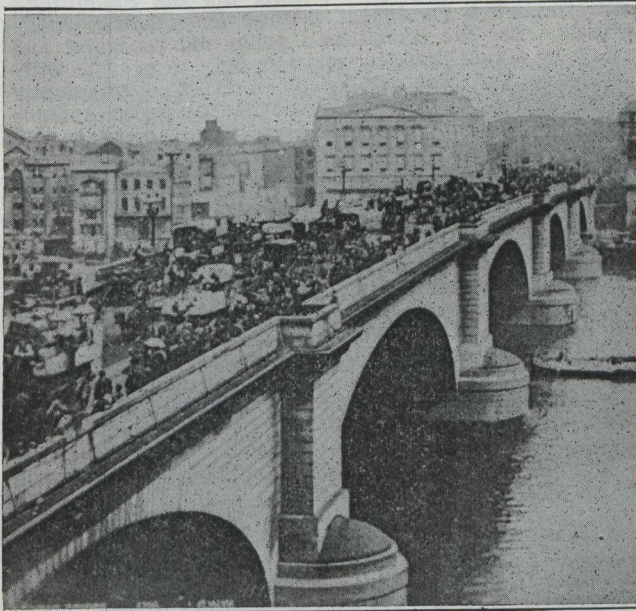


## Traffic Over Some of the World's Busy Highway Bridges

In a paper recently presented before the Western Society of Engineers, Charles M. Spofford gave the following statistics concerning the width of roadway and traffic over some of the important bridges of the world.

**Brooklyn Bridge.**—Width of roadway. Two roadways at 16 ft. 9 in. each between curbs, with single street car track on each.

Traffic in 1909. Surface cars, round trip, 1,489,364; average per day, including Sundays, 4,080 single trips. Other vehicles, 1,525,262; average per day of twenty-four hours, including Sundays, 4,179.



LONDON BRIDGE.

**Manhattan Bridge, N.Y.**—Width of roadway. One roadway at 35 ft. without street car tracks.

Total roadway vehicle traffic in 1910, 918,535; average per day, including Sundays, 2,516.

Total roadway vehicle traffic in 1909, 1,673,333; average per day, including Sundays, 4,584.

**Queensboro Bridge.**—Width of roadway. One roadway 33 ft. 1½ in. clear with space for street car on either side, giving a total width of 53 ft. 2½ in.

**Waterloo Bridge, London.**—Width of roadway in the clear, 27 ft. 6 in. 10,192 horse and motor vehicles. No street cars.

**Blackfriars Bridge.**—Width of roadways in the clear, 73 ft. 6 in. 14,067 horse and motor vehicles, including 1,829 electric tram cars.

The following figures are from the 1911 Report of the London Traffic Branch of the Board of Trade and refers to traffic on one day in 1911 between 8 a.m. and 8 p.m.

**Westminster Bridge, London.**—Width of roadway in the clear, 54 ft. 14,618 horse and motor vehicles, including 2,975 electric tram cars.

**London Bridge.**—Width of roadway in the clear, 37 ft. 13,771 horse and motor vehicles. No street cars.

**Tower Bridge, London.**—Width of roadway in the clear 35 ft. 9,552 horse and motor vehicles. No street cars.

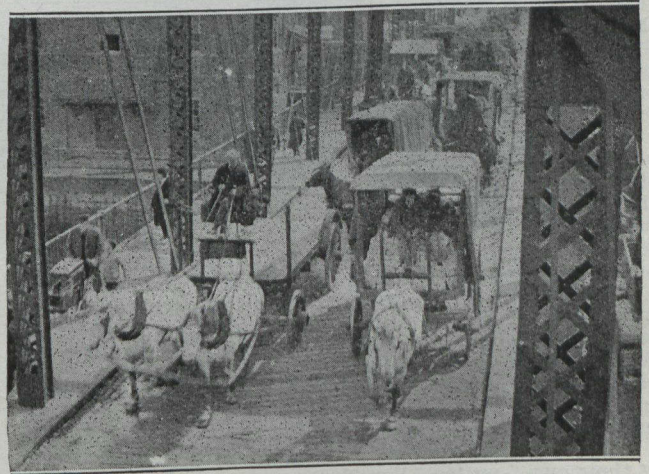
**Northern Avenue Bridge, Boston.**—Width of roadway. Two roadways each 18 ft. 9 in., and one roadway at 18 ft. 6 in. between curbs, without provision for street cars. Traffic on February 27, 1913, between 7 a.m. and 6 p.m., 3,644 vehicles.

**Congress Street Bridge, Boston.**—Width of roadway. One roadway 44 ft. between curbs on fixed spans; 31 ft. 4 in. between curbs on draw-span. This bridge, including draw-span, is used regularly by three lines of vehicles. No street cars. Traffic on September 11, 1908, 7,362 vehicles.

**Malden Bridge Draw-Span, Boston.**—Width of roadway. Two roadways each 19 ft. 6 in. between curbs, with street car track on each roadway.

**Roadway Bridge, Boston.**—Width between curbs 40 ft., with double track street railway. Traffic on March 8, 1915, from 6 a.m. to 10 p.m., 398 cars, 1,925 other vehicles. Four lines of traffic.

**Meridian Street Bridge, Boston.**—This bridge is a comparatively narrow structure, having a distance between trusses of 25 feet and between curbs of 21 ft. 3 in. The traffic across this bridge on Sept. 10, 1912, between 6 a.m. and 10 p.m., consisted of 1,145 vehicles, including street cars.



NORTHERN AVE. BRIDGE, BOSTON.

### SERVICE TESTS OF MANITOBA GOVERNMENT TELEPHONES.

The results of service tests of the Manitoba Government Telephones in the provincial exchanges made during the year 1914, show that 95.4 per cent. of the calls were answered by the operator in 15 seconds or less; 90.0 per cent. in 10 seconds or less; 62.4 per cent. in five seconds or less; and 3.7 per cent. in two seconds or less.

The time required to complete the connection from the time the operator answers until the subscriber answers was 60 seconds for 88.5 per cent. of the calls; 30 seconds for 60.3 per cent.; 15 seconds for 12.9 per cent. and 10 seconds for 6.1 per cent. But 11.5 per cent. of the calls required over 60 seconds for completion. 93.5 per cent. of the calls were disconnected in 30 seconds; 70.8 per cent. in 10 seconds; 3.2 per cent. in two seconds and 6.4 per cent. over 30 seconds.

The average number of complaints per day was 10.3. The average number of complaints per 1,000 stations per annum was 10.

In the Winnipeg exchanges over 6,000 tests were made during the year 1914. The results show that 99.2 per cent. of the calls were answered by the operator in 15 seconds; 96.6 per cent. in 10 seconds; 90.4 per cent. in five seconds; 62.1 per cent. in two seconds, but .8 per cent. of the calls requiring more than 15 seconds.

The time required to make connections was 60 seconds or less for 99.9 per cent. of the calls; 20 seconds for 98.2 per cent. of the calls; 15 seconds for 78.6 per cent.; 10 seconds for 41.3 per cent.; and over 60 seconds for .1 per cent. of the calls. 99.8 per cent. of the calls were disconnected in 30 seconds; 98.2 per cent. in 10 seconds; 91.8 per cent. in five seconds; 68.2 per cent. in two seconds, and .2 per cent. over 30 seconds.

The holding time of connection for 72.9 per cent. of the calls was 120 seconds; for 29.8 per cent., 60 seconds; 14.3 per cent., 45 seconds; 2.7 per cent., 30 seconds, and 27.1 per cent. over 120 seconds. The average number of calls per line per day was 11.9. The average number of complaints per 1,000 stations per annum was 17.4.