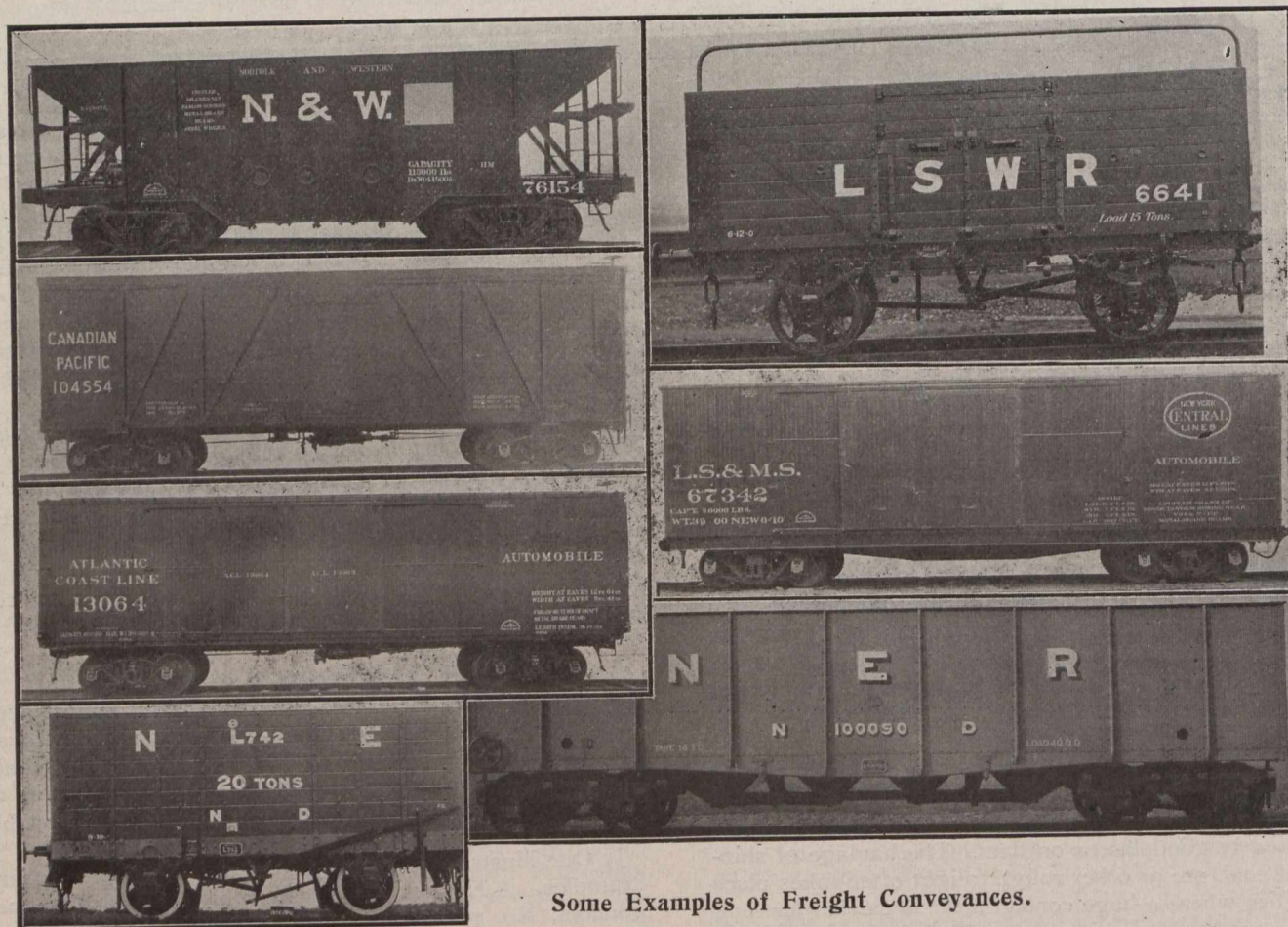


A Great Western Railway of England, 10-ton covered goods wagon (shown as nearly as may be, by a L.T. and S.E., somewhat similar vehicle) has a tare of 15,232 lbs. and capacity of 22,400 lbs., and gives a 68 per cent. ratio. Erie Box 107831, with tare 40,200 lbs. and capacity 80,000 lbs., gives a ratio of dead weight to load of 50.25 per cent.

North-Eastern Railway of England open goods wagon No. L. 742, with tare 20,048 lbs. and a capacity of 20 long tons or 44,800 lbs., gives a ratio between the two of 44.75 per cent. L.S. & M.S. Auto-Box 67342, with a tare of 39,000 lbs. and capacity 80,000 lbs., shows a ratio of 48.75 per cent., and London, Tilbury and South End Railway (English) open 10-ton goods wagon No. 1411, with tare 13,272 lbs. and capacity 22,400 lbs., gives a proportion of dead weight to live load of 50.9 per cent.

aggregate tare is 99,176 lbs., giving an average of 46.60 per cent.

In these two cases there is not much to choose from, but it may be remarked that the Canadian and United States cars contain much greater volume than do those of the United Kingdom, and the former are subject to interchange among the various roads, a practice almost unknown on the other side of the water. This tends to increase hard usage. Weather conditions here are more severe, and everywhere shunting on this continent is far more detrimental to cars than it is abroad. The percentages stand almost even, but with the larger business done here, under severe conditions of service, against the handicap of snow, cold, more numerous grades, sharper curves, and with the strains incidental to long trains and



Some Examples of Freight Conveyances.

- (1) N. & W. high-side steel hopper gondola; capacity 115,000 lbs.
- (2) C.P.R. box car; capacity 80,000 lbs.
- (3) A.C.L. box car (automobile doors); capacity 60,000 lbs.
- (4) N.E.R. (English) open goods wagon; capacity 44,800 lbs.

- (5) L. & S.W.R. (English) open goods wagon; capacity 33,600 lbs.
- (6) L.S. & M.S. box car (automobile doors); capacity 80,000 lbs.
- (7) N.E.R. (English) open steel goods wagon; capacity 89,600 lbs.

In these examples we have five Canadian and United States and five British vehicles, and though they are not strictly comparable, because each differs widely in certain particulars from the others, yet a rough and ready comparison may be attempted. The total capacity of the five Canadian and United States cars is 415,000 lbs. and the aggregate tares amount to 197,300 lbs. The ratio of aggregate tare to aggregate capacity gives a percentage of 47.54; and in like manner the five British goods wagons show an aggregate capacity of 212,800 lbs., and the ag-

heavy engines, the actual "work" done by the American freight car, carrying more weight per vehicle, cannot be accurately determined by the simple survey of the mathematical ratio representing the proportion of dead weight to live load.

When day coaches and sleepers are taken into account, it is at once obvious that value of the paying "load" cannot be computed by weight, either physical or "moral." It is usually determined by the distance travelled and the accommodation provided. All persons