and it is immediately returned to the principal stamp depot.

When the number of sheets or stamps is not found in accordance with the invoice, an appeal is made to the dispatching office from which the stamps were received and the deficiency or overplus reported. This appeal is signed by the receiver of the stamps and by the two witnesses, and sent within twenty-four hours to the principal stamp depot. No claim is admitted after the receipt has been acknowledged.

The stamp account is kept in the following manner:

The bureaus keep a journal, made up so that two pages are sufficient for the entries of a month. One page is to register the disposition of the stamps and the other their value. The first lines of each page serve for the inscription of the articles on hand at the expiration of the preceding month, as well as those received during the current month. The lines and dates which follow are intended for the entry of the stamps sold each day. At the expiration of each month the entries concerning the stock on hand and the sales are added up carefully and the results of the latter deducted from the results of the first, in order to show at a glance the balance which is to be carried over to the following month.

The first of each month the bureaus forward a faithful copy of the account in the journal, including the last day of the month. The account of the sale of stamps, which must balance with the receipts for the month, is addressed to the comptroller with the order for stamps annexed.

Besides these accounts which have been mentioned, the bureaus will furnish daily to the comptroller a statement of the condition of their cash account, showing among other evidences the produce from the sale of stamps during the preceding day and during the previous days of the month.

Periodical verifications are made in the bureaus in order to prove the exactitude of the statements entered in the books and of the cash account.

The subaccountants (under agents) charged with sale of stamps have a special day-book for debit and credit, which enables them to show at once to their chief, or to the visiting supervising officer, the account of each date.

There are no accounts established between the telegraph and post officers for telegraphic stamps sold by the postal authorities, the two departments forming one and the same administration.

The agents always show separately by their books the sales of postal and telegraphic stamps.

All telegrams must be prepaid in stamps by the sender. The stamps are canceled at the dispatching bureau by means of a canceling machine bearing date.

10 and 11. The rate of an ordinary telegram is 50 centimes for from one word to ten words, and 10 centimes for each five additional words between any two points of the country, including the delivery of the dispatch at the domicile within the radius of 2 kilometers from the receiving office and the transmittal by the post-office both ways. The name of the receiving office is not counted.

Telegrams for which the sender demands priority are accepted as *urgent*, and are charged double. The double urgency rate is charged and made obligatory for telegrams deposited after 9 o'clock at night, and which are to be forwarded and to arrive during the night.

The sender of a telegram may demand the repetition of a message to insure its correct transmission. In this case the different bureaus concerned in the transmission of the message repeat it in full. The rate for repetition is equal to that of an ordinary telegram.

12. Belgium has no special rates for telegrams of the press.

13. No statistics are kept in Belgium of press messages.

14. The receipts in 1880 amounted to 2,516,287.96 francs.

15. Although under one and the same administration, the post-office and telegraphic bureaus form two distinct and separate services, with a special officer for each of the principal bureaus. The expenses have been always stated separately for each service in the annual budget of the minister of public works.

The *personnel* of the telegraphic service comprised, December 31, 1880—

1. Functionaries and employés .....	1,009
2. Workmen, laborers, and messengers .....	1,212
	2,221

There are besides 2,162 railroad and postal agents who aid in the transmission of telegrams.

The salaries and wages of these 2,221 aforementioned agents amounted in 1880 to 2,638,781.57 francs.

THE NETHERLANDS.

2. The larger portion of the telegraphs of the Netherlands belong to the government, but there are some that belong to private companies. The government telegraphs have been constructed since the year 1852.

3. In the year 1864 one telegraph line was bought from a private company. It was of the length of 85 kilometers, for which the government paid 35,000 florins.

4. The expenditure for constructing government telegraph lines from 1852 to 1881 was 3,380,198.59 florins.

5. The receipts of the government telegraphs, and also the expenditures for keeping in order exploitations, are as follows :

Year.	Receipts.	Expenses.
	<i>Florins.</i>	<i>Florins.</i>
1852 (December) .....	2,386.18	146,584.78 <sup>f</sup>
1853.....	51,862.39 <sup>f</sup>	213,301.54
1854.....	105,549.72	170,308.28
1855.....	157,382.47 <sup>f</sup>	200,345.89
1856.....	215,523.68 <sup>f</sup>	206,051.97
1857.....	254,011.45	215,824.72 <sup>f</sup>
1858.....	230,840.08	305,351.65 <sup>f</sup>
1859.....	291,538.92 <sup>f</sup>	339,157.24 <sup>f</sup>
1860.....	303,091.07 <sup>f</sup>	379,544.64
1861.....	334,862.98 <sup>f</sup>	419,022.39
1862.....	320,864.54 <sup>f</sup>	456,541.58
1863.....	477,423.29 <sup>f</sup>	467,684.33
1864.....	442,092.07	531,620.29 <sup>f</sup>
1865.....	518,274.31	592,903.09 <sup>f</sup>
1866.....	510,968.73	719,653.26
1867.....	510,642.72	772,855.04
1868.....	539,027.24	805,396.27 <sup>f</sup>
1869.....	573,369.73	954,231.50
1870.....	621,190.09	963,320.23
1871.....	673,361.35	946,467.22 <sup>f</sup>
1872.....	671,870.02	1,020,474.14 <sup>f</sup>
1873.....	712,353.89 <sup>f</sup>	1,104,133.82
1874.....	710,204.34 <sup>f</sup>	1,152,258.63
1875.....	744,027.79 <sup>f</sup>	1,208,841.37 <sup>f</sup>
1876.....	788,758.50 <sup>f</sup>	1,221,444.11
1877.....	791,005.39	1,237,781.96
1878.....	826,340.12	1,316,289.28
1879.....	922,883.86	1,410,764.35 <sup>f</sup>
1880.....	1,023,020.58	1,453,666.90

6. In December, 1880, there were in the Netherlands 396 telegraph offices for the use of the public, of which 191 were conducted by the government and 205 by individuals.

7. Except in the case mentioned in answer 3, the government bought no telegraph lines; and therefore no satisfactory estimate can be made, as called for in the question.

8. Telegraph stamps for paying messages are sold at eleven different prices, viz, 1, 3, 5, 12½, 15, 20, 30, 50, and 60 cents; also at 1 and 2 guilders.

9. Only the government telegraph offices are allowed to sell such stamps. The stamps, after being used, are canceled by an instrument with which a hole is made through the center of the stamp.

10. Any telegram can have as many words as the sender wishes to use. For a telegram of the shortest kind within the country there is a fixed price of 15 cents; for every word in addition, 1 cent more is charged.

11. By the law regulating the tariff within the country words only are counted, not distance. This applies to government as well as individuals.

12. There is no special tariff for the press.

13. Not known.

14. The telegraphs, as will be seen, are carried on at large cost, but the government is charged the same as individuals for the use of them.

## SWEDEN.

1, 2, 3, 4. In Sweden, according to the statements of the Swedish officials, the electric telegraph since early in 1853 has been under the direction of the state, having a department of its own separate from that of the post. In addition to the telegraphs named, there were afterward, in connection with the railway lines, railway telegraphs constructed, belonging partly to the state and partly to private companies, with the right to forward private telegrams. The state railway telegraph lines are under the direction of the board for the state railways, and not under that of the telegraph department.

5. For the telegraph lines under the control of the telegraph department, the income during 1876-1880 averaged 1,241,000 kronors, and the expenses 1,201,000 kronors each year.

6. The number of telegraph offices in Sweden at the close of 1880 was 784, of which 176 belonged to the state, 187 to the state railways, and 421 to private railways.

The length of lines belonging to the state is 8,288 kilometers and 20,336 length of wire; to the state railways, 516 kilometers of line and 5,406 of wire; to private railways, 2,716 kilometers of line and 3,698 of wire. In most of the telegraph districts the state and the state railway telegraphs use the same poles.

8 and 9. The system of telegraph postage-stamps has not been introduced.

10 and 11. In home correspondence a simple telegram consists of 20 words or less. The tax for this is, without respect to distance, 1 kronor, which payment is increased by 25 öre for each 5 words over 20. To this is added 10 öre for sending each telegram to its address within station limits. In international correspondence the tariff system of so much per word is used, the other points being decided by the international telegraph arrangements.

12. In Sweden there is no reduction for home correspondence for the press, which, on the contrary, has such an advantage in the correspondence between Sweden on the one side and Norway and Denmark on the other. This advantage consists in the fact that the word tax is lowered to half price, while the simple telegraph tax is not changed.

13. This cannot be answered, as no special statistics of the foreign press telegrams have thus far been regarded necessary.

14. The answer to the second interrogatory implies the answer to this.

## NORWAY.

2, 3, 4, 5. The state owns all the telegraph lines in the country, and was the original owner of the same.

6. The length of telegraph lines is 5,313 English miles, of which 4,634 miles belong directly to the state and 681 miles to the railways, which are owned and controlled by the state. The total length of wire is 9,726 English miles, of which 8,414 belong directly to the state and 1,312 miles to the state railways.

8 and 9. Telegraph postage-stamps are not yet in use.

10 and 11. A simple telegram consists of 15 words. The tax is 1 kronor, without regard to distance; an addition of 20 öre is made for every three words in excess of 15.

12. Though the tax for press telegrams is the same as for private, the price for extra words is not the same.

14. As state telegrams are taxed as private, there exist no special statistics of their annual cost.

## DENMARK.

1. The telegraphs were established in Denmark under the provisions of the law of March 17, 1852, by which the three sound and river custom-houses were authorized to be placed in telegraphic communication with Hamburg. Penalties for injury or obstruction to the telegraphs are imposed by section 295 of the penal code.

2. All telegraph lines in Denmark are the property of the state, except telegraph lines along private railroads and a single minor telegraph line which works by special agreement. There are besides in Copenhagen private telegraphic and telephonic contrivances for local correspondence, without co-operation with the government. The public use of the government lines was inaugurated February 1, 1854.

3. After the establishment of the government telegraphs several private telegraphic enterprises were purchased by the government, with its given concession, pursuant to the law of May 28, 1870. For the negotiation of the conditions of the aforesaid transfer to the state a commission was organized by the government, consisting of two officers of the government and two members of the rigsdag.

4. The sum paid by the state for the purchase of 16 private telegraph lines with 20 stations, aggregating 68.76 geographical miles of land lines and 1.44 geographical miles of marine line, which was taken possession of by the government in 1871, and representing a capital stock of 235,619 crowns (one Danish crown = \$0.2630 United States money) and 29 öre (100 öre = a crown), amounted to 150,000 crowns.

5. With regard to the private lines, the yearly earnings of the above-mentioned 16 lines, reckoned for one year, amounted to 32,100 crowns 42 öre, and the expenses to 21,464 crowns 25 öre, and after transfer to the government the earnings for one year amounted to 51,356 crowns and 42 öre. The expenses cannot be given, owing to the lack of data.

6. At the transfer of the old private stations on the 1st of April, 1871, the government stations amounted to 75 in number, with 264.50 geographical miles of telegraph line and 686.90 geographical miles of wire, and at the end of the year 1880 there were 128 stations, with 476.22 geographical miles of line and 1,261.10 geographical miles of wire. In addition, there are 159 stations on the government railroads which are open to the use of the public.

7. Cannot be answered, owing to the want of the necessary data.

8 and 9. There are no special telegraph stamps in the Danish government telegraph, although postage-stamps can be used for prepaid telegrams which are sent to stations in sealed letters.

10 and 11. In the interior the minimum rate, without regard to distance, is 50 öre for 20 words, and half as much for every additional series of 10 words or less.

12 and 13. There are no special fixed rates for press telegrams in the interior, but there are agreements made with a single newspaper for the use of one wire out of the regular working hours for a specified sum, which is payable by the hour.

14. Cannot be answered.

15. In the telegraph service in Denmark there is a chief administrator in common with the postal service, and the larger part of the minor stations are managed by the post-office officials; but otherwise the Danish telegraph service, in regard to administrative and fiscal matters, is a separate branch of the government. Postal officials receive for the management of telegraph stations a fixed salary, for which they may draw upon the expenses of the station, including the expenses for assistants and messenger.

PORTUGAL.

2, 3, and 4. The telegraph was, at the time of its introduction into Portugal, created and operated by the state.

5. The receipts and expenditures of telegraph lines during three years were :

Years.	Receipts.	Expenditures.
	<i>Reis.</i>	<i>Reis.</i>
1877-'78 .....	117, 360, 524	236, 677, 579
1878-'79 .....	117, 192, 949	243, 005, 003
1879-'80 .....	115, 248, 907	241, 042, 402

6. There are at present in Portugal :

Telegraph stations.....	105
Postal stations.....	729
Common to both.....	96
Total stations.....	<u>930</u>
Miles of wire at present in Portugal.....	<u>5, 329</u>

7. Answered in reply to interrogatory 2.

8 and 9. As yet there are no stamps employed by the Portuguese government for the prepayment of telegrams.

13. The average number of words sent daily for the press is 114; but these figures are subject to great variations, owing to political events, etc.

14. The value of the work performed by the telegraph for the government for the years 1877, 1878, and 1879 was 42,654,000 reis (\$46,086 36 United States gold).

15. The following table shows the increase in the number of employés and in the expenses of the post-office department of Portugal, caused by the additional labor required for the management of the postal telegraphs :

Designations.	NUMBER OF EMPLOYÉS.			EXPENDITURES.		
	Postal.	Telegraph.	Total.	Postal.	Telegraphic.	Total.
AVERAGE BEFORE						
Union of services.....	1, 036	895	1, 931	382, 713, 678	240, 241, 601	622, 955, 339
AVERAGE SINCE 1880-'81.						
Union of services.....			1, 662			638, 763, 941
Differences greater.....						5, 808, 602
Differences less.....			269			

Previous to the union of the services there existed 459 "delegates of the post" not belonging to the service, and the greater part of them without pecuniary compensation. There are now in existence 596 stations of the fifth class, which are in substitution of, and supply identically, the place of the aforesaid "delegates".

## POSTAL TELEGRAPHS.

## ROUMANIA.

The following are the replies received from the Roumanian government to the inquiries contained in the circular of the department of state, marked "separate", dated May 20, 1881 :

1. Annexed are French translations of the postal telegraph law and of the law for the organization of the postal telegraph staff. No postal savings-banks exist in Roumania.
2. Telegraphs exist in Roumania since 1854. The lines were constructed entirely by the government.
5. In 1880 the receipts were \$183,711, and the expenses, including salaries, \$549,424.
6. On December 31, 1880, there were in Roumania 102 telegraph offices and 5,145 miles of wire.
7. See answer to No. 2.
- 8 and 9. Stamps are not used. All payments for telegrams are made in cash.
10. Telegrams are charged by the word.
11. The general internal tariff for private telegrams is 8 centimes (1 $\frac{2}{3}$  cents) per word for the whole extent of the country, and 5 centimes (1 cent) per word between two offices of the same commune.
12. There are no reduced rates for the press.
13. There are no special statistics for the amount of telegrams sent to the press. They are comparatively small.
14. Government telegrams are sent free. Nevertheless, the value of work done by the telegraph for the government in 1880 was \$97,884.
15. The postal and telegraph services are united. The sum spent in salaries during 1880 was \$469,164.

A report on the posts and telegraphs made by the director-general, C. F. Robescu, and just published for the years 1876 to 1880, gives somewhat different statistics from those furnished above, which came to me through the minister of foreign affairs.

The following tables, taken from this report, will show the receipts, expenses, and general state of the telegraphic administration for the years 1876 to 1880 :

Year.	LENGTH IN MILES.		NUMBER OF OFFICES.			Number of instruments (Morse system).	Staff employed.	TELEGRAMS.					
	Line.	Wire.	State.	Railway.	Total.			Interior.	International.			Service telegrams.	Total.
									Received and sent.	Transit.	Total.		
1876.....	2,348	4,370	91	98	189	390	905	475,400	181,275	8,415	189,690	137,325	802,415
1877.....	2,471	4,954	101	98	199	417	933	441,067	247,535	8,343	255,878	263,106	960,051
1878.....	2,730	5,458	93	98	191	424	953	518,283	371,029	8,145	379,174	175,165	1,072,622
1879.....	2,803	5,649	97	98	195	476	1,124	486,472	233,304	20,242	253,546	182,353	922,371
1880.....	2,839	5,663	102	101	203	500	1,114	488,414	240,531	11,867	252,398	209,200	950,072

  

Year.	RECEIPTS.				EXPENSES.				EXPENSES OF MAINTENANCE.				
	From telegrams.		Sundry.	Total.	Installation.	Postal and telegraph staffs combined.	Repairs of lines and offices.	Total.	Repairs.	Construction.	Total.	Material.	Labor.
	Interior.	International.											
1876.....	\$155,842	\$88,507	\$8,315	\$252,664	\$8,468	\$375,950	\$15,209	\$399,627	\$7,000	\$8,200	\$15,200	\$12,260	\$2,949
1877.....	201,645	162,539	10,854	375,038	9,172	360,794	6,356	376,322	6,356	.....	6,356	4,492	1,864
1878.....	207,480	178,588	21,827	407,895	11,340	379,980	13,720	405,040	9,226	4,494	13,720	7,857	5,863
1879.....	167,562	104,158	16,742	288,462	9,468	435,264	17,096	461,828	9,388	26,000	35,388	26,573	8,815
1880.....	176,011	97,699	20,726	294,436	18,692	455,155	17,068	490,915	8,114	17,083	25,197	11,181	14,016

Respectfully submitted.

BUCHAREST,

*Legation of the United States,  
September 11, 1882.*

EUGENE SCHUYLER.

## TURKEY.

The information received from Turkey is communicated in the following dispatch :

UNITED STATES LEGATION,  
Constantinople, August 1, 1881.

SIR: In conformity with the instruction in your circular of the 10th of May last, marked "Separate", directing me to obtain from this government such information as may be procured relative to the practical working of postal telegraphs and postal savings-banks under the several heads given in the circular, I made application to Mr. Arthur de Vere, superintendent of the Black Sea Telegraph Company, and have now the honor to transmit inclosed a communication which he has had the kindness to send me, in which are answered, as well he was able, the queries in the circular.

I am, sir, etc.,

Hon. JAMES G. BLAINE, *Secretary of State, etc.*

G. H. HEAP,  
*Chargé d'Affaires ad interim.*

THERAPIA, July 30, 1881.

DEAR MR. HEAP: I inclose you answers to the queries you made me regarding postal telegraphs in Turkey.

As you will observe, the absence of statistics and the irregular way in which the public accounts are kept in Turkey prevents my furnishing you with any interesting data on this subject.

As, however, you ask me to give you any further information on this subject of which I am possessed, I think the following facts may be of interest.

In addition to the government land lines, there are submarine cables, which communicate on the one side with Odessa, and thence to England by the lines of the Indo-European Telegraph Company, and on the other with the Turkish and Greek archipelagoes and the main system of cables through the Mediterranean to Spain, Portugal, and England, and through the Red sea to India, China, Australia, and the Cape.

These cables are the property of the Eastern Telegraph Company, and are worked by them under concessions from the Turkish government.

As regards the Turkish "Administration des Télégraphes", it must be allowed that, of all the public departments of this empire, it is the only one which shows even a semblance of organization; and, by comparison with other branches of the public service, the telegraph department is a shining light.

This fact may be attributed chiefly to there being several Europeans employed in the administration, and that when the government first conceived the idea of establishing a telegraphic system all the chief posts were filled by Englishmen and Frenchmen.

Of the former nation none, I believe, remain; but it is owing to the exceptional ability and energy of a native of France, Monsieur Emile Lacoine (electrician in chief to the Turkish administration), that some of the latest improvements in telegraphs have been introduced into Turkey, and also that some of the most important lines are as perfect as any in Europe. To this gentleman, too, Turkey owes her possession of a manufactory of telegraphic instruments and material.

This establishment deserves a word or two to itself, and a word or two of the highest praise. Turkey is a country which depends almost entirely on foreign enterprise for all manufactured articles of luxury and even of absolute necessity; yet in the heart of Stamboul there is to be found a small establishment which provides the empire with all the apparatus required for the working of its telegraphic lines, and which provides it of a kind almost as perfect as that to be obtained in London or Paris. The workmen are mostly Turks, and Mr. Lacoine tells me they make excellent mechanics, as, indeed, is proved by their work.

Having said so much in praise of the Turkish telegraph department, it is now necessary for me to state some facts not quite so much in its favor.

Some years ago Turkey, assisted by the British India office, established a line of telegraphs across Asia Minor to Fao, on the Persian gulf, and thence by submarine cables to India. This was the first line of telegraphs connecting Europe with Hindostan, and the route taken, being the shortest possible, admitted of a comparatively cheap tariff for messages.

For some years this line being the only one open had a monopoly of the traffic, and the income derived from it by the Turkish government reached at that time £48,000 a year. But it was under Turkish management, and though originally well constructed no attempts were made to keep it in repair, and after a few years continual interruptions ensued, and the delay on messages was enormous.

The public would not stand this, and private enterprise, seizing the opportunity, first the Indo-European Company, opened a line through Russia and Persia, and later the Eastern Telegraph Company laid its cables through the Mediterranean and Red seas. The tariff by these routes was necessarily higher than by the old route, but messages from Bombay to London arrived in 45 minutes instead of taking six, seven, or ten days. The result may be supposed; and Turkey's revenue from her Indian line, which, as I have said, reached formerly £48,000 a year, is now less than £100.

A great effort is made to secure good working on the chief of the Turkish lines, that which connects Constantinople, via Avlona and Otranto, with the rest of Europe, and a modicum of success is the result. The minor lines of the empire once erected are almost entirely neglected, and even in the immediate neighborhood of the capital it is impossible to take a short drive without seeing telegraph posts without insulators and wires supported by the branches of trees or hanging loose across the high road. The consequence of this is that a special messenger is usually quicker than the telegraph for messages intended for the interior of Turkey.

It may be mentioned that the employes of the telegraph department are usually paid punctually, and this is owing to the interference of the foreign ambassadors and ministers, who, mindful of their own interests, have on several occasions interfered to protect the poor telegraphist whose miserable stipend has been threatened with confiscation by an economical ministry.

Hoping that these notes may be of some use to you,

I am, etc.,

GWYNNE HARRIS HEAP, esq.,  
*United States Chargé d'Affaires, Therapia.*

ARTHUR DE VERE.

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## POSTAL TELEGRAPHS.

## ANSWERS.

1. I am not aware of any special laws as to postal telegraph.
- 2, 3, 4, and 5. The government owns all the interior land telegraphs of the country. The first telegraphs were erected during the Crimean war by the allies, who, after peace was proclaimed, handed them over (gratis) to the Porte. As to receipts and expenditures under government, no reliable statistics are obtainable.
6. There are now 471 offices and 49,072 kilometers of wire (latter includes 4,000 kilometers of submarine cable, property of the Eastern Telegraph Company).
7. Answered by No. 2.
- 8 and 9. No telegraph stamps are used.
10. Twenty words is the ordinary message.
11. The tariff varies according to distance, from piastres 2.20 (9 cents) for immediate vicinity of capital to piastres 45 (\$1 98) for distant provinces of Turkey in Asia for messages of 20 words.
12. The rates for press messages are the same as for ordinary telegrams.
13. For the interior the number of press messages is almost *nil*. For Europe a considerable number of press telegrams sent, but no statistics exist of the number of words.
14. No accounts have been kept of the work performed for the government.

## BRAZIL.

The information received from Brazil is accompanied by the following dispatch :

UNITED STATES LEGATION,  
Rio de Janeiro, December 3, 1881.

SIR: I herewith forward so much of the information desired by the postmaster-general as I have been able to obtain:

The expenditures of the postal telegraphs of the Brazilian government are so interwoven with those of the post-office department proper as to render it impossible to obtain accurate information. I have learned by special inquiry that the postal telegraphs are not self-supporting, and that last year the deficit amounted to over \$40,000.

I have the honor to be, sir, your obedient servant,

JOHN WHITE.

To Hon. JAMES G. BLAINE,  
Secretary of State, Washington.

[Inclosure.]

2, 3, and 4. All telegraphic lines owned by the government were originally constructed by the government, and no private lines exist in the empire, except those owned and used by the railroad companies.

5, 6, and 7. The accompanying table gives the receipts for the years 1870-1880 and the first six months of 1881. The expenditures I have been unable to obtain.

8 and 9. Telegraphic stamps are not as yet employed.

10 and 11. The number of words for a single message, in addition to address and signature, is 20.

12 and 13. The telegrams of the public press enjoy an abatement of 20 per cent.

It is impossible to state the number of words supplied the press, inasmuch as the Havas agency furnishes most of the messages.

14. See table.

STATISTICS OF TELEGRAMS FROM THE FISCAL YEAR 1870-'71 TO AND INCLUDING THE FIRST SIX MONTHS OF THE FISCAL YEAR 1881.

Years.	Number of messages.	Number of words.	Receipts for official telegrams.	Receipts for private telegrams.	Total receipts.
			<i>Reis.</i>	<i>Reis.</i>	<i>Reis.</i>
Total.....	1, 428, 556	28, 561, 261	800, 194, 760	3, 888, 722, 811	4, 188, 217, 571
1870-'71.....	44, 775	1, 091, 103	18, 993, 900	107, 948, 800	126, 242, 700
1871-'72.....	53, 173	1, 250, 721	22, 792, 000	117, 161, 964	139, 953, 964
1872-'73.....	89, 165	1, 945, 579	30, 478, 200	135, 800, 200	165, 778, 400
1873-'74.....	72, 344	1, 599, 409	29, 026, 500	141, 138, 200	170, 164, 700
1874-'75.....	103, 689	2, 263, 819	40, 445, 000	208, 970, 615	249, 415, 615
1875-'76.....	119, 358	2, 516, 500	46, 637, 500	240, 141, 875	286, 779, 375
1876-'77.....	140, 030	2, 923, 666	69, 894, 100	299, 981, 706	369, 875, 806
1877-'78.....	182, 011	3, 696, 652	113, 415, 760	465, 540, 982	578, 956, 742
1878-'79.....	232, 022	4, 307, 592	143, 769, 200	714, 374, 896	858, 144, 096
1879-'80, first six months.....	254, 416	4, 558, 739	175, 457, 600	614, 219, 647	789, 677, 247
1880-'81.....	137, 573	2, 407, 481	109, 285, 000	343, 943, 926	453, 228, 926

## JAPAN.

1. In answer to the first request the Japanese government forwards a copy printed in English of "the penal code of the telegraph department"; also of the printed rules and regulations of that department and its tariff sheet.

2, 3, 4, 5, 6, and 7. The telegraphs belong to the government, and were originally constructed on government account. No telegraph company has ever existed in Japan.

8 and 9. Up to the present time the government has not adopted the system of using stamps for the payment of telegrams, but in the case of a telegram being forwarded for transmission by post from a place where no telegraph office exists it suffices to inclose at the same time sufficient postage-stamps to cover the charges. The telegraphs form a separate department, which has no connection with the post-office.

10 and 11. To answer these questions in full would be unnecessarily long. The tariffs and regulations are herewith attached.

For Japanese messages (messages in Kana) the charge is 43 sen for 20 characters to Nagasaki, a distance of 872½ miles from Tokei, plus a charge of 5 sen per telegram for the address. The charges on these messages are calculated according to distance.

12 and 13. No arrangement exists for press telegrams.

14. Work performed for the various government departments is charged for and entered in the accounts in the same manner as the public traffic.

The following is the tariff sheet showing the number of offices and the various rates between them :

IMPERIAL JAPANESE GOVERNMENT TELEGRAPHS.

(a) Tariff for local European messages. Calculated in yens or dollars for a message of 20 words, and half the rate for every additional 10 words or fraction thereof. Local European messages within the cities of Tokio and Osaka, 15 sen or cents per 20 words, and half rate for every additional 10 words.

(b) International messages, to or from any town in the empire, 20 cents (Mexican) per word of 10 letters. These messages are treated in accordance with the international telegraph convention regulations.

Tokio.										Tokio.																									
Utsunomiya	.0.25									Utsunomiya	.0.25									Yokohama	.0.25														
Shirakawa	.0.25	0.50								Shirakawa	.0.25	0.50								Yokosuka	.0.25	0.50													
Fukushima	.0.25	0.50	0.50							Fukushima	.0.25	0.50	0.50							Odawara	.0.50	0.25	0.50												
Yonezawa	.0.25	0.50	0.50	1.00						Yonezawa	.0.25	0.50	0.50	1.00						Numadzu	.0.25	0.50	0.50	0.50	0.50										
Yamagata	.0.25	0.50	0.50	1.00	1.00					Yamagata	.0.25	0.50	0.50	1.00	1.00					Shizuoka	.0.50	0.50	0.50	0.50	0.50	0.50									
Sendai	.0.50	0.50	0.50	0.50	0.50	1.00				Sendai	.0.50	0.50	0.50	0.50	0.50	1.00				Hamamatsu	.0.25	0.50	0.50	0.50	0.50	0.50	0.50								
Ishinomaki	.0.25	1.00	0.50	0.50	0.50	1.00	1.00			Ishinomaki	.0.25	1.00	0.50	0.50	0.50	1.00	1.00			Toyohashi	.0.25	0.50	0.50	0.50	0.50	0.50	0.50								
Ichinoseki	.0.50	0.25	1.00	0.50	0.50	0.50	1.00	1.00		Ichinoseki	.0.50	0.25	1.00	0.50	0.50	0.50	1.00	1.00		Okazaki	.0.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
Morioka	.0.25	0.50	0.50	1.00	1.00	0.50	1.00	1.00	1.00	Morioka	.0.25	0.50	0.50	1.00	1.00	0.50	1.00	1.00	1.00	Nagoya	.0.25	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Awomori	.0.50	0.50	1.00	0.50	1.50	1.00	1.00	1.50	1.50	Awomori	.0.50	0.50	1.00	0.50	1.50	1.00	1.00	1.50	1.50	Kuwana	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00						
Fukuyama	.0.50	0.50	1.00	1.50	1.00	2.00	1.50	1.50	2.00	2.00	Fukuyama	.0.50	0.50	1.00	1.50	1.00	2.00	1.50	1.50	2.00	2.00	Yokkaichi	.0.25	0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00			
Hakodate	.0.25	0.50	0.50	1.00	1.50	1.00	2.00	1.50	1.50	2.00	2.00	Hakodate	.0.25	0.50	0.50	1.00	1.50	1.00	2.00	1.50	1.50	2.00	2.00	Tsu	.0.25	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mori	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Mori	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Gifu	.0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Osamanbe	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Osamanbe	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Hikone	.0.50	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Sapporo	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Sapporo	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Otsu	.0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Otaru	.0.25	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Otaru	.0.25	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Saikai	.0.25	0.50	0.50	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50
																								Osaka	.0.25	0.25	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Sakai	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Kobe	.0.50	0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Himeji	.0.50	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Okayama	.0.50	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Marugame	.0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Takamatsu	.0.25	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Matsuyama	.0.50	0.25	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Muya	.0.50	0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Tokushima	.0.25	0.50	0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00
																								Uwajima	.0.50	0.50	0.25	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00
																								Kochi	.0.50	0.50	0.25	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00
																								Onomichi	.0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
																								Hiroshima	.0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Mitajiri	.0.25	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Yamaguchi	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Hagi	.0.25	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Shimonoseki	.0.50	0.50	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00
																								Kokura	.0.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Nakatsu	.0.25	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Oita	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Nobeoka	.0.25	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Miyazaki	.0.25	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Fukuoka	.0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Saga	.0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Kurume	.0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Miike	.0.25	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Kumamoto	.0.25	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Yatsushiro	.0.50	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
																								Kagoshima	.0.50	0.50	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00
																								Nagasaki	.0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

In addition to the foregoing information the following is furnished by the Department of State :

TELEGRAPHS IN JAPAN.

[Report by J. Morris, esq., of the Japanese telegraph system, transmitted to the Department of State by Mr. Bingham, United States minister at Tokio.]

As far back as the year 1839 attention has been directed to the telegraph, and two short lines had been provided and worked by Breguet alphabetical instruments from Tokio to Yokohama, and Osaka to Kobe, in all about 40 English miles, but it was in 1871 that a general telegraphic system for the empire was decided upon. Engineers were then engaged from England, and upon their arrival in the autumn of that year a rapid preliminary survey of the country was undertaken and arrangements made for the provision of the requisite timber, the fittings, in the shape of insulators, brackets, etc., as indeed wire and apparatus generally, having been ordered from England. In the course of the next spring and summer communication was fairly established through one-half of the principal trunk line, and in the ensuing autumn the entire length of about 900 miles was completed and opened provisionally for traffic, though as yet without formal official sanction, that being reserved until the elaborate system of lines which had been agreed upon for the whole country could be carried out in its entirety.

Innumerable little difficulties, as may be imagined, were met with in these early days. The people of the interior had scarcely become reconciled to the new order of things consequent upon the revolution of 1868; the old feudal system was practically in force, though nominally abolished; the roads were but very imperfectly known even to the native staff; superstition and dislike to the introduction of western notions, with general hatred of the foreign "barbarian", all had a share in rendering the establishment of the telegraph in the interior anything but an easy task or absolutely devoid of personal danger. Happily this has long ceased, save in times of unusual excitement among the peasantry, and such instances are very rare.

The timber employed in the earlier works was not carefully selected—a great deal was sacrificed to speed of construction; but nevertheless some of the poles then set up are in existence to this day. Most of them perished, however, with the third or fourth year of their existence, and all were replaced, with very few exceptions, within six years.

The tree from which the poles are commonly cut in Japan is the "sugi", a species of cedar (*Cryptomeria japonica*). Other woods are employed to some extent, among them the hinoki (*Pinuspora obtusa*), and this appears to be less affected by dry rot than the cedar. Owing to various causes, however, there exists a great difficulty in the way of obtaining properly felled and seasoned timber, and it is unlikely that this will be diminished, from the fact that the supplies of wood in the immediate neighborhood of the main trunk lines have become practically exhausted and we have to look to the more remote island hillsides to yield sufficient for the annual maintenance.

A few iron poles were imported, but they were too short in length to be generally employed, even if the first cost and subsequent charges attendant upon their transport from place to place had not been so vastly in excess of the price paid for wooden ones, which averages about 3s. 6d. for 24-foot lengths, gradually increasing to 50-foot lengths, for which, however, a very disproportionately high rate is demanded. The life of "sugi" poles naturally varies in duration very much, according to the soil upon which the tree has grown and to that in which it has subsequently been erected; as a rule, it is not safe to expect that it will endure beyond two years, and decay, in its earliest stages, frequently makes its appearance within six months. Tarring has been extensively resorted to, and in some instances with success. From the trouble and expense attending the transport of tar to the country, however, it has lately been found inadvisable to persevere, and the cheapest and simplest course appears to be to replace the poles after a four-years' term, or at least as soon as decay has progressed so far as to make renewal desirable. This may sound somewhat strange, but timber and labor are so cheap in the provinces compared with the cost of transit of preserved timber by water or other means, combined with the fact that a numerous staff of linemen is everywhere regularly employed and available for repair work, that it is a question whether a better policy could be pursued, at least at present. The Boucherizing process has lately been tried, and with a fair measure of success as far as the first cost of poles so treated is concerned, but the calculations are based upon the assumption that this timber will be not less than three times as durable as that which has not been subjected to similar treatment. This the future can alone decide in regard to Japanese wood. Creosoting is quite out of the question, owing to the enormous expense of sending the poles to and from the works—if these were established at the central depot, or even if at several convenient points in the interior—everything having to be conveyed on hand-barrows or on men's shoulders for many miles. So much for the item of timber.

The short lines previously referred to as having existed prior to 1871 were worked by Breguet instruments, but the new and long lines thereafter provided have all been worked by Morse apparatus, supplied by Siemens Brothers, of the single current pattern, and these have given thorough satisfaction. Upon the longest line working between Yokohama and Nagasaki automatic translators are employed. At Kobe, occasionally in very fine weather, the wire has been worked direct without their aid, the batteries being of the value of about 80 cells Daniell, and the relays of 900 ohms resistance.

The Daniell battery is ordinarily employed throughout the system (a few Leclanche cells are in use for call-bells merely), and a stock of plate cells and copper sulphate is supplied to every station in advance sufficient for six months' consumption.

The Breguet instruments were retained in use upon the short local lines in the capital for a considerable period, but gradually retired in favor of apparatus of the Morse type. Single-needle instruments were employed upon the railway department wires between Tokio and Yokohama in 1872, and subsequently on those of the Kobe and Osaka section, opened two years later; but these also have been replaced by the Morse system, with the object of attaining uniformity in regard to the apparatus in use as far as practicable. The single-needle "blocks" originally used on the railways are still, however, in operation for train signaling.

At first the wire was everywhere suspended from insulators of the barley double-cup earthenware pattern fixed in Warden's brackets, but it was shortly found advantageous to make use of wooden arms, particularly as there exists in the country a very suitable wood, known as "keyaki", and also a species of oak, both everywhere obtainable at moderate price. Moreover, it was natural that in a country famous for its porcelain attention should early be directed to the production of a material suitable for insulators. The first attempts in this direction were complete failures, and the home-made article turned out anything but well; but want of success at the outset did not cause the manufacturers to despond, and in the end a porcelain single-cup insulator was produced, which at once was found to answer all requirements and has since given general satisfaction, dating from the year 1874.

The best material for porcelain to be found for the purpose of making insulators was obtained from a hill in the island of Kiu-siu, regarding the use of which there was formerly the strictest prohibition, save when the articles to be made were destined to grace the palace of the "Tycoon" "Shogun". Insulators of this class, when tested, were found to be of a quality beyond the capacity of a Naomson reflecting galvanometer of 20,000 ohms resistance, unshunted, with a battery of 200 Daniell cells to determine. (Several are sent herewith for inspection, as well as a double-cup insulator made as an experiment, but too costly for general use.)

At the present time an instrument of the same resistance, etc., is employed to test every insulator before it leaves the works, the standard being fixed at 40,000 megohms. Those made of the famous "Zmari" or HiZen were only fail to the extent of 0.797 per cent. to pass the ordeal; others of Kioto ware are not quite so good. Defective cups are destroyed immediately. Later on I may be permitted to offer some statistics relative to the actual tests taken daily for insulation.

In connection with the establishment of the line joining the capital with Nagasaki, in 1872, it became necessary to lay a submarine cable across the straits of Shimonoseki, the western entrance of the inland sea which divides the island of Kiu-siu from the mainland of Nihon. The straits vary in width from two to only one-third of a mile at the narrowest point, and the most suitable position for the cable was found to be a little to the eastward of the narrow channel, where the width is about 1,350 yards. The requisite length of shore-end cable was taken down from Yokohama by the steamer attached to the department, and the submersion was readily effected by means of small native lighters, towed by ropes carried ashore and there hauled in by some hundred or so of the villagers and fishermen. This cable has remained in perfect condition to this hour. Four others have since been carried across at the same point.

The only difficulty attending cable laying operations in these "straits" is occasioned by the very strong tidal currents, which sweep through the narrow channel with a velocity frequently exceeding 8 knots per hour; the period of slack-water is of so brief duration as to be almost undistinguishable. The cables are terminated upon Siemens' pattern plate dischargers in convenient huts built for the purpose.

The experiment was tried of suspending an open wire across the straits from poles erected on the adjoining hills, the length of span being about three-fourths of a mile. Owing to the lack of really suitable wire it was not altogether successful, and after hanging for a week the wire was caught by the mast of a passing man-of-war.

There is no special difficulty to be contended with in the provision of an open line in this spot, but as the submarine connection is absolutely safe, and costs practically nothing for maintenance (if we leave out the item of very gradual deterioration), it is unlikely that the experiment will be repeated.

At Zmajiri inlet, about midway between Yokohama and Kobe, it became necessary to carry over the line on poles set below water level, in some cases to a depth of 12 feet, the width of the inlet being about  $2\frac{1}{2}$  miles. This proved a somewhat tedious and expensive operation, especially as sea-going native vessels pass out by the central channel, the masts of which are so long as to necessitate the wires being kept 60 feet clear at high water. The works were substantially executed, and the line existed with occasional mishaps until the poles decayed, in 1877, to an extent which rendered renewal imperative, and advantage was then taken of a by-road passing around the head of the inlet to do away with the crossing at its mouth by the substitution of an entirely land line, which, though involving extra mileage, is less costly to maintain and is practically secure in stormy weather.

The rivers of this country have proved to be a source of considerable trouble, especially in the hot season. In winter many are all but dry, but in floods during the summer and autumn months the channel becomes a mile or so in width in two or three of the most important rivers of the east coast, and the velocity of the current at such times is prodigious, quantities of timber, and even houses and cattle, being brought down from the hills and carried on with irresistible force to the open sea. The width from bank to bank being so great, it is not practicable to span such rivers, and consequently poles have to be planted in those portions of the flood channel least likely to be disturbed by the scour.

The earlier attempts in this direction were failures, but ultimately a system of construction was adopted which has for five years proved efficient to withstand the rush of the heaviest floods, and there is now no danger of the long-continued interruptions to communication which recently occurred prior to 1874, when poles were regularly washed away in spite of all attempts at affording protection by fenders and embankments.

The widest of the east coast rivers, the Tenrin, is now crossed in four spans, averaging 450 yards each, the double "H" masts being 60 feet high and the wire employed of No. 11 gauge.

The river Oigawa, where the floods are most serious, is crossed in three spans of about the same length, at a point where the banks approach each other, somewhat higher upstream than the regular ferry.

All the poles are well protected by fenders in a "V" shape, formed by piles driven in to a depth of 12 to 16 feet, the wire stays in the same way being attached to piles, so that they can readily be tightened, if ever necessary.

Many attempts have been made to bridge these rivers, and no doubt immense benefit would accrue to the traffic on the high road if this could be effected; but so far the wooden structures provided in the winter months have annually been swept away by the first floods, and probably nothing short of iron screw piles, carried down to a great depth, would afford any security as bridge supports. I was told that in the Fujikawa, another of these troublesome streams, the borings showed sand to a depth of 90 feet.

The frequent changes of channel rendered the preservation of a line of poles peculiarly hazardous, and it became necessary, for this reason, to reduce the number of supports as low as possible, and to make as long spans as was consistent with safety in the much-dreaded "typhoons", which frequently blow with hurricane force around these islands in the autumn.

At the outset but one wire was suspended from the poles on the southern trunk line. It soon became evident that the telegraph would be a popular institution, and greater facilities were needed for the rapidly-increasing traffic; a second wire was therefore commenced in the same year. Extra wires have since been carried through, and at the present time there are five wires connecting the capital with the south, irrespective of the numerous branches and local lines and the two alternative routes by the middle and west coast roads.

The total number of miles on December 31, 1879, was as follows:

	English miles.
Poles.....	3,929 $\frac{1}{2}$
Wires.....	9,345

In 1871 a school was established for the training of the Japanese youths as operators; they have year by year been educated and sent to the various stations as rendered necessary by the extension of the service. In the year ending June 30, 1880, in all 227 were appointed to new offices or sent out as reliefs, and 97 remained under tuition. These scholars are taught to write and speak English, and also French to some extent, with the rudiments of an English education generally, and they have to qualify as Morse operators by sending and receiving messages at a fair rate of speed previously determined upon.

The Japanese language having no regular alphabet, it became necessary to form a combination of Morse characters to represent the sounds of the syllabary known as the Katakana. This was effected by using the letters of the international code, supplemented by others formed of five dots and dashes (figures, of course, excepted) to produce a total of 47 signs, and the "native alphabet" so constituted has given tolerable satisfaction during the nine years which have passed since its introduction.

The maintenance of the lines throughout is performed by a staff of inspectors and linemen, who have all undergone practical training on new and repair works, the inspectors being required to qualify themselves for the general indoor duties at offices, such as the localization of faults in wires or apparatus, battery testing, etc., before receiving their appointments. The linemen have nearly all been taught (under the eye of a European employé at some time or other) the methods of fitting and setting poles, jointing of wires, etc., and they can be trusted, as a rule, to execute minor repairs with reasonable dispatch and skill. It is a rare occurrence now to find an interruption lasting more than half a day on the trunk lines, unless in some exceptionally bad weather, or, as happens in the north in winter, accumulations of snow make the roads impassable. The workmen thus employed are divided into five classes, and are distinguished by stripes on the blue-cloth livery supplied to them twice a year; on the back they bear the badge of the letter "Deu", or lightning.

In some few instances such men have risen to the grade of petty officers; but as considerable acquaintance with Chinese writing and arithmetic is essential, the numbers of those who have so distinguished themselves is very limited.

In the ten months of the present year ending October 31 there were 153 interruptions of less than 6 hours' duration, 85 of less than 12 hours, 27 of less than 24 hours; 21 other faults exceeded this limit, but only 7 of them were of a serious character, and were due to flood in the remote provinces, which stopped all traffic by road.

If we have regard to the total (87) number of distinct circuits for the 304 days, we find an average of somewhat less than one interruption per day on 9,345 miles of wire.

The system originally provided one man to about every 15 miles of line, the man living in the town or village midway through his section, and walking half of the entire length each day (Sundays excepted), for economical reasons, and to afford more complete control. However, the men now reside at the stations (which are only 30 miles apart on an average along the trunk line), except in some special cases, and go out whenever a fault appears, late or early, patrolling their stations only once a week or so; and this plan seems to answer every purpose.

The extension of the telegraph has produced some interesting results in regard to the rice trade. In former years a stock of the staff of life, equal to one and one-half year's consumption, was always kept on hand in the granaries of the various castle-towns, the residences of the numerous feudal lords, but with all precautions famines would occasionally occur in the more remote principalities. This, happily, is now impossible, owing to the readiness with which supplies can be concentrated upon any district threatened with scarcity by failure of the crop; and thus such large reserves are no longer needed, and quantities of grain can be placed upon the market which otherwise would be lying idle and certainly not improving in quality.

Telegrams are constantly exchanged between Japan and the principal centers of the tea and silk commerce in Europe and America, and upon the receipt of information from abroad in any degree affecting the exports from Japan it is immediately distributed to the agents of the principal merchants in all parts of the empire. In regard to these products, therefore, the telegraphs may be said to have practically worked a revolution in the method of carrying on mercantile operations.

The value of all products, agricultural or otherwise, has vastly increased since the establishment of telegraphic communication, owing to the greater facilities afforded thereby to trade generally; and this may be said of property of all kinds.

Some idea of the extent to which the "wonder-working" wire is employed by Japanese merchants may be gained from the fact that recently, when the government had prohibited speculation in rice and paper currency for a brief period, the receipts at one office alone fell off to the amount of £70 as compared with the day before.

Before telegraphs existed, relays of messengers, fleet of foot, were kept continually in readiness, night or day, to convey dispatches affecting the prices and shipments from the various ports—men who maintained a speed of 9 miles an hour for a distance equal (in one case which came directly under my own observation) to 65 English miles.

Across the straits of Shimonoseki, where five submarine cables now exist, the signaling was done by hand flags and lanterns. The total receipts for the year ending June 30, 1879, from all sources, amounted to £108,323, and the total expenditures (if we except the item of cost of building new lines) to £101,674, so that for the first time in the history of the department its revenue exceeded its working expenses. The new extension works involved a further outlay of £25,809.

The total number of telegrams dealt with during the year was 1,272,756, of which about 96 per cent. were in Japanese. International messages numbered 22,695.

The proportion of telegrams in the native language averages about one to every thirty individuals, taking the population at thirty-five and three-quarter millions, as determined by the latest census.

The rate of increase in traffic and receipts is represented roughly by the diagrams which I have the honor to submit for the inspection of the members of the society.

The experience of the last few years has shown indisputably that the tariff for native messages was originally framed on a basis too low to make the telegraph bureau a highly paying institution; but a low rate was adopted, with the object of inducing the public to make general use of the system and in the fear that a high tariff might have a prejudicial effect.

Doubtless at this moment so much dependence is placed upon the means of rapid interchange of news between the chief cities and ports, and the wires play so important a part in mercantile life, that an increase in charges would but little effect the traffic in bulk; but after the lapse of nine years it is not thought advisable to make any change in this direction.

The average rate for 20 characters of the Japanese language for a distance of about 60 miles is, roughly, 3 sen, or, at present rates, less than 1 penny, taking the entire line from Tokio to Nagasaki as a basis of calculation. Of course the average for shorter distances is higher, but messages between Tokio and Yokohama are transmitted for 7 sen, which is about equal to 2½¢. for 20 miles.

The rates established for the foreign traffic throughout the country have been based on the fact that it costs more for their transmission. Skilled clerks are specially needed, and as a high rate of speed as compared with Japanese traffic cannot be maintained, the average price for 20 words (exclusive of the special international rates) amounts to about one-tenth of a penny a mile for messages passing between the capital and Nagasaki.

In the last fiscal year the income derived from foreign telegrams in this way was £4,719. Submarine cables exist at places around the coast other than Shimonoseki; there are two in the Inland sea, connecting Nihon with Shikoku at a point where the channel is 6 miles wide, and two across the Tsugare straits near Hakodadi.

The light-house steam-tender Meiji Maru (a Clyde-built vessel) was employed in connection with the submersion of the Shikoku cables, and the Great Northern Telegraph Company's H. C. Orestes was engaged to lay those at Hakodadi. The Shikoku cables originally consisted of "deep-sea Atlantic" with corresponding shore ends, but were never very strong, owing to previous deterioration during the six years the material lay at Yokohama without at first proper storage accommodation. The fishermen, moreover, frequently hauled them to the surface, unintentionally perhaps, when getting up their anchors, and then in ignorance of their value set themselves free by the primitive method of dividing the wires with a hatchet. Finally, the "Teredo navalis" completed the work of destruction by boring innumerable holes in both. It was not until January of this year, when a strongly protected cable, 2½ inches in diameter, with two conductors, was laid, that confidence in our ability to maintain a reliable line of communication at this point was fully restored.

In the north several mishaps have occurred, and at present only one of the two cables is at work. It is intended, however, during the ensuing spring to lay a new one, with two conductors, from Imabetsu bay direct to Hakodadi, thus avoiding a long land line liable in winter at any moment to be stopped by snow. The length of this cable will be about 33 miles.

Tests for insulation and on fine days for conducting twice a week are regularly made every morning at seven o'clock at three important stations, viz, Tokio, Kobe, and Nagasaki. As all the principal lines radiate from these three centers, accurate knowledge is possessed at headquarters of their condition by about 9 a. m., including some idea of the state of the weather everywhere.

Insulation is determined by a tangent galvanometer of 41 ohms resistance-conductivity by the Wheatstone bridge. The wires in wet weather rarely give a lower insulation resistance than 1½ megohms per mile, while in fine weather the southern lines, for example, show no leakage when tested to Soyohashi, a distance of 180 miles, which implies that the resistance is greater than 90 megohms per mile.

Much has yet to be done in the way of obtaining accurate meteorological reports by telegraph from the many distant stations. Great benefits must follow from observations of wind and weather on these coasts, peculiarly fitted, as the islands are, from their geographical position, for such scientific investigations. The absence everywhere at present of iron works, etc., in proximity to the lines doubtless is a great advantage as far as insulation is concerned; but, on the other hand, the high roads are bordered by cryptomeria, and in summer the branches of these are the resorts of countless spiders, which endeavor, and not without success, to counteract the beneficial effects of fine weather on the working of the lines by spinning myriad threads of gossamer between the earth wires, wooden arms, and insulators, and the trees which they infest, and nothing is needed beyond the heavy night dews to render these fairy conductors almost perfection in their capabilities of working disaster. Men are constantly employed in sweeping the wires with bamboo brushes at this season, but the difficulty can in no way be completely overcome.

In the course of the year 1877, during the struggle with the Satsuma rebels, recourse was had to temporary lines of telegraph to a great extent, which proved instrumental in bringing the war to a speedy termination, by reason of the facilities thus given to the commanders of the loyal army for concentrating their forces quickly at given points and for counteracting the rebel leader's tactics in the field.

The Satsuma men made splendid marches, and might have effected many surprises but that the telegraph was ever at hand to defeat their schemes and to give opportunity for employment to the best purpose of the government troops. No fewer than 511 miles of line were constructed with this object, and 53 offices were opened at villages immediately in the rear of, or in direct connection with, the afterward victorious army. The material employed in construction were light portable posts, vulcanite insulators, and No. 11 wire, every use being made of natural supports in the way of trees, etc., when practicable, and for insulators, when the stock became low, anything in the shape of earthenware that could be picked up. There were but few interruptions of a serious character.

On the 31st of December, 1879, there were 112 offices open for general traffic, local and international, and 70 others connected with government departments, railways, or police; 53 in all are kept open day and night. There are 348 Morse instruments in use, 26 single needle-blocks, and 29 telephones of the Bell pattern; some of the latter have been made in the workshops, and answer very well. A pair of Edison telephones have been tried in Tokio privately, with excellent results. Seventy-one instruments of various kinds are used in the school for the students to practice upon.

The staff of the department on the 31st December, 1879, numbered 1,803 individuals of all ranks, of which 496 were inspectors, linemen, and workmen; 707 were cashiers and clerks at stations, and 358 messengers, the remainder being engaged as correspondents, writers, etc., or at the depot as accountants, mechanics, etc., and in various other capacities. The European employes now number 10 only, many having returned home on the expiration of their engagements, having been released by the government, in the belief that many of the duties of supervision and instruction can now be performed satisfactorily by the Japanese staff.

I beg to submit a paper, containing some statistical information furnished by the Japanese electrician, relative to the tests of wire and insulators, particularly with regard to the results obtained from copper wire of native manufacture insulated with lacquer as a substitute for silk or cotton, and which promises to become a material of great service.

A special test of the wires, taken on the 1st and 2d instants for insulation, in fine weather, with the object of ascertaining the exact resistance of the insulator, gave as the total rate per mile on a line 183 miles in length the high record of 314.9 megohms.

J. MORRIS.

UNITED STATES LEGATION,  
Tokio, January 20, 1881.

### CANADA.

[Extracts from the report of the president of the Montreal Telegraph Company for the year ending December 31, 1880.]

The number of messages in 1879 was.....	1,724,030
The number of messages in 1880 was.....	2,112,101
Increase in 1880.....	388,071
Miles of poles in 1879 were.....	12,477½
Miles of poles in 1880 were.....	12,703½
Increase in 1880.....	226
Miles of wire in 1879 were.....	21,236½
Miles of wire in 1880 were.....	21,568½
Increase in 1880.....	332½
Number of offices in 1879 was.....	1,619
Number of offices in 1880 was.....	1,674
Increase of.....	55
The gross revenue in 1879 was.....	\$478,435 32
The gross revenue in 1880 was.....	550,840 01
Increase of.....	72,404 69
The expenses in 1879 were.....	335,573 86
The expenses in 1880 were.....	358,676 08
Increase of.....	23,102 22
Showing an increase in the net profit for the year of.....	49,302 47

POSTAL TELEGRAPHS.

COMPARATIVE STATEMENT OF THE GROSS REVENUE AND EXPENDITURE FOR THE LAST SIX YEARS.

Year.	Revenue.	Expenditure.	Profit.
1875.....	\$550,493 34	\$373,403 90	\$177,089 44
1876.....	508,919 25	357,356 24	151,563 01
1877.....	514,122 26	345,450 83	168,671 43
1878.....	485,302 46	343,204 84	142,097 62
1879.....	478,435 32	335,573 86	142,861 46
1880.....	550,840 01	358,676 08	192,163 93

*Revenue and expenditure for the year ending November 30, 1880.*

RECEIPTS.

Revenue from all sources.....	\$550,840 01
Instruments and office fittings, etc.....	\$10,647 65
Fuel and lights.....	9,352 40
Battery.....	5,817 50
Repairs.....	41,900 28
Stationery.....	9,750 45
Salaries.....	256,550 70
Rent.....	13,955 20
Taxes.....	6,350 00
Miscellaneous.....	4,351 90
	<u>358,676 08</u>
	<u>192,163 93</u>

*Financial statement.*

Balance of contingent fund, November 30, 1880.....	\$144,468 95
Net revenue for this year.....	192,163 93
	<u>336,632 88</u>
Less:	
Paid for new lines, etc.....	\$30,622 66
Paid dividend, July, 1880, 3 per cent.....	\$60,000 00
Paid dividend, now payable, 4 per cent.....	80,000 00
	<u>140,000 00</u>
	<u>170,622 66</u>
Balance to next year.....	166,010 22
Invested as follows:	
Cash in bank and on hand.....	\$59,402 68
Stores on hand.....	93,390 25
Due from offices, governments, railways, etc.....	114,999 11
	<u>267,792 04</u>
Less:	
Dividend now payable.....	\$80,000 00
Due connecting lines, etc.....	21,781 82
	<u>101,781 82</u>
	<u>166,010 22</u>

*Statement of assets and liabilities.*

ASSETS.

12,703½ miles poles, at \$60.....	\$762,195 00
21,568½ miles wire, at \$40.....	862,740 00
1,674 offices, at \$125.....	209,250 00
Cables in use.....	31,630 79
Buildings—Montreal, Ottawa, Toronto, and Quebec.....	299,652 38
Stores on hand.....	93,390 25
Due from offices, railways, governments, etc.....	114,999 11
Cash in bank and on hand.....	59,402 68
	<u>\$2,433,260 21</u>

LIABILITIES.

Capital stock.....	\$2,000,000 00
Dividend now payable.....	80,000 00
Due connecting lines and unpaid dividends.....	21,781 82
	<u>2,101,781 82</u>
Estimated surplus.....	331,478 39
	<u>331,478 39</u>

## POSTAL TELEGRAPHS.

## NEW ZEALAND.

[Extracts from the seventeenth annual report of the telegraph department.]

OFFICE OF THE POSTMASTER-GENERAL AND COMMISSIONER OF TELEGRAPHS,

Wellington, July 16, 1881.

SIR: I have the honor to submit to your excellency a report on the operations of the telegraph department of New Zealand for the twelve months ending March 31, 1881.

I have, etc.,

WALTER W. JOHNSTON,

Postmaster-General and Commissioner of Telegraphs.

His Excellency the Hon. Sir A. H. GORDON,

G. C. M. G.

## REPORT.

The cash revenue for the year was estimated at £80,000. It has fallen short of that amount by £6,997 18s.

The value of the government telegrams for the year amounts to £27,021 3s. 8d., which, added to the value of the private telegrams (£69,634 12s. 7d.) and incidental receipts (£3,367 9s. 5d.), shows the gross earnings of the department to amount to £100,023 5s. 8d. Deducting the June quarter telegrams and receipts from the year's collections, as shown in Table C, and comparing the remaining three quarters ending March 31, 1881, with the corresponding quarters ending March, 1880, there is a falling off in telegrams to the extent of 37,788, and in cash to the amount of £2,053 3s. 9d.

There are evidences, however, that the department is slowly recovering from the depression that has existed during the past year; for it will be found, on examination of Table C, that the differences between the corresponding quarters for the years ending March, 1880 and 1881, have gradually diminished, viz, the September quarter, 1880, showed a decrease of £919 13s. 4d., as compared with September, 1879; December, 1880, £626 0s. 7d., as compared with December, 1879; and March, 1881, £507 9s. 10d., as compared with the quarter ending March, 1880.

The total number of messages of all codes transmitted during the year amounts to 1,058,342.

The number of telegrams transmitted during the twelve months, as compared with the number of letters posted during the same period, show that for every 100 letters posted 9.71 telegrams were sent. On perusal of Table B it will be apparent that a considerable falling off in percentage of telegrams for the year ending March, 1881, has been experienced when compared with any of the previous years. The sudden drop in percentage in 1881 is not, however, solely due to the decrease of telegrams in that particular year, but is in a measure to be accounted for by the very large increase in the number of letters posted in the nine months ending March, 1881, and which exceeded those in 1880, for the same period, by 1,106,482. Doubtless this large increase may be set down to a certain extent to the prevailing monetary depression at the time, but there must have been other causes at work to create such a large increase besides the depression alluded to, and the effect of which must be patent to any close observer, viz, that with the falling off of trade the users of the telegraph confined their communications by telegraph to strictly their necessities, and made use of the post-office to a much larger extent than they would have done in more prosperous times. The only other causes, therefore, that could operate in this direction must be due to the increased facilities placed at the disposal of the post-office by improved steam communication, but more especially by the railway, which has brought points which were far apart comparatively nearer to one another. And this conclusion is, to a certain extent, borne out by fact; for if Table B is examined closely it will be found that, while places like Taranaki still maintain their percentage of telegrams for every 100 letters posted, Canterbury and similar districts, with the increased facilities placed at their disposal by rail and steam, have availed themselves to a greater extent of that mode of communication. There can be no doubt that as business improves the telegraph will recover a portion of this traffic.

The telegraph department, however, must, in order to maintain itself, open up new channels of communication at present inaccessible to its more successful rivals. The recent introduction of the telephone will, in a measure, largely enable the department to attain this end. The increase of business, and consequent swelling of the receipts by this means of communication, will not be liable to such heavy deductions for skilled labor as in the past when opening new lines and offices; for there are doubtless hundreds of places in New Zealand in which, by the ordinary telegraphic means of communication, it would be out of the question for the department to entertain the idea of granting them telegraphic facilities on account of the expense attendant thereon, but which, by means of the telephone, beyond the expense of erection of line, can be readily granted the boon at a very small additional outlay and annual expenditure. All such lines will act as feeders to the main trunk lines without trenching on their receipts, for it is intended, in opening such stations, to conduct them on the principle of no work no pay; in fact, to limit the remuneration for the work done to a percentage on the receipts up to a certain point. When the percentage reaches a certain annual amount the department will then step in, and, as by previous agreement, make fresh terms. With a view of making such extensions, supplies of telephones have been ordered and will shortly arrive. It is fully anticipated that this means of intercommunication will be largely made use of in the future.

The business done in money-order telegrams during the past year amounts to £58,334 11s. 11d., causing 14,497 telegrams to be transmitted, at the expense to the senders of £1,696 19s. 8d., of which amount £724 17s. represents fees collected by the post-office on behalf of the department, the balance being the commission charged for the money-orders.

At the close of the year there were 3,758 miles of line, carrying 9,587 miles of wire of the above. During the year 120 miles of line and 254 miles of wire were erected.

The number of stations open to the public at the end of the year was 227, showing an increase of 13 over the previous year. The most of these were opened in conjunction with railway stations.

The number of miles of line maintained during the year was 3,656, at an average cost per mile of £6 6s. 7d.

The number of miles of wire now duplexed amounts to 2,820, and as this is really equal to 5,640 miles of single line, the actual wire accommodation at the disposal of the department is 12,407 miles.

The expenditure last year exceeded the receipts by £5,582 5s. 9d. This year the debit balance against the department, after taking credit for government telegrams, amounts to £1,355 4s. 3d., clearly showing that the financial position of the department is slowly mending.

The number of "urgent" telegrams sent during the year amounts to 33,390, representing a cash value of £5,002 13s. 4d., being within a fraction of 3s. per telegram. The number of "delayed" telegrams for the same period amounts to 88,881; for the nine months ending March 31, 1880, the number transmitted was 65,684, which, after making allowance for the deficient quarter, only shows an increase of some 1,303 telegrams. When this class of telegrams was first introduced it was thought that many of the users of the telegraph would resort to this cheaper mode of communication and abandon the more expensive, and that the department would consequently lose revenue.

This anticipation has not been realized, for on examining the telegrams of this class it is evident that the introduction of the system has brought to the department in most cases quite a new class of business, and even where it has been made to take the place of the shilling telegram it has either been the means of introducing a fresh customer to the department or has caused to be sent a telegram which, under the shilling system, would never have been received. It must be remembered, also, that this class of correspondence is only placed on the wires when the other business is slack, an event which happens in every telegraph system at certain periods of the day; so that really the public who pay the higher rates suffer no inconvenience from this class of correspondence, and the department, by being able to hold back these telegrams, can make use of its unoccupied wire and staff to better advantage. One thing must not be lost sight of, and it is this: that the cheapening of the system has not in any way injured the post-office; for every telegram carries postage fee with it, which is collected from the sender. In addition to the fee for the telegram, the post-office in the past year netted by this class of correspondence, taking all the postages at a penny, some £370. This amount is, however, under the actual sum received, for it does not take into account that many of the telegrams had to be franked with two-penny stamps, being outside of the town delivery, and consequently liable to the increased postage.

On January 1, 1881, the head office was amalgamated with the general post-office, and the office of secretary and accountant abolished, the duties belonging to the respective offices being allotted to the secretary and accountant of the general post-office. Up to the date of this report the amalgamation has worked satisfactorily, and has every appearance of continuing to do so. The chief postmasters in the towns where amalgamation has been effected, and who have assumed the appointments of officers-in-charge, although not technical officers had in some cases claims superior to those they have supplanted. In all future appointments, however, to such stations it will be requisite, if this branch of the public service is to be served efficiently, to demand that all officers who aspire to such promotion should qualify themselves for it by possessing a fair amount of technical knowledge, so as not to place them, as it were, at a disadvantage by having under them officers of superior attainments, and whose duties are performed in a subordinate capacity. The gradual fusion and interchange of duties in the different offices where such amalgamations have taken place will be carried out as far as practicable; but this fact must not be lost sight of: that, in order to work the wires to the fullest capacity, the duties of the telegraphist in the larger offices must still be kept distinct and quite apart from any other duty; for telegraphy, like piano-playing, requires constant practice, in order to acquire and maintain a certain degree of expertness in the manipulation of the Morse key. Prior to the final amalgamation above alluded to it has been the custom of the telegraph department to appoint to the small stations, where the duties of postmaster and telegraphist could be performed by one officer, an officer specially trained by the telegraph. This custom in the future will still be adhered to, as it has worked well and cannot be improved upon. Telegraphic appointments to such stations are of the greatest importance, for where officers are thrown upon their own resources and far away from assistance it is an absolute necessity that they should possess a certain degree of expertness and technical knowledge to enable them to detect faults in their own offices and to render such assistance as may be necessary to the central offices in the localization of faults and by alteration of the wires at their own test-boards, in order to keep open as many circuits as possible when the wires fall out of repair through bad weather and other accidents to which telegraph lines are liable.

COMPARISON OF POSTAL AND TELEGRAPHIC CORRESPONDENCE.

Year.	Number of letters.	Number of telegrams.	Proportion of telegrams sent to every 100 letters.
1880-'81.....	10,895,998	1,058,342	9.71
1879-'80 (for nine months only).....	7,065,510	1,008,409	14.27
1878-'79.....	7,374,786	1,448,943	19.64
1877-'78.....	6,078,384	1,260,324	20.71
1876-'77.....	5,540,920	1,124,432	20.29
1875-'76.....	4,731,873	1,051,086	22.21
1874-'75.....	4,059,517	917,218	22.59
1873-'74.....	3,209,837	752,899	23.45
1872-'73.....	2,828,372	568,960	19.76
1871-'72.....	2,418,021	411,677	17.02
1870-'71.....	2,626,947	312,874	11.91
1869-'70.....	2,374,060	185,423	7.81
1868-'69.....	2,749,488	146,167	6.12
1867-'68.....	1,938,578	106,104	5.47

ORDINARY AND PRESS TELEGRAMS DISPATCHED DURING THE THREE QUARTERS ENDED MARCH 31, 1880; ALSO FOR EACH QUARTER OF THE YEAR ENDED MARCH 31, 1881, AND THE REVENUE DERIVED FROM EACH CLASS.

Telegrams.	JUNE QUARTER.		SEPTEMBER QUARTER.		DECEMBER QUARTER.		MARCH QUARTER.		TOTALS.	
	Number.	Revenue derived.	Number.	Revenue derived.	Number.	Revenue derived.	Number.	Revenue derived.	Number.	Revenue derived.
1879-'80.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
Ordinary.....			246,252	16,139 10 4	250,030	16,203 18 5	263,855	16,975 13 9	760,137	49,319 2 6
Press.....			22,614	1,566 18 0	22,115	1,607 5 8	19,868	1,421 7 3	64,597	4,595 10 11
Totals.....			268,866	17,706 8 4	272,145	17,811 4 1	283,723	18,397 1 0	824,734	53,914 13 5
1880-'81.										
Ordinary.....	254,778	16,334 1 0	225,928	14,985 14 2	247,906	16,011 2 9	255,090	16,521 0 5	983,702	63,851 18 4
Press.....	16,618	1,439 1 11	17,326	1,801 0 10	16,002	1,174 0 9	24,694	1,368 10 9	74,640	5,782 14 3
Totals.....	271,396	17,773 2 11	243,254	16,786 15 0	263,908	17,185 3 6	279,784	17,889 11 2	1,058,342	69,634 12 7

POSTAL TELEGRAPHS.

COMPARATIVE TABLE SHOWING THE PROGRESS OF THE TELEGRAPH DEPARTMENT DURING THE FINANCIAL YEARS ENDED JUNE 30, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, AND TO MARCH 31, 1880 AND 1881.

Year ended—	Number of miles of line.	Number of miles of wire.	Number of stations open.	Number of telegrams forwarded during the year.			Revenue derived from private and press messages and incidental receipts.	Value of government messages.	Total value of business done during the year.
				Private, press, and provincial government.	General government.	Total.			
							£ s. d.	£ s. d.	£ s. d.
June 30, 1866.....	809	1,390	13	24,761	2,476	27,237	5,561 19 2	483 3 2	6,045 2 4
June 30, 1867.....	757	1,498	21	55,621	15,331	70,952	9,070 10 1	3,770 4 8	12,840 14 9
June 30, 1868.....	1,110	2,223	31	72,241	26,244	98,485	11,052 3 7	6,672 0 3	18,324 3 10
June 30, 1869.....	1,329	2,495	45	106,070	50,097	156,157	13,520 10	13,430 11 9	31,051 2 1
June 30, 1870.....	1,661	2,897	56	122,545	62,878	185,423	17,218 1 4	12,252 6 0	29,470 7 4
June 30, 1871.....	a 1,976	3,247	72	253,582	59,292	312,874	22,419 8 8	9,876 17 6	32,296 6 2
June 30, 1872.....	b 2,185	3,823	81	344,524	67,243	411,767	28,121 10 0	11,043 3 9	39,164 13 9
June 30, 1873.....	c 2,356	4,574	93	485,507	83,453	568,960	39,630 18 9	11,105 2 0	50,736 0 9
June 30, 1874.....	d 2,530	5,782	105	645,067	107,832	752,899	46,508 18 10	12,618 11 6	59,127 10 4
June 30, 1875.....	e 2,986	6,626	127	788,237	130,891	917,128	55,301 12 3	13,679 10 9	68,981 3 0
June 30, 1876.....	f 3,154	7,247	142	890,382	160,704	1,051,086	62,715 10 4	16,154 6 0	78,869 16 4
June 30, 1877.....	g 3,259	7,423	155	952,283	172,159	1,124,442	65,644 15 3	17,024 8 9	82,669 4 0
June 30, 1878.....	h 3,434	8,085	182	1,065,481	194,843	1,260,324	73,284 1 10	19,148 12 4	92,432 14 2
June 30, 1879.....	i 3,512	8,117	195	1,201,982	246,961	1,448,943	85,402 0 2	26,949 2 2	112,351 2 4
March 31, 1880.....	j 3,638	9,333	214	824,734	183,675	1,008,409	58,120 3 3	19,707 6 3	77,827 9 6
March 31, 1881.....	k 3,758	9,587	227	1,058,342	246,370	1,304,712	73,002 2 0	27,021 3 8	100,023 5 8

Year ended—	Cost of maintenance of stations.		Cost of maintenance of lines.		Total expenditure.		Cost of maintenance of lines per mile.		Tariff in operation.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
June 30, 1866.....	3,034 3 4	2,443 2 11	6,377 6 3	3 9 10	} Mileage tariff.				
June 30, 1867.....	3,017 14 7	2,541 4 11	10,558 19 6	3 7 1					
June 30, 1868.....	9,489 17 10	5,406 7 3	14,896 5 1	4 17 4					
June 30, 1869.....	14,266 12 7	8,547 4 9	22,813 17 4	6 8 6	} Mileage tariff in operation up to September 1, 1869, uniform 2s. 6d. tariff from September 1, 1869, to March 31, 1870, and 1s. tariff from April 1, 1870.				
June 30, 1870.....	16,417 7 4	14,120 4 10	30,537 12 2	8 9 11					
June 30, 1871.....	21,254 4 3	11,344 3 8	32,598 7 11	5 19 6					
June 30, 1872.....	23,593 9 9	8,858 19 7	32,452 9 4	4 2 3					
June 30, 1873.....	27,040 18 10	9,479 5 4	36,520 4 2	4 1 11	} From November 1, 1873, address and signature given in free.				
June 30, 1874.....	38,801 19 4	15,021 17 11	53,823 17 3	63 11					
June 30, 1875.....	45,814 11 4	14,240 19 7	60,055 10 11	4 16 4					
June 30, 1876.....	61,696 14 5	21,074 8 8	82,771 3 1	5 18 10					
June 30, 1877.....	63,353 10 10	17,931 8 0	81,284 18 10	5 12 11					
June 30, 1878.....	69,340 1 8	18,259 4 9	87,599 6 5	6 10 0					
June 30, 1879.....	79,502 0 5	17,299 7 10	96,801 8 3	5 0 9					
March 31, 1880.....	68,651 10 10	14,758 4 5	83,409 15 3	4 3 4					
March 31, 1881.....	77,324 1 8	23,154 8 3	100,478 9 11	6 6 7					

- a From this mileage 78 miles to be deducted before computing the cost per mile for maintenance.
- b From this mileage 32 miles to be deducted before computing the cost per mile for maintenance.
- c From this mileage 42 miles to be deducted before computing the cost per mile for maintenance.
- d From this mileage 106 miles to be deducted before computing the cost per mile for maintenance.
- e From this mileage 31 miles to be deducted before computing the cost per mile for maintenance.
- f From this mileage 174 miles to be deducted before computing the cost per mile for maintenance.
- g From this mileage 85 miles to be deducted before computing the cost per mile for maintenance.
- h From this mileage 116 miles to be deducted before computing the cost per mile for maintenance.
- i From this mileage 109 miles to be deducted before computing the cost per mile for maintenance.
- j From this mileage 95 miles to be deducted before computing the cost per mile for maintenance.
- k From this mileage 102 miles to be deducted before computing the cost per mile for maintenance.

## REGULATIONS FOR INTERNATIONAL TELEGRAPHIC CORRESPONDENCE IN EUROPE.

The different countries of Europe, being closely united by telegraphic lines, have found it necessary to agree diplomatically upon the rules which should govern correspondence by telegraph between them, and several international conventions have from time to time been concluded for that purpose. The last of these conventions, which was signed in Saint Petersburg in July, 1875, by the plenipotentiaries of Switzerland, Germany, Austria-Hungary, Belgium, Denmark, Spain, France, Greece, Italy, the Netherlands, Portugal, Russia, Sweden and Norway, Turkey, and Persia, is as follows:

ARTICLE 1. The high contracting parties recognize the right of all persons to correspond by means of international telegraphs.

ART. 2. They engage to take all necessary steps to secure secrecy and rapidity of communication.

ART. 3. They decline, however, any responsibility for international telegraphic service.

ART. 4. Each government agrees to set apart for international service a sufficient number of wires to secure the rapid transmission of telegrams. These wires will be arranged and worked according to the best and most improved methods.

ART. 5. Telegrams are divided into three classes:

1. Governmental; those sent by the head of a state, ministers, commanders-in-chief of military and naval forces, and the diplomatic or consular agents of the contracting powers, as well as the answers thereto.

2. Service telegrams; those sent by the telegraphic administrations of the contracting powers, and which concern either the international telegraphic service or other objects of public interest agreed upon by those administrations.

3. Private telegrams. Governmental dispatches are entitled to priority of transmission over other telegrams.

ART. 6. Governmental and service telegrams may be sent everywhere in cipher. Private telegrams may be sent in cipher between two countries which permit that mode of correspondence. Those governments which do not permit dispatches in cipher to be sent from or received within their territories will nevertheless allow them to pass in transit, except in case of the suspension provided for in the eighth article.

ART. 7. The high contracting parties reserve the right to arrest transmission of private messages which appear dangerous to the security of the state or contrary to law, public order, or good morals.

ART. 8. Each government also reserves the right, in case of necessity, to suspend international telegraphy for an indefinite time, either generally or only upon certain lines and for certain classes of correspondence. In such case each of the other contracting parties is to be immediately notified.

ART. 9. The high contracting parties undertake to give every sender of a message the benefit of the different combinations agreed upon by their telegraphic administrations, so as to give better guarantees and facilities for the transmission and delivery of correspondence. They also agree to give him the benefit of any arrangements made with other states for the use of special means of transmission and delivery.

ART. 10. The high contracting powers adopt for the formation of international tariffs the following principles: The tariff for messages sent by the same route shall be uniform between any two offices of different states. One state in Europe may, however, be divided for the application of uniform tariffs into at most two grand territorial divisions. The amount of the tariff shall be fixed by agreement between the governments of the terminal and intervening countries. The rates may be changed at any time by agreement. The franc is the monetary unit in the establishment of international tariffs.

ART. 11. International service telegrams are transmitted free throughout the territory of the contracting parties.

ART. 12. The high contracting parties will account to each other for the moneys received by each.

ART. 13. The terms of this convention will be supplemented by regulations whose provisions may at any time be modified by agreement between the administrations of the contracting parties.

ART. 14. The central bureau, under the direction of the superior administration of one of the contracting parties, to be designated for this purpose by the regulations, is charged with the duty of collecting and publishing information of every character relative to international telegraphy; of communicating propositions for the modification of tariffs or of the regulations; of promulgating the changes made, and generally of undertaking all the investigations and other labors which may be assigned to it in the interest of international telegraphy. The expenses of this institution will be borne by the administrations of all the contracting parties.

ART. 15. The tariffs and the regulations provided for in articles 10 and 13 are hereto annexed, and have the same force and bear the same date as this convention. They will be submitted to divisions, where all the governments which have agreed to them may be represented. For this purpose administrative conferences will take place periodically, each conference fixing the place and date of the next meeting.

ART. 16. These conferences will be composed of delegates representing the administrations of the contracting powers. Each administration shall be entitled to one voice in the deliberations; but if there are different administrations in the same government, notice must be given diplomatically to the government of the country where the conference is to meet before the time fixed for its opening, and each administration must have a special and distinct representation. The revisions agreed upon at these conferences are not to take effect until they have been approved by all of the governments of the contracting powers.

ART. 17. The high contracting parties reserve respectively the right to make separately special arrangements between themselves on all points which do not affect their general interest.

ART. 18. Governments which have not taken part in the present convention will be admitted to adhere to the same on demand; this adhesion will be diplomatically notified to the government of the country in which the last conference shall have been held, and by that government to all the others. It will carry with it an agreement to all the provisions, and admission to all the advantages stipulated in the present convention.

ART. 19. Telegraphic relations with states not parties hereto, or with private systems of telegraphs, are governed in the general interest of the progressive development of communications by the regulations provided for in article 13 of this convention.

ART. 20. This convention will take effect from January 1, 1876 (new style), and will remain in force for an indefinite time and for one year after denunciation shall have been made. Denunciation shall affect only the government making it. The convention shall remain in force for the other contracting parties.

ART. 21. This convention shall be ratified and the ratifications exchanged at St. Petersburg with as little delay as possible.

In witness whereof the respective plenipotentiaries have hereunto set their hands and seals.

Done at St. Petersburg July 10 (22), 1875.

The latest regulations of the character provided for in the preceding convention are those adopted at London July 25, 1879. The following regulations, based on the convention, are published by the British post-office:

## FOREIGN TELEGRAMS.

[Regulations founded upon the international telegraph convention.]

1. Foreign telegrams are divided into three classes: ordinary, code, and cipher. Ordinary telegrams are those composed of a series of words, or of words, figures, and letters conveying an intelligible meaning.
2. Code telegrams are those composed of words, the context of which has no intelligible meaning. Proper names are not allowed in the text of code telegrams, except in their natural sense.
3. In European code telegrams any of the languages in use in Europe, or Latin, may be employed; but no telegram may contain words of more than one language.
4. In extra-European code telegrams only English, French, German, Italian, Spanish, Portuguese, Dutch, and Latin may be employed; but words of any or all of these languages will be allowed in one and the same telegram.
5. Cipher telegrams are those containing series or groups of figures or letters having a secret meaning, or words not to be found in a standard dictionary of the language. The portion in cipher must be composed exclusively of figures or exclusively of letters.
6. Cipher telegrams written in letters are not accepted for extra-European places.
7. The address of the receiver must be paid for, and must not consist of less than two words, a name and a town. Example: Hercules, Bombay.
8. The address of the sender is charged for if transmitted; if not to be transmitted, it must be written at the foot of the form.
9. In European telegrams the maximum length allowed for a single word is 15 letters, in extra-European telegrams 10 letters, any additional letters being counted and charged for as extra words at the rate of 15 or 10 letters respectively to the word.
10. Subject to the limit imposed by rule 9, ordinary compound words and names of persons and places, etc., written without break or interruption, are counted as single words. If joined by a hyphen, or separated by an apostrophe or other sign of punctuation, they are counted as so many separate words.
11. Words incorrectly spelled, so as to reduce the number of letters below the maximum, or words incorrectly joined together, contrary to the usage of the language, cannot be accepted as single words.
12. Every separate letter or figure is charged for as one word, and in European telegrams every group of five figures or letters is counted as one word, larger groups being counted at the rate of five figures or letters to a word, plus one word for any excess. In extra-European telegrams groups of figures or letters (when these are trade-marks cipher in letters is forbidden) are counted at the rate of three to a word, plus one word for any excess. Bars of divisions, decimal points, and stops used in the formation of numbers are counted as figures. Letters added to figures to form ordinal numbers are counted as figures.
13. In telegrams addressed to residents in large towns the name of the street and number of the house should be given, and the addresses should be expressed in French or in the language of the country to which they are to be sent. When these particulars cannot be given, the profession, trade, or calling of the addressee should, if possible, be stated. Telegrams which do not contain this information are forwarded only at the risk of the sender.
14. In telegrams addressed to places of which there are more than one of the same name, the name of the country or state in which the place is situated should be added to the address.
15. The sender is held responsible for an incorrect or insufficient address; corrections, alterations, or additions to the address can only be made by means of a fresh telegram, which must be paid for at the ordinary rate.
16. Persons residing in the United Kingdom may have an abbreviated or fixed address, or special instructions respecting the hours of delivery of telegrams which they may expect to receive, registered at the chief office of the town in which they reside, upon payment at that office of a registration fee of one guinea per annum.
17. If the sender of a telegram desires to prepay a reply of 10 words, he must insert before the address of the receiver either the words "Réponse payée" (reply paid), which are charged for as two words, or "R P", which is charged for as one word; but if he desires the reply to consist of more or less than 10 words he must insert the words "R P — mots", which are charged for as three words. More than 30 words cannot be prepaid.
18. In telegrams for extra-European countries the sender must always insert the words "reply — words paid", or "R P — words". The amount prepaid for a reply will in no case be handed to the addressee; but if he do not use the reply form which will be handed to him, the amount will be returned to the sender, provided that the addressee returns the form to the post-office within six weeks, accompanied by a request that the money may be refunded to the sender. No allowance will be made in case the charge for the reply should be less than the amount prepaid.
19. The sender can have his telegram repeated from office to office to the terminal office by paying over and above the charge for the original transmission half that charge in addition. In that case the words "collationnement payé" (repetition paid), which are charged for as two words, or "T C", which is charged for as one word, must be inserted immediately before the receiver's address.
20. In North American telegrams, the words "repetition paid", or "T C", take the place of "collationnement payé".
21. Repetition is desirable for all code telegrams.
22. On payment of a charge equal to one-half the inland rate, the sender can have the telegram repeated between the office of origin and the office in Great Britain at which it is handed over to the cable company.
23. The sender may have a notice of the time at which his telegram was delivered transmitted to him by telegraph by payment of an additional rate for 10 words. In that case the words "accusé de réception payé" (acknowledgment of receipt paid), which are charged for as four words, or "C R", which is charged for as one word, must be inserted before the receiver's address.
24. In North American telegrams the words "acknowledgment paid", or "C R", must be substituted for "accusé de réception payé"; and the acknowledgment of receipt is charged for as a five-word message.
25. The receiver of a telegram can, within twenty-four hours after its delivery, request the department to obtain the correction of passages which appear to him to be doubtful. For this purpose he must pay for two separate telegrams, viz:
  - A.—A telegram requesting the repetition, and containing the instruction "R P", or "R P — words".
  - B.—A telegram calculated according to the length of the passage to be repeated, plus two words for the address of the reply.
 The amount thus paid is refunded, on application being made to the secretary, general post-office, if it should prove that the telegram has been inaccurately transmitted.

18. The receiver of a telegram addressed to a place in the United Kingdom may have it repeated from the office at which it was handed over by the cable company to the department on depositing the ordinary inland rate for the part of the telegram of which he requires the repetition; and if it be found that an error has taken place on the lines of this department the amount deposited for the repetition will be refunded.

19. When the sender is not quite certain of the exact place at which the receiver of the telegram will be found, he may insert immediately before the address the words "faire suivre" (to follow), which will be charged for as two words, or "FS", which will be charged for as one word.

Telegrams "to follow" are not accepted for extra-European countries.

20. In telegrams intended to be left until called for at telegraph offices or at post-offices the words "bureau restant" or "poste restante" must be inserted as part of the receiver's address.

A telegram addressed to several persons in the same town, or to the same firm at different localities in the same town, is charged for as a single telegram, and a sum of 5*d.* must be prepaid for every extra copy to be delivered if the number of chargeable words does not exceed 100, an additional sum of 5*d.* being charged for every additional 100 words or part of 100 words.

In calculating the charge all the names and addresses are included.

The North American telegraph companies do not accept telegrams having multiple addresses.

21. Under no circumstances is the charge for an unrepeatd (uncollated) telegram, which has been inaccurately transmitted, refunded. The cost of a telegram which has been inaccurately transmitted, and of which the repetition to the terminal office has been paid by the sender, is returned when it is shown that the telegram was rendered useless by the inaccuracy.

The cost of telegrams which have failed to reach their destination owing to some error on the part of the telegraph service, and the cost of telegrams which have been delayed beyond two days in the case of European and beyond six days in the case of extra-European telegrams, from other causes than an interruption of the telegraphic communication, is returned to the senders.

The cost of any telegrams which may have been rendered necessary in consequence of the non-delivery, delay, or incorrect transmission of a telegram is in no case returned.

The amount paid for a telegram which has been canceled before transmission has commenced is returned, less the sum of sixpence. If the telegram is canceled after transmission has commenced, but before it has reached the place to which it is addressed, any balance of charges which may be due to the sender will be returned.

22. Claims for reimbursement of the charges paid for telegrams should be accompanied—

1. In the case of non-delivery, by a written statement from the terminal office, or the addressee, that the telegram has not been received.

2. In the case of error in a telegram of which the sender has prepaid the repetition to the office of destination, or of delay, by the actual message form delivered to the addressee.

3. In the case of error in a telegram of which the receiver has paid the repetition from the office of origin, by the original message form delivered to the addressee, together with the form upon which the repeated telegram is written.

23. No claim for reimbursement for European telegrams will be entertained unless it is made within two months of the date of the original telegram, nor in the case of extra-European telegrams, unless it is made within six months from the date of the original telegram.

Foreign administrations decline to make any inquiry into complaints which do not involve a return of the cost of the telegram within the limits of rule 21.

24. Telegrams can be sent from one place to another abroad by post. If the telegram be intended for delivery in the same country, no charge for postage is made, unless it is to be posted from one part to another of China or Japan, for which the charge is 1*s.* 6*d.*, except in the case of telegrams posted at Tientsin for Peking, the charge for the postage of which is 10*d.*

If it be intended for delivery in another country, the following charges for postage (which should be prepaid by means of telegraph stamps) are made:

On telegrams to be handed to the Submarine Telegraph Company:( <i>a b c</i> )	s. d.
Eastern, ( <i>a b c</i> ) Direct Spanish, Great Northern, or Indo-European companies .....	1 6
On telegrams to be handed to the Anglo-American, Direct United States Cable, Paris and New York Telegraph and American Cable companies.....	1 0

The following statement of charges for messages from Great Britain and Austria to the different countries of Europe gives a fair idea of the rates prevailing for international telegrams. The average rates from Great Britain are somewhat higher than the average of those on the continent, because of the excess of cost of cables over that of land lines and of the fact that the cables are in the hands of private companies:

STATEMENT OF CHARGES FOR FOREIGN TELEGRAMS.

*European telegrams from any part of the United Kingdom.*

	For each word.
	s. d.
Algeria, submarine company .....	0 4
Austria, ( <i>d</i> ) submarine company .....	0 4½
Belgium, submarine company .....	0 2
Bosnia, ( <i>d</i> ) submarine company .....	0 5
Bulgaria, ( <i>d</i> ) submarine company .....	0 5½
Corsica, submarine company .....	0 2½
Denmark:	
Great Northern Company .....	0 4
Submarine company .....	0 4
France, submarine company .....	0 2½
Germany, submarine company .....	0 3

*a* Except on telegrams posted from France, Italy, Portugal, or Gibraltar, for which the charge is 10*d.*

*b* Except on telegrams posted from Gibraltar for Morocco or Tangiers, for which the charge is 1*d.*

*c* On telegrams posted from Madeira or Saint Vincent to South Africa, or from Malta to Tripoli, no charge for postage is made.

*d* Private telegrams in code or cipher are not accepted for the Austrian province of Dalmatia, for Bosnia, Bulgaria, Herzegovina, Montenegro, Romania, or Servia.

## POSTAL TELEGRAPHS.

## STATEMENT OF CHARGES FOR FOREIGN TELEGRAMS—Continued.

	For each word.
	s. d.
<b>Gibraltar:</b>	
Eastern company .....	0 6½
Direct Spanish company .....	0 6½
Submarine company .....	0 6½
Via Marseilles and Barcelona .....	0 9
<b>Greece:</b>	
Submarine company:	
Via Zante direct .....	0 7½
Via Volo .....	0 7½
Via Corfu .....	0 10½
<b>Greek islands:</b>	
<b>Andros:</b>	
Submarine company:	
Via Zante direct .....	0 9
Via Volo .....	0 9
Via Corfu .....	0 11½
<b>Cephalonia:</b>	
Submarine company:	
Via Zante direct .....	0 8½
Via Volo .....	0 8½
Via Corfu .....	0 10½
<b>Corfu:</b>	
Submarine company:	
Via Otranto direct .....	0 7½
Via Zante direct .....	0 7½
<b>Hydra:</b>	
Submarine company:	
Via Zante direct .....	0 8½
Via Volo .....	0 8½
Via Corfu .....	0 10½
<b>Ithaca:</b>	
Submarine company:	
Via Zante direct .....	0 8½
Via Volo .....	0 8½
Via Corfu .....	0 10½
<b>Kea (Cea):</b>	
Submarine company:	
Via Zante direct .....	0 8½
Via Volo .....	0 8½
Via Corfu .....	0 10½
<b>Kythnos:</b>	
Submarine company:	
Via Zante direct .....	0 9
Via Volo .....	0 9
Via Corfu .....	0 11½
<b>Kythira (Cerigo):</b>	
Submarine company:	
Via Zante direct .....	0 8½
Via Volo .....	0 8½
Via Corfu .....	0 10½
<b>Skiathos:</b>	
Submarine company:	
Via Zante direct .....	0 8½
Via Volo .....	0 8½
Via Corfu .....	0 10½
<b>Spezzia:</b>	
Submarine company:	
Via Zante direct .....	0 8½
Via Volo .....	0 8½
Via Corfu .....	0 10½
<b>St. Maure:</b>	
Submarine company:	
Via Zante direct .....	0 8½
Via Volo .....	0 8½
Via Corfu .....	0 10½
<b>Syra:</b>	
Submarine company:	
Via Zante direct .....	0 9½
Via Volo .....	0 9½
Via Corfu .....	1 0½

POSTAL TELEGRAPHS.

37

STATEMENT OF CHARGES FOR FOREIGN TELEGRAMS—Continued.

	For each word.
	s. d.
Greek islands—continued.	
Tinos:	
Submarine company:	
Via Zante direct .....	0 9
Via Volo.....	0 9
Via Corfu.....	0 11½
Zante:	
Submarine company:	
Via Zante direct.....	0 8½
Via Volo.....	0 8½
Via Corfu.....	0 10½
Heligoland, submarine company .....	0 6
Herzegovina, (a) submarine company .....	0 5
Holland, submarine company .....	0 3
Hungary, submarine company.....	0 5
Italy, submarine company.....	0 5
Luxemburg, submarine company .....	0 3
Malta:	
Eastern company .....	0 8
Submarine company.....	0 8
Montenegro, (a) submarine company .....	0 5
Norway:	
Great Northern Company .....	0 4
Submarine company .....	0 4
Portugal:	
Eastern company.....	0 6½
Direct Spanish company.....	0 6½
Submarine company .....	0 6½
Submarine company:	
Via Marseilles and Barcelona.....	0 9
Roumania, (a) submarine company .....	0 5
Russia in Europe:	
Submarine company.....	0 9
Great Northern Company .....	0 9
Russia (Caucasus):	
Submarine company .....	0 11
Great Northern Company .....	0 11
Servia, (a) submarine company .....	0 5
Spain:	
Direct Spanish company.....	0 6
Eastern company .....	0 6
Submarine company .....	0 6
Submarine company:	
Via Marseilles and Barcelona.....	0 8½
Sweden:	
Great Northern Company .....	0 5½
Submarine company .....	0 5½
Switzerland, submarine company .....	0 4
Tunisia, submarine company .....	0 4
Turkey in Europe (b)—seaports:	
Submarine company:	
Via Vallona.....	0 8
Via Servia.....	0 8
Via Dulcigno.....	0 8
Via Bosnia .....	0 8
Via Salonica and Tenedos to Constantinople only .....	0 9½
Via Salonica and Tenedos to other places.....	0 10
Via Zante direct and Chio.....	0 10½
Via Odessa .....	1 1½
Great Northern Company:	
Via Odessa.....	1 1½
Indo-European Company:	
Via Odessa.....	1 1½

<sup>a</sup> Private telegrams in code or cipher are not accepted for the Austrian province of Dalmatia, for Bosnia, Bulgaria, Herzegovina, Montenegro, Roumania, or Servia.

<sup>b</sup> Private telegrams in code or cipher are not accepted for Turkey.

## POSTAL TELEGRAPHS.

## STATEMENT OF CHARGES FOR FOREIGN TELEGRAMS—Continued.

	For each word.
	s. d.
Turkey in Europe (a)—inland.	
Submarine company:	
Via Vallona.....	0 8
Via Servia.....	0 8
Via Dulcigno.....	0 8
Via Bosnia.....	0 8
Via Salonica and Tenedos.....	0 10
Via Zante direct and Chio.....	1 1½
Via Odessa.....	1 1½
Great Northern Company:	
Via Odessa.....	1 1½
Indo-European Company:	
Via Odessa.....	1 1½
Turkey in Asia (a)—seaports:	
Submarine company:	
Via Zante direct and Chio.....	0 10½
Via Vallona.....	0 10½
Via Servia.....	0 10½
Via Dulcigno.....	0 11
Via Bosnia.....	0 11
Via Salonica and Tenedos.....	1 0½
Via Odessa.....	1 4
Great Northern Company:	
Via Odessa.....	1 4
Indo-European Company:	
Via Odessa.....	1 4
Turkey in Asia (a)—inland:	
Submarine company:	
Via Zante direct and Chio.....	1 1½
Via Vallona.....	1 1½
Via Servia.....	1 1½
Via Dulcigno.....	1 2
Via Bosnia.....	1 2
Via Salonica and Tenedos.....	1 3½
Via Odessa.....	1 7
Great Northern Company:	
Via Odessa.....	1 7
Indo-European Company:	
Via Odessa.....	1 7
Turkish islands:	
Candia or Crete:	
Submarine company:	
Via Zante direct.....	1 1½
Via Vallona.....	1 1½
Via Servia.....	1 1½
Via Dulcigno.....	1 2
Via Bosnia.....	1 2
Via Salonica and Tenedos.....	1 3½
Via Odessa.....	1 7
Great Northern Company:	
Via Odessa.....	1 7
Indo-European Company:	
Via Odessa.....	1 7
Cyprus:	
Submarine company:	
Via Vallona.....	1 0½
Via Servia.....	1 0½
Via Dulcigno.....	1 1
Via Bosnia.....	1 1
Via Salonica and Tenedos.....	1 2½
Via Zante direct and Chio.....	1 0½
Via Odessa.....	1 6
Via Alexandria (b).....	1 7
Eastern company:	
Via Alexandria (b).....	1 7
Great Northern Company:	
Via Odessa.....	1 6
Indo-European Company:	
Via Odessa.....	1 6

<sup>a</sup> Private telegrams in code or cipher are not accepted for Turkey.

<sup>b</sup> Telegrams sent by this route are charged for under the rules applicable to extra-European telegrams.

STATEMENT OF CHARGES FOR FOREIGN TELEGRAMS—Continued.

Turkish islands—continued.

Mytelene:	For each word.
	s. d.
Submarine company:	
Via Vallona.....	1 0
Via Servia.....	1 0
Via Dulcigno.....	1 0½
Via Bosnia.....	1 0½
Via Salonica and Tenedos.....	1 2
Via Zante direct and Chio.....	1 0
Via Odessa.....	1 5½
Great Northern Company:	
Via Odessa.....	1 5½
Indo-European Company:	
Via Odessa.....	1 5½
Rhodes:	
Submarine company:	
Via Vallona.....	1 0
Via Servia.....	1 0
Via Dulcigno.....	1 0½
Via Bosnia.....	1 0½
Via Salonica and Tenedos.....	1 2
Via Zante direct and Chio.....	1 0
Via Zante direct and Crete.....	1 0½
Via Odessa.....	1 5½
Great Northern Company:	
Via Odessa.....	1 5½
Indo-European Company:	
Via Odessa.....	1 5½
Samos:	
Submarine company:	
Via Vallona.....	1 0
Via Servia.....	1 0
Via Dulcigno.....	1 0½
Via Bosnia.....	1 0½
Via Salonica and Tenedos.....	1 2
Via Zante direct and Chio.....	1 0
Via Odessa.....	1 5½
Great Northern Company:	
Via Odessa.....	1 5½
Indo-European Company:	
Via Odessa.....	1 5½
Scio, or Chios, or Chio:	
Submarine company:	
Via Vallona.....	1 0
Via Servia.....	1 0
Via Dulcigno.....	1 0½
Via Bosnia.....	1 0½
Via Salonica and Tenedos.....	1 2
Via Zante direct and Chio.....	0 8½
Via Odessa.....	1 5½
Great Northern Company:	
Via Odessa.....	1 5½
Indo-European Company:	
Via Odessa.....	1 5½

TABULAR STATEMENT OF THE

The following rates are computed for ordinary telegrams, and on the cheapest cost of transmission. *Reputed acknowledgment of receipt* (C R) or a *prepaid answer* is required (R P) will be charged according to ordinary rates a 10-word telegram, and (2) in the case of a prepaid answer, the usual rates, computed on the *number of words*

Rates for telegrams: A—To Austria-Hungary and Liechtenstein; B—To Bosnia-Herzegovina; C—To other

[NOTE.—The rates in this table are based on words of 15 letters or 5 ciphers,

To—	Via—	2 words. (b)	3 words.	4 words.	5 words.	6 words.	7 words.	8 words.	9 words.	10 words.
<b>A.—AUSTRIA-HUNGARY AND LIECHTENSTEIN.</b>										
1 I.—To stations beyond sending office (a) .....		0.28	0.30	0.32	0.34	0.36	0.38	0.40	0.42	0.44
2 II.—For local messages.....		0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.22
3 B.—BOSNIA-HERZEGOVINA .....	Direct .....	0.34	0.39	0.44	0.49	0.54	0.59	0.64	0.69	0.74
<b>C.—OTHER COUNTRIES.</b>										
4 ALGERIA AND TUNIS.....	Switzerland-or Italy-Marseilles.....	1.26	1.44	1.62	1.80	1.98	2.16	2.34	2.52	2.70
5 BELGIUM.....	Germany, Switzerland, or Italy.....	0.77	0.88	0.99	1.10	1.21	1.32	1.43	1.54	1.65
6 BULGARIA.....	Bukowina-Roumania.....	0.68	0.72	0.81	0.90	0.99	1.08	1.17	1.26	1.35
7 DENMARK (f).....	Germany.....	0.77	0.88	0.99	1.10	1.21	1.32	1.43	1.54	1.65
8 GERMAN EMPIRE (g).....	Direct.....	0.36	0.42	0.48	0.54	0.60	0.66	0.72	0.78	0.84
9 FRANCE (with Corsica and Monaco).....	Switzerland, Italy, or Germany.....	0.84	0.96	1.08	1.20	1.32	1.44	1.56	1.68	1.80
10 GIBRALTAR (h).....	Switzerland-(or Italy)-Spain-San Roque.....	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80	3.00
11 GREECE: (i)										
1. Mainland .....	Italy-Zante .....	1.47	1.68	1.89	2.10	2.31	2.52	2.73	2.94	3.15
2. Islands.....										
12 a. Ithaca, Cephalonia, Zante, Spezzia, St. Maura, Hydra.....	Italy-Zante .....	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75
13 do.....	do.....	1.82	2.08	2.34	2.60	2.86	3.12	3.38	3.64	3.90
14 b. Tinos, Andros, Cythnos.....	do.....	2.03	2.32	2.61	2.90	3.19	3.48	3.77	4.06	4.35
15 c. Syra.....	do.....	1.33	1.52	1.71	1.90	2.09	2.28	2.47	2.66	2.85
16 d. Corfu.....	Italy-Otranto.....	1.33	1.52	1.71	1.90	2.09	2.28	2.47	2.66	2.85
17 GREAT BRITAIN AND CHANNEL ISLANDS.....	Switzerland, Italy, or Germany.....	1.19	1.36	1.53	1.70	1.87	2.04	2.21	2.38	2.55
18 HELIGOLAND.....	Germany.....	1.05	1.20	1.35	1.50	1.65	1.80	1.95	2.10	2.25
19 ITALY: (j)										
1. Within the old frontiers (k).....	Direct.....	0.32	0.36	0.40	0.44	0.48	0.52	0.56	0.60	0.64
2. Beyond the old frontiers.....	do.....	0.40	0.48	0.56	0.64	0.72	0.80	0.88	0.96	1.04
20 LUXEMBOURG.....	Germany.....	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
21 MALTA.....	Italy.....	1.33	1.52	1.71	1.90	2.09	2.28	2.47	2.66	2.85
22 MONACO (see France).....										
23 MONTENEGRO:										
1. From Dalmatia.....	Direct.....	0.28	0.32	0.36	0.40	0.44	0.48	0.52	0.56	0.60
2. From the other crown lands.....	do.....	0.42	0.48	0.54	0.60	0.66	0.72	0.78	0.84	0.90
24 NETHERLANDS.....	Germany.....	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
25 NORWAY.....	do.....	1.19	1.36	1.53	1.70	1.87	2.04	2.21	2.38	2.55
26 PORTUGAL.....	France.....	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80	3.00
27 ROUMANIA:										
1. From Galicia.....	Direct.....	0.36	0.42	0.48	0.54	0.60	0.66	0.72	0.78	0.84
2. From the other crown lands.....	Bukowina or Hungary.....	0.38	0.45	0.52	0.59	0.66	0.73	0.80	0.87	0.94
28 RUSSIA:										
1. In Europe:										
29 a. Close to boundary-line (l).....	Direct.....	0.32	0.36	0.40	0.44	0.48	0.52	0.56	0.60	0.64
30 b. Extended boundary-line.....	do.....	0.36	0.42	0.48	0.54	0.60	0.66	0.72	0.78	0.84
31 c. Balance of realm.....	do.....	1.12	1.28	1.44	1.60	1.76	1.92	2.08	2.24	2.40
32 2. In the Caucasus (m).....	do.....	1.68	1.92	2.16	2.40	2.64	2.88	3.12	3.36	3.60
33 SWEDEN.....	Germany.....	1.12	1.28	1.44	1.60	1.76	1.92	2.08	2.24	2.40
34 SWITZERLAND:										
1. From Tyrol, Vorarlberg, and Liechtenstein.....	Direct.....	0.32	0.36	0.40	0.44	0.48	0.52	0.56	0.60	0.64
2. From the other crown lands.....	do.....	0.36	0.42	0.48	0.54	0.60	0.66	0.72	0.78	0.84
35 SERBIA.....	Hungary or Bosnia.....	0.36	0.42	0.48	0.54	0.60	0.66	0.72	0.78	0.84
36 SPAIN (n).....	Switzerland, Italy, or Germany.....	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80	3.00
37 TUNIS (see Algeria).....										
38 TURKEY:										
1. European mainland (o).....	Italy-Vallona.....	1.47	1.68	1.89	2.10	2.31	2.52	2.73	2.94	3.15
2. Asiatic mainland:										
39 a. Seaport stations.....	Italy-Vallona or Zante.....	2.17	2.48	2.79	3.10	3.41	3.72	4.03	4.34	4.65
40 b. Stations in the interior.....	do.....	2.87	3.28	3.69	4.10	4.51	4.92	5.33	5.74	6.15
3. Islands:										
41 a. Chios.....	Italy-Zante.....	2.17	2.48	2.79	3.10	3.41	3.72	4.03	4.34	4.65
42 b. Metelin, Samos, and Rhodes.....	Italy-Vallona or Zante.....	2.52	2.88	3.24	3.60	3.96	4.32	4.68	5.04	5.40
43 c. Cyprus.....	do.....	2.73	3.12	3.51	3.90	4.29	4.68	5.07	5.46	5.85
44 d. Candia (Crete).....	do.....	2.87	3.28	3.69	4.10	4.51	4.92	5.33	5.74	6.15

a Telegrams intended for stations beyond the place of origin, and sent through a railroad-telegraph office connected with the state telegraph service, are rated 1 krenzer more per word than the regular tariff.

b Telegrams of two words, containing only the name of the person addressed and the name of the point of destination, cannot be accepted.

c Telegrams indicated in column c are not admissible for transmission to the respective countries opposite which the letters used in the column are placed. The abbreviations used in this column are as follows: D=Urgent telegram; RO=Telegram to be delivered open; G=Secret telegrams in cipher or letters; GB=Secret telegram in letters.

d The means for further transportation are indicated in column d by the following abbreviations: P=Post; X=Express messenger; E=Courier.

e The maritime postage as indicated in column e is to be collected on all telegrams which shall be further transmitted from the respective country by mail over sea.

f On telegrams destined for the Danish semaphore-station Hammershus (Island of Bornholm) a messenger's fee of 50 krenzer is to be collected in addition to the telegraph and semaphore rates.

g The maritime postage from Germany to countries not members of the postal union is 50 krenzer.

h The maritime postage from Gibraltar to Tangiers and Morocco is 5 krenzer

AUSTRO HUNGARIAN RATES.

messages (T C) are charged at 1½, and *urgent* messages at 3 times the ordinary rates. Messages on which for the original telegram, to which are to be added: (1) in the case of an acknowledgment of receipt, the rates for which prepayment is made. (a) countries of Europe.

and the Austrian florin, which equals 47 cents United States silver currency.

11 words.	12 words.	13 words.	14 words.	15 words.	16 words.	17 words.	18 words.	19 words.	20 words.	21 words.	22 words.	23 words.	24 words.	25 words.	26 words.	27 words.	28 words.	29 words.	30 words.	Each additional word costs—	Inadmissible telegrams.	Ways and means of transmission.	Sea postage.		
0.46	0.48	0.50	0.52	0.54	0.56	0.58	0.60	0.62	0.64	0.66	0.68	0.70	0.72	0.74	0.76	0.78	0.80	0.82	0.84	0.02	}	P. X. E.	0.50	1 to 12	
0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.01					}
0.79	0.84	0.89	0.94	0.99	1.04	1.09	1.14	1.19	1.24	1.29	1.34	1.39	1.44	1.49	1.54	1.59	1.64	1.69	1.74	0.05	}	P. X. E.	0.50	4	
2.88	3.06	3.24	3.42	3.60	3.78	3.96	4.14	4.32	4.50	4.68	4.86	5.04	5.22	5.40	5.58	5.76	5.94	6.12	6.30	0.18					}
1.76	1.87	1.98	2.09	2.20	2.31	2.42	2.53	2.64	2.75	2.86	2.97	3.08	3.19	3.30	3.41	3.52	3.63	3.74	3.85	0.11	}	D. G. RO.	P.	0.50	
1.44	1.53	1.62	1.71	1.80	1.89	1.98	2.07	2.16	2.25	2.34	2.43	2.52	2.61	2.70	2.79	2.88	2.97	3.06	3.15	0.09					}
1.76	1.87	1.98	2.09	2.20	2.31	2.42	2.53	2.64	2.75	2.86	2.97	3.08	3.19	3.30	3.41	3.52	3.63	3.74	3.85	0.11	}	P. X. E.	0.50	8	
0.90	0.96	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50	1.56	1.62	1.68	1.74	1.80	1.86	1.92	1.98	2.04	0.06					}
1.92	2.04	2.16	2.28	2.40	2.52	2.64	2.76	2.88	3.00	3.12	3.24	3.36	3.48	3.60	3.72	3.84	3.96	4.08	4.20	0.12	}	D. RO.	0.50	10	
3.20	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	0.20					}
3.36	3.57	3.78	3.99	4.20	4.41	4.62	4.83	5.04	5.25	5.46	5.67	5.88	6.09	6.30	6.51	6.72	6.93	7.14	7.35	0.21	}	P.	0.50	16	
4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.50	8.75	0.25					}
4.16	4.42	4.68	4.94	5.20	5.46	5.72	5.98	6.24	6.50	6.76	7.02	7.28	7.54	7.80	8.06	8.32	8.58	8.84	9.10	0.26	}	P. X. E.	0.50	18 to 19	
4.64	4.93	5.22	5.51	5.80	6.09	6.38	6.67	6.96	7.25	7.54	7.83	8.12	8.41	8.70	8.99	9.28	9.57	9.86	10.15	0.29					}
3.04	3.23	3.42	3.61	3.80	3.99	4.18	4.37	4.56	4.75	4.94	5.13	5.32	5.51	5.70	5.89	6.08	6.27	6.46	6.65	0.19	}	P. X. E.	0.50	21	
2.72	2.89	3.06	3.23	3.40	3.57	3.74	3.91	4.08	4.25	4.42	4.59	4.76	4.93	5.10	5.27	5.44	5.61	5.78	5.95	0.17					}
2.40	2.55	2.70	2.85	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	4.50	4.65	4.80	4.95	5.10	5.25	0.15	}	D. G. RO.	0.50	23 to 24	
0.68	0.72	0.76	0.80	0.84	0.88	0.92	0.96	1.00	1.04	1.08	1.12	1.16	1.20	1.24	1.28	1.32	1.36	1.40	1.44	0.04					}
1.12	1.20	1.28	1.36	1.44	1.52	1.60	1.68	1.76	1.84	1.92	2.00	2.08	2.16	2.24	2.32	2.40	2.48	2.56	2.64	0.08	}	RO.	1.00	26	
1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	0.10					}
3.04	3.23	3.42	3.61	3.80	3.99	4.18	4.37	4.56	4.75	4.94	5.13	5.32	5.51	5.70	5.89	6.08	6.27	6.46	6.65	0.19	}	P. X.	1.00	29	
0.04	0.68	0.72	0.76	0.80	0.84	0.88	0.92	0.96	1.00	1.04	1.08	1.12	1.16	1.20	1.24	1.28	1.32	1.36	1.40	0.04					}
0.96	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50	1.56	1.62	1.68	1.74	1.80	1.86	1.92	1.98	2.04	2.10	0.06	}	D.	0.50	31	
1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	0.10					}
2.72	2.89	3.06	3.23	3.40	3.57	3.74	3.91	4.08	4.25	4.42	4.59	4.76	4.93	5.10	5.27	5.44	5.61	5.78	5.95	0.17	}	P. X.	0.50	33	
3.20	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	0.20					}
0.90	0.96	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50	1.56	1.62	1.68	1.74	1.80	1.86	1.92	1.98	2.04	0.06	}	P.	0.50	36	
1.01	1.08	1.15	1.22	1.29	1.36	1.43	1.50	1.57	1.64	1.71	1.78	1.85	1.92	1.99	2.06	2.13	2.20	2.27	2.34	0.07					}
0.68	0.72	0.76	0.80	0.84	0.88	0.92	0.96	1.00	1.04	1.08	1.12	1.16	1.20	1.24	1.28	1.32	1.36	1.40	1.44	0.04	}	P. X. E.	0.50	38 to 39	
0.90	0.96	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50	1.56	1.62	1.68	1.74	1.80	1.86	1.92	1.98	2.04	0.06					}
2.56	2.72	2.88	3.04	3.20	3.36	3.52	3.68	3.84	4.00	4.16	4.32	4.48	4.64	4.80	4.96	5.12	5.28	5.44	5.60	0.16	}	D. RO.	0.50	41	
3.84	4.08	4.32	4.56	4.80	5.04	5.28	5.52	5.76	6.00	6.24	6.48	6.72	6.96	7.20	7.44	7.68	7.92	8.16	8.40	0.24					}
2.56	2.72	2.88	3.04	3.20	3.36	3.52	3.68	3.84	4.00	4.16	4.32	4.48	4.64	4.80	4.96	5.12	5.28	5.44	5.60	0.16	}	D. G.	0.50	43	
0.68	0.72	0.76	0.80	0.84	0.88	0.92	0.96	1.00	1.04	1.08	1.12	1.16	1.20	1.24	1.28	1.32	1.36	1.40	1.44	0.04					}
0.90	0.96	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50	1.56	1.62	1.68	1.74	1.80	1.86	1.92	1.98	2.04	0.06	}	D. G.	0.50	46	
0.90	0.96	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44	1.50	1.56	1.62	1.68	1.74	1.80	1.86	1.92	1.98	2.04	0.06					}
3.20	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	0.20	}	D. G. RO.	1.00	48 to 49	
3.36	3.57	3.78	3.99	4.20	4.41	4.62	4.83	5.04	5.25	5.46	5.67	5.88	6.09	6.30	6.51	6.72	6.93	7.14	7.35	0.21					}
4.96	5.27	5.58	5.89	6.20	6.51	6.82	7.13	7.44	7.75	8.06	8.37	8.68	8.99	9.30	9.61	9.92	10.23	10.54	10.85	0.31	}	D. G. RO.	1.00	51	
6.56	6.97	7.38	7.79	8.20	8.61	9.02	9.43	9.84	10.25	10.66	11.07	11.48	11.89	12.30	12.71	13.12	13.53	13.94	14.35	0.41					}
4.96	5.27	5.58	5.89	6.20	6.51	6.82	7.13	7.44	7.75	8.06	8.37	8.68	8.99	9.30	9.61	9.92	10.23	10.54	10.85	0.31	}	P.	1.00	53	
5.76	6.12	6.48	6.84	7.20	7.56	7.92	8.28	8.64	9.00	9.36	9.72	10.08	10.44	10.80	11.16	11.52	11.88	12.24	12.60	0.36					}
6.24	6.63	7.02	7.41	7.80	8.19	8.58	8.97	9.36	9.75	10.14	10.53	10.92	11.31	11.70	12.09	12.48	12.87	13.26	13.65	0.39	}	P.	1.00	55	
6.56	6.97	7.38	7.79	8.20	8.61	9.02	9.43	9.84	10.25	10.66	11.07	11.48	11.89	12.30	12.71	13.12	13.53	13.94	14.35	0.41					}

i The maritime postage from Greece to countries outside of Europe is 1 florin.  
 j The maritime postage from Italy to Australia is 1 florin.  
 k The rates fixed for the transmission to Italy in the zone of the old frontier applies to the Austrian stations in Tyrol, Vorarlberg, Corinthia, Carniola, Goritz, Trieste, Istria, and Leichtenstein on the one part, and to the Italian stations situated on the territory bordered by the Po, the Ticino, and the Lago Maggiore.  
 l The rates for telegrams to Russia, "close to the boundary-line," apply to dispatches between Brody and Radziwilow, between Podwoloczyska and Woloczysk, as well as between Bojan, Czernowitz, Nowoselika, and Sadagora on the one part, and Chotin and Nowoselzy on the other part. The rates for the "extended boundary-line" apply to telegrams between the Austrian stations in Galizia and the Bukowina, and such Russian stations whose distance from the Austro-Russian frontier does not exceed 185 kilometers.  
 m The rates as given for the Caucasus are to be augmented by 1 florin 80 kreuzer for each telegram, if sent to the station *Tschikisehlar* on the Caspian sea.  
 n The Spanish mail rates for telegrams to be further transmitted beyond sea are as follows: To the Canary Islands, the transmaritime Spanish possessions, the north coast of Africa, and the coast of Morocco, 13 kreuzer; to all other countries, 50 kreuzer.  
 o Urgent telegrams may be exchanged with Constantinople.

## POSTAL TELEGRAPHS.

## STATISTICS OF TELEGRAPHS IN EUROPE

	AUSTRIA-HUNGARY.		Belgium.	Denmark.	France.	German states.	Great Britain and Ireland. <sup>1</sup>	Greece.
	Austria.	Hungary.						
SYSTEM.								
1 Area in square miles.....	115,920	124,459	11,330	14,709	204,016	208,246	121,849	19,386
2 Population at last census.....	22,130,684	15,417,327	5,536,654	1,080,675	36,901,788	45,198,401	34,468,552	1,079,765
3 Miles of line.....	<sup>2</sup> 21,783	<sup>3</sup> 9,053	3,485	2,192	42,893	44,009	26,313	2,220
4 Miles of wire.....	<sup>2</sup> 56,987	<sup>3</sup> 32,453	16,251	5,807	124,536	158,983	<sup>6</sup> 121,026	<sup>7</sup> 2,846
5 Number of instruments.....	3,694	1,420	1,344	290	8,370	12,849	12,947	157
6 <sup>8</sup> Cost of lines and equipment to date..... dollars..	7,168,479	3,419,517	1,009,888	1,317,434	11,752,526	13,658,724	9,944,918	685,619
7 Number of offices.....	<sup>9</sup> 2,554	<sup>10</sup> 996	<sup>11</sup> 772	<sup>12</sup> 281	<sup>13</sup> 5,476	<sup>14</sup> 10,021	<sup>15</sup> 5,433	88
8 Number of employes.....	2,597	<sup>13</sup> 1,346	<sup>14</sup> 2,221	584	<sup>15</sup> 10,054	<sup>(26)</sup>	<sup>17</sup> 11,367	379
MESSAGES.								
1 Internal.....	3,807,776	1,587,107	2,031,426	464,379	15,864,298	11,313,443	<sup>31</sup> 25,913,534	293,928
2 International sent.....	772,924	555,799	500,282	156,817	1,582,234	1,909,400	1,907,168	29,398
Total sent.....	4,080,700	2,142,906	2,531,708	621,196	17,446,532	13,222,843	27,820,702	323,326
3 International received.....	848,124	599,056	535,363	176,164	1,413,256	1,996,454	1,642,997	33,428
4 Transit.....	378,324	99,981	356,724	311,413	397,840	569,066	356,746	40,581
Total international.....	1,999,372	1,254,836	1,392,389	444,384	3,393,330	4,474,860	3,906,911	103,407
Total passing over wires.....	5,307,148	2,841,943	3,423,815	1,168,773	19,257,628	15,788,303	29,820,445	397,335
RECEIPTS.								
1 From internal messages..... dollars..	937,376 03	277,945 85	243,546 59	68,576 88	2,551,081 01	2,237,489 29	<sup>32</sup> 6,342,101 45	74,511 52
2 From international messages..... do....	679,170 88	201,271 14	233,943 40	105,530 44	1,542,883 49	1,890,679 00	<sup>34</sup> 889,365 38	28,387 56
Total from messages..... do....	1,616,546 91	479,216 99	477,489 99	174,107 32	4,094,564 50	4,128,168 29	7,231,466 83	97,899 08
3 Divers..... do....	99,040 54	43,273 49	8,036 19	2,110 33	468,554 01	.....	<sup>35</sup> 539,280 48	.....
Total..... do....	1,715,587 45	522,490 48	485,526 18	176,217 65	4,563,118 51	4,128,168 29	7,770,747 31	97,899 08
EXPENSES.								
1 Salaries..... dollars..	1,092,486 88	443,893 77	509,161 73	146,852 72	3,184,507 91	( <sup>37</sup> )	4,080,905 34	69,535 56
2 Maintenance, supplies, etc..... do....	487,984 80	150,657 30	63,856 70	51,155 82	1,097,318 81	.....	1,409,678 54	25,841 97
Total..... do....	1,580,471 68	594,551 07	573,048 43	198,008 54	4,281,826 72	.....	5,490,583 88	95,377 53
3 Profit..... do....	135,115 77	.....	.....	.....	281,291 79	.....	2,280,163 43	2,521 55
4 Deficit..... do....	.....	72,060 59	87,522 25	21,790 89	.....	.....	.....	.....
PROPORTIONS.								
1 Square miles per mile of line.....	5.3	13.7	3.2	6.7	4.7	4.7	4.6	8.7
2 Square miles per mile of wire.....	2	3.8	0.6	2.5	1.6	1.3	1	6.8
3 Square miles per office.....	45.3	124.9	14.6	52.3	37.2	20.7	22.4	220.2
4 Inhabitants per office.....	8,665	15,479	7,171	7,048	6,738	4,510	6,344	19,088
5 Miles of line per office.....	8.5	9	4.5	7.8	7.8	4.3	4.8	25.2
6 Cost per mile of single-wire line..... dollars..	198 96	199 20	133 80	<sup>46</sup> 361 56	158 76	163 08	175 80	233 88
7 Cost per mile of additional wire..... do....	49 74	49 80	33 45	90 39	39 69	40 77	43 95	58 47
8 Messages per mile of wire.....	93	87	210	190	154	99	246	139
9 Messages per instrument.....	1,436	2,001	2,547	3,823	2,300	1,228	2,303	2,530
10 Inhabitants per message sent.....	5	7	2	3	2	3	1	5
11 Receipt per message of all kinds..... dollars..	0 30	0 16	0 13	0 15	0 21	0 26	0 24	0 24
12 Receipt per internal message..... do....	0 28	.....	0 11	0 14	0 16	0 19	0 24	0 25
13 Receipt per international message..... do....	0 33	.....	0 16	0 16	0 45	0 42	0 22	0 22
14 Average yearly pay of employes..... do....	420 67	329 78	229 24	251 46	316 74	.....	359 01	183 47
15 Expense per message of all kinds..... do....	0 29	0 20	0 16	0 17	0 22	.....	0 18	0 24
16 Expense per office..... do....	618 82	596 93	742 29	704 65	781 92	.....	1,010 59	1,063 83
17 Maintenance per mile of line..... do....	22 40	16 64	18 33	23 33	25 58	.....	53 57	11 64
18 Percentage of profit to cost.....	1.8	.....	.....	.....	2.3	.....	22.9	0.3

<sup>1</sup> Fiscal year ending March 31, 1881. <sup>2</sup> Of these about 7,300 miles of line and 18,000 miles of wire are railroad lines. <sup>3</sup> Of these about 620 miles of line and 10,125 miles of wire are private lines. <sup>4</sup> Including about 4,800 miles of line and 33,800 miles of wire belonging to railroad and private companies. <sup>5</sup> Including about 2,000 miles of line and 5,650 miles of wire belonging to railroads. <sup>6</sup> Including about 9,000 miles of private wires, but not including railroad lines. <sup>7</sup> Not including those of railroad offices. <sup>8</sup> The total cost of construction and equipment of telegraph lines in all countries in Europe excepting Great Britain and Ireland, Italy, Roumania, and Turkey, down to the year 1872, was given upon the authority of official reports and of the international bureau of telegraphs, in a report to the department of state by Robert B. Lines, a commissioner to the Vienna exhibition of 1873. From the data thus furnished a calculation of the cost in the countries above excepted was made, it being estimated that a line of poles with a single wire costs four times as much as each additional wire. It is upon this basis that the cost of lines in Europe as they existed down to 1880 has been estimated, but these figures are doubtless in excess of the actual cost of construction, as in many cases the continental governments purchased private lines at a high price. The earlier telegraphs were also built much more expensively than those more lately constructed. Thus the total cost of Belgian telegraphs down to December 31, 1880, is given in the report of that government as 4,161,000 francs, showing that the cost per mile has decreased since 1872 from the average on which the cost is calculated above. The estimate for the United States is based on the report of the president of the Western Union Telegraph Company for 1869, and upon other data found in Mr. Lines' report. <sup>9</sup> Including 1,310 railroad and 97 private offices and 15 offices of deposit. <sup>10</sup> Including 585 railroad or private offices. <sup>11</sup> Including 99 railroad or private offices and 460 offices of deposit. <sup>12</sup> Including 149 railroad or private offices. <sup>13</sup> Including 1,708 railroad or private offices. <sup>14</sup> Including 2,926 railroad or private offices and 1,989 offices of deposit. <sup>15</sup> Including 1,423 railroad or private offices and 35 offices of deposit. <sup>16</sup> Including 759 railroad or private offices. <sup>17</sup> Including 205 railroad or private offices. <sup>18</sup> Including 122 railroad or private offices. <sup>19</sup> Including 101 railroad or private

POSTAL TELEGRAPHS.

AND THE UNITED STATES FOR THE YEAR 1880.

Italy.	Nether-lands.	Norway.	Portu-gal.	Roumania.	Russia.	Servia.	Spain.	Sweden.	Switzer-land.	Turkey.	Europe.	United States.
114,404	12,632	121,892	.....	61,834	2,060,940	18,795	.....	170,509	15,939	.....	3,396,860	2,970,000
28,209,620	4,060,578	1,870,000	.....	5,040,000	74,125,838	1,701,000	.....	4,567,300	2,831,787	.....	285,719,969	50,155,783
16,335	2,374	5,393	.....	3,237	58,740	1,355	.....	4,074	4,074	.....	250,614	110,720 <sup>33</sup>
53,381	8,585	9,926	.....	5,145	133,752	1,948	.....	18,093	9,953	.....	759,672	291,212 <sup>34</sup>
72,534	462	452	.....	465	5,716	90	.....	1,411	1,478	.....	53,679	.....
5,217,787	1,789,529	1,922,952	.....	795,187	15,113,504	323,823	.....	3,016,566	728,409	.....	77,804,862	18,701,785
162,324	17,306	18,249	.....	19,203	2,621	62	.....	21,784	21,108	.....	33,368	12,510
5,097	1,373	741	.....	1,286	9,300	329	.....	694	1,583	.....	.....	14,928
5,222,489	1,915,349	491,929	.....	685,642	5,796,268	152,372	.....	686,862	1,751,018	.....	77,477,820	.....
454,906	460,087	144,171	.....	120,060	496,955	27,382	.....	170,705	383,247	.....	9,671,535	.....
5,677,395	2,375,436	636,100	.....	805,702	6,293,223	179,754	.....	857,567	2,134,265	.....	87,149,355	31,703,181
487,383	518,249	169,484	.....	120,471	500,126	27,896	.....	186,411	370,640	.....	.....	.....
199,579	189,032	2,682	.....	11,897	68,346	1,289	.....	93,108	262,333	.....	.....	.....
1,141,868	1,167,368	316,337	.....	252,398	1,005,427	56,567	.....	450,224	1,016,220	.....	.....	.....
6,364,357	3,082,717	808,266	.....	938,040	6,861,695	208,939	.....	1,137,086	2,767,238	.....	87,149,355	31,703,181
1,147,590	230,332	158,626	.....	164,021	4,662,796	29,377	.....	201,029	232,016	.....	19,559,020	16
598,498	176,490	89,458	.....	90,398	1,194,673	7,728	.....	152,815	193,660	.....	7,979,954	65
1,656,088	406,823	248,085	.....	254,419	5,857,469	37,106	.....	353,844	425,677	.....	27,538,974	81
7,197	.....	3,294	.....	29,643	143,141	26	.....	6,159	21,099	.....	1,371,100	27
1,663,286	406,823	251,379	.....	284,062	6,000,611	16	.....	360,004	446,776	.....	28,910,075	68
1,067,860	431,811	211,937	.....	373,887	2,728,892	67	.....	263,301	254,297	.....	.....	4,886,128
328,826	124,474	70,435	.....	41,755	1,573,715	27	.....	69,474	95,342	.....	.....	5,332,152
1,366,637	556,286	282,373	.....	415,142	4,302,607	94	.....	332,776	349,640	.....	.....	10,218,281
266,599	.....	.....	.....	.....	1,698,003	22	.....	27,228	97,136	.....	.....	6,478,342
.....	149,463	30,993	.....	131,079	.....	25	.....	44,853	.....	.....	.....	.....
7	5.3	2.2	.....	19.1	35	13.8	.....	23.8	3.9	.....	13.5	26.8
2.1	1.4	12.2	.....	12	15.4	9.6	.....	9.4	1.6	.....	4.4	10.2
49.2	31.8	489.5	.....	304.6	786.3	303.1	.....	217.4	14.3	.....	101.7	237.41
12,134	10,253	7,510	.....	24,827	28,281	27,435	.....	5,825	2,555	.....	8,562	4,009
7	5.9	21.6	.....	15.9	22.4	21.8	.....	9.1	3.6	.....	7.5	8.9
175.80	437.20	244.20	.....	175.80	163.96	175.80	.....	258.24	111.00	.....	176.52	120
43.95	87.55	61.05	.....	43.95	40.99	43.95	.....	64.56	27.75	.....	44.13	30
119	359	81	.....	182	51	107	.....	62	278	.....	131	108
511	6,672	1,788	.....	2,017	1,200	2,321	.....	805	1,872	.....	1,865	.....
4	1	2	.....	6	1	9	.....	5	1	.....	3	1.58
0.26	0.13	0.30	.....	0.27	0.85	0.17	.....	0.31	0.15	.....	0.32	0.43
0.21	0.12	0.32	.....	0.23	0.80	0.19	.....	0.29	0.13	.....	0.25	.....
0.44	0.15	0.28	.....	0.35	1.12	0.13	.....	0.33	0.19	.....	0.83	.....
209.50	314.50	286.01	.....	290.34	293.42	199.28	.....	379.39	160.64	.....	.....	327.31
0.21	0.18	0.34	.....	0.44	0.62	0.39	.....	0.29	0.12	.....	.....	0.32
600.98	1,404.76	1,134.02	.....	2,045.03	1,641.59	1,326.27	.....	424.45	315.55	.....	.....	316.31
20.13	52.43	13.06	.....	12.89	26.79	12.29	.....	9.70	23.40	.....	.....	48.16
5	.....	.....	.....	.....	11.2	.....	.....	0.9	13.3	.....	.....	34.6

offices. <sup>20</sup> Including 1,464 railroad or private offices and 41 offices of deposit. <sup>21</sup> Including 608 railroad or private offices. <sup>22</sup> Including 103 railroad or private offices and 69 offices of deposit. <sup>23</sup> Not including post-office employes. <sup>24</sup> Not including 2,162 railroad and postal employes, or numerous messengers who perform other than telegraphic service. <sup>25</sup> Of this number 6,632, including the 923 principal employes, assist more or less in the service of the post-office. <sup>26</sup> The telegraphic and postal service in Germany are so intimately united that no separation of their employes is now made in the official reports. <sup>27</sup> Including only employes for telegraph service exclusively, and excluding workmen and others temporarily employed. <sup>28</sup> Including postal employes. <sup>29</sup> In addition, 5,545 railroad employes are employed in the transmission of messages. <sup>30</sup> Excluding about 600 railroad employes. <sup>31</sup> Comprising press telegrams. <sup>32</sup> Comprising about \$360,000 from press telegrams. <sup>33</sup> Including about \$260,000 balance of accounts with the railroad companies for the exchange of messages between their offices and those of the government. <sup>34</sup> Including rents for lines used by cable companies. <sup>35</sup> Including about \$400,000 from rents of wires, of which 1,945 are leased to private parties and 27 to newspapers. <sup>36</sup> Including about \$40,000 subscribed by communes, etc., for the opening of new lines and offices. <sup>37</sup> See note on employes. <sup>38</sup> Including about \$22,000 for the pension fund. <sup>39</sup> Divided as follows: Maintenance of lines, \$887,759 04; rent and care of offices, \$440,978 66; furniture, paper, etc., \$44,251 03; delivery of messages to points where there are no offices, \$71,471 10; reimbursement of overcharges, \$11,444 92; divers expenses, \$117,810 52. <sup>40</sup> As stated in the note upon the cost of construction, these figures are based on official data furnished in 1872. The special causes which made the average cost of lines in Denmark and Netherlands existing in 1872 so much higher than the cost in other countries probably are now operative, but the error will not materially affect the calculation for the whole of Europe.

MEM.—See latest reports from Denmark and Netherlands for present cost of lines.

POSTAL TELEGRAPHS.

STATISTICS OF TELEGRAPHS IN EUROPE AND

[NOTE.—The following table is taken from the report

	AUSTRIA-HUNGARY.		Belgium.	Denmark.	France.	GERMAN STATES.			Great Britain and Ireland. (b)	Greece.
	Austria.	Hungary.				Bavaria.	North Germany. (a)	Württemberg.		
<b>SYSTEM.</b>										
1 Area in square miles .....	109,331	114,164	11,339	14,709	187,072	29,207	187,611	6,533	121,849	19,287
2 Population at last census .....	20,394,498	15,417,327	5,021,336	1,784,741	36,102,921	4,824,421	33,504,611	1,778,396	31,817,000	1,457,894
3 Miles of line .....	11,447	7,426	2,723	1,460	28,137	4,062	16,855	1,315	f22,781	1,187
4 Miles of wire .....	30,072	25,132	10,447	3,806	76,054	13,241	58,036	2,862	f95,360	1,264
5 Number of instruments .....	1,285	1,081	910	207	4,147	1,189	3,253	372	7,542	90
6 Cost of lines and equipment to date. dollars .....	3,204,761	2,372,068	m623,790	739,929	6,383,964	950,367	4,436,178	355,160	n7,194,781	282,137
7 Number of offices. (o) .....	1,659	764	522	169	3,463	755	3,058	224	5,474	48
8 Number of employes .....	2,750	1,405	p1,580	408	5,260	p322	5,569	128	p10,576	278
<b>MESSAGES. (a)</b>										
9 Internal .....	62,822,411	2,016,001	c1,589,344	d237,902	6,004,462	600,554	e6,783,533	228,585	f15,535,780	156,884
10 International sent .....	715,690	82,995	310,261	107,428	827,581	334,068	71,443,972	168,868	1,002,216	12,846
11 Total sent .....	3,538,101	2,098,996	1,899,605	345,340	6,832,043	934,622	8,227,505	397,453	16,537,996	169,730
12 International received .....	638,721	87,334	850,262	109,331	914,153	362,841	1,554,079	181,167	869,107	13,784
13 Transit .....	501,189	170,532	157,496	129,881	306,207	278,768	354,730	47,394	.....	.....
14 Total international .....	1,855,600	340,861	818,019	346,650	2,047,941	975,677	3,352,790	397,429	1,871,323	26,630
15 Total passing over wires .....	4,673,011	2,356,862	2,407,363	584,552	8,052,403	1,576,281	10,136,323	626,014	17,407,103	183,514
<b>RECEIPTS.</b>										
16 From internal messages .....	761,730	498,643	173,490	46,913	1,359,298	62,411	1,304,373	36,412	a3,985,825	47,205
17 From international messages .....	542,433	50,270	180,710	79,448	1,021,787	143,639	1,093,900	37,823	b882,995	7,099
18 Total from messages .....	1,304,163	554,913	354,209	126,361	2,381,085	206,050	2,398,273	74,235	4,868,820	54,304
19 Divers (c) .....	125,572	25,508	437	3,028	150,662	1,829	25,556	2,019	c219,510	.....
20 Total .....	1,429,735	580,421	354,646	129,389	2,531,747	207,879	2,423,829	76,254	5,088,330	54,304
<b>EXPENSES.</b>										
21 Salaries .....	844,044	452,920	220,132	85,853	1,900,000	87,306	1,678,349	48,805	a3,300,000	37,078
22 Maintenance, supplies, etc .....	553,550	320,920	151,860	30,502	639,000	40,434	706,943	26,469	a1,268,445	18,729
23 Total .....	1,397,594	773,840	371,992	116,355	2,539,000	136,740	2,385,292	75,274	4,568,445	75,807
Profit .....	32,141	.....	.....	13,034	.....	71,139	38,537	980	519,885	.....
Deficit .....	.....	143,419	17,346	.....	7,253	.....	.....	.....	.....	21,503
<b>PERCENTAGES.</b>										
24 Square miles per mile of line .....	9.5	15.4	4.2	10	6.6	7.1	11.1	4.9	5.4	16.3
25 Square miles per mile of wire .....	3.6	4.5	1	3.9	2.5	2.2	3.2	2.3	1.3	16.1
26 Square miles per office .....	65.8	149.2	21	87	53.9	38.7	61.3	25	22.2	402
27 Inhabitants per office .....	12,293	20,165	9,619	10,561	10,425	6,390	10,953	7,493	5,812	30,373
28 Miles of line per office .....	6.9	9.6	5.2	8.6	8.1	5.4	5.5	5.8	4.1	226
29 Cost per mile of single-wire line (a) dollars .....	198.96	199.2	133.8	361.66	158.76	149.08	163.08	208.12	175.8	232.88
30 Cost per mile of additional wire (a) do .....	49.74	49.8	33.45	90.39	39.69	37.27	40.77	52.03	43.95	58.47
31 Messages per mile of wire .....	155	93	230	153	106	111	176	219	183	141
32 Messages per instrument .....	3,640	2,180	2,755	2,824	1,773	1,326	3,116	2,976	23,054	2,639
33 Inhabitants per message sent .....	6	7	3	5	5	5	4	4	2	8
34 Receipt per message of all kinds .....	0.28	0.237	0.147	0.216	0.267	0.13	0.236	0.118	0.279	0.294
35 Receipt per internal message .....	0.23	0.247	0.109	0.197	0.226	0.104	0.193	0.159	0.256	0.309
36 Receipt per international message .....	0.29	0.163	0.221	0.229	0.499	0.147	0.323	0.095	0.47	0.266
37 Average yearly pay of employes .....	307	322.36	139.32	210.42	361	271	301.37	365	313.17	205.31
38 Expense per message of all kinds .....	0.29	0.328	0.154	0.199	0.293	0.087	0.235	0.12	0.268	0.413
39 Expense per office .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40 Maintenance per mile of line .....	48.36	43.2	59.4	20.89	22.71	12.12	41.94	20.13	55.68	15.77
41 Percentage of profit to cost .....	1	.....	.....	1.7	.....	7.5	0.09	0.05	7.2	.....

System.—a. Including Baden and the French provinces. b. Year commencing April 1, 1872. c. Year commencing November 1-13, 1871. d. Figures for 1870 last received. e. Year commencing July 1, 1871. Figures in this column are based on those furnished in official reports and letters to the Postmaster-General from the officers of companies controlling over nine-tenths of the telegraphs in the United States. f. Not including lines of railroad companies not operated by government (about 8,000 miles of line and 35,000 miles of wire). g. Including over 6,500 miles of wire belonging to railroad companies. h. Russia has about 6,300 miles of line in her Asiatic possessions and 3,200 miles of wire in Europe on posts belonging to railroad companies. The railroad and private companies own about 9,500 miles of line. i. Railroad companies own of this about 200 miles of line and 2,000 miles of wire. k. Not including lines of railroad companies and private parties. l. Not including 1,200 instruments in offices of railroad companies. m. Reimbursed from profits of former years. n. Estimated at the average cost of continental lines. o. Including offices of railroad and private companies open to the public. In Great Britain each post-office is an office of deposit for telegrams. There are also 31 offices of deposit connected with central stations by pneumatic tubes. Offices of deposit also exist in Württemberg, Austria, Belgium, Italy, Russia, Sweden, and Switzerland. p. Employed exclusively in telegraphic service. The railroad service in Europe is very generally carried on by semaphore or alphabetical dial-instruments, operated by railroad employes. q. Including all employes of postal as well as telegraphic service.

Messages.—a. Including generally messages on public service and excluding free railroad and telegraph "service" messages and those sent under private franks. The maximum message on the continent contains 20 words, including address and signature, which are estimated, when paid for, to average together 7 words, leaving 13 "body words." In Great Britain the message is of 20 body-words and in the United States of 10. b. Excluding over 100,000 relating to meteorological service, to the "bourse", to the corn-exchange, and to the state lotteries, which are called "service-messages". c. 55 per cent. of these are on social affairs. Nearly 800,000 railroad, postal, and telegraphic service messages are excluded. d. Meteorological messages not counted. e. Including internal-service

THE UNITED STATES FOR THE YEAR 1872.

of the commissioners to the Vienna exhibition of 1873.]

Italy.	Nether-lands.	Norway.	Portugal.	Roumania.	Russia.	Servia. (c)	Spain.	Sweden.	Switzer-land.	Turkey. (d)	Europe.	United States. (e)
109,398	12,632	121,892	35,092	46,623	1,899,702	15,849	194,993	153,573	15,939	133,570	3,540,630	*3,384,865
25,944,543	3,688,337	1,729,691	3,995,153	4,424,961	63,658,934	1,825,437	16,649,960	4,168,882	2,669,095	10,510,000	290,868,158	38,558,371
g11,535	1,945	3,823	1,841	1,804	h33,321	814	6,955	i4,171	k3,271	15,929	182,807	77,000
g39,645	6,672	5,961	3,388	3,437	65,716	1,213	15,815	i10,685	k7,470	26,551	502,836	165,000
1,550	345	252	187	163	21,565	41	408	636	955	1,285	27,463	12,000
n3,263,287	1,095,083	1,065,676	275,348	n388,914	6,792,021	160,637	1,049,751	1,498,715	470,808	n3,260,155	46,692,069	11,880,000
1,818	282	148	120	60	1,333	30	215	320	707	393	21,071	6,162
3,530	914	582	650	q1,106	5,481	231	1,826	531	1,134	2,536	46,797	10,000
3,456,596	g1,217,837	344,695	h210,789	651,170	2,551,703	96,242	1,021,761	i563,819	1,498,285	640,063	48,720,416	k13,700,000
337,760	274,728	95,657	32,953	86,974	246,030	26,264	93,528	111,783	251,707	80,563	6,544,882	-----
3,794,356	1,492,565	440,352	243,742	738,144	2,797,733	122,506	1,115,239	675,602	1,749,992	720,626	55,265,298	13,700,000
364,485	310,223	111,659	34,954	96,542	250,679	27,103	102,315	113,211	246,597	85,477	-----	-----
161,254	215,825	22,330	10,735	10,578	27,577	37,395	37,049	62,601	150,158	19,290	-----	-----
863,409	800,836	229,646	78,642	194,094	524,286	90,762	232,392	287,595	648,402	185,330	6,544,882	-----
4,820,095	2,018,673	574,841	269,431	845,264	3,075,989	187,004	1,254,653	851,414	2,146,747	825,393	55,265,298	13,700,000
870,272	158,103	114,052	46,012	147,619	2,776,671	20,248	206,447	165,488	166,060	960,046	13,907,313	9,590,000
434,156	112,071	83,135	21,631	21,133	691,749	17,646	148,436	123,262	147,860	250,188	6,002,380	-----
1,304,428	270,174	197,187	67,643	168,802	3,368,420	37,894	354,833	293,750	813,920	1,210,184	19,909,698	9,590,000
15,084	-----	1,657	c2,202	4,592	c55,620	273	-----	3,554	21,114	11,561	669,778	210,000
1,319,512	270,174	198,844	69,845	173,394	3,424,040	38,167	354,833	297,304	335,034	1,221,745	20,579,476	9,800,000
763,143	252,136	111,203	137,811	b341,920	1,482,588	49,057	591,900	162,025	176,119	735,405	13,477,844	3,600,000
222,727	142,746	64,757	24,492	23,800	1,099,993	6,585	105,976	56,804	78,400	138,812	5,730,949	2,700,000
985,870	394,932	175,960	162,303	365,720	2,582,586	55,642	697,376	218,829	254,519	874,217	19,208,793	6,300,000
333,642	-----	22,884	-----	-----	841,454	-----	-----	78,475	80,515	347,528	1,370,683	3,500,000
-----	124,758	-----	92,458	192,326	-----	17,475	342,993	-----	-----	-----	-----	-----
8.2	6.5	31	19.4	25.8	57	18.2	28	36.8	4.9	8.3	19.3	44
2.8	1.9	20.4	10.5	13.6	28.9	13	12.3	14.3	2.1	5	7	20.5
83	44.4	324	297	675	1,424	528	907	479	22.5	340	168	549
19,685	13,079	687	33,293	64,130	47,055	44,181	77,441	13,027	3,775	26,092	13,804	6,257
8.7	6.9	25.8	15.3	26.1	25	27	32.3	13	4.6	40.5	8.7	13
175.80	437.20	244.20	125.00	175.8	163.96	175.80	121.08	253.24	111	175.80	175.80	120.00
43.95	37.55	61.05	31.25	43.95	40.99	43.95	30.27	64.56	27.75	43.95	43.95	30.00
109	302	96	86	246	47	154	79	79	286	31	110	83
2,785	5,851	2,279	1,543	513	1,895	4,561	375	1,338	2,246	643	2,008	1,142
7	1	4	16	6	23	6	13	6	1	14	5	3
0.319	0.134	0.343	0.233	0.199	1.09	0.204	0.28	0.356	0.146	1.40	0.36	0.70
0.252	0.129	0.331	0.219	0.225	1.08	0.241	0.22	0.293	0.106	1.48	0.285	-----
0.528	0.139	0.362	0.274	0.114	1.10	0.194	0.633	0.516	0.228	1.35	0.917	-----
213.35	275.86	191.07	212.02	303.25	270.50	212.36	329.13	305.13	155.30	290.00	288.00	360.00
0.228	0.195	0.306	0.56	0.433	0.84	0.297	0.556	0.257	0.119	1.05	34.7	0.46
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
19.31	73.39	16.10	13.29	13.18	33.31	8.09	15.25	13.61	23.97	8.71	31.35	33.77
10	-----	2.2	-----	-----	12.4	-----	-----	5.2	17	11	2.9	20.5

messages. *f.* 1,300,000 above the estimate for that year. 3,465,253 words per week were sent to the press, or about 5,500,000 messages, at an average of 30 words each, during the year. The latest returns (1874) show a weekly average of about 360,000 messages of all kinds. *g.* Excluding meteorological dispatches. *h.* Excluding all public messages. *i.* Over 800,000 railroad messages not counted. *k.* Including nearly 2,000,000 press-messages, averaged at 30 words each. *l.* Excluding foreign "service" messages.

*Receipts.*—*a.* Including receipts from press-messages. *b.* Including receipts of Submarine Cable Company and rent of wires used by international companies. *c.* Receipts from sales of old material, etc. In Great Britain the rents of wires leased to private parties are included under this head. In Portugal, Russia, and Switzerland "communes" desiring to have offices opened contribute specified sums for a certain time, the administration charging itself with all the expenses of the office. In America similar contributions in the smaller towns take the form of a guarantee from citizens that the receipts of such offices shall be sufficient to meet the expenses; if they are not, the deficiency is made up directly to the operator; and if there be a surplus, it goes to the company, which takes no risk.

*Expenses.*—*a.* Comprising some arrearsages not strictly chargeable to the years 1872-'73. The actual total expenses are given, but the different items are not specified. The proportion between salaries and maintenance is made up here from the estimates given by Mr. Soudamore in 1872. The item of salaries should include only the pay of exclusively telegraph employes, and that of maintenance, etc., the commissions paid railroad companies and postmasters at the smaller towns on receipts from messages sent by them.

*Percentages.*—*a.* A line of poles carrying one wire is estimated to cost four times as much as each additional wire erected thereon, equipments included. This proportion varies, of course, according to the circumstances of each country and the state of the market for materials.

\* This exceeds the area as recomputed for the United States census of 1880.

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# ADDENDUM.

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## NOTE ON EXPRESS COMPANIES.

In addition to the other agencies of transportation, it was contemplated in the act of March 3, 1879, that the express business of the country should be included in the census. The provision to this effect is to be found in the seventeenth section of the act referred to, and is as follows:

The Superintendent of Census shall require and obtain from the owners, proprietors, or managers of every *incorporated express company* the following facts, to wit: Name of corporation or company; capital paid up; total capital stock, and to what extent the same has been watered, and how often corners have been made on such watered stock; length of lines in miles; whether the business is conducted by rail, vessel, or otherwise; total amount paid to railroads or vessels for use of line or lines; number of officers; number of persons engaged in general administration; number of agents and messengers; total receipts: total expenditures, exhibiting separately amount paid for salaries, for repairs, and for general expenses. \* \* \*

He may require such other information as to the subjects of this section as, in his judgment, may be necessary to secure such returns as will exhibit the transactions of said several companies.

In compliance with this requirement, a schedule was prepared at the Census Office containing the interrogatories appropriate to the collection of the information desired. A letter was addressed from that office to the proper officer of each company or association known to be doing what is usually called an express business, inclosing a copy of this schedule, and demanding a return thereupon. As the result of this effort it was ascertained that the companies and associations in question were in general not incorporated companies within the ordinary significance of that term, the express business of the country being, as it would appear, transacted under a highly anomalous system. Of all the companies addressed, but two, and those not the most important, admitted that they came within the purview of the law. The others represented themselves either as mere business partnerships or else as associations of railroads, apportioning their expenses, pooling their earnings in the carrying of parcels, under agreements often informal, and even subject at times to oral modification or enlargement.

The Adams Express Company, the United States Express Company, and the New York and Boston Despatch Company, for instance, state that they are, severally, but joint partnerships, and pay taxes neither on their capital stock nor on their business; that their officers are perpetual, and not affected by any election through stockholders, it not even being the custom to hold stockholders' meetings. The American Foreign and European Express Company, again, claims that it does not operate in the United States, but considers itself simply as a forwarding agency.

The Pacific Express Company took the place of the express departments of the Kansas Pacific and the Union Pacific railways, and is virtually an association of the Union Pacific, the Missouri Pacific, and the Wabash, Saint Louis, and Pacific railways, which carry on the express business upon their own lines under the name of the Pacific Express Company, the stock being subscribed for (but not issued) on the assumed proportion of the aggregate net proceeds which each system would earn. The net earnings, as nearly as they can be ascertained, are paid to the railways monthly. The company is, in fact, a part of these railways, which include their respective receipts from the express or parcels business in their proper railway accounts.

Under the conditions recited, the Census Office was advised that it was doubtful whether it would be held that companies and associations like the foregoing came within the requirements of the census law, while it was certain that such returns could not be exacted from the companies or associations under the penalties of the statute, penal provisions being always construed strictly.

At the same time that the inadequacy of the provisions of the existing law respecting the companies doing an express business was discovered it was ascertained that much of that business throughout the country was done in such a way as to render it of the highest difficulty, if not virtually impossible, to disentangle it from the general web of railway transactions, even were the parties conducting that business unmistakably subject to the requirements of the law in this respect. Especially was this found to be the case with the officers and employes engaged, who were in a great majority of cases the officers or employes of railroads, already so reported, and giving to the express business only a varying fraction of their time, of which no record was kept. Such a condition of

## EXPRESS COMPANIES.

things did not seem to justify the Census Office in a recommendation to Congress of new legislation to enlarge the scope of the provision already recited and to confer upon the agents of the census greater powers. Indeed, only a commission constituted with judicial authority, having the power of subpoena and of summary punishment for contempt, could, with any degree of success, pursue, against unwilling companies, the inquiry into the express business which was in contemplation of Congress in the enactment of the provision recited.

But while this effort to secure direct returns of the express business resulted in failure from the start, much information relating to the same will be found in Table E of the report on the traffic, and fiscal operations of the railroads, and also in Table III of the same report, which exhibits detailed accounts of the receipts of the several companies reporting, as derived from carrying express matter.

It has been said that two companies addressed from the Census Office did not demur to the requirement of a return of their business, under the act of March 3, 1879. It is questionable whether these companies—the Southern Express Company and the Texas Express Company—were, in fact, under any stronger obligation to make such return than others which refused; whether, indeed, they are incorporated express companies in the sense which would have made their officers liable to the penalties of the statute in case of refusal; but as these companies made returns so far as their records permitted them to do, the facts are here given.

The Southern Express Company is a joint undertaking of certain persons having a good will, the facilities, and equipment for conducting the express business, organized under the distinctive title of an express company. The interests of the contributors were allotted by shares in the common property, but such shares were not denominated as of any money value, nor were they called stock, but are certificates of interest, entitling the holder to so many fractional parts of the whole number of undivided shares. The aggregation of the property of this company is represented by 30,000 shares. These shares are therefore not paid for in the sense in which shares of ordinary corporations are paid for, so as to constitute capital. The business of this company is conducted by rail, vessel, and stage; the miles operated aggregate about 10,337. There are 12 general officers, 12 persons conducting the administration, and 1,201 agents and messengers.

The total receipts during the year ending June 30, 1880, were.....	\$1, 645, 618 10
The amounts paid to railroads, vessels, and stages.....	\$549, 326 36
The repairs and general outlay amounted to .....	778, 291 52
Total expenditures.....	<u>1, 327, 617 88</u>
Net earnings.....	<u><u>318, 000 22</u></u>

The Texas Express Company was created under similar conditions as to formation as the Southern Express Company. The return made by this company is as follows: Capital stock authorized by law, 3,000 shares; capital stock issued for cash, 500 shares; balance of capital stock issued for equipment, good will, facilities, and as representative for earnings. The stock has not been watered. The business is conducted by rail, vessel, and stage. The number of miles operated, about 2,292; general officers, 3; general administration, 3; agents and messengers, 150.

Total receipts for year ending June 30, 1880.....	\$263, 240 45
Paid to railroads, vessels, and stages.....	\$115, 205 66
General expenses, including repairs .....	144, 921 59
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