

Appendix A. RAILS.

QUESTIONS.	CAMBRIAN.	FURNESS.	GREAT EASTERN.	GREAT NORTHERN.
Weight of Rail per yard	80 lbs.	80½ lbs.	85 lbs.	85 lbs.
Length	30 feet.	30 feet.	30 feet.	30 feet.
Holes for Fish Bolts—				
(a) Number	Four.	Four.	Four.	Four.
(b) Shape	Round.	Elongated.	Oval.	Oval.
(c) Distance apart from centre to centre of holes	4½ inches.	4½ inches.	4½ inches.	4½ inches.
(d) Distance from end of Rail to centre of nearest hole	2½ inches.	2½ inches.	2½ inches.	2½ inches.
Is the Line relaid when the Rails wear down to minimum weight per yard?	No attention is paid to this, but renewed when required.	Relaying of Line is ruled by the position, gradient, amount of traffic, &c.	Relaying is carried on year by year all over the system at various points wherever required. Judging by this it gives an average life of 14 to 24 years. On the Suburban Lines, and at or near the London termini, where the traffic is very heavy, Rails have been taken out at a much shorter life than this.	Dependent on the amount of Traffic, and life of Rails.
If so, give weight				
Is Line relaid when Rails wear down to minimum thickness of top flange or minimum depth over all?				
If so, give thickness or depth				
Have you made use of Rails of unusual length, 60 feet or upwards?	On Viaducts only.	No	No	No
If so, state object and what result.....		.....	.....	.....

Appendix A. RAILS.

ENGLAND AND WALES.

GREAT NORTHERN.	GREAT WESTERN.	LANCASHIRE AND YORKSHIRE.	LONDON, BRIGHTON, AND SOUTH COAST.	LONDON AND NORTH WESTERN.	LONDON AND SOUTH-WESTERN.	MANCHESTER SHEFFIELD AND LINCOLNSHIRE.
85 lbs.	92 lbs.	86 lbs.	84 lbs.	80 lbs. and 90 lbs.	87 lbs.	86 lbs.
30 feet.	32 feet.	30 feet.	30 feet.	30 feet and 60 feet.	30 feet.	30 feet.
Four.	Four.	Four.	Four.	Four.	Four.	Four.
Oval.	Oval.	Oval.	Oval.	Circular.	Oval.	Oval.
4½ inches.	5 inches.	4½ inches.	4½ inches.	4½ inches.	4½ inches.	4½ inches.
2⅜ inches.	2⅞ inches.	2⅞ inches.	2½ inches.	2⅜ inches.	2 inches.	2⅝ inches.
Dependent on the amount of Traffic, and life of Rails.	As a rule it may be taken that with from 15 to 20 years of average traffic, a Rail loses 15 to 20 per cent. of its weight, and is taken out and used in Sidings or Goods Lines, the Fittings and Sleepers being removed at the same time, and likewise used again.	Approximate minimum weight 66 lbs. per lineal yard, provided the other component parts of the Permanent Way are in sufficiently good order to allow of them being so worn down, if not the whole road is taken out and the unworn Rails used for Sidings.	.....	No weight is arbitrarily fixed. The nature of traffic, the condition of sleepers and chairs, and the demand for second-hand rails for repairs, are taken into consideration, as well as the deformation and weight of the Rail.	No such standard prevails. The necessity for relaying any section of the Permanent Way is determined by the general condition of all its component parts, coupled with the amount and class of traffic which passes over it.	Yes
			.....			72 lbs. per yard.
			Top Flange. When ½ inch has been worn off.			Thin top flange. Top flange worn to thickness of bottom flange.
No	No	No	No	60 feet is the standard length, shorter Rails are also used	No	No
.....	.....	.....	.....	Fewer joints.	.....	.....

SCOTLAND.

[illegible]

SCOTLAND.

IRELAND.

GR. SOUTH EASTERN.	CALEDONIAN.	GLASGOW AND SOUTH WESTERN.	HIGHLAND.	NORTH BRITISH.	GREAT NORTHERN OF IRELAND.	GREAT SOUTHERN AND WESTERN.
82 lbs.	90 lbs.	90 lbs. Only one section is now used, but there are still different sections in use, which are being replaced by the standard section when worn out.	76½ lbs. Double-headed. 77 and 80 lbs. Bull-headed.	84 lbs.	Steel Bull-headed, 85 lbs. Steel flat-bottomed, 79 lbs.	74 lbs.
30 feet.	32 feet.	30 feet.	30 feet.	30 feet.	26 feet.	30 feet.
Four.	Four.	Four.	Four.	Four.	Four.	Four.
Oval.	Oval.	Oval.	Round.	Oval.	Elongated.	Oval.
4½ inches.	4½ inches.	4½ inches.	4½ inches.	4 inches.	4 inches.	4 inches.
2½ inches.	2½ inches.	2½ inches.	2½ inches.	2½ inches.	2½ inches.	2½ inches.
Yes	No weight is arbitrarily fixed, but generally wear down to 70 lbs. per lineal yard. If, however, state of Ballast and Sleepers require renewal, the Rails would be taken out whether they are worn down to 70 lbs. or not.	The Line is relaid when the rails are worn so that they are considered too weak to carry the traffic. The Rails which come out of the Main Line when relaying weigh from 68 lbs. to 72 lbs. per yard, and we consider that they should not be used any lighter than this.	Steel rails substituted for iron.	There is no fixed minimum weight per yard when line must be relaid. There is no fixed minimum thickness when line must be relaid.	All old iron Rails taken up when much laminated, worn, and cracked, and relaying with new steel Rails carried out in long continuous lengths.	We have no fixed rule as to when this should be done.
Average, 70 lbs. per yard.						
Yes						
4½ inches to 4½ inches.						
No	No	No	No	No	No	No