

# TELEGRAPHS, 1922

## INTRODUCTION

**General description.**—The census of land telegraphs and ocean-cable systems has been taken quinquennially since 1902, and, beginning with the inquiry for 1907, wireless systems have also been canvassed. The only census statistics for the telegraph industry for years prior to 1902 are those compiled and published at the decennial censuses of 1850 and 1880, which related to land systems only.

All the commercial systems in the United States are owned and operated by incorporated companies. The land (wire) and wireless commercial systems covered by this report are those operated in the United States exclusive of outlying possessions, and the commercial cable systems are those operated by companies incorporated in the United States. No statistics are given for press-association or newspaper traffic over private or leased wires.

The figures for railway telegraphs as given in Tables 9 and 11 relate solely to Class I railroads (those having annual operating revenues of \$1,000,000 or more). No data as to railway telegraphs are included in any of the other tables.

Statistics are given in Table 14 for the land and cable systems operated by the Government in outlying possessions, since these systems transacted commercial as well as governmental business; and brief statistical and other information in regard to the Weather Bureau telegraph and telephone lines in the United States, some of which did a small amount of commercial business, is given on pages 23 and 24. No data have been compiled, however, in regard to the operations of Government wireless stations in the United States, for the reason that these stations handle little or no commercial business.

**Period covered.**—The statistics for income, expenses, and traffic relate to the calendar year 1922, except that the figures for Alaska, given in Table 14, refer to the fiscal year ended June 30. The figures for equipment and the balance sheet relate to December 31, 1922; the number of employees was reported by most companies as of June 30.

**Financial statistics.**—Under the accounting system introduced by the Interstate Commerce Commission for telegraph companies and adopted in considerable measure by the Bureau of the Census, more detailed financial data have been secured for land and ocean-cable companies for 1917 and 1922 than for preceding census years, and for this reason "miscellaneous rentals and deductions" have been combined with "operating expenses" in presenting the income statements for these companies for 1922, 1917, and 1912. It is not practicable to compile an income statement for wireless telegraph companies.

**Effect of change in monetary values.**—In making use of the financial statistics, consideration must be given to the change in the purchasing power of the monetary unit between 1912 and 1917 and between 1917 and 1922. According to the wholesale price index compiled by the Bureau of Labor Statistics, Department of Labor, the weighted average price of all commodities was 77 per cent higher in 1917 than in 1913 (the base year), 49 per cent higher in 1922 than in 1913, and 16 per cent lower in 1922 than in 1917. (The indices for retail food prices and general cost of living show considerably different movements.)

A still more important consideration, so far as the telegraph and cable business is concerned, is the increase in salary and wage scales, for the reason that salaries and wages constitute nearly three-fifths of the total expenses. (See Tables 4 and 6.) The total salaries and wages paid by the telegraph and cable systems increased by 58.8 per cent between 1912 and 1917 and 92.1 per cent between 1917 and 1922, whereas the corresponding rates of increase in number of employees were only 38.3 per cent and 33.1 per cent, respectively.

ELECTRICAL INDUSTRIES: 1922

TABLE 1.—SUMMARY, LAND AND OCEAN-CABLE TELEGRAPH SYSTEMS COMBINED: 1902-1922

|   | PER CENT OF INCREASE OR DECREASE (-) |               |               |               |               |
|---|--------------------------------------|---------------|---------------|---------------|---------------|
|   | 1917-1922                            | 1912-1917     | 1912-1922     | 1907-1912     | 1902-1907     |
| Number of companies or systems.....   | 24                                   | 27            | 27            | 26            | 25            |
| Miles of pole line <sup>1</sup> .....   | 252,941                              | 247,528       | 247,528       | 230,446       | 237,900       |
| Miles of single wire owned and leased <sup>2</sup> .....                                | 1,853,250                            | 1,814,196     | 1,814,196     | 1,577,993     | 1,518,550     |
| Nautical miles of ocean cable.....  | 76,711                               | 67,678        | 67,678        | 46,301        | 46,301        |
| Number of messages.....   | 191,421,393                          | 198,176,456   | 198,176,456   | 103,704,076   | 91,855,287    |
| Number of telegraph offices.....  | 27,854                               | 30,804        | 30,804        | 29,110        | 27,877        |
| Income, total.....  | \$151,588,086                        | \$109,703,428 | \$64,782,843  | \$51,583,808  | \$40,030,088  |
| Telegraph traffic.....  | \$146,806,215                        | \$106,989,743 | \$60,403,009  | \$45,253,187  | \$35,900,560  |
| All other sources.....  | \$5,052,871                          | \$2,713,685   | \$4,359,834   | \$6,329,631   | \$5,029,528   |
| Expenses, total.....  | \$127,990,615                        | \$91,871,159  | \$68,378,952  | \$41,879,613  | \$30,048,031  |
| General operation and maintenance, including salaries and wages and legal expenses..... | \$113,139,825                        | \$74,934,753  | \$46,780,041  | \$34,057,298  | \$24,455,511  |
| Interest and taxes.....   | \$10,195,086                         | \$7,981,786   | \$3,955,381   | \$3,436,680   | \$2,599,085   |
| All other expenses.....   | \$4,655,704                          | \$8,954,620   | \$7,643,530   | \$4,385,635   | \$3,053,815   |
| Net income <sup>3</sup> .....   | \$23,807,471                         | \$17,832,269  | \$6,383,891   | \$9,704,255   | \$9,982,004   |
| Dividends.....  | \$10,715,577                         | \$9,817,211   | \$6,180,061   | \$7,477,083   | \$6,256,693   |
| Balance sheet:  |                                      |               |               |               |               |
| Assets, total.....  | \$459,469,284                        | \$363,017,223 | \$238,288,906 | \$261,807,890 | \$195,593,775 |
| Plant and equipment.....  | \$326,661,860                        | \$248,368,432 | \$162,046,746 | \$210,043,659 | \$161,679,579 |
| Investment and marketable securities.....   |                                      |               |               |               |               |
| long-term advances, and miscellaneous investments.....                                  | \$78,838,774                         | \$56,034,997  | \$33,933,679  | \$36,486,446  | \$25,930,944  |
| Cash and current assets, including surplus and sundries.....                            | \$53,968,650                         | \$63,623,794  | \$42,308,481  | \$15,275,494  | \$7,884,252   |
| Liabilities, total.....   | \$177,203,778                        | \$167,261,237 | \$298,288,906 | \$291,807,890 | \$195,608,775 |
| Capital stock.....  | \$100,000,000                        | \$100,000,000 | \$100,000,000 | \$100,000,000 | \$100,000,000 |
| Funded debt.....  | \$71,224,000                         | \$61,827,540  | \$69,741,000  | \$66,931,709  | \$117,083,325 |
| Reserves.....   | \$6,000,000                          | \$33,652,948  | \$30,803,780  | \$8,257,093   | \$45,863,000  |
| Accounts payable <sup>4</sup> .....   | \$14,712,880                         | \$21,791,729  | \$19,755,480  | \$8,411,379   | \$6,244,385   |
| Interest, taxes, dividends, and rents, due and accrued, and sundries.....               | \$55,419,643                         | \$23,692,626  | \$15,492,888  | \$2,510,043   | \$373,976     |
| Net surplus.....  | \$70,516,784                         | \$34,782,135  | \$13,549,948  | \$20,252,980  | \$15,079,041  |
| Number of employees <sup>5</sup> .....  | 68,632                               | 51,574        | 37,205        | 28,034        | 27,027        |
| Salaries and wages <sup>6</sup> .....   | \$76,161,926                         | \$39,643,911  | \$24,964,994  | \$17,808,249  | \$15,039,673  |

- 1 Exclusive of pole line owned and operated wholly by railway companies.
- 2 Exclusive of wire owned and operated wholly by railway companies, as follows: For 1922, 285,002 miles, and for 1917, 314,110 miles, as reported by railway companies having annual operating revenues of \$1,000,000 or more; for 1912, 314,329 miles, as reported by all railway companies. No data for 1907 and 1902.
- 3 Includes charges for depreciation.
- 4 Includes payments for use of leased lines.
- 5 Total income less all expenses including depreciation; for 1922 and 1917, does not include charges for sinking and other reserve funds.
- 6 Includes sinking funds and stock and bond discount.
- 7 Includes floating debt.
- 8 Includes deferred noninterest-bearing obligations payable only on termination of leases and, for 1912, real-estate mortgages.
- 9 Messengers and their wages included for 1922, 1907, and 1902. For 1917 and 1912, messengers—13,149 and 7,516, respectively—are not included; their wages—\$1,120,290 for 1917, not reported separately for 1912—are included in total expenses but not in salaries and wages.

## COMPARISON OF COMMERCIAL LAND AND OCEAN-CABLE TELEGRAPH SYSTEMS

This section presents summary statistics in regard to commercial land and ocean-cable telegraph systems combined, for all quinquennial census years, and more detailed statistics for the two classes of systems separately, for 1922 only.

The statistics for equipment, number of employees, and salaries and wages are shown separately for land and ocean-cable companies in Tables 2 and 6. The detailed financial data, however, were not reported separately for the ocean-cable lines operated by the Western Union Telegraph Co., and accordingly it has been necessary, in Tables 3, 4, 5, 7, and 8, to include the Western Union cable system statistics with those for land systems.

**Balance sheet (Table 5).**—The total assets and liabilities include some duplication resulting from intercompany holdings of telegraph and cable securities. These intercompany holdings, which are included in the item "Investment and marketable securities and long-term advances," were not reported separately for 1922, but the "stocks and bonds of other telegraph and cable companies" as reported for 1917 amounted to \$13,465,582, or approximately one-fourth of the total holdings of stocks and bonds of other companies (\$52,868,238).

**Growth between 1902 and 1922.**—The growth of the land-telegraph and ocean-cable business during the 20-year period covered by Table 1 (see p. 8) is illustrated by the following percentages of increase:

|                          |     |                     |     |
|--------------------------|-----|---------------------|-----|
| Plant and equipment..... | 102 | Total income.....   | 271 |
| Number of messages.....  | 108 | Total expenses..... | 314 |
| Number of employees..... | 148 | Net income.....     | 139 |

**TABLE 2.—EQUIPMENT AND TRAFFIC, LAND AND OCEAN-CABLE TELEGRAPH SYSTEMS: 1922**

|   | Total       | Land        | Ocean     |
|---|-------------|-------------|-----------|
| Number of companies or systems.....                               | 125         | 19          | 6         |
| Miles of pole line, aggregate.....                                | 252,991     | 252,991     | -----     |
| Owned, total.....   | 195,655     | 195,655     | -----     |
| On reporting company's right of way.....                          | 274         | 274         | -----     |
| On highway.....   | 21,035      | 21,035      | -----     |
| On railway right of way.....                                      | 174,346     | 174,346     | -----     |
| Leased, total.....  | 57,336      | 57,336      | -----     |
| On lessor's right of way.....                                     | 7           | 7           | -----     |
| On highway.....   | 2,422       | 2,422       | -----     |
| On railway right of way.....                                      | 54,907      | 54,907      | -----     |
| Miles of single wire, aggregate.....                              | 1,853,250   | 1,845,237   | 8,013     |
| Overhead, aggregate.....  | 1,718,261   | 1,714,211   | 4,040     |
| Owned, total.....   | 1,550,392   | 1,550,392   | -----     |
| On reporting company's right of way.....                          | 2,358       | 2,358       | -----     |
| On highway.....   | 257,412     | 257,412     | -----     |
| On railway right of way.....                                      | 1,290,622   | 1,290,622   | -----     |
| Leased, total.....  | 167,859     | 163,819     | 4,040     |
| On lessor's right of way.....                                     | 444         | 275         | 169       |
| On highway.....   | 7,948       | 4,077       | 3,871     |
| On railway right of way.....                                      | 159,467     | 159,467     | -----     |
| Underground.....  | 131,448     | 127,475     | 3,973     |
| Submarine.....  | 3,551       | 3,551       | -----     |
| Nautical miles of ocean cable.....                                | 76,711      | -----       | 76,711    |
| Number of offices or stations, aggregate.....                     | 27,354      | 27,214      | 140       |
| Operated solely by the company, exclusive of railway offices..... | 5,393       | 5,255       | 138       |
| Operated with other telegraph and cable companies.....            | 23          | 21          | 2         |
| Operated with telephone companies.....                            | 6           | 6           | -----     |
| Railway offices, total.....                                       | 21,932      | 21,932      | -----     |
| Operated solely by telegraph companies.....                       | 26          | 26          | -----     |
| Operated jointly by telegraph and railway companies.....          | 21,906      | 21,906      | -----     |
| Number of messages sent, total.....                               | 191,121,333 | 181,518,774 | 9,602,559 |
| Governmental.....   | 3,198,724   | 3,129,770   | 68,954    |
| Full commercial rate.....   | 175,847,129 | 169,730,190 | 6,116,939 |
| Contract and free.....  | 12,075,480  | 11,658,814  | 416,666   |

<sup>1</sup> The Western Union Telegraph Co., which operates both land and ocean systems, is counted in this table as 2 companies.

TABLE 3.—INCOME STATEMENT, LAND AND OCEAN-CABLE TELEGRAPH SYSTEMS:<sup>1</sup> 1922

| ACCOUNT  | Total                  | Land                 | Ocean        |
|--|------------------------|----------------------|--------------|
| <i>1.—Operating income</i>                       |                        |                      |              |
| Telegraph and cable operating revenues.....      | \$146,805,215          | \$128,630,859        | \$18,174,356 |
| Telegraph and cable operating expenses.....      | 113,139,825            | 102,010,773          | 11,129,052   |
| Net telegraph and cable revenue.....             | 33,665,390             | 26,620,086           | 7,045,304    |
| Other operating revenues.....                    | 8,215                  | 8,215                | .....        |
| Other operating expenses.....                    | 5,303                  | 5,303                | .....        |
| Net revenue from miscellaneous operations.....   | 2,912                  | 2,912                | .....        |
| Total net operating revenue.....                 | 33,668,302             | 26,622,998           | 7,045,304    |
| Taxes assignable to operation.....               | 6,893,994              | 5,572,704            | 1,321,290    |
| Operating income.....                            | 26,774,308             | 21,050,294           | 5,724,014    |
| <i>2.—Nonoperating income</i>                    |                        |                      |              |
| Dividend income.....                             | 880,949                | 644,755              | 245,194      |
| Interest income.....                             | 3,299,968              | 964,290              | 2,335,678    |
| Miscellaneous nonoperating income.....           | 854,739                | 290,541              | 564,198      |
| Nonoperating income.....                         | 5,044,656              | 1,899,586            | 3,145,070    |
| Gross income.....                                | 31,818,964             | 22,949,880           | 8,869,084    |
| <i>3.—Deductions from gross income</i>           |                        |                      |              |
| Rent of plant.....                               | 3,081,922              | 3,081,922            | .....        |
| Interest accrued.....                            | 3,301,042              | 3,140,207            | 160,835      |
| Miscellaneous rentals.....                       | 621,284                | 471,679              | 149,605      |
| Miscellaneous deductions.....                    | 947,245                | 581,313              | 365,932      |
| Total deductions from gross income.....          | 7,951,493              | 7,275,121            | 676,372      |
| Net income.....                                  | 23,867,471             | 15,674,759           | 8,192,712    |
| <i>4.—Disposition of net income</i>              |                        |                      |              |
| Dividends.....                                   | <sup>2</sup> 3,732,883 | <sup>2</sup> 160,077 | 3,572,806    |
| Charges for sinking and other reserve funds..... | 71,277                 | 11,277               | 60,000       |
| Appropriations for construction.....             | 846,716                | 846,716              | .....        |
| Appropriations for other purposes.....           | 2,894,421              | 2,661,867            | 232,554      |
| Total appropriations of net income.....          | 7,545,297              | 3,679,937            | 3,865,360    |
| Balance carried to surplus.....                  | 16,322,174             | 11,994,822           | 4,327,352    |

<sup>1</sup> Western Union cable system statistics, not having been reported separately, are included with those for land systems.

<sup>2</sup> In addition, dividends amounting to \$6,952,694 were declared from surplus.

TABLE 4.—EXPENSE ACCOUNT, LAND AND OCEAN-CABLE TELEGRAPH SYSTEMS:<sup>1</sup> 1922

| ACCOUNT   | Total         | Land          | Ocean        |
|---|---------------|---------------|--------------|
| Total.....  | \$127,990,615 | \$114,863,901 | \$13,126,714 |
| Maintenance expenses <sup>2</sup> .....                                     | 80,927,025    | 25,977,241    | 4,949,784    |
| Conducting operations <sup>3</sup> .....                                    | 76,805,237    | 71,677,533    | 4,627,704    |
| General and miscellaneous operating expenses <sup>4</sup> .....             | 5,907,583     | 4,385,909     | 1,551,664    |
| Taxes assignable to operations.....   | 6,893,994     | 5,572,704     | 1,321,290    |
| Rent of plant.....  | 3,081,922     | 3,081,922     | .....        |
| Interest on funded and floating debt.....                                   | 3,301,042     | 3,140,207     | 160,835      |
| Rentals of conduits, underground privileges, land, poles,<br>and wires..... | 621,284       | 471,679       | 149,605      |
| All other expenses.....   | 952,548       | 586,616       | 365,932      |

<sup>1</sup> Western Union cable system statistics, not having been reported separately, are included with those for land systems.

<sup>2</sup> Includes supervision of maintenance, repairs and depreciation, and cost of testing and regulating apparatus.

<sup>3</sup> Includes supervision of operations; salaries of operators, clerks, and messengers; cost of operating power and supplies; office expenses; commissions, etc.

<sup>4</sup> Includes salaries of general officers and clerks and expenses for law, accidents, damages, franchises, etc.

TABLE 5.—BALANCE SHEET, LAND AND OCEAN-CABLE TELEGRAPH SYSTEMS:<sup>1</sup> 1922

| ACCOUNT  | Total         | Land          | Ocean         |
|--|---------------|---------------|---------------|
| Total assets or liabilities.....                                 | \$459,469,284 | \$321,912,658 | \$137,556,626 |
| ASSETS   |               |               |               |
| Plant and equipment.....   | 326,661,869   | 254,029,933   | 72,631,927    |
| Investment and marketable securities and long-term advances..... | 78,661,515    | 31,697,574    | 46,963,941    |
| Miscellaneous investments.....                                   | 177,259       | 177,259       | .....         |
| Materials and supplies.....                                      | 7,791,742     | 6,487,760     | 1,303,982     |
| Cash and current assets.....                                     | 42,224,616    | 26,516,797    | 15,707,819    |
| Stock and bond discount.....                                     | 299,701       | 299,701       | .....         |
| Sinking and other special funds.....                             | 1,741,893     | 1,293,429     | 448,464       |
| Sundries.....  | 1,916,638     | 1,410,205     | 506,433       |
| LIABILITIES  |               |               |               |
| Capital stock.....   | 177,293,778   | 104,465,778   | 72,738,000    |
| Funded and long-term debt.....                                   | 71,394,090    | 67,394,090    | 4,000,000     |
| Floating debt (loans and notes payable).....                     | 998,327       | .....         | 998,327       |
| Reserves (depreciation and other).....                           | 90,222,189    | 46,773,260    | 43,448,929    |
| Accounts payable.....  | 13,714,593    | 10,691,564    | 3,022,999     |
| Interest, taxes, dividends, and rents, due and accrued.....      | 19,636,685    | 14,448,148    | 5,187,937     |
| Sundries.....  | 15,783,658    | 15,290,678    | 492,880       |
| Net surplus.....   | 70,516,784    | 62,849,230    | 7,667,554     |

<sup>1</sup> Western Union cable system statistics, not having been reported separately, are included with those for land systems.

TABLE 6.—EMPLOYEES, SALARIES, AND WAGES, LAND AND OCEAN-CABLE TELEGRAPH SYSTEMS:<sup>1</sup> 1922

|  | Total        | Land         | Ocean       |
|--|--------------|--------------|-------------|
| Employees, total:                                    |              |              |             |
| Number.....  | 68,632       | 62,299       | 26,333      |
| Salaries and wages.....                              | \$76,161,923 | \$68,736,763 | \$7,425,163 |
| Salaried employees:                                  |              |              |             |
| Number.....  | 22,670       | 20,159       | 1,911       |
| Salaries.....  | \$28,818,998 | \$25,068,891 | \$2,850,197 |
| Salaried officers—                                   |              |              |             |
| Number.....  | 90           | 48           | 42          |
| Salaries.....  | \$734,458    | \$406,565    | \$327,893   |
| Superintendents and managers—                        |              |              |             |
| Number.....  | 1,965        | 1,766        | 199         |
| Salaries.....  | \$4,604,593  | \$3,924,880  | \$679,683   |
| Clerks, stenographers, and other salaried employees— |              |              |             |
| Number.....  | 20,615       | 18,345       | 1,670       |
| Salaries.....  | \$23,479,977 | \$21,637,356 | \$1,842,621 |
| Wage earners:  |              |              |             |
| Number.....  | 46,562       | 42,140       | 4,422       |
| Wages.....   | \$47,342,928 | \$42,767,962 | \$4,574,966 |
| Operators—   |              |              |             |
| Number.....  | 23,628       | 21,430       | 2,198       |
| Wages.....   | \$32,459,291 | \$29,421,502 | \$3,037,789 |
| Male—  |              |              |             |
| Number.....  | 14,291       | 12,198       | 2,093       |
| Wages.....   | \$21,584,057 | \$18,642,834 | \$2,941,233 |
| Female—  |              |              |             |
| Number.....  | 9,337        | 9,232        | 105         |
| Wages.....   | \$10,875,224 | \$10,778,668 | \$96,556    |
| All other wage earners—                              |              |              |             |
| Number.....  | 22,634       | 20,710       | 2,224       |
| Wages.....   | \$14,883,637 | \$13,346,460 | \$1,537,177 |

<sup>1</sup> Statistics for Western Union cable employees, having been reported separately, are included with those for ocean systems. (See p. 8.)

<sup>2</sup> Includes, in some instances, employees outside the United States.

## COMMERCIAL AND RAILWAY LAND TELEGRAPH SYSTEMS

**Commercial systems.**—The following-named commercial telegraph companies reported for 1922:

Canadian Pacific (lines in the United States).  
 Central Idaho, of Weiser, Idaho.  
 Cleveland, of Chicago, Ill.  
 Colorado & Wyoming, of Denver, Colo.  
 Continental, of Butte, Mont.  
 Canadian National Telegraphs (lines in the United States).  
 Comprising: {Canadian Northern Telegraph Co.  
 {Great Northwestern Telegraph Co.  
 Louisburg, of Franklinton, N. C.  
 Martha's Vineyard, of Woods Hole, Mass.  
 Mountain, of Denver, Colo.  
 North American, of Minneapolis, Minn.  
 Northern, of Bangor, Me.  
 Philadelphia, Reading & Pottsville, of Philadelphia, Pa.  
 Pittsboro, of Pittsboro, N. C.  
 Postal Telegraph-Cable System (land lines only).  
 Put-in-Bay, of Put-in-Bay, Ohio.  
 Stock Quotation, of New York, N. Y.  
 United Telegram Co., of Boston, Mass.  
 Vermont International, of St. Johnsbury, Vt.  
 Western Union System.

Of the 21 land-telegraph companies reporting for 1917, 3 were no longer operating in 1922, and another, the Federal Telegraph Co., which was engaged in land telegraphy (wire) in 1917, is again counted with the wireless systems as in 1912. Two companies which did not report for 1917 are included for 1922, namely, the Cleveland Telegraph Co., of Chicago, and the United Telegram Co., of Boston, both of which do a local stock-exchange ticker business.

**Line and wire mileage.**—The following statement shows the line and wire mileage for land-telegraph companies as reported for 1852 and 1880 (in connection with the decennial censuses of 1850 and 1880, respectively) and for each of the quinquennial census years. (As explained in the Introduction, the only statistics for years prior to 1902 are those for 1852 and 1880.)

| YEAR | Miles of pole line | Miles of single wire | YEAR | Miles of pole line | Miles of single wire |
|------|--------------------|----------------------|------|--------------------|----------------------|
| 1852 | 16,735             | 23,281               | 1912 | 247,528            | 1,814,196            |
| 1880 | 110,727            | 291,213              | 1917 | 241,012            | 1,888,793            |
| 1902 | 237,990            | 1,307,046            | 1922 | 252,991            | 1,849,312            |
| 1907 | 239,046            | 1,577,961            |      |                    |                      |

**Increase in business and decrease in number of offices and wire mileage (Table 7).**—The amount of business done, measured either by number of messages sent or by income from telegraph traffic, shows a substantial increase for the period 1917–1922. The number of offices and the wire mileage, however, decreased somewhat. The decrease in the former item is accounted for in large measure by the reduction from 23,334 to 21,932 in the number of railway offices operated for commercial business; and that in the latter item was due wholly to the decrease

from 411,730 to 163,819 in the mileage of leased overhead wire (mainly on railway right of way). The decrease in mileage of leased overhead wire in turn resulted from the inclusion of one company (the Federal Telegraph Co.) in the land (wire) group for 1917 and in the wireless group for 1922, this company having been engaged in land telegraphy over leased wires in the former year and in wireless telegraphy in the latter. The mileage of owned overhead wire increased from 1,396,595 to 1,550,392. (See Table 2 for 1922 figures.)

**"Plant and equipment" and "Funded debt" (Table 7).**—As explained in footnotes 8 and 10, Table 7, these items as reported by ocean-cable companies for 1917 and 1912 included \$20,000,000 which actually represented land-line plant and equipment owned by one of the cable companies. In compiling the statistics for 1922 this amount has been included in the land-line figures and excluded from those for ocean-cable systems.

**Long-distance telephone business over telegraph wires.**—According to the annual report of the Postal Telegraph-Cable Co. for 1922, as published in "Moody's," there has been a considerable development of long-distance telephone business over telegraph wires in the South and West. This telephone traffic, which does not interfere with the simultaneous transmission of telegraphic messages, may be regarded as a "by-product."

**Railway and commercial telegraph lines on railway right of way (Table 9).**—The track mileage shown in this table covers the trackage of all railroads of Class I, including four which reported no telegraph lines along their right of way. The reports show a slight decrease, amounting to 615 miles, or three-tenths of 1 per cent, in total pole-line mileage in 1922 as compared with 1917. The wire mileage, however, increased by 104,660, or 7.6 per cent.

**Telephone wire on railway right of way.**—The railroads could not in all cases supply complete data regarding mileage of commercial wire along their lines. Some of the telegraph pole line reported by the Class I railroads carried telephone wire also, and 23,597 miles of additional pole line designated as "telephone" doubtless carried part of the telegraph wire. The total telephone wire mileage on the right of way of Class I railroads was reported as 586,259. Of this amount, the railroads owned 372,710 miles outright and 22,735 miles jointly with telephone and other companies, the remaining 190,814 miles being owned by telephone and other nonrailway companies; and the mileage of telephone wire operated either solely by the railroads or jointly by the railroads and other companies amounted to 424,317, or nearly three-fourths of the total.

**Train dispatchers and railroad telegraph operators.**—The census inquiry did not call for data regarding railroad telegraph operators or their wages; but the following statement relating to train dispatchers and telegraph operators employed by Class I railroads has been prepared from reports of the Interstate Commerce Commission:

| TRAIN DISPATCHERS AND TELEGRAPH OPERATORS,<br>CLASS I RAILROADS | 1922          | 1917         | 1912         |
|---|---------------|--------------|--------------|
| Number.....   | 64,794        | 63,010       | 41,615       |
| Wages.....  | \$118,282,579 | \$63,718,334 | \$34,193,100 |

The methods of classifying these employees have been such that it is impossible to show separately the exact number of telegraph operators; and, because of changes in classification, it is likely that the figures for 1912 are not strictly comparable with those for 1917 and 1922. The grouping for 1922 was as follows:

| TRAIN DISPATCHERS AND TELEGRAPH OPERATORS, CLASS I RAILROADS: 1922 | Number | Wages         |
|--|--------|---------------|
| Total.....   | 64,794 | \$118,282,579 |
| Chief train dispatchers.....                                       | 5,302  | 16,362,694    |
| Chief telegraphers and telephoners or wire chiefs.....             | 895    | 1,883,138     |
| Telegraphers, telephoners, and towermen.....                       | 26,552 | 45,794,566    |
| Clerk-telegraphers and clerk-telephoners.....                      | 12,613 | 21,191,866    |
| Station-agent telegraphers and telephoners.....                    | 19,432 | 33,050,312    |

**Train dispatching by telegraph and by telephone (Table 11).**—There was a considerable increase between 1917 and 1922 in the use of the telephone and a corresponding decrease in the use of the telegraph for train dispatching. Of the 166 railroads of Class I which reported for 1922, 43 used the telegraph only, 25 used the telephone only, 72 used the telegraph only on parts of their lines and the telephone only on the remainder, and 26 used the telephone and telegraph jointly or interchangeably over all or parts of their lines. The proportion of the total mileage dispatched by telephone only increased from 43.3 per cent in 1917 to 46.6 per cent in 1922.

The use of "printing telegraphs" by the railroads decreased somewhat between 1917 and 1922. Of the 13 lines or parts of systems reporting this type of telegraph for 1917, only 6 again reported it for 1922, but 2 other railroads adopted it within the 5-year period, making a total of 8 which were using the printing telegraph in 1922. These 8 railroads reported 21 circuits, comprising 6,344 miles of wire, in operation with printing telegraph instruments.

No railroad reported the use of radio for train dispatching in 1922.

TABLE 7.—SUMMARY, LAND TELEGRAPH SYSTEMS:<sup>1</sup> 1912-1922

|  | 1922          | 1917          | 1912          | PER CENT OF INCREASE<br>OR DECREASE (-) |               |               |
|--|---------------|---------------|---------------|---|---------------|---------------|
|  |               |               |               | 1917-<br>1922                           | 1912-<br>1917 | 1912-<br>1922 |
| Number of companies or systems.....  | 19            | 21            | 21            |   |               |               |
| Miles of pole line <sup>2</sup> .....  | 252,991       | 241,012       | 247,528       | 5.0                                     | -2.6          | 2.2           |
| Miles of single wire owned and<br>leased <sup>3</sup> .....  | 1,849,312     | 1,888,793     | 1,814,190     | -2.1                                    | 4.1           | 1.9           |
| Number of messages <sup>4</sup> .....  | 185,841,267   | 155,263,206   | 100,532,530   | 19.7                                    | 45.7          | 74.4          |
| Number of telegraph offices.....   | 27,253        | 28,865        | 30,781        | -5.6                                    | -6.2          | -11.5         |
| Income, total.....   | \$130,538,660 | \$92,954,370  | \$56,293,469  | 40.4                                    | 65.1          | 131.9         |
| Telegraph traffic.....   | \$128,630,859 | \$91,312,567  | \$52,337,211  | 40.9                                    | 71.5          | 145.8         |
| All other sources.....   | \$1,907,801   | \$1,641,803   | \$3,956,258   | 16.2                                    | -58.5         | -51.8         |
| Expenses, total.....   | \$114,863,901 | \$80,828,070  | \$52,862,425  | 42.1                                    | 52.9          | 117.3         |
| General operation and main-<br>tenance, including salaries<br>and wages and legal ex-<br>penses <sup>5</sup> ..... | \$102,010,773 | \$66,959,295  | \$42,771,823  | 52.3                                    | 56.6          | 138.5         |
| Interest and taxes.....  | \$8,712,911   | \$5,511,747   | \$2,740,827   | 58.1                                    | 101.1         | 217.9         |
| All other expenses.....  | \$4,140,217   | \$8,357,028   | \$7,349,775   | -50.5                                   | 13.7          | -43.7         |
| Net income <sup>7</sup> .....  | \$15,674,759  | \$12,125,400  | \$3,431,044   | 29.3                                    | 253.4         | 356.9         |
| Dividends.....   | \$7,142,771   | \$7,165,514   | \$9,139,861   | -0.3                                    | 128.2         | 127.5         |
| Balance sheet:   |               |               |               |   |               |               |
| Assets, total.....   | \$321,912,658 | \$226,406,952 | \$190,705,751 | 42.2                                    | 18.7          | 68.8          |
| Plant and equipment.....   | \$254,029,933 | \$163,487,037 | \$143,910,031 | 55.4                                    | 13.6          | 76.5          |
| Investment and market-<br>able securities, long-<br>term advances, and<br>miscellaneous invest-<br>ments.....      | \$31,874,833  | \$29,564,702  | \$17,122,592  | 7.8                                     | 72.7          | 86.2          |
| Cash and current assets,<br>including supplies and<br>sundries <sup>8</sup> .....                                  | \$36,007,892  | \$33,354,613  | \$29,672,528  | 8.0                                     | 12.4          | 21.4          |
| Liabilities, total.....  | \$321,912,658 | \$226,406,952 | \$190,705,751 | 42.2                                    | 18.7          | 68.8          |
| Capital stock.....   | \$104,465,778 | \$106,360,237 | \$108,150,410 | -1.8                                    | -1.7          | -3.4          |
| Funded debt.....   | \$67,394,000  | \$39,827,549  | \$34,741,000  | 99.2                                    | -2.6          | 94.0          |
| Reserves.....  | \$40,773,260  | \$20,627,340  | \$3,254,329   | 126.8                                   | 202.6         | 790.2         |
| Accounts payable <sup>11</sup> .....   | \$16,991,564  | \$16,829,137  | \$18,295,683  | -36.5                                   | -8.0          | -41.6         |
| Interest, taxes, dividends,<br>and rents, due and ac-<br>crued.....  | \$14,448,148  | \$7,174,908   | \$1,460,733   | 101.4                                   | 391.2         | 889.1         |
| Sundries <sup>12</sup> .....   | \$15,290,678  | \$19,019,821  | \$13,444,926  | 17.4                                    | -3.2          | 13.7          |
| Net surplus.....   | \$62,849,230  | \$28,567,960  | \$9,352,670   | 120.0                                   | 205.4         | 572.0         |
| Number of employees <sup>13</sup> .....  | 64,902        | 49,608        | 35,639        | 30.8                                    | 39.2          | 82.1          |
| Salaries and wages <sup>13</sup> .....   | \$71,491,743  | \$37,879,560  | \$23,797,980  | 88.7                                    | 59.2          | 200.4         |

<sup>1</sup> Western Union cable system statistics for all items except nautical miles of ocean cable are here included, no adequate segregation of the financial data having been made.

<sup>2</sup> Exclusive of pole line owned and operated wholly by railway companies, and of that owned and operated in 1922 and 1917 by cable companies reporting separately.

<sup>3</sup> Exclusive of the following items: Ocean cable operated by Western Union Telegraph Co.—1922, 24,281 nautical miles; 1917, 24,301 nautical miles; 1912, 22,816 nautical miles. Wire owned and operated wholly by railway companies having annual operating incomes of \$1,000,000 or more—1922, 285,002; 1917, 344,110. Wire operated by railway companies of all classes—1912, 314,329 miles. Land wire of cable companies reporting separately—1922, 3,935 miles; 1917, 1,452 miles.

<sup>4</sup> Does not include ocean-cable messages, except those reported by the Western Union Telegraph Co. nor land messages sent over leased land wire by a wireless company in 1922 and 1912.

<sup>5</sup> Includes charges for depreciation; does not include payments for use of leased lines.

<sup>6</sup> Includes payments for use of leased lines.

<sup>7</sup> Total income less all expenses including depreciation; for 1922 and 1917, does not include charges for sinking and other reserve funds.

<sup>8</sup> Not including land-line-system plant and equipment to the value of \$20,000,000, reported as cable-system plant and equipment for 1917 and 1912. (See "Plant and equipment" and "Funded debt," p. 16.)

<sup>9</sup> Includes sinking funds and stock and bond discount.

<sup>10</sup> Not including land-line-system funded debt to the amount of \$20,000,000, reported as cable-system indebtedness for 1917 and 1912. (See "Plant and equipment" and "Funded debt," p. 16.)

<sup>11</sup> Includes floating debt.

<sup>12</sup> Includes deferred noninterest-bearing obligations payable only on termination of leases.

<sup>13</sup> Messengers and their wages included for 1922, 1907, and 1902. For 1917 and 1912, messengers—13,149 and 7,516, respectively—are not included; their wages—\$4,120,290 for 1917, not reported separately for 1912—are included in total expenses but not in salaries and wages.

TABLE 8.—CONDENSED INCOME STATEMENT, LAND TELEGRAPH SYSTEMS: <sup>1</sup> 1912-1922

| ACCOUNT  | 1922             | 1917                   | 1912                   | PER CENT OF INCREASE OR DECREASE (—) |           |
|--|------------------|------------------------|------------------------|--------------------------------------|-----------|
|  |                  |                        |                        | 1917-1922                            | 1912-1917 |
| Telegraph and other operating revenues.....  | \$128,639,074    | \$91,312,567           | \$52,337,211           | 40.9                                 | 74.5      |
| Telegraph and other operating expenses and miscellaneous rentals and deductions..... | 103,069,068      | 71,741,971             | 45,527,504             | 43.7                                 | 57.6      |
| Net operating revenues less miscellaneous rentals and deductions.....                | 25,570,006       | 19,570,596             | 6,809,647              | 30.7                                 | 187.4     |
| Taxes assignable to operation.....   | 5,572,704        | 4,091,087              | 1,132,234              | 30.2                                 | 261.4     |
| Operating income less miscellaneous rentals and deductions.....                      | 19,997,302       | 15,478,909             | 5,677,413              | 29.2                                 | 172.6     |
| Nonoperating income, total.....  | 1,899,586        | 1,641,803              | 3,956,258              | 15.7                                 | -58.5     |
| Dividends and interest on stocks and bonds of other companies.....                   | 1,609,045        | 1,474,571              | 375,903                | 9.1                                  | 292.3     |
| Lease of telegraph lines, wires, and conduits.....                                   | ( <sup>2</sup> ) | ( <sup>2</sup> )       | 2,419,065              |                                      |           |
| Real-estate rents.....   | ( <sup>3</sup> ) | ( <sup>3</sup> )       | 191,154                |                                      |           |
| Miscellaneous.....   | 290,541          | 167,232                | 970,136                | 73.7                                 | -82.8     |
| Gross income less miscellaneous rentals and deductions.....                          | 21,896,888       | 17,120,712             | 9,633,671              | 27.9                                 | 77.7      |
| Deductions from gross income, total.....   | 6,222,129        | 4,995,312              | 6,202,627              | 24.6                                 | -19.5     |
| Interest.....  | 3,140,207        | <sup>4</sup> 1,420,060 | <sup>4</sup> 1,608,593 | 121.1                                | -11.7     |
| Rent of leased lines.....  | 3,081,922        | 3,575,252              | 4,594,034              | -13.8                                | -22.2     |
| Net income, total.....   | 15,674,759       | 12,125,400             | 3,431,044              | 29.3                                 | 253.4     |
| Dividends from net income.....   | 160,077          | 153,216                | 148,037                | -12.6                                | 23.8      |
| Appropriations for construction and other purposes.....                              | 3,508,583        |                        |                        |                                      |           |
| Surplus, including appropriations for sinking and other reserve funds.....           | 12,006,099       | 11,942,184             | 3,283,007              | 0.5                                  | 263.8     |
| Dividends from surplus.....  | 6,982,694        | 6,982,298              | 2,991,824              | ( <sup>5</sup> )                     | 133.4     |

<sup>1</sup> Includes data for Western Union cable system not reported separately.

<sup>2</sup> Not reported separately; included in "Telegraph and other operating revenues."

<sup>3</sup> Not reported separately; included in "Miscellaneous."

<sup>4</sup> Not including interest on \$20,000,000 funded debt of land-line systems carried in statistics for ocean-cable systems. (See "Plant and equipment" and "Funded debt," p. 16, and note 10, Table 7.)

<sup>5</sup> Less than one-tenth of 1 per cent.

TABLE 9.—RAILWAY AND COMMERCIAL TELEGRAPH LINE AND WIRE ON RIGHT OF WAY OF CLASS I RAILROADS: <sup>1</sup> 1922

|  | Number  |   | Number    |
|--|---------|---|-----------|
| Number of systems or lines reporting.....        | 166     | Miles of single wire owned, total.....  | 1,475,027 |
| Miles of single track.....                       | 234,936 | By railway companies.....   | 317,127   |
| Miles of pole line owned, total.....             | 219,756 | Jointly by railway and telegraph companies.....                                 | 73,968    |
| By railway companies.....                        | 64,476  | By telegraph and other nonrailway companies.....                                | 1,083,932 |
| Jointly by railway and telegraph companies.....  | 28,817  | Miles of single wire operated, total.....                                       | 1,475,027 |
| By telegraph and other nonrailway companies..... | 126,463 | By railway companies.....   | 446,914   |
| Miles of pole line operated, total.....          | 219,756 | Jointly by railway and telegraph companies.....                                 | 55,435    |
| By railway companies.....                        | 62,930  | By telegraph and other nonrailway companies.....                                | 972,678   |
| Jointly by railway and telegraph companies.....  | 33,205  | Miles of single wire owned wholly and operated wholly by railway companies..... | 286,002   |
| By telegraph and other nonrailway companies..... | 123,621 |   |           |

<sup>1</sup> Railroads having annual operating incomes of \$1,000,000 or more.

TABLE 10.—COMMERCIAL TELEGRAPH LINE AND WIRE ON RAILWAY RIGHT OF WAY, BY COMPANIES: 1922

{The statistics in this table relate to line and wire mileage along rights of way of railroads of all classes}

| COMPANY                                 | MILES OF POLE LINE |         |                      | MILES OF WIRE |           |                      |
|---|--------------------|---------|----------------------|---------------|-----------|----------------------|
|   | Total              | Owned   | Leased or controlled | Total         | Owned     | Leased or controlled |
| Total.....                              | 220,253            | 174,340 | 54,907               | 1,450,089     | 1,290,622 | 159,467              |
| Western Union.....                      | 207,407            | 168,982 | 48,425               | 1,315,117     | 1,174,333 | 140,784              |
| Postal Telegraph-Cable.....             | 14,142             | 12,430  | 1,712                | 103,684       | 101,073   | 2,611                |
| North American.....                     | 1,876              | 767     | 1,109                | 11,629        | 6,068     | 5,561                |
| Continental.....                        | 2,744              |         | 2,744                | 10,511        |           | 10,511               |
| Philadelphia, Reading & Pottsville..... | 952                | 952     |                      | 4,865         | 4,865     |                      |
| All other telegraph companies.....      | 2,132              | 1,215   | 917                  | 4,283         | 4,283     |                      |

TABLE 11.—TRAIN DISPATCHING, TELEGRAPH AND TELEPHONE, FOR CLASS I RAILROADS:<sup>1</sup> 1922

| METHOD                             | NUMBER OF SYSTEMS OR LINES REPORTING |      | MILES OF ROAD DISPATCHED |         |
|------------------------------------|--------------------------------------|------|--------------------------|---------|
|                                    | 1922                                 | 1917 | 1922                     | 1917    |
| Total.....                         | 166                                  | 137  | 222,664                  | 220,143 |
| Telegraph.....                     | <sup>2</sup> 132                     | 120  | 114,216                  | 124,876 |
| Telephone.....                     | <sup>3</sup> 117                     | 100  | 103,835                  | 96,268  |
| Joint telegraph and telephone..... | <sup>4</sup> 26                      | (5)  | 4,613                    | (5)     |

<sup>1</sup> Railroads having annual operating incomes of \$1,000,000 or more.

<sup>2</sup> Telegraph only over entire line, 43; telegraph only over part of line and telephone only over remainder, 72; telegraph and telephone jointly or interchangeably over part of line and telegraph over all or part of remainder, 17.

<sup>3</sup> Telephones only over entire line, 25; telephone only over part of line and telegraph only over remainder, 72; telegraph and telephone jointly or interchangeably over part of line and telephone only over all or part of remainder, 14.

<sup>4</sup> Telegraph and telephone jointly or interchangeably over entire line, 4; telegraph and telephone jointly or interchangeably over part of line and either telegraph only or telephone only over remainder, or telegraph only and telephone only over separate parts of remainder, 22.

<sup>5</sup> No data.

## COMMERCIAL CABLE SYSTEMS

The statistics presented under this head relate only to commercial cable companies incorporated in the United States. These are—

All American Cables, Inc. (formerly reported separately as Central and South American Telegraph Co. and Mexican Telegraph Co.).  
Commercial Cable Co. of Cuba.  
Commercial Cable Co. of New York.  
Commercial Pacific Cable Co.  
United States & Haiti Telegraph & Cable Co.

The Commercial Cable Co. of Cuba, the Commercial Cable Co. of New York, The Commercial Pacific Cable Co., and the Postal-Telegraph Cable Co. (land-line system only) together constitute the Mackay Companies.

As already explained (p. 11), the Western Union Cable System statistics are included with those for land systems except in Tables 2 and 6.

Comparability of statistics for 1917 and 1912 with those for 1922.—The figures for 1917 and 1912, as given in Table 12, are not strictly comparable with those for 1922, for the reason that they do not include the number of local messages handled wholly outside the United States by one company which operated in connection with another in dispatching through traffic to and from the United States, and also do not include the number of foreign employees of that company, except those who were paid jointly by it and the connecting company, nor the amount of their salaries and wages. Between 1917 and 1922, however, these two companies combined, and their consolidated report for the latter year covers all messages handled, including local messages in foreign countries, all employees, and all salary and wage payments. The extent to which the omissions affected the totals for 1912 is not known; but for 1917 the omissions of messages, employees, and salaries and wages were equal to 3.7 per cent, 1 per cent, and 1.5 per cent of the respective totals for all companies.

TABLE 12.—SUMMARY, OCEAN-CABLE TELEGRAPH SYSTEMS: 1912-1922

|   | 1922          | 1917          | 1912          | PER CENT OF INCREASE OR DECREASE (—) |           |           |
|---|---------------|---------------|---------------|--------------------------------------|-----------|-----------|
|   |               |               |               | 1917-1922                            | 1912-1917 | 1912-1922 |
| Number of companies or systems.....   | 5             | 6             | 6             |                                      |           |           |
| Nautical miles of ocean cable.....  | 52,428        | 40,950        | 44,840        | 11.7                                 | -4.7      | 14.0      |
| Number of messages.....   | 5,280,009     | 2,913,250     | 2,843,162     | 81.2                                 | 2.6       | 85.6      |
| Number of cable offices.....  | 101           | 75            | 82            | 34.7                                 | -9.0      | 21.7      |
| Income, total.....  | \$21,312,426  | \$16,742,038  | \$8,480,274   | 27.3                                 | 67.8      | 151.7     |
| Telegraph traffic.....  | \$19,174,826  | \$15,677,176  | \$3,085,798   | 15.0                                 | 94.4      | 125.3     |
| All other sources.....  | \$2,145,070   | \$1,071,862   | \$532,576     | 193.4                                | 155.6     | 679.3     |
| Expenses, total.....  | \$12,126,714  | \$11,042,180  | \$3,516,527   | 18.9                                 | 180.2     | 123.0     |
| General operation and maintenance, including salaries and wages and legal expenses..... | \$11,129,022  | \$7,975,458   | \$4,006,218   | 33.5                                 | 99.0      | 177.7     |
| Interest and taxes.....   | \$1,492,126   | \$2,470,639   | \$1,214,584   | -40.0                                | 132.4     | 23.0      |
| All other expenses.....   | \$515,527     | \$596,022     | \$292,755     | -12.6                                | 103.1     | 75.5      |
| Net income.....   | \$8,182,712   | \$5,704,858   | \$2,962,247   | 43.6                                 | 98.3      | 177.4     |
| Dividends.....  | \$3,572,809   | \$2,651,637   | \$3,040,200   | 34.7                                 | -12.5     | 17.5      |
| Balance sheet:  |               |               |               |                                      |           |           |
| Assets, total.....  | \$127,556,626 | \$136,610,271 | \$107,583,155 | 0.7                                  | 27.0      | 27.9      |
| Plant and equipment.....  | \$72,681,927  | \$70,870,798  | \$78,134,115  | -9.1                                 | 2.2       | -7.0      |
| Investment and marketable securities and long-term advances.....                        | \$44,963,941  | \$36,470,296  | \$10,511,087  | 77.4                                 | 57.5      | 179.4     |
| Cash and current assets, including supplies and spares.....                             | \$10,000,758  | \$30,269,181  | \$19,085,953  | -40.7                                | 130.5     | 42.1      |

See footnotes at end of table.

TABLE 12.—SUMMARY, OCEAN-CABLE TELEGRAPH SYSTEMS:<sup>1</sup> 1912-1922—CON.

|   | 1922          | 1917          | 1912          | PER CENT OF INCREASE OR DECREASE (—) |           |           |
|---|---------------|---------------|---------------|--------------------------------------|-----------|-----------|
|   |               |               |               | 1917-1922                            | 1912-1917 | 1912-1922 |
| Balance sheet—Continued.  |               |               |               |                                      |           |           |
| Liabilities, total.....   | \$137,556,626 | \$136,610,271 | \$107,583,155 | 0.7                                  | 27.0      | 27.9      |
| Capital stock.....  | \$72,738,000  | \$80,900,000  | \$55,483,400  | 19.4                                 | 9.8       | 31.1      |
| Funded debt.....  | \$4,000,000   | \$28,000,000  | \$28,000,000  | —85.7                                | —         | —85.7     |
| Reserves.....   | \$43,448,929  | \$33,035,608  | \$15,549,451  | 31.5                                 | 112.5     | 179.4     |
| Accounts payable.....   | \$4,021,326   | \$4,962,392   | \$1,459,797   | —19.0                                | 240.0     | 175.5     |
| Interest, taxes, dividends, and rents, due and accrued, and sundries..... | \$5,680,817   | \$3,497,896   | \$557,229     | 62.4                                 | 495.7     | 807.4     |
| Net surplus.....  | \$7,667,554   | \$6,214,175   | \$6,497,278   | 23.4                                 | —4.4      | 18.0      |
| Number of employees.....  | 3,730         | 1,966         | 1,656         | 89.7                                 | 18.7      | 125.2     |
| Salaries and wages.....   | \$4,670,183   | \$1,704,351   | \$1,167,014   | 164.7                                | 51.2      | 300.2     |

<sup>1</sup> Does not include statistics for the ocean-cable systems operated by the Western Union Telegraph Co., no segregation of the financial data for the cable business of this company having been made. The numbers of nautical miles of ocean cable owned and leased and the numbers of ocean messages reported by the Western Union Telegraph Co., were as follows: Cable mileage—1922, 24,281; 1917, 24,301; 1912, 22,810. Ocean messages—1922, 4,322,493; 1917, 3,537,978; 1912, 2,966,112.

<sup>2</sup> In addition, the cable companies reported 3,938 miles of single wire on land and underground for 1922, and 1,452 miles of such wire for 1917.

<sup>3</sup> Includes payments for lease of lines.

<sup>4</sup> Includes land-line system plant and equipment to the value of \$20,000,000. (See "Plant and equipment" and "Funded debt," p. 16.)

<sup>5</sup> Includes sinking and other special funds.

<sup>6</sup> Includes land-line system indebtedness to the amount of \$20,000,000. (See "Plant and equipment" and "Funded debt," p. 16.)

<sup>7</sup> Includes floating debt.

TABLE 13.—CONDENSED INCOME STATEMENT, OCEAN-CABLE TELEGRAPH SYSTEMS: 1912-1922

| ACCOUNT  | 1922         | 1917         | 1912        | PER CENT OF INCREASE OR DECREASE (—) |           |           |
|--|--------------|--------------|-------------|--------------------------------------|-----------|-----------|
|  |              |              |             | 1917-1922                            | 1912-1917 | 1912-1922 |
| Telegraph and other operating revenues.....  | \$18,174,356 | \$15,677,176 | \$8,065,798 | 15.9                                 | 94.4      | 125.3     |
| Telegraph and other operating expenses and miscellaneous rentals and deductions..... | 11,644,589   | 8,572,150    | 4,214,264   | 35.8                                 | 103.4     | 176.3     |
| Net operating revenue less miscellaneous rentals and deductions.....                 | 6,529,767    | 7,105,026    | 3,851,534   | —8.1                                 | 84.5      | 69.5      |
| Taxes assignable to operation.....   | 1,321,290    | 1,305,664    | 54,554      | 1.2                                  | 2,293.3   | 2,322.0   |
| Operating income less miscellaneous rentals and deductions.....                      | 5,208,477    | 5,799,362    | 3,796,980   | —10.2                                | 52.7      | 87.2      |
| Nonoperating income, total.....  | 3,145,070    | 1,071,882    | 403,576     | 193.4                                | 165.6     | 679.3     |
| Dividends and interest on stocks and bonds of other companies.....                   | 2,580,872    | 1,046,365    | (1)         | 148.7                                | —         | —         |
| Miscellaneous.....   | 564,198      | 25,517       | (1)         | 2,111.1                              | —         | —         |
| Gross income less miscellaneous rentals and deductions.....                          | 8,353,547    | 6,871,244    | 4,200,556   | 21.8                                 | 63.6      | 98.9      |
| Deductions from gross income, total.....   | 160,835      | \$1,164,375  | \$1,247,700 | —                                    | —         | —         |
| Interest.....  | 160,835      | \$1,164,375  | \$1,160,000 | —86.2                                | 0.4       | —86.1     |
| Rent of leased lines.....  | —            | 87,709       | —           | —                                    | —         | —         |
| Net income, total.....   | 8,192,712    | 5,706,869    | 2,952,847   | 43.6                                 | 93.3      | 177.5     |
| Dividends.....   | 3,572,808    | \$2,651,697  | 3,040,200   | 34.7                                 | —12.8     | 17.5      |
| Appropriations for construction and other purposes.....                              | 232,554      | 140,611      | —           | 55.4                                 | —         | —         |
| Surplus, including appropriations for sinking funds.....                             | 4,387,352    | 2,905,561    | \$87,555    | 51.0                                 | —         | —         |

<sup>1</sup> Not reported separately.

<sup>2</sup> Includes interest on \$20,000,000 of land-line-system indebtedness. (See "Plant and equipment" and "Funded debt," p. 16, and notes 4 and 6, Table 12.)

<sup>3</sup> In addition, stock dividends of \$5,793,930 and dividends of \$110,845 from accumulated surplus were declared.

<sup>4</sup> Deficit.

## GOVERNMENT TELEGRAPH AND CABLE LINES

This section presents statistics for those Government telegraph and cable lines which, although used mainly in connection with the transaction of Government business, also transmit commercial messages. All such lines, except those operated by the Weather Bureau, are located in or connect with the outlying possessions of the United States. With these Government lines the effort generally has been, with reference to commercial traffic, to provide a public service rather than to make the lines a source of revenue.

**Outlying possessions.**—In Table 14 are given statistics for the Government telegraph and cable lines located in or connecting with Alaska, the Panama Canal Zone, the Philippine Islands, and Porto Rico, these being the only Government lines which reported commercial business for 1922. Some of the employees reported were engaged in nontelegraphic work during part of their time, and, except in the case of the Philippine lines, the segregation of that portion of their compensation chargeable to the telegraph and cable work was necessarily estimated by the officials who made the reports.

The Washington-Alaska Military Cable and Telegraph System, operated by the Signal Corps of the Army, connects Seattle, Wash., with the most important points in Alaska. Although the mileage of line construction and that of single wire show decreases since 1917, the service has been extended through connection with the Navy Radio Communication Service. The cable system connects with the telegraph lines of the Government railroad and other railroads in Alaska and with nine telephone systems in the Territory, all of which handle telegrams. The cable itself is in a bad state of repair, causing interruptions to service, and the installation of new and modern equipment is planned.

The Panama Canal Zone System is operated by the Panama Railroad Co.

The telegraph lines in the Philippines are operated as a part of the Postal Service. The telegraphic work is done by employees who perform other duties also, but the portion of their compensation chargeable to the telegraphic work is reported separately.

In regard to the Porto Rican lines, the report of the Commissioner of the Interior states that increases in salaries of all employees were granted by law, that necessary repairs during the year were unusually heavy, and that the volume of business was less in 1922 than in 1921, partly because of abnormal commercial and financial conditions and partly as a result of legislation reducing the hours of operation of telegraph offices.

**Weather Bureau—Report of Chief of Weather Bureau, 1921-1922 (pp. 20-23).**—The United States Weather Bureau operates nine telegraph and telephone lines in localities where no commercial lines are available, primarily for the purpose of transmitting meteorological observations, weather forecasts and warnings, vessel and wreck reports, and general Government business. Following is a list of these lines:

- Block Island—Matunuck Beach, R. I.—telegraph-cable.
- Norfolk, Va.—Hatteras, N. C.—telegraph.
- Alpena—Thunder Bay—Middle Island, Mich.—telephone.
- Whitefish Point—Vermilion Point, Mich.—telephone.
- North and South Manitou Islands—Sleeping Bear Point, Mich.—telephone.
- Beaver Island—Charlevoix, Mich.—telephone.
- Point Reyes—Fairfax, Calif.—telephone.
- North Head, Wash.—Portland, Oreg.—telegraph.
- Tatoosh—Port Angeles, Wash.—telegraph.

The combined length of these 9 lines is 289 miles, including 15 miles of leased wire and 86 miles of cable. The commercial telegrams transmitted numbered approximately 25,000; the Government telegrams and local telephone calls, 15,000; and the long-distance telephone calls, both governmental and commercial, 3,000. Practically all the commercial traffic was handled on 5 lines, which reported a total revenue of more than \$5,000.

The Coast Guard, Lighthouse Service, and Naval Communication Service cooperate with the Weather Bureau in the maintenance of these lines and make extensive use of some of them.

Because of their location, some of the Weather Bureau lines are of great benefit to logging, shipping, fishing, and other private interests. During the fiscal year 1922 more reports from ships were handled than in any preceding year, largely as a result of cooperation with the Shipping Board, which transmits reports from many ships twice daily without cost for wireless tolls.

TABLE 14.—GOVERNMENT TELEGRAPH AND CABLE SYSTEMS, OUTLYING POSSESSIONS: 1922 AND 1917

|  | ALASKA            |                   | PANAMA CANAL ZONE |         |
|--|-------------------|-------------------|-------------------|---------|
|  | 1922 <sup>1</sup> | 1917 <sup>1</sup> | 1922              | 1917    |
| Miles of land line.....                            | 470               | 849               |                   | 10      |
| Miles of single wire.....                          | 840               | 1,219             | 470               | 212     |
| Miles of submarine cable.....                      | 2,069             | 2,376             |                   |         |
| Number of employees.....                           | 307               | 251               | 15                | 36      |
| Salaries and wages.....                            | \$432,200         | \$260,480         | \$1,500           | \$7,528 |
| Expenses, total, including salaries and wages..... | \$525,133         | \$350,000         | \$3,147           | \$9,222 |
| Income from commercial business.....               | \$176,226         | \$200,958         | \$4,121           | \$2,810 |
| Number of messages.....                            | 211,337           | 222,343           | 33,132            | 30,310  |
| Governmental.....                                  | 73,793            | 65,068            |                   | 136     |
| Commercial.....                                    | 137,544           | 156,675           | 33,132            | 30,174  |

  

|  | PHILIPPINE ISLANDS |           | PORTO RICO |           |
|--|--------------------|-----------|------------|-----------|
|  | 1922               | 1917      | 1922       | 1917      |
| Miles of land line.....                            | 5,227              | 4,872     | 195        | 426       |
| Miles of single wire.....                          | 6,434              | 5,029     | 911        | 1,651     |
| Miles of submarine cable.....                      | 550                | 986       |            |           |
| Number of employees.....                           |                    |           | 212        | 196       |
| Salaries and wages.....                            | \$423,050          | \$294,754 | \$102,446  | \$68,666  |
| Expenses, total, including salaries and wages..... | \$648,009          | \$372,162 | \$125,358  | \$81,095  |
| Income from commercial business.....               | \$610,053          | \$418,769 | \$82,180   | \$104,472 |
| Number of messages.....                            | 1,210,099          | 918,650   | 202,871    | 277,140   |
| Governmental.....                                  | 113,563            | 127,365   | 21,451     | 11,200    |
| Commercial.....                                    | 1,096,536          | 788,785   | 271,420    | 265,940   |

<sup>1</sup> Fiscal years ended June 30.

<sup>2</sup> Includes 251 enlisted men, United States Army.

<sup>3</sup> Includes 208 enlisted men, United States Army.

<sup>4</sup> Not including salaries and wages paid for telegraphic services relating directly to railroad transportation.

<sup>5</sup> Land, 35,187; ocean-cable, 156,607; wireless, 19,573.

<sup>6</sup> Land, 44,467; ocean-cable, 166,753; wireless, 11,118.

<sup>7</sup> Includes data for telephone systems. So far as reported separately, these are as follows: Pole line, 100 miles; single wire, 802 miles; operating revenues, \$30,781; operating expenses, \$30,367; long-distance calls, 60,340.

<sup>8</sup> Includes 719 radio messages to ships. Land and ocean-cable messages not reported separately.

<sup>9</sup> Includes 35 radio messages to ships. Land and ocean-cable messages not reported separately.

## COMMERCIAL WIRELESS SYSTEMS

The following-named commercial wireless-telegraph companies reported for 1922:

Federal Telegraph Co.  
Independent Wireless Telegraph Co.  
Radio Corporation of America.  
Tropical Radio Telegraph Co.

The earliest census statistics for wireless telegraphs relate to the year 1907. Table 15 presents summary figures for the four census years 1907 to 1922, inclusive.

**Comparability of statistics for 1917 with those for preceding and following years.**—As explained in footnote 1, Table 15, the 1917 figures for number of messages and certain other items do not show the actual amount of business done during the year, for the reason that they represent only the operations of the land stations during the first quarter of the year and the operations of the ship stations of two companies during the first quarter and of one company during the entire year. No complete record of the number of commercial messages transmitted under Government operation was kept. The report of the Secretary of the Navy for the fiscal year 1917, however, contains the statement that the traffic from April 6 to June 30, 1917, through the stations formerly operated by the commercial companies, aggregated 103,737 messages, of which number, 14,797 were official and 88,940 were commercial. The addition of these 88,940 commercial messages to the 122,244 shown in Table 15 gives a total of 211,184 for the first six months of 1917; and if the number of commercial messages sent during the remainder of the year was approximately the same, the total for 1917 would amount, in round figures, to 420,000, representing an increase of nearly 50 per cent as compared with 1912. The number of messages reported for 1922 shows a very great increase—approximately 400 per cent—over the estimate for 1917.

The reduction in the number of tower stations from 117 in 1907 to 37 in 1922 was made possible by the development of high-power sending apparatus.

Radio telegraphy and telephony, and particularly the latter, have become established modes of communication for many commercial organizations in the conduct of their business. In regions where it would be difficult or impossible to construct and maintain wire lines, the problem is solved by the use of radio. Among the industries thus benefited are fishing, mining, and lumbering.

**Government radio stations.**—The Government maintains nine radio stations in Alaska. These are units of the Naval Communication Service, with headquarters at Radio, Va. The War Department at Washington communicates by radio with 72 garrisons, posts, camps, and stations.

TABLE 15.—SUMMARY, WIRELESS TELEGRAPH SYSTEMS: 1907-1922

|  | 1922         | 1917         | 1912         | 1907         | PER CENT OF INCREASE OR DECREASE (-) |           |           |
|--|--------------|--------------|--------------|--------------|--------------------------------------|-----------|-----------|
|  |              |              |              |              | 1917-1922                            | 1912-1917 | 1907-1912 |
| Number of companies or systems.....  | 4            | 3            | 4            | 5            |                                      |           |           |
| Number of messages.....  | 2,365,109    | 1,122,244    | 285,091      | 154,617      | 834.7                                | -57.1     | 84.4      |
| Number of tower stations.....  | 37           | 63           | 74           | 117          | -41.3                                | -14.9     | -30.8     |
| Income, total.....   | \$8,111,102  | \$1,385,000  | \$669,158    | \$100,791    | 485.6                                | 107.0     | 526.6     |
| Expenses, total.....   | \$5,111,674  | \$775,534    | \$664,420    | \$160,329    | 559.1                                | 16.7      | 314.4     |
| General operation and maintenance, including salaries and wages and legal expenses.....      | \$3,534,474  | \$540,891    | \$588,712    | \$117,480    | 553.5                                | -8.1      | 401.1     |
| Interest and taxes.....  | \$156,457    | \$47,806     | \$7,826      | \$5,592      | 227.3                                | 510.9     | 40.7      |
| All other expenses.....  | \$1,420,643  | \$186,837    | \$67,882     | \$37,287     | 660.4                                | 175.2     | 82.1      |
| Net income.....  | \$2,999,528  | \$609,526    | \$4,738      |              | 302.1                                | 12,764.0  |           |
| Deficit.....   |              |              |              | \$53,538     |                                      |           |           |
| Balance sheet:   |              |              |              |              |                                      |           |           |
| Assets, total.....   | \$46,494,909 | \$14,483,638 | \$10,377,197 | \$32,058,897 | 221.0                                | 39.6      | -68.5     |
| Plant and equipment.....   | \$34,716,814 | \$9,275,261  | \$1,205,770  | \$317,614    | 274.3                                | 669.2     | 279.6     |
| Investment and marketable securities, long-term advances, and miscellaneous investments..... | \$1,225,169  | \$2,040,504  |              |              |                                      |           |           |
| Cash and current assets.....   | \$4,427,830  | \$1,479,337  | \$9,171,427  | \$32,196,456 |                                      |           |           |
| Materials and supplies.....  | \$5,888,877  | \$1,395,971  |              |              |                                      |           |           |
| Sundries.....  | \$241,219    | \$292,565    |              |              |                                      |           |           |
| Deficit.....   |              |              |              | \$444,827    |                                      |           |           |
| Liabilities, total.....  | \$46,494,909 | \$14,483,638 | \$10,377,197 | \$32,058,897 | 221.0                                | 39.6      | -68.5     |
| Capital stock.....   | \$36,034,309 | \$10,399,500 | \$9,602,570  | \$32,076,242 | 246.5                                | 8.3       | -70.6     |
| Funded and long-term debt.....   | \$525,000    | \$378,318    |              |              |                                      |           |           |
| Floating debt.....   | \$659,280    | \$612,857    |              |              |                                      |           |           |
| Accounts payable.....  | \$3,254,556  | \$979,103    | \$287,866    | \$282,655    | 232.4                                |           | 1.8       |
| Reserves (depreciation and other).....   | \$4,040,280  | \$692,538    |              |              | 483.4                                |           |           |
| Interest, taxes, and rents, due and accrued, and sundries.....                               | \$1,172,599  |              | \$313,777    |              |                                      |           |           |
| Surplus.....   | \$803,885    | \$1,423,324  | \$172,984    |              | -43.2                                | 722.8     |           |
| Number of employees.....   | 1,258        | 580          | 958          | 176          | 114.7                                | -38.8     | 444.3     |
| Salaries and wages.....  | \$2,095,506  | \$461,402    | \$393,606    | \$81,771     | 354.2                                | 17.2      | 381.4     |

<sup>1</sup> Incomplete. The statistics for 1917 relate only to the first quarter of the year, or until the stations were taken over by the Government for operation during the period of the war, except that the operations of the ship stations of 1 company are covered for the entire year.

<sup>2</sup> Includes 5,013 land messages sent over a leased wire by a wireless company doing a land-telegraph business also.

<sup>3</sup> Includes sinking funds and stock and bond discounts.

## APPENDIX

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SCHEDULE USED IN SECURING DATA FOR TELEGRAPHS



