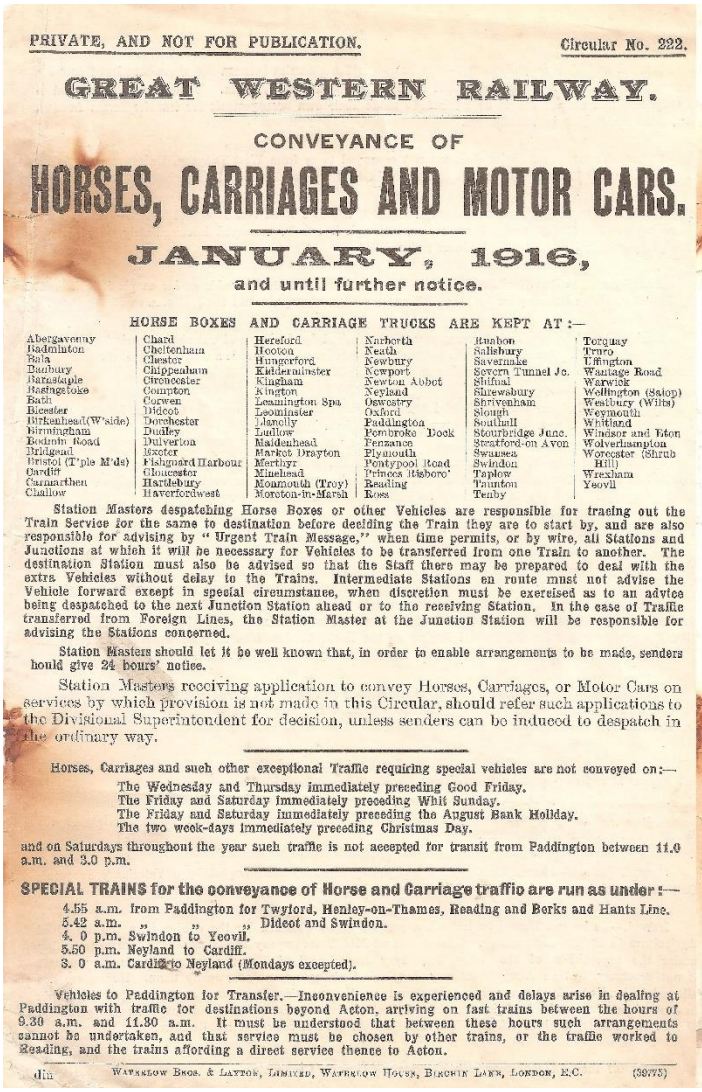
Development of Great Western Railway's covered wagons for carrying Motorcars

In the 19th century, the Great Western Railway had built a range of covered and flat wagons for carrying carriages. The first purpose built covered wagons for carrying motorcars (Telegraphic code - PYTHON) appeared in 1905. The internal dimensions of the first sixty were twenty-seven feet long (which was considered to be sufficient for two motor cars) by seven feet, ten inches wide. Full width end doors were provided at both ends to allow motorcars to be driven on. The framing was internal with vertical planking. They were designed so that wealthy passengers could transport their vehicles when they travelled by train and as such were considered to be passenger stock and were painted brown with ochre lettering. Annual instructions were issued to staff detailing; where these wagons were normally kept, which trains should not be used, and when dual braking systems were required. Dual braking allowed the wagons to operate over the lines of other railway companies whose locomotives did not use vacuum braking.



PRIVATE, AND NOT FOR PUBLICATION. Circular No. 222.

GREAT WESTERN RAILWAY.

CONVEYANCE OF

HORSES, CARRIAGES AND MOTOR CARS.

JANUARY, 1916,

and until further notice.

HORSE BOXES AND CARRIAGE TRUCKS ARE KEPT AT:—

Abergavenny	Chard	Hereford	Narberth	Ruabon	Torquay
Badminton	Cheltenham	Heston	Neath	Salisbury	Truro
Bala	Chester	Hungerford	Newbury	Savernake	Uffington
Banbury	Chippenham	Kidderminster	Newport	Severn Tunnel Jc.	Wantage Road
Barnstaple	Cirencester	Kingham	Newton Abbot	Shifnal	Warwick
Basingstoke	Compton	Kington	Neyland	Shrewsbury	Wellington (Salop)
Bath	Corwen	Leamington Spa	Oswestry	Shrivenham	Westbury (Wilts)
Bicester	Didcot	Leominster	Oxford	Slough	Weymouth
Birkenhead(W'side)	Dorchester	Llanelly	Paddington	Southall	Whitland
Birmingham	Dudley	Ludlow	Pembroke Dock	Stourbridge Junc.	Windsor and Eton
Bodmin Road	Dulverton	Maidenhead	Penzance	Stratford-on Avon	Wolverhampton
Bridgend	Exeter	Market Drayton	Plymouth	Swansea	Worcester (Shrub Hill)
Bristol (T'ple M'ds)	Fishguard Harbour	Merthyr	Pontypool Road	Swindon	Wrexham
Cardiff	Gloucester	Minehead	Princes Risboro'	Taplow	Yeovil
Carmarthen	Hardlebury	Monmouth (Troy)	Reading	Taunton	
Challow	Haverfordwest	Moreton-in-Marsh	Ross	Tenby	

Station Masters despatching Horse Boxes or other Vehicles are responsible for tracing out the Train Service for the same to destination before deciding the Train they are to start by, and are also responsible for advising by "Urgent Train Message," when time permits, or by wire, all Stations and Junctions at which it will be necessary for Vehicles to be transferred from one Train to another. The destination Station must also be advised so that the Staff there may be prepared to deal with the extra Vehicles without delay to the Trains. Intermediate Stations en route must not advise the Vehicle forward except in special circumstance, when discretion must be exercised as to an advise being despatched to the next Junction Station ahead or to the receiving Station. In the case of Traffic transferred from Foreign Lines, the Station Master at the Junction Station will be responsible for advising the Stations concerned.

Station Masters should let it be well known that, in order to enable arrangements to be made, senders should give 24 hours' notice.

Station Masters receiving application to convey Horses, Carriages, or Motor Cars on services by which provision is not made in this Circular, should refer such applications to the Divisional Superintendent for decision, unless senders can be induced to despatch in the ordinary way.

Horses, Carriages and such other exceptional Traffic requiring special vehicles are not conveyed on:—

The Wednesday and Thursday immediately preceding Good Friday.
The Friday and Saturday immediately preceding Whit Sunday.
The Friday and Saturday immediately preceding the August Bank Holiday.
The two week-days immediately preceding Christmas Day.

and on Saturdays throughout the year such traffic is not accepted for transit from Paddington between 11.0 a.m. and 3.0 p.m.

SPECIAL TRAINS for the conveyance of Horse and Carriage traffic are run as under:—

4.55 a.m. from Paddington for Twyford, Henley-on-Thames, Reading and Berks and Hants Line.
5.42 a.m. " " " Didcot and Swindon.
4. 0 p.m. Swindon to Yeovil.
5.50 p.m. Neyland to Cardiff.
8. 0 a.m. Cardiff to Neyland (Mondays excepted).

Vehicles to Paddington for Transfer.—Inconvenience is experienced and delays arise in dealing at Paddington with traffic for destinations beyond Acton, arriving on fast trains between the hours of 9.30 a.m. and 11.30 a.m. It must be understood that between these hours such arrangements cannot be undertaken, and that service must be chosen by other trains, or the traffic worked to Reading, and the trains affording a direct service thence to Acton.

dlm

WATERLOW BROS. & LAYTON, LIMITED, WATERLOW HOUSE, BIRCHIN LANE, LONDON, E.C. (38775)

FORMATION OF SMALL VEHICLES IN PASSENGER TRAINS.

When a four-wheel vehicle with a tare weight of less than 6 tons has to be attached to a passenger train, it must be formed behind any bogie vehicles which may be on the train.

At certain stations, such as Chester, Carmarthen, Plymouth and Swansea, where trains run in and out in reverse order, it will be necessary for the four-wheel vehicle to be reversed; and in order that no time may be lost in doing this, the station where the vehicle has to be reversed should be advised by wire by the sending station.

The vehicles in question will consist almost entirely of four-wheel open carriage trucks.

In no instance may the small vehicles be attached next to the engine on any Main Line train.

Horse boxes, carriage trucks, and other vehicles with a wheel base of less than 9 feet, must not be run on any of the expresses.

MOTOR CARS,

TO AND FROM IRELAND, VIA FISHGUARD, AND THE CHANNEL ISLANDS, VIA WEYMOUTH, ALSO THROUGH THE SEVERN TUNNEL.

For General Information see G.W.R. "Motor Touring" Booklet.

WESTINGHOUSE FITTED STOCK.

Horses, Carriages and Motor Cars brought to the Station without notice, for a Station on a Railway using the Westinghouse brake, may be accepted subject to transfer to a suitable vehicle *en route*, which will mean delay. In such cases the sending Station must wire promptly to the point *en route* where it will be least inconvenient to make the transfer. A list of Stations where dual fitted vehicles are located appears in the General Appendix.

The Railways to which dual fitted vehicles must be loaded are:—

Caledonian
Colne Valley and Halstead
East and West Junction
Glasgow and South Western
*Great Eastern
Great North of Scotland
†Highland
London, Brighton and South Coast
London, Tilbury and Southend
Mersey
Metropolitan District
North British
North Eastern
Rhymney
S.E. & C. (*via* Victoria except to Stations mentioned below).

* Vehicles for Stratford (G.E.) need not be Westinghouse-fitted.
† Traffic has to travel over Caledonian Line.

Vehicles loaded to the undermentioned S.E. & C. Stations *via* Victoria need not be Westinghouse fitted. Dual-fitted stock is not necessary to S.E. & C. Stations *via* Reading.

Adisham	Eynsford	Maidstone East	Sheerness
Barming	Faversham	Malling	Shepherds Well
Bearsted	Gillingham (Kent)	Margate West	Shoreham (Kent)
Birchington	Harrietsham	Meopham	Sole Street
Broadstairs	Herne Bay	Queenborough	Teynham
Canterbury East	Hollingbourne	Rainham	Westgate-on-Sea
Charing	Lenham	Ramsgate Harbour	Whitstable Town
Chatham	Leysdown	Selling	Wrotham

DIMENSIONS OF VEHICLES TO STATIONS ON THE TUNBRIDGE WELLS AND HASTINGS BRANCH, OF THE S. E. & C. RAILWAY.

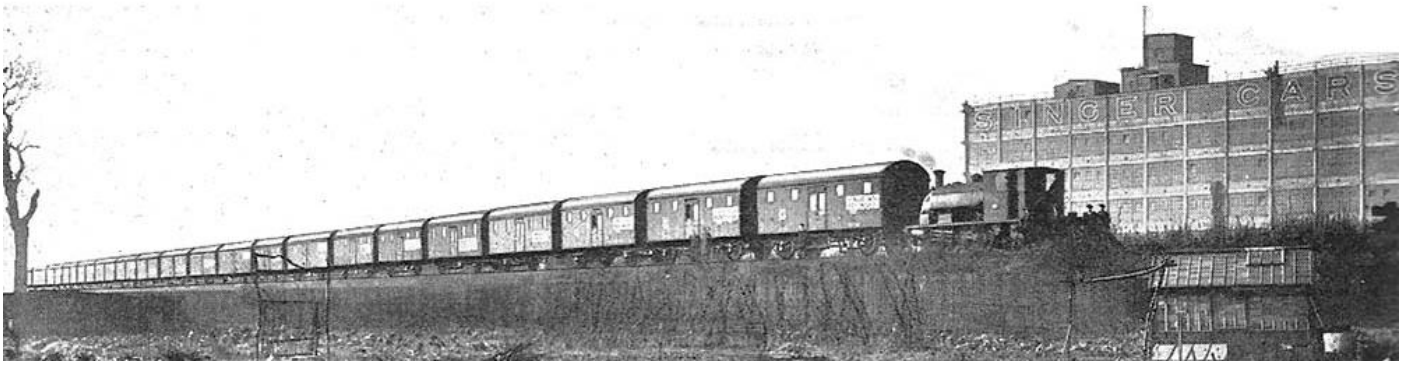
Vehicles which exceed the dimensions set out below cannot work over this Branch.

Length of body	50 ft. 0 in.
Width of body at waist	8 ft. 0⅞ in.
Width across side cornices of roof	8 ft. 4 in.
Width across top step boards	8 ft. 10 in.
Width across bottom step boards on body	8 ft. 4 in.
Width across bottom step boards on bogie truck	8 ft. 6 in.
Height of top of side cornice from rail level	10 ft.

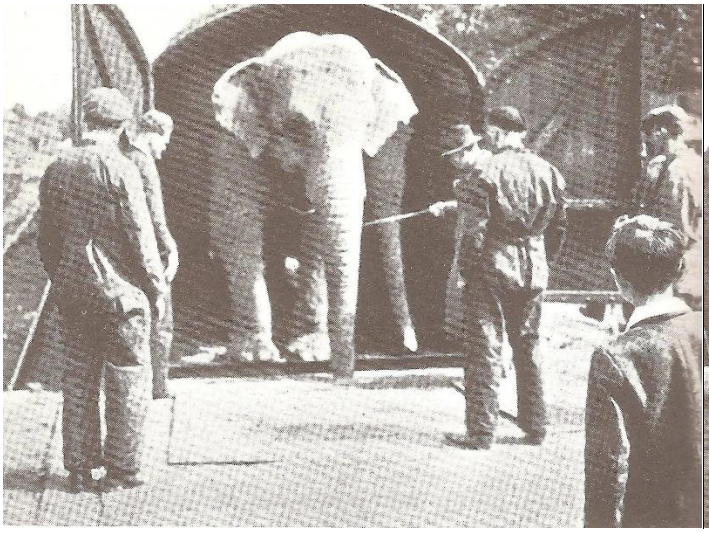
The new pattern "double ended" Beetles and Brake Coaches with side look-outs are dimensions.

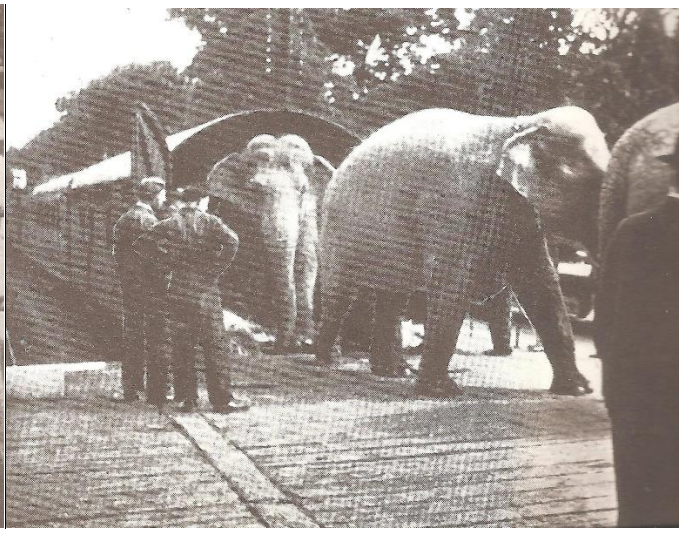
As motorcars became more reliable, this market dried up and the covered wagons were used more frequently for transporting new motorcars. The Great Western Railway provided a loading ramp for end loading motorcars in to these covered wagons at Tyseley Goods Yard. This is believed to have been used by Rover, who after the First World War took over a surplus Munitions Factory in Abingdon Road (now Hay Hall Road). Here they manufactured the chassis for their 'Rover Eight' two seater, producing 17,700 between 1919 and 1925.

This photograph from the June 1933 GWR Magazine shows a special train of PYTHON wagons at the Singer Motorcar Works in Small Heath (Singer Motors Ltd acquired this site on the Coventry Road in 1926, where the ASDA supermarket is now). The train was transporting new motorcars to Brentford Docks in west London for export.



The PYTHON wagons were also used for other purposes, such as transporting travelling circus animals and one wagon (No 580) was specifically strengthened to carry elephants.





Details of the various PYTHON wagon lots are given in the table:

Lot No	Year built	Passenger Diagram	Overall Length	Wheelbase	Brake types	Quantity built	Running Numbers
L1106	1905	P13	31 foot	18 foot	Vacuum	Ten	521 – 530
L1134	1907	P14	31 foot	19 foot	Vacuum	Ten	531 – 540
L1197	1912	P14	31 foot	19 foot	Vacuum and Westinghouse	Twenty	541 – 560
L1238	1914	P19	31 foot	18 foot	Vacuum and Westinghouse	Nineteen	561 – 579
L1238	1914	P20 Strengthened	31 foot	18 foot	Vacuum and Westinghouse	One	580
L1650	post 1940	P22	32 foot	20 foot	Vacuum and Westinghouse	Six	1 – 6

As the number of motorcar manufacturers wanting to transport their products increased, the number of PYTHON wagons proved insufficient, and freight versions of the wagon (Telegraphic code – DAMO A and DAMO B) appeared in 1925. This was followed in 1930 by a standard slightly longer version (Telegraphic code ASMO). All three freight versions were built to a similar design as the previous PYTHONs, with doors at both ends for access, but they were without windows. As freight stock, they were painted grey with white lettering. All were, however, fitted with vacuum brakes and had oil axle boxes, so that they could run in passenger trains. The telegraphic code (ASMO) was a shortened form of **AS**sembled **MO**torcar wagon. These photographs from the June 1930 GWR Magazine show new ASMO wagons being loaded at the Austin Works in Longbridge. These motorcars were to be transported to the Victoria and Albert Docks in east London for export.

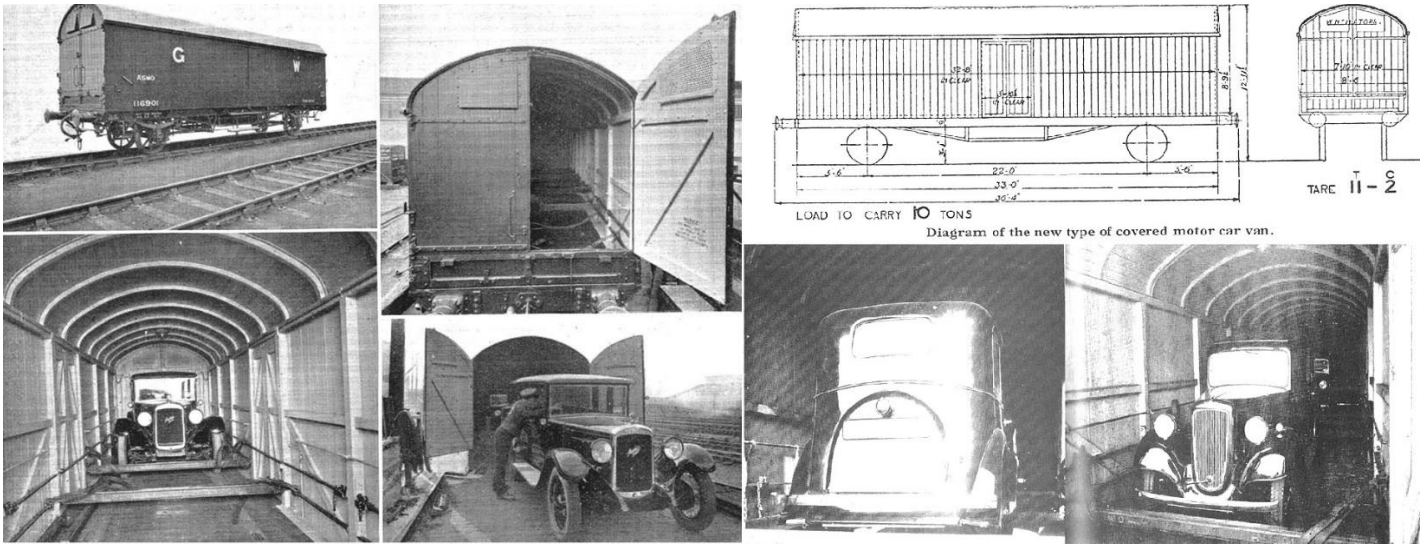


Diagram of the new type of covered motor car van.

Details of the various DAMO and ASMO wagon lots are given in the table:

Code	Lot No	Year built	Freight Diagram	Overall Length	Wheelbase	Brake type	Quantity built	Running Numbers
DAMO A	972	1925	G24	30 foot	18 foot	Vacuum	Fifteen	42206 - 42220
DAMO B	973	1925	G25	20 foot	12 foot	Vacuum	Ten	42221 - 42230
DAMO A	1051	1930	G24	30 foot	18 foot	Vacuum	Twenty	42244 - 42263
ASMO	1059	1930	G26/32	33 foot	22 foot	Vacuum	Hundred	116901 - 117000

By 1933, the demand for covered motorcar wagons to transport new vehicles from both the Morris Cowley Works at Oxford and the Austin Works at Longbridge to the London Docks for export was continuing to increase. The Great Western Railway was unwilling to build more ASMO wagons, as they were concerned that the motorcar traffic would not continue increasing at this rate. If this had happened and the traffic declined, it would leave them with a large fleet of surplus dedicated motorcar wagons. They therefore decided to build a convertible wagon, based on their standard covered goods wagon (Diagram V23). This would only be able to carry a single motorcar, as the internal dimensions of the van were 17 feet 4.25 inches (5.29 metres) long by 7 feet (2.14 metres) wide. Like its predecessors it would have doors at both ends to allow vehicles to drive through during loading. The wagon would also have side double doors for when it was being used to convey general merchandise. The telegraphic code (MOGO) was a shortened form of **MO**torcar / **GO**ods wagon.

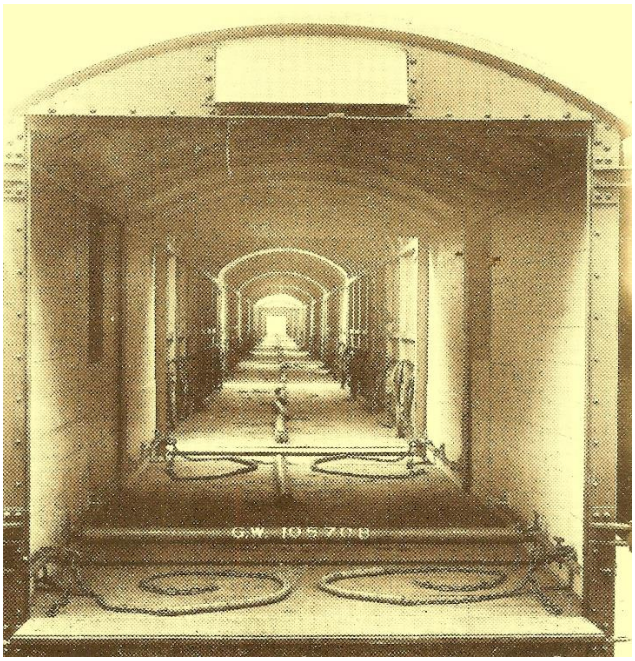
Details of the various MOGO wagon lots are given in the table:

Lot No	Year built	Freight Diagram	Length over Headstocks	Wheelbase	Brake type	Quantity built	Running Numbers
1147	1933	G31	17 foot, 6 inches	10 foot	Vacuum	Fifty	123951 - 124000
1168	1934	G31	17 foot, 6 inches	10 foot	Vacuum	Hundred	126331 - 126430
1178	1934	G31	17 foot, 6 inches	10 foot	Vacuum	Fifty	126431 - 126480
1210	1934	G31	17 foot, 6 inches	10 foot	Vacuum	Fifty	126951 - 127000
1224	1936	G31	17 foot, 6 inches	10 foot	Vacuum	Hundred	105661 - 105760
1556	1946	G43	17 foot, 6 inches	10 foot	Vacuum	Hundred	65736 – 65748, 65750 – 65778, 65780 – 65784, 65786, 65787, 65789, 65791 – 65816, 65818 – 65838, 65840 - 65842

Car manufacturing at the Morris Cowley works In particular continued to expand and the GWR Magazine reported that 2,500 motorcars were conveyed from there during July and August 1935. This aerial photograph from the British Motor Industry Heritage Trust shows the Morris Cowley Works in 1937 with large numbers of both MOGO and ASMO wagons in the sidings.

Description of GWR 12ton MOGO Covered Wagon

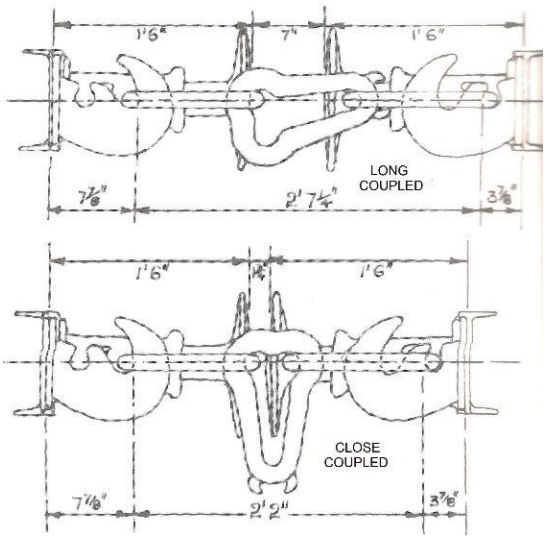
The MOGO wagons were built to the current Railway Clearing House (RCH) standard dimensions and incorporated many RCH standard fittings. The wagon was seventeen feet six inches (5.334 metres) long with a ten foot (3.048 metres) wheelbase. The underframe was constructed of rolled channel section steel. The bodies were horizontally planked with rebated timbers fixed to vertical steel T-stanchions, which were strengthened by diagonal L-bracing. The vertical T-stanchion above the brake lever ratchet was shortened to give additional clearance. The roof construction was canvas stretched over wooden roof boards, which were supported on steel hoops from each pair of stanchions. To make the canvas watertight it was covered in a bedding compound made from chalk in linseed oil. This gave the roof a white appearance, which gradually turned grey when stained with soot. Rain strips were fitted directly above the side doors. The Diagram G31 wagon had vertically planked side and end doors. Below the end doors, a short flap with blocks could hinge down to rest on the buffers. This formed a platform allowing motorcars to be driven through.

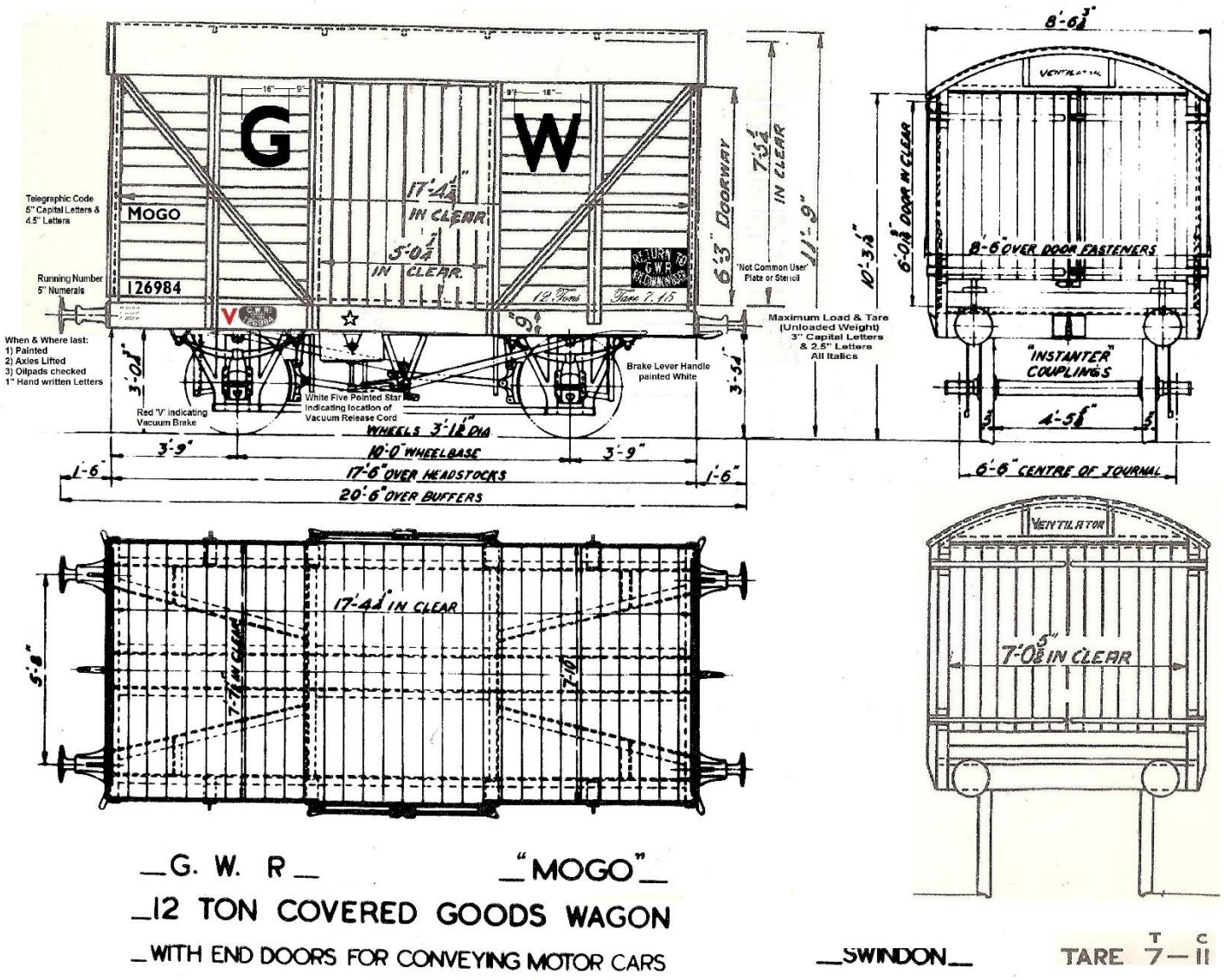


This photograph shows a series of carriage wagons set up to allow vehicles to be driven along the length of the train. The first two wagons are MOGO covered vans, but after these are a series of ASMO or DAMO wagons. Unlike its predecessors, the MOGO covered wagons had straight top doors and no internal framing. Removable wheel beams and chains for securing the load were also provided. The nearest beam is marked with the wagon number (No.105708) which is a Diagram G31 MOGO from lot 1224, built in 1936.

All the wagons were fitted with vacuum brakes, which acted on all four wheels. A manual brake lever of the 'Morton' type was also provided on either-side at the right-hand end of the wagon. This arrangement was in accordance with Board of Trade requirements. A 7 inch high red 'V' was painted on the solebar to indicate that the wagon was fitted with a vacuum brake and a white 2½ inch five pointed star painted on the solebar indicated the location of the vacuum release lever. Wagons fitted with vacuum brakes were allowed to travel in express goods trains (class C headcode), if they also had oil axle boxes. The MOGO wagons had standard 3 foot 1½ inch (0.952 metres) diameter three-hole steel disc wheels and standard RCH oil axleboxes. The axlebox journals were 9 inch with a 4¼ inch diameter, which was suitable for a four wheeled wagon rated for a load of twelve tons.

The drawgear (coupling hooks) at either end of these wagons were connected together through the underframe by a spring bar, which absorbed the shock when the coupling tightened. The couplings were of the Instanter type, which had a triangular shaped middle link. This could either act as a normal three-link coupling or be turned so that the short section would provide a close-coupled arrangement. Loose (or long) coupling allowed locomotives with heavy trains to start without slipping, as the load would be gradually picked up wagon by wagon. Unfortunately when stopping from speed, the wagons in loose coupled trains would surge and then recoil. This could cause damage to the contents. Close coupling prevented this and instanter couplings were quicker to attach/disconnect than the other alternative, which was to use screw couplings. Screw couplings are fitted as standard to locomotives and passenger stock, but they require staff to go between the vehicles to attach/disconnect them.





In addition to construction detail this drawing shows the original livery when built. The company letters were 16 inch high. When the wagon was repainted after 1936 the company letters were reduced to 5 inch high and moved to the extreme left. On the bottom plank (left hand side) in 5 inch high lettering was the running number and on the fifth plank up, the telegraphic code 'MOGO' (First letter of the code was 5 inches high with subsequent letters 4.5 inches high). On the bottom plank (right hand side) was the maximum load (12 tons) and tare (weight when empty). These were written in italic script with the numerals and first letters of the words in 3 inch high capital letters with the subsequent letters in 2.5 inch high lower-case lettering.

Above the tare information was stencilled on a black background the words ‘Non Common User’. In some cases a metal plate was attached in this position. This indicated that the wagon was not part of the general ‘pooling’ arrangement between the four big railway companies and must be returned empty to the Great Western Railway.

On the solebar was detail of; where and when the wagon was last painted, when and where the wagon was last lifted (to examine the axle journals) and when and where the oil box pads were last checked. This information was hand painted in 1 inch high lettering. Note, This information would only have been painted on after these activities had been carried out for the first time, so would not have appeared on the new wagon.

Also on the solebar was the half round shaped cast-iron owner / number plate. In addition to displaying the owning company ‘G.W.R.$\frac{Y}{-}$’ and running number ‘126984’, the plate carried the words ‘STANDARD 12 TONS’. This signified that the wagon had been built with, (and therefore could if necessary be repaired with) standard Railway Clearing House (RCH) fittings as specified for 12 ton wagons.

12ton Covered Wagon to Diagram G31 (MOGO) No 126984

The Great Western Railway built a total of 350 12ton MOGO covered wagons to Diagram G31, in five different lots. Four of these wagons have been preserved and the details are given in the table:

Lot No.	Date	Quantity	Running Numbers	Preserved	Current Owner and Location
1147	1933	50	123951 - 124000	None	
1168	1934	100	126331 - 126430	126359	GWR 813 Fund, at South Devon Rly
1178	1934	50	126431 - 126480	126438	National Railway Museum at Shildon
1210	1934	50	126951 - 127000	126984	Vintage Trains, at Tyseley Locomotive Works
1224	1936	100	105661 - 105760	105742	GWS, at Didcot Rly Centre

A further 100 MOGO covered wagons were built to GWR Diagram G43 in lot 1556 in 1946/47. This diagram was virtually identical to the Diagram G31, but with plywood sides and side doors. No.65801from this lot has been preserved by the GWR 813 Fund and can be seen at the Severn Valley Railway.

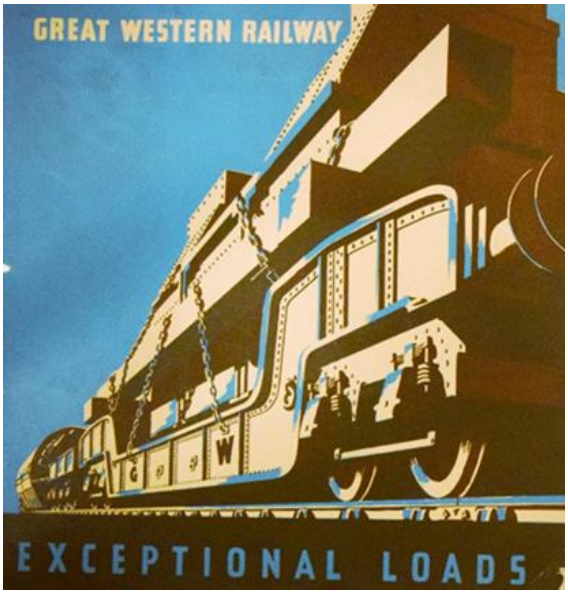
Attached are photographs of the four preserved Diagram G31 MOGOs:

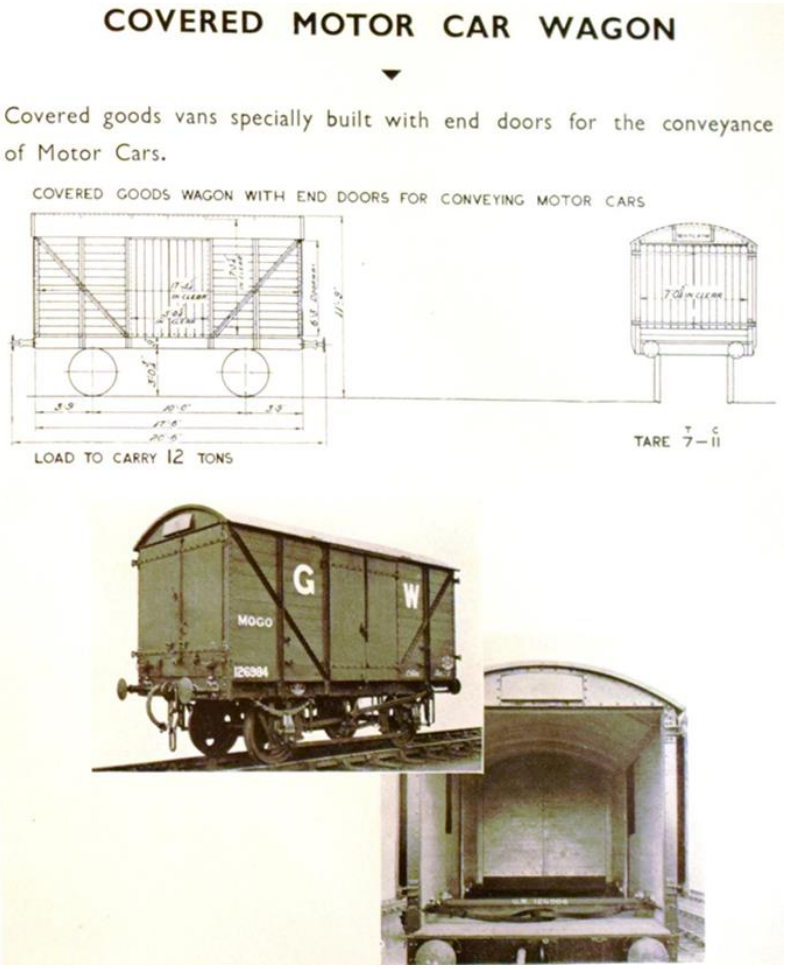
1) No.126359 MOGO from lot 1168 preserved by GWR 813 Fund at Avon Valley Rly (now at South Devon Rly)
2) No.126438 MOGO from lot 1178 preserved in Nation Railway Museum Collection at Shildon
3) No.126984 MOGO from lot 1210 in original livery for an official GWR photograph taken at Swindon in 1934
4) No.105742 MOGO from lot 1224 preserved in Great Western Society Collection at Didcot Railway Centre

Although the half round shaped cast-iron ownership / number plates are now missing from the solebar of MOGO wagon No.126984 at Tyseley, an original build plate, together with a repair plate does remain in situ and these confirm the build date as 1934 (lot 1210).

1	Repair Plate	Generally Repaired 9/57	2	Build Plate	GWR Swindon 1934

In 1936, the Great Western Railway produced a Publicity Pamphlet entitled 'Exceptional Loads' and this included photographs of covered wagon (MOGO) No.126984.





In the 1960s diesel hauled vacuum fitted freight train speeds were accelerated and it was found that unevenly loaded wagons, with the short (ten foot wheelbase) could become unstable. After a number of derailments, these wagons were withdrawn from revenue service, with many relegated to stores vans.

In 1979, wagon No.126984 was in BR service at the Acton Marshalling Yard in London, from where it was purchased by the Birmingham Railway Museum and brought to Tyseley. The wagon was repaired and repainted before being used for the storage of spare parts. Unfortunately because of its exposed location, it has slowly deteriorated and now needs major renovation work. It is hoped that the Tyseley volunteers will undertake this work.

By Robert Ferris (Volunteer Archivist at Tyseley)
February 2021

References

GWR Official Documentation
Great Western Railway – Diagrams of Special Wagons - Nov 1910, June 1926, Sept 1932 & July 1939
Great Western Railway – General Appendix to the Rule Book, April 1910, Sept 1920 & July 1936
Great Western Railway Magazines, June 1930, June 1933
Great Western Railway, A new railway book for boys of all ages 'Cheltenham Flyer' by W Chapman 1934
Great Western Railway - Exceptional Loads 1936
British Railways (LM Region – Western Lines) - Freight Train Loads Book, April 1964
GWR Freight Wagons and Loads by J Russell (OPC) 1981
GWR Goods Services Vol1 by A Atkins & D Hyde (Wild Swan) 2000
Oxford to Princes Risborough – A GWR Secondary Route by C Potts (Oakwood Press) 2004
Great Western Way compiled by J Lewis (HMRS) 2009
GWR Goods Wagons by A Atkins, W Beard & R Tourret (OPC) 2013
GWR Goods Train Working Vol2 by A Atkins (Crecy) 2017
A History of Tyseley Station and Goods Yard by R Ferris (FoVT) 2020
British Motor Industry Heritage Trust – Photograph of the Morris Cowley Works in Oxford
Railway Heritage Register Wagon Survey Project – Photographs of preserved MOGO wagons