

NEW PULLMAN CARS FOR CONTINENTAL SERVICE.

All-Steel Parlour and Kitchen Cars built by the Leeds Forge Co. Ltd., Leeds, to the order of the International Sleeping Car Company.

An order for 30 Pullman cars, placed by Sir Davison Dalziel on behalf of the Compagnie Internationale des Wagons-Lit et des Grands Express Europeens, has just been completed at the Newlay Works of the Leeds Forge Co. Ltd., Leeds, the last five vehicles being scheduled for despatch to the Continent to-morrow, Saturday, the 5th inst., by train ferry from Harwich, and due to reach Zeebrugge about the middle of next week. These cars have been built for the service between Nice and Milan, which was inaugurated on December 15. 1925. Those already running are said to be giving the greatest satisfaction. It is, perhaps, fitting to note that the original allsteel sleeping cars for the Wagon-Lits service from Paris to the Riviera, the now "Blue Train" were designed and constructed by the Leeds Forge Company. The new Pullman cars, described below, finished in cream and blue, are for day service and are worthy companions to the Blue trains.

Visit of Inspection.

On Tuesday last, February 1, a small party, consisting of officials of the Leeds Forge Company and representative's of the press, travelled to Leeds for the purpose of inspecting the last few cars, then practically ready for shipment from England to the Continent.

The party on the outward journey travelled by the 10.10 a.m. corridor express from Kings Cross, a Pullman car being placed at their disposal by the courtesy of Sir Davison Dalziel. Luncheon was served during the journey, and on arriving at Leeds the guests were conveyed in motor-cars to the Newlay works of the builders, where, after making a thorough inspection of the new Continental Pullmans, they were enabled to witness the various processes involved in the manufacture of wheels for rolling-stock, orders for railways at home and abroad being then in course of execution. The visitors proceeded later to the Armley Works of the Leeds Forge Company, being conducted round the shops by principal officers of the concern, including: -

Mr.A.S.Bailey, Managing Director, Messrs, F.L.Lane and A.J.Boyd, Directors, Messrs. A.W.Kidd and W.Redpath, General Managers.

These shops have recently been rearranged to some considerable extent, the machinery the capacity of the works, while speeding up output and generally improving the facilities for the distribution and rapid and thorough execution of the work to be performed.

The main shop represents a very fine example of a modern lay-out for the construction of rollingstock, underframes, bogies, &c., and is capable of undertaking orders on the largest scale with increased expedition.

The party, after being entertained to tea in the works office building, entrained for London, the return journey being made by the 5.30 p.m. from Leeds Central station, to which the Pullman car used on the outward, trip was attached. Dinner during the course of journey.

The New Cars.

Except that the new cars of necessity conform to the Continental running gauge and to the standards of the French, Belgian and Italian railways, they are in many respects similar to the English Pullmans; and, by special request, the interior finish and decoration of the first two vehicles, known as the "Argus Cars", are identical with the English Pullman cars built by the Midland Railway Carriage & Wagon Co. Ltd., Birmingham.

The lay-out of the two cars will be seen clearly from the drawings reproduced herewith. The parlour cars have two large open saloon compartments, each seating 12 passengers, and two coupé

compartments, one at each of the car, each four passengers. The kitchen cars, similarly, have two large saloon compartments, one seating 12 and one eight passengers. One end of the car has a coupé compartment for four passengers, while at the other end are situated the kitchen and pantry. The saloons are noteworthy for their spaciousness and the evident intention to make the comfort of the traveller the prime consideration. The chairs are of the large Pullman type, arranged two to each table, which latter in turn are arranged at each window. The windows are large and provide an ample outlook, the lower portion being fixed and the upper arranged to slide for ventilation. The ceilings, painted a dead white, have a raised flat middle portion, bordered by a heavy decorated mould, on which are spaced the ceiling lights. This, together with the coved sides and ends, gives a very pleasing appearance.

The interior walls, i.e., sides and particulars, are finished and decorated in various styles, this work being carried out by Waring & Gillow Limited, London. In all there are 15 different designs, including the mirror scheme of the "Argus Cars", styles in quartered mahogany panels, inlaid schemes in mahogany, Patapsee, &c., and lastly, two cars with a very fine interior in Chinese lacquer, the carpets, chair upholstery, &c., varying in colour and design to tone and match with the different interior schemes.

In addition to the ceiling lights mentioned above, torch fittings are arranged along the cornice, and each table is provided with a portable table lamp and shade of artistic design. A double-dial clock of 24-hour type is provided on the intermediate partitions between the two large saloons. The saloons and coupé compartment are heated by means of low-pressure steam heaters extending along the body sides near the floor, from partition to partition.

Kitchen and Pantry.

The kitchen equipment comprises cooking stove, hot plates, sinks with hot and cold water, chopping block, ample cupboard space for crockery and lines, racks for plates, hooks for saucepans, and also a griller. The stove is of the large coal-burning variety and is arranged to heat the water for hot water supply. In conjunction with the stove, two circulating tanks are fitted in the roof, and in addition a large tank is carried over the corridor ceiling for the cold-water supply. The tanks and piping are of copper. A new feature compared with previous cars is the double (upper and lower) sliding door, provided with hinged flap tables, giving access between kitchen and pantry. The whole of the kitchen interior, i.e., body side, end and ceilings, is of steel. The corridor partition also, behind the stove, is of steel, heavily insulated and provided in its thickness and over its entire area with a space for the flow of a cold air stream entering from the corridor near the floor and issuing into the upper part of the kitchen immediately under the ceiling. In addition, the partition incorporates a flue extending for the length of the stove, for the purpose of carrying away the hot air and gases from the latter up to three roof torpedo extractors. With the exception of the stove, and the galvanised coal box, refuse boxes, &c., the kitchen is finished in white enamel, giving a very clean appearance.

The pantry has a varnished wood finish and is fitted with zinc lined food cupboards which, in the case of those for storage of meat, fish and wines, are heavily insulated and provided with ice refrigeration. For the rest, the equipment comprises shelves for glassware, drawers and cupboards for silver and linen, and the sinks supplied from the kitchen tanks with hot and cold water. The whole is provided with heavy bronze fittings and special sealing brackets for customs purposes.

Other Details.

The lavatory of each type of car is provided with hot and cold water. The walls are of polished mahogany, and the floor of a composition marbled to give a terrazolite effect. The fittings, taps,

coat hooks, ventilator, &c., are silver plated. Hopper and cistern together with wash basin and other fitments, are of a type similar to those used on the English Pullman cars. The end corridors are finished in polished mahogany. The floor is covered with carpet for the length of the coupé, and beyond the coupé to the body, and with Pullman type black and white interlocking rubber tiles. Ample luggage accommodation is provided by three shelf units, one large and one small unit at the end of car opposite to lavatory in the parlour car only, and on both types of car, one small unit at the lavatory end. The parlour car also includes, at the lavatory end, the conductor's folding seat and table. The platform interiors are of steel, painted and polished to give the appearance of mahogany. Cupboards are fitted in the ceiling and on the platform ends. The hand brake is fixed on one platform of each type of car.

Exterior Finish.

The cars are painted blue on the lower panels and cream on the upper. The panels, windows and main mouldings are tastefully lined in gold and the roof is painted white. On the fascia board above the windows the letters are of bronze, black oxidised. On the centre of the lower panel is placed the coat-of-arms in polished bronze and on the ends are fixed the polished bronze letters, Pullman. The following are the leading dimensions: -

	English. Ft. in.	French. m.
Length over buffers	76 11 ¹ / ₄	23 . 452
Length over headstocks	71 11 ⁷ / ₈	21 . 940
Length over platform ends	72 10 ¹ / ₈	22 . 200
Length over main body ends	67 3 ¹ / ₈	20 . 500
Width over outside cornices	9 5 ¹ / ₂	2 . 882
Width over waist mouldings	9 4 ¹ / ₁₆	2 . 847
Height from rail to top of roof mouldings	13 1 ⁵ / ₈	4 . 004
Height from rail to centre of buffer	3 5 ³ / ₈	1 . 050
Centre of bogies	52 6	16 . 000
Bogie wheelbase	8 2 ⁷ / ₁₆	2 . 500
Diameter of wheels	3 5 ³ / ₈	1 . 050

Each parlour car has accommodation for 32 passengers, and each kitchen car, 24 passengers. The parlour cars each weigh 46 tons 12 cwt. (47.4 tonnes). The kitchen cars 50 tons 4 cwt. 3 qrs 25 lb. (51.0 tonnes).

Constructional Details.

The whole of the car structure is of steel. The various components of which the structure is built are first assembled from their detail parts into separate units on special jigs. These jigs make possible not only interchange ability and a much-accelerated speed of manufacture, but in the erected car ensure that strict accuracy in size, which is so necessary to enable the various sections of interior finish to be fixed into position without any hand fitting. The body sides are constructed of vertical pressed pillars connected together longitudinally by rolled angle sections, and the whole covered by steel sheeting, held down firmly by mouldings. The window openings are pressed into the upper panels. The platform and body ends are built up of pressed-steel pillars and rails similarly sheeted.

Roofs, Floors, &c.

The roof structure is composed of transverse steel members pressed to the contour of the roof, connected together by longitudinal angles, and the whole covered by steel sheets, the lap joints of which are held down by mouldings to prevent any possibility of leakage.

On the inside, steel members are arranged to carry the coved ceiling, tanks, and lavatory flat ceilings. The roof is designed in such a manner that the tanks can be removed through the outer skin, thus minimising the disturbance of the interior finish. The floor is of key section corrugated steel on which is laid an insulation and fireproof composition. In the saloons, coupé compartments and corridors, this is of a specially light variety, on which is then laid the felt, linoleum and carpet. In the kitchen and pantry, however, the composition is made heavier and harder to withstand wear. The whole of the body outer sheeting on the inside is covered with insulating material; on the roof and sides this is of Celotex, and on the ends the sheet are lined with canvas. Provision for the attachment of the interior finish is made by means of the Leeds Forge patent fibre block method, which consists in securing the interior finish by wood screws to special fibre blocks riveted to the steelwork.

Underframe Details.

The type of underframe as originally designed, by the Leeds Forge Company for the Blue Train has been adhered to with the exception of some slight modifications carried out to reduce weight. The notable features of this design, which is patented by the Leeds Forge Company, are the caststeel ends, main centre longitudinal fish-bellied girder and through crossbars. The solebars are made of rolled "Z" sections connected firmly to the tail pieces of the end castings and arranged so as to form landings for the bottom angles of the body sides. The buffing gear is of the equalising type, the ends of the buffer shanks being fitted with shoes bearing on large laminated springs and connected by equalising bars, inside each buffer ease a cast-steel plunger is inserted, the front of the plunger projecting slightly beyond the front of the case and the back bearing on indiarubber pads. This reduces the shock on the headstocks in the event of the collars behind the buffer heads being driven up to the cases. Provision has been made in the construction of the end casting for the easy erection of the buffing and draw springs into position, a removable cradle being bolted to the underside of the casting at the centre, the lower portions of the diagonals also being made removable. These removable parts of the diagonals are tightly wedged up by the insertion of wedged pieces fitted between the front ends and the main casting, thus relieving the latter from eccentric buffing moments. The hand brake operated from the platform has already been mentioned. The system of power brake used is the Westinghouse. The power is obtained from a cylinder 17 in. diameter, which, through the medium of an intermediate shaft, actuates a pair of brake shafts and thence is transmitted to the brake blocks by suitable rigging.

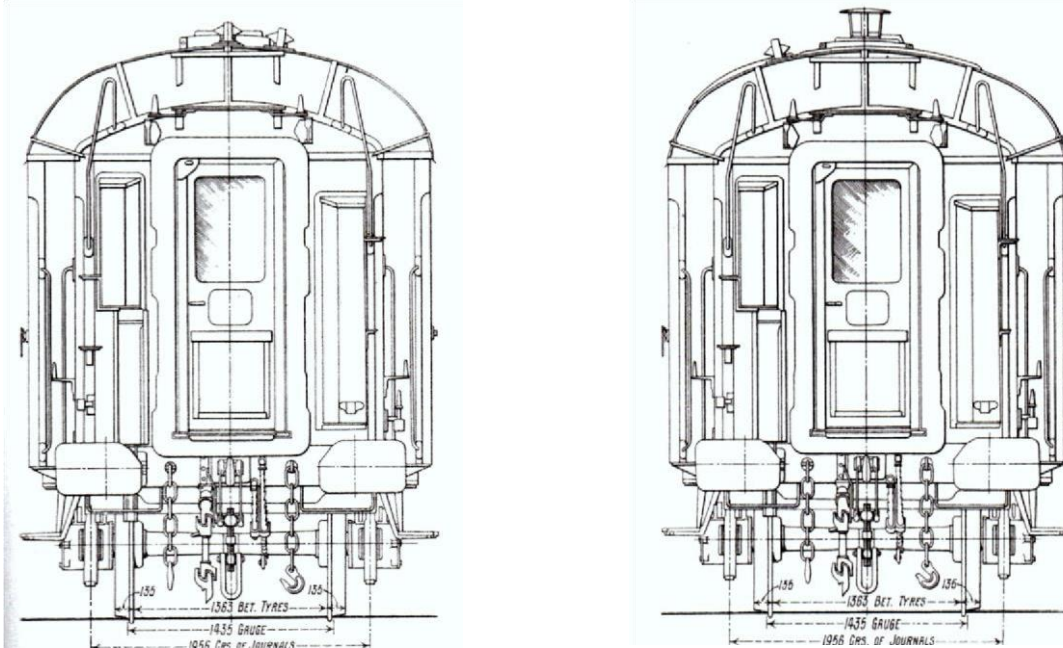
Bogies.

The bogie frame consists of one steel casting, of which the axle-guards, bolster suspension brackets, block hanger brackets, &c., are cast to form integral parts, thus reducing the number of pieces in the finished bogie to a minimum. The wear of pin holes, &c., is provided for by the insertion in the casting of hard steel bushes. The axleguards and bolster-wearing surfaces are faced with suitable liners. The bolster and spring planks are of cast steel. The bogies, of the equalising beam type, are designed with a view to obtaining the easiest possible riding of the cars, and the trials have proved that this has been effectively obtained. Each nest of bolster springs consists of four double elliptic springs, and each nest of side bearing springs of three helical springs. The wheels, axles and axle-boxes are of the Wagons-Lits standard as required by the railways over which the cars will be operated.

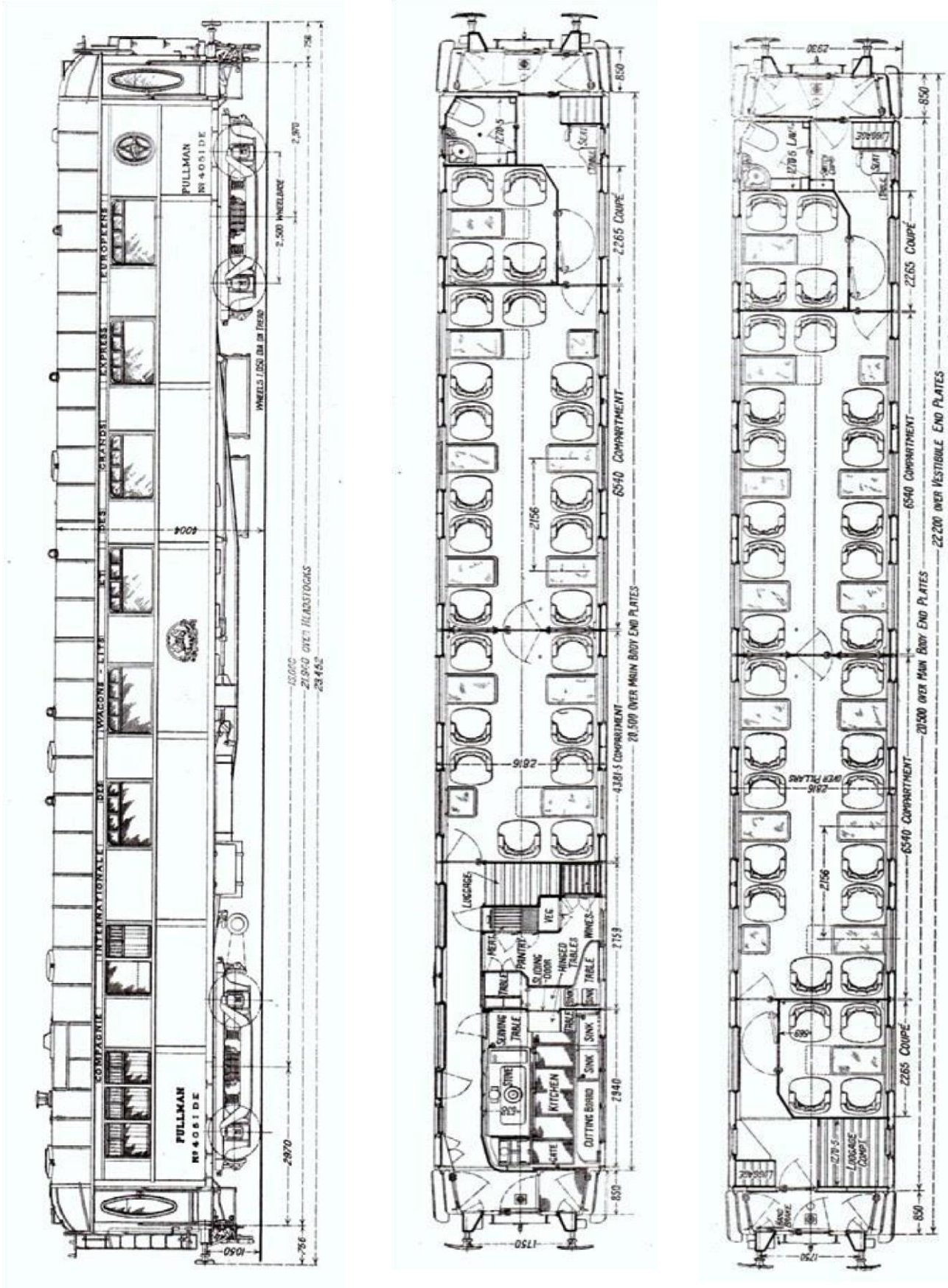
Lighting and Heating.

Stone's system of electric lighting is incorporated. The current for the lights and the two large ceiling extractor fans is generated by a dynamo slung from the underframe and driven by a belt from a pulley attached to one of the axles, the current passing to a pair of accumulator boxes also supported from the frames. The heating system is of the low-pressure type manufactured by the Laycock Engineering Company. As already described, the saloon and coupé compartments are fitted with longitudinal heaters extending from partition to partition, and the hot water supply to the lavatory wash basins is provided for by a heater incorporated in the system. It would, we think, be difficult, if not indeed impossible, to improve upon the excellent design and appearance of these new cars, both externally and internally. The degree of comfort afforded is the highest imaginable, while the general scheme of the appointments, combined with the artistic styles of decoration adopted, give an all-round impression of the utmost refinement in railway carriage construction.

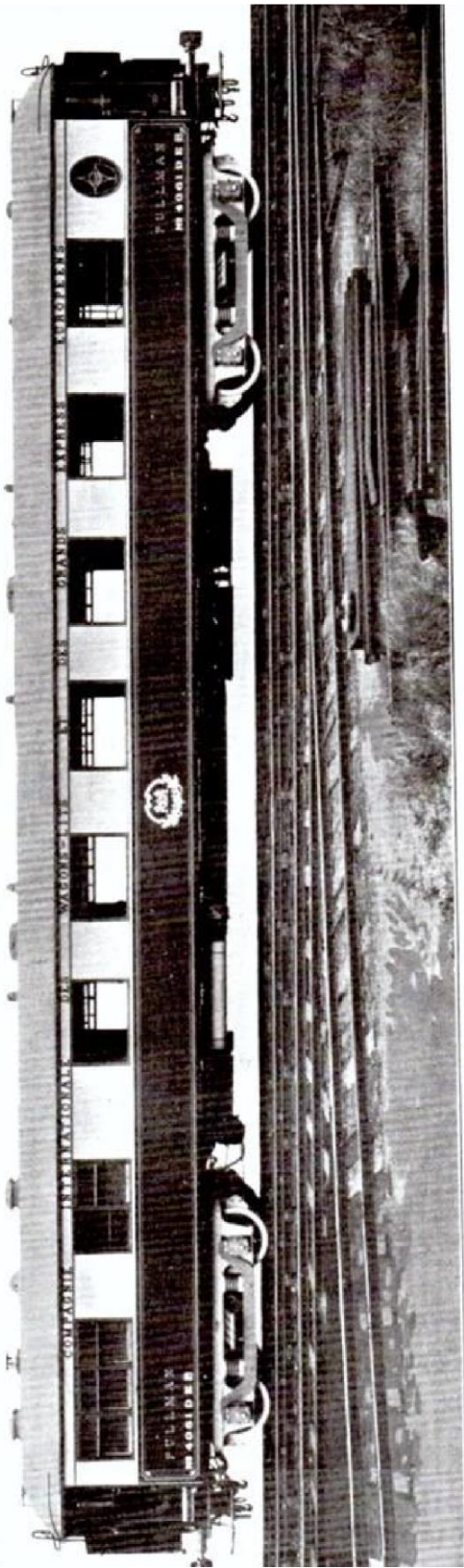
Both Sir Davison Dalziel and the Leeds Forge Co. Ltd. are to be congratulated on the result of their efforts, representing as it does a British achievement of a very high order.



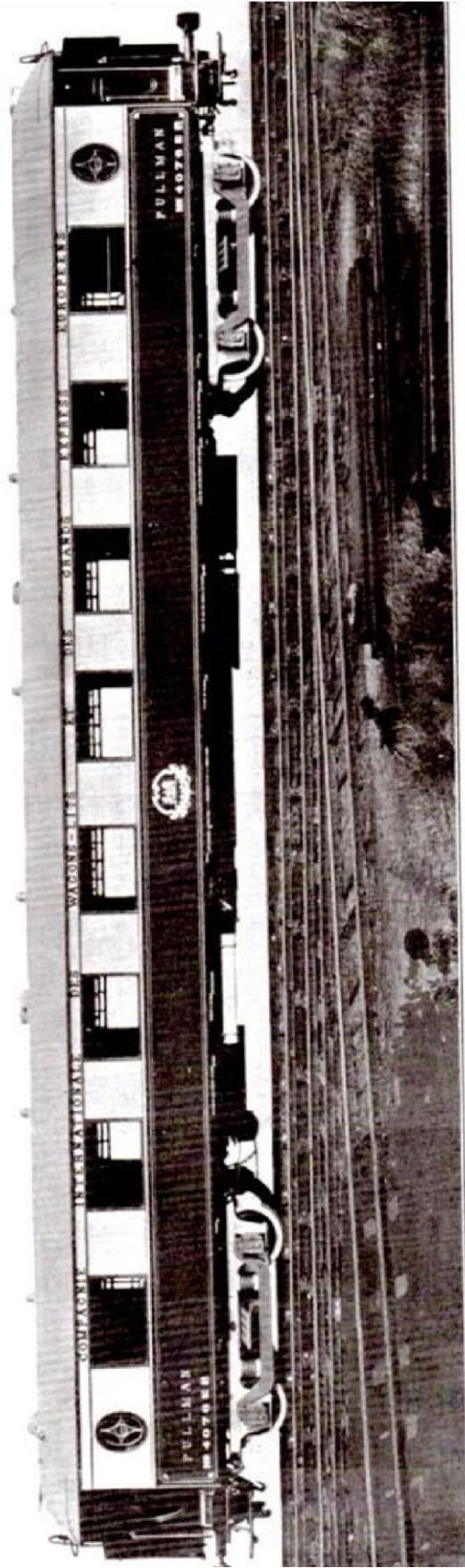
End Views of Pullman Cars built in England for Continental Service.



Elevation of Pullman Car with Kitchen and Plans of Kitchen-Parlour and Parlour Cars.



General View of Kitchen and Parlour Car.



General View of Parlour Car.

General View of Kitchen and Parlour Car.

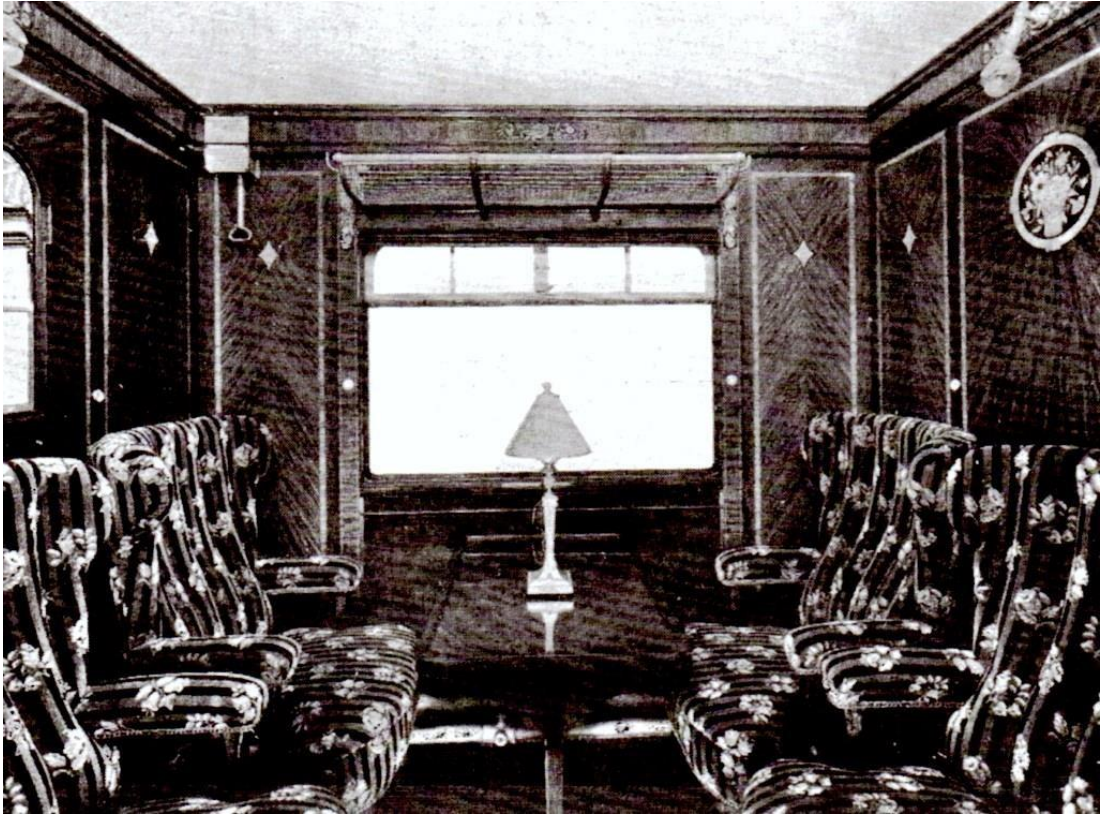
General View of Parlour
Car.



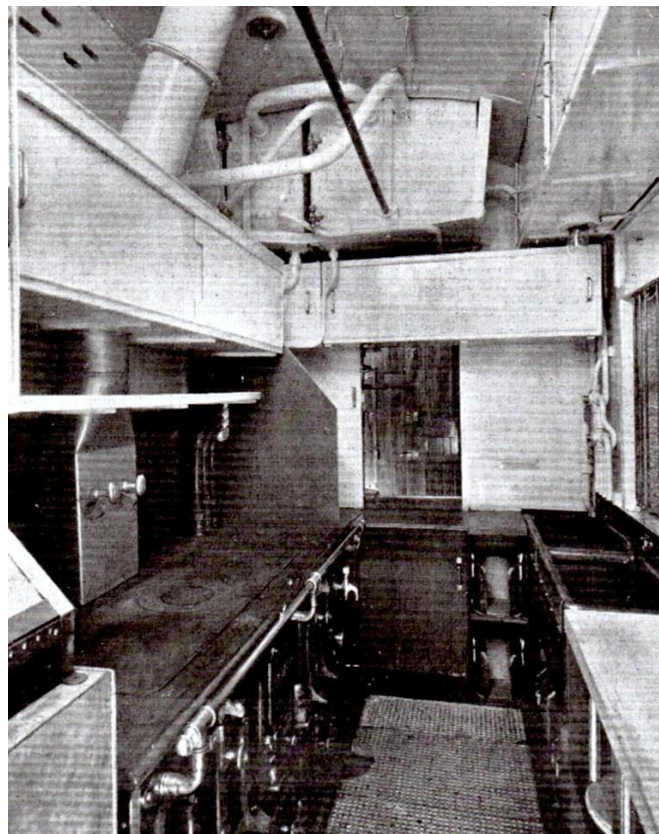
One example of Interior Decoration, Equipment and Upholstery.



Another example of Interior Decoration, Equipment and Upholstery.



Interior of Coupé, showing Typical Decoration, &c.



Interior of Kitchen.