

**THE STEAM RAIL MOTOR CARS BUILT BY THE GLOUCESTER RAILWAY  
CARRIAGE AND WAGON COMPANY LIMITED FOR THE GREAT WESTERN  
RAILWAY.**

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The term "Steam Rail Motor" was applied to steam driven self-propelled railway carriages by railway companies when introduced in the first years of the twentieth century. The Great Western Railway introduced the first of their steam rail motor cars in October 1903 to meet the threat of competition from tram cars in the Stroud valley. The service commenced on Monday 12 October, Mondays to Saturdays, and the car in operation ran in each direction each hour from 8 am to 9 pm from Chalford to Stonehouse and on the half hours in the opposite direction. There were extra runs on Fridays and Saturdays.

The service proved an instant success and plans for a tram service were abandoned. It was made possible by the opening of the South Wales and Bristol direct Line from Wootton Bassett to Patchway, thus relieving the Swindon-Gloucester line of through traffic to South Wales. The Great Western Railway management were very enthusiastic about the success of these vehicles and built, or had built ninety-nine cars between 1903 and 1908. The first cars were withdrawn from service in 1915 and the last in 1935.

The early steam rail motor cars were of the "suburban" type, that is for the carriage of passengers only. From the seventeenth car onwards, provision was made for the carriage of a limited amount of small articles in a luggage compartment and these cars were designated "Branch" type. The first two cars were 57 feet in length, but subsequent cars were 59 feet 6 $\frac{3}{4}$

inches long. after just over a year from the first introduction of the cars, 70 feet long cars were introduced and subsequent buildings were of both lengths.

The majority of the steam rail motor cars were built at the Great Western's Works at Swindon, but in December 1904 and June 1905 the works were so busy that the Railway contracted out the construction of twenty-two cars, fourteen (GWR Numbers 15, 16, 61 to 72) to Kerr, Stuart and company Limited of Stoke-on-Trent and eight (GWR Nos 73 to 80) to Gloucester Railway Carriage and Wagon Company Limited. Cars numbered 61 to 80 were to GWR design and specification. Those built by Kerr, Stuart were 70 feet in length, those by the Gloucester Company 59 feet 6 $\frac{3}{4}$  inches. All were of the "Branch" type.

Neither of these Companies could build the complete vehicle; Kerr, Stuart being engine builders and the Gloucester Company building carriages. There is no record of the two Companies co-operating.

A copy of the Kerr, Stuart contract is in existence and accompanying correspondence refers to a sub-contractor without naming the company. No copy of the GWR/Gloucester contract seems to exist, despite the fact that the Gloucestershire County Record Office has a large library of the Company's contracts. Despite extensive searches in reference books, British Rail Archives and the Public Record Office, there appears to be no information on the GWR/Gloucester cars (other, that is, than that their construction was contracted out to the Gloucester Company). The Centenary Volume of that Company (1) surprisingly, does not even mention steam rail motor cars, even though it built a sizable number for overseas railways plus two for the Cardiff Railway Company as well as those for the GWR. However, extant in the County Record Office are four photographs of the GWR Cars (2). The County Record Office does have a copy of the Contract between the Cardiff Railway and the Gloucester Company, which vehicles were identical to the GWR Cars with the exception of the passenger accommodation. The wording of this Contract is extremely close to that of the Kerr, Stuart contract wording.

The Order Book of the Gloucester Railway Carriage and Wagon Company Limited for 1905, (3), a small diary sized booklet, provides the following data:

Order No	24618
Order Placed	3 July 1905
Placed by	Great Western Railway
Order	8 Rail Motor Cars Complete
Delivery	2 Cars in 4 months
	3 Cars per month after
	2 November 3rd
	3 December 3rd

(Pencilled entry besides last three entries:-

6th December

6th January

31st January)

The accompanying record of delivery was as follows:

1st Car sent for steam 8.1.06  
2 delivered 26th January 1906  
2 delivered 26th January 1906  
1 delivered 27th January 1906  
1 delivered 31st January 1906  
1 delivered 23rd April 1906  
1 delivered 30th April 1906

This is at variance with GWR data for the placement of the Order and Car deliveries:

Order Placed 27 June 1905  
Cars delivered April to June 1906  
Contract value £19,560

(The latter value is pencilled in the Gloucester Company's Order Book, with an additional £66, as the cost per car, but without saying so. From other sources the final price paid was £20,080. The delivery dates, though quoted in various GWR Records as dates built (see Table 1), may be those when the vehicles entered service. There is no record traceable to verify or deny this fact.)

As no brochures of the Gloucester Company are in the Public Record Office at Kew, or at the County Record Office, copies of the local papers of the period could be expected to provide more information on the non-technical side. There appear to be only two small indicators:

"Motor Trains' Manufacture

The Great Western Railway Co. who have recently had the bodies of several omnibuses (sic) made by the Gloucester Railway Carriage and Wagon Co., have just placed with them an order for the manufacture of eight rail motor coaches, and Messrs Summers and Scott, Engineers also of Gloucester will supply their engines to the order of the Wagon Co. this company is now making several motor trains for South America." (4)

And,

"Rail Motor Trains

Two Rail-Motor-carriages, part of an order for the building of eight that the Great Western Railway Co. placed with the Gloucester railway Carriage and Wagon Co.

some months ago, have just been delivered by the makers to Gloucester Station, and, on Tuesday several of the chief officials from Swindon were down inspecting and trying them. They are certainly handsome and well-fitted coaches." (5)

Thus a further inconsistency exists on delivery dates of the vehicles and the "dates built" of the GWR records.

Little information appears to be available on the firm of Messrs Summers and Scott, Engineers, as indicated by the following:

"The Firm of Summers and Scott was based at High Orchard Iron works in Bristol Road, Gloucester. Although the firm is no longer trading I cannot find that any of their records have been deposited here.

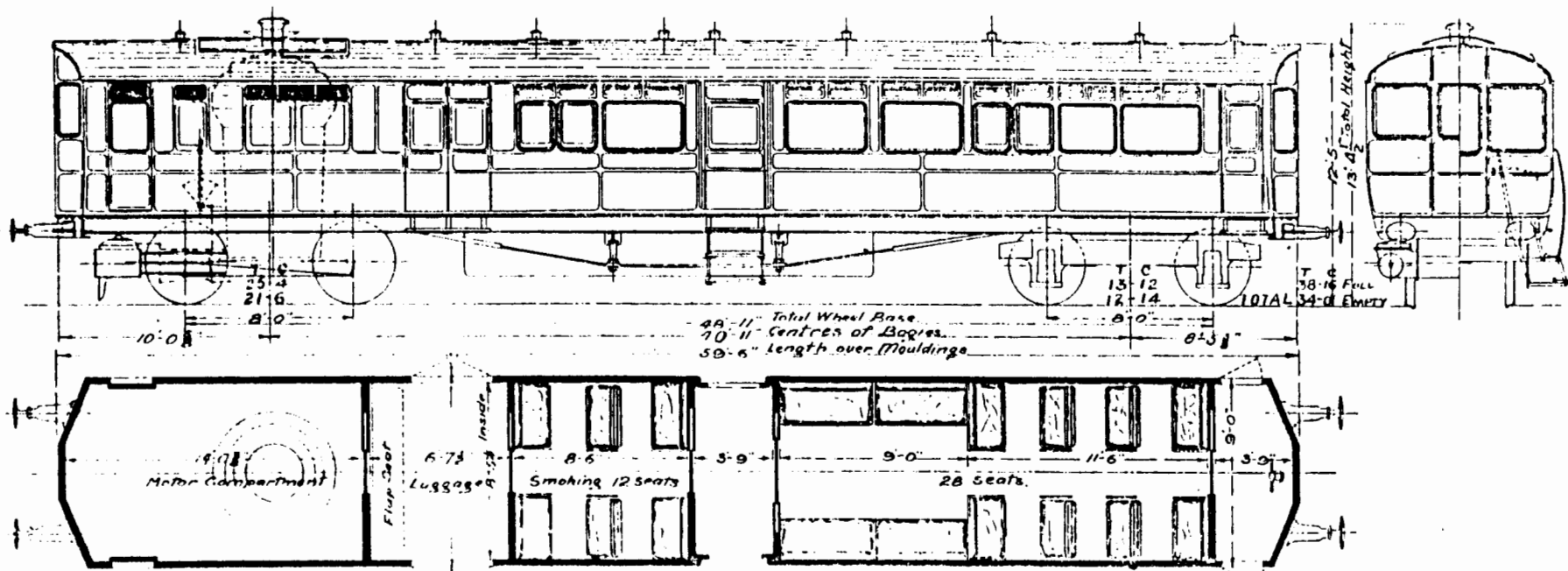
"The catalogue of records deposited by the Gloucester Railway Carriage and Wagon Company includes a section relating to businesses with other British companies. Unfortunately the name of Summers and Scott Ltd does not appear there either." (6)

Enquiries of the Gloucester City Library, Local Studies Department, elicited a copy of pages 6 and 7 from Industrial Gloucestershire, a one-off publication of 1904. (7) Although of interest, it was a couple of years too early for the purpose reported here. Neither did it indicate whether Summers and Scott Ltd made boilers. (It is pertinent to record that the GWR were clients of the company for pumps, valves and pipework at around this time.)

One must assume that the Gloucester Railway Carriage and Wagon Co was disappointed in some way with Messrs Summers and Scott Ltd, or that the latter was too busy when the former company turned to Messrs Sissons and Company Limited for identical equipment around 1912. As far as can be traced, no difficulty was experienced by the GWR in engines or boilers incorporated in the Gloucester company's cars. As can be seen from Table 3, those items where records exist lasted from about twenty to twenty five years before being scrapped. (Engines and boilers were interchanged throughout the operation of the GWR steam rail motor cars.)

Interestingly, the index to the catalogue of records deposited by the Gloucester company also omits any relationship with Messrs W. Sissons and Co. Ltd.

Unfortunately, the surviving outline drawing of the Gloucester built Cars is of insufficient quality for reproduction. However, the diagram for the GWR Cars numbered 81 to 83, only differed from that of the Gloucester built cars in that they had single central doors, whereas the Gloucester built cars had



Total Seats, including seats in Luggage Compartment 45.

CYLINDERS	DIAR 12 <sup>INS</sup>	STROKE 16 <sup>INS</sup>			
BOILER	HEIGHT 9 <sup>FT</sup> 6 <sup>INS</sup>	DIAR 1 <sup>FT</sup> 6 <sup>INS</sup>	FIREBOX HEIGHT 3 <sup>FT</sup> 5 <sup>INS</sup>	DIAR 3 <sup>FT</sup> 10 <sup>INS</sup>	
TUBES	N. 420	DIAR 1 1/4 <sup>IN</sup>	LENGTH 7 <sup>FT</sup> 5 1/2 <sup>INS</sup>	FIRECRATE AREA 11.54 SQ. FT.	
HEATING SURFACE	TUBES 612.78 SQ. FT.	FIREBOX 46.46 SQ. FT.	TOTAL 659.24 SQ. FT.		
WHEELS	MOTOR 4'-0 <sup>FT</sup> <sup>INS.</sup>	BOGIE 3 <sup>FT</sup> 7 1/2 <sup>INS.</sup>			
WATER TANK CAPACITY	450 GALLONS.	COAL BUNKER CAPACITY 15 CWTs.			
WORKING PRESSURE	160 LBS.	TRACTIVE FORCE 6912 LBS.			

STEAM MOTOR CARRIAGE  
LOT 1129 Nos 81 to 83.

Figure I Steam Rail Motor Car - prior to conversion

double central doors. The photographs in the County Record Office are in matt sepia and are not easy to reproduce.

The Gloucester built cars worked all over the GWR system having been based at least at 46 locations.

The heyday of GWR steam rail motor car operation was around the year 1913, a year when well over two million miles were worked. The emergencies placed on the British railways in 1914 and 1915 due to the 1914-18 Great War resulted in a great reduction in the mileage run. This was not restored in 1919. By 1923, when the post war GWR steam rail motor car mileage peaked, it was less than one million and three vehicles had been sold and a further thirty eight withdrawn. The boiler and engine units were removed from the withdrawn Cars and the body rebuilt to serve as "trailer cars" for "push and pull" trains. A further six were similarly altered in 1923. Some cars were scrapped without conversion. Car No 76 was the last steam rail motor car to be converted to a trailer car. Figure 1 shows the outline of a steam rail motor car prior to conversion. In this process the luggage compartment was moved to the end of the motor compartment and the remaining part of the motor compartment and the old luggage compartment were converted to longitudinal seating for thirty people. The rest of the original passenger accommodation was retained.

Table 1 shows the GWR allocated numbers of the cars, engines and boilers on building, together with their GWR "built dates". Table 2 shows the car withdrawal dates, the resulting trailer car numbers and their dates of their withdrawals. This shows that component pieces of the original cars existed in operation for around 50 years. The mileages quoted are those of the steam rail motor cars as those for trailer cars are not available. Table 3 shows, where available, the dates and mileages for engines and boilers when scrapped. In the case of boiler No 1087, where the mileage at "cut-up" is not available, that at the latest date known to the author is quoted.

### **Postscript**

The author would appreciate knowing more about the involvement of Summers and Scott Ltd with these vehicles. Assuming that the firm built the engines (we have only the one indication of that, but would like more), did they build the boilers? (Those for the Cardiff Railways were built by Messrs Abbott and Co Ltd of Newark.) Could we complete this piece of local history?

**Table 1: Unit Numbers Allocated by the GWR and GWR "Built Dates"**

Steam Rail Motor car number	Number Allocated to associated engine when built	Number Allocated to associated boiler when built	GWR "Date built"
73	0878	1085	March 1906
74	0879	1086	ditto
75	0880	1087	April 1906
76	0881	1088	ditto
77	0882	1089	ditto
78	0883	1090	June 1906
79	0884	1091	ditto
80	0885	1092	ditto

**Table 2: Withdrawal dates and Mileage run**

Steam Rail Motor car Number	Date of Withdrawal of steam rail motor car	Mileage Run by steam rail motor car	Date of Conversion to trailer car	Number of Trailer car	Date of Withdrawal of trailer car
73	June 1933	425 868	24.2.34	202	24.3.56
74	ditto	364 555	ditto	203	22.3.58
75	June 1934	250 365	1.9.34	207	1.12.56
76	Jan. 1935	409 636	26.10.35	219	21.4.56
77	Oct. 1935	399 403	Condemned	-	-
78	June 1934	354 245	8.9.34	208	23.3.57
79	ditto	370 148	ditto	209	7.9.57
80	Oct. 1935	346 667	Condemned	-	-

**Table 3: Withdrawal Dates and Mileages run engines and boilers**

Engines			Boilers		
Number	Date Cut up	Mileage	Number	Date Cut up	Mileage
0878	16.12.26	NKA	1085	-. 8.25	about 185500
0879	ditto	ditto	1086	-.9.34	345407
0880	NKA	ditto	1087	-.8.35	NKA 292731@7.28
0881	ditto	ditto	1088	-.3.27?	234114
0882	24.8.35	458022	1089	12.4.30	336545
0883	15.3.30	NKA	1090	29.6.35+	355805
0884	29.7.33	380044	1091	12.1.35+	270808
0885	18.11.33	402070	1092	21.12.29	251148

Notes: NKA Not known to author

+ date withdrawn from service on demise of steam rail motor cars, possibly used as stationary boiler. No 1090 sold to Messrs Burgess & Co, Bracknell 14.5.40, probably making it the longest serving boiler built for steam rail motor car use. No 1091 cut up 20.7.40.

### References

- 1 A History of the Gloucester Railway Carriage and Wagon Company Ltd, London (Weidenfeld and Nicholson), 1960.
- 2 GRO (Gloucestershire Record Office) D4791/16/35, Gloucester Railway Carriage and Wagon company, photographs No 3162.
- 3 GRO D4791/15/1 Gloucester Railway Carriage and Wagon Company Order Book 1905.
- 4 The Gloucestershire Chronicle, 15.7.1905 p4 "Local News".
- 5 The Gloucestershire Chronicle, 3.2. 1905, p4 "Local News".
- 6 P.R. Evans, Letter from Gloucestershire Record Office dated 19.3.1992, ref EN/PRE/SAW headed "Summers and Scott Ltd".
- 7 Industrial Gloucester, 1904, Chance and Bland, Gloucester.