

23-4-55

BRITISH TRANSPORT COMMISSION

Telephone:  
AMBassador 7711

222 MARYLEBONE ROAD,

LONDON, N.W.1.

G.4895/135

April 16, 1959

Dear Sir,

The first of the most-powerful main-line diesel locomotives to be erected in British Railways' workshops under the railway modernisation programme is to be shown to the Press at Marylebone Station (Platform 1), between 10.30 a.m. and 12 noon on Thursday, April 23, 1959.

The new locomotive, which will be also the most-powerful of British Railways' diesel locomotives in service, is the first of 147 of this type which are to be built for the London Midland Region at Derby and Crewe locomotive works, to haul fast main-line passenger and other services including such well-known named trains as "The Mid-day Scot" and "The Irish Mail".

Would you please let me know not later than Monday, April 20, if you intend to be represented. u

Yours faithfully,

*E. Merrill*

Eric Merrill  
Chief Public Relations Officer

News Editor,  
Pathe News.

*yes we can.*  
*[Signature]*

375/W/9



# Crompton Parkinson LIMITED



CROMPTON HOUSE, ALDWYCH, LONDON, W.C.2

TELEGRAMS: CROMPARK ESTRAND LONDON · CABLEGRAMS: CROMPARK LONDON

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Our Ref. SA/1

## PRESS RELEASE

P.R. No. 341A

2 3rd April, 1959.

### THE MAIN AND AUXILIARY GENERATOR

### FOR TYPE 4 DIESEL ELECTRIC LOCOMOTIVES

The largest traction generator so far constructed in Europe was on view, installed in the first of 147 'type 4' diesel electric locomotives for British Railways, at Marylebone Station on the 23rd April, 1959. These locomotives, numbered D.1 to D.147 are rated at 2300 h.p., have Sulzer 12LDA28 diesel engines, Crompton electrical equipment, and are being erected at the B.R. Derby Locomotive Works. A proportion of the locomotives will be uprated to 2500 h.p. but as there was an adequate margin of capacity inherent in the original design the generator will be unchanged.

The main outline dimensions contain two machines which are combined to save space and to economise in weight. The main generator section is a ten-pole machine with a continuous rating in accordance with BS 173/1941 of 1531 kW 580 V, 2640 A at 1080 rev/min. The auxiliary generator is an eight pole machine with a continuous rating to BS 173 of 90 kW, 220 V 410 A at any speed from 650 to

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1080 rev/min.

The generator set is coupled to the synchronising pinion of a Sulzer Bros (London) Ltd. 12LDA28 double bank diesel engine and runs at 1080 rev/min - the engine crankshaft speed being 750 rev/min. The engine frame is extended to support the generator set which has a single bearing, the main and auxiliary armatures being mounted on a hollow 'bottle' shaped cast steel rotor bolted directly to the synchronising gear 'take-off' shaft which is rigidly mounted in a supporting bearing. The single roller bearing at the end of the generator set is easily accessible and, if necessary, can be replaced without disturbing any other part of the machines. The whole rotor arrangement has exceptional mechanical strength to enable it to act as a fly-wheel for the diesel engine and to withstand the inherent cyclic variations of torque. The combination of the main and auxiliary sections into a single rotor provides the attributes of minimum length and maximum strength whilst avoiding excessive weight.

In this machine the main generator commutator is at the driving end. The auxiliary generator is partly accommodated within the field system of the main generator without increase to the overall length. The main generator is fitted with compensating windings of special design and patent by Crompton Parkinson.

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Normally these windings, which are necessary on large traction generators, make it impossible to change a field or interpole coil without disturbing the compensating winding. With the C.P. design however each field coil, i.e. self field coil, separate field coil and decomposing and starting coil can be removed and replaced with the compensating winding in position. This greatly facilitates maintenance operations if any part of the field system becomes damaged in any way.

High temperature glass insulation is used throughout the generator set and consists of a glass and mica combination without any Class A reinforcement. This type of insulation is eminently suitable for high temperature operation and has the advantage in the diesel electric application of withstanding considerable overloads without damage. The brushgear of the main generator is carried on a ring which may be completely rotated by a crank handle and pinion drive engaging with teeth cut in the outer periphery of the ring. With this arrangement it is possible to gain access to all the brush arms for inspection purposes from a working position inside the locomotive engine room. To release the ring for rotation, it is only necessary to remove two flexible connections and a dowel and slacken four nuts, the replacement of the dowel ensuring that the brushgear is correctly set. Wherever possible the brushes and brushgear elements

are standardised for both the main and auxiliary generator and are interchangeable between locomotive types.

A special barring gear is incorporated to enable the engine to be turned during maintenance operations. This consists of a toothed ring manufactured integrally with the generator fan, and a detachable barring lever which when engaged with the teeth enables the armature to be rotated.

The commutator of the main generator is of overhung construction and has a maximum wearing depth of  $\frac{1}{2}$ ". The auxiliary generator commutator is of bolted construction similar to traction motor commutators and also has a wearing depth of  $\frac{1}{2}$ ".

The design of this largest traction generator has included techniques developed on the smaller machines for the Type 2 and 3 locomotives and includes the provision of field and armature coils fully pressed with resin powder impregnation and the armature coils having main armature insulation carried throughout the complete length of the coil. The armatures are dynamically balanced during manufacture at various stages and finally as finished assemblies.

Issued by: P. D. Rush  
Press & Publicity Department.

BRITISH TRANSPORT COMMISSION

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FOR PRESS INFORMATION

April 23, 1959

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FIRST OF THE "PEAK" LOCOMOTIVES

BRITISH RAILWAYS' WORKSHOPS MOST POWERFUL MAIN-LINE DIESEL

FORERUNNER OF 147 LOCOMOTIVES FOR THE  
LONDON MIDLAND REGION

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The first of the most-powerful main-line diesel-electric locomotives to be erected in British Railways' workshops under the modernisation programme, is on inspection at Marylebone Station today, Thursday, April 23. Numbered D.1 and named "Scafell Pike", the locomotive is of 2,300 h.p., designed for mixed traffic duties, and is capable of hauling a heavy express passenger train at speeds of up to 90 m.p.h. or a train of 660 tons gross weight at a speed of 74 m.p.h. on level track. It is the first of a series of 147 locomotives which are to be built at the Derby and Crewe Locomotive Works for the London Midland Region. They will be the biggest and most-powerful diesel locomotives to be introduced in the London Midland Region. Some of the later locomotives are to have similar engines with an improved power rating of 2,500 h.p.

These locomotives, No's D.1-D.147, have been designed and are being constructed to the requirements of the British Transport Commission under the general direction of the Chief Mechanical Engineer and Chief Electrical Engineer, British Railways Central Staff, B.T.C., the detailed design and supervision of construction being the responsibility of the Chief Mechanical & Electrical Engineer, Derby, London Midland Region.

The first ten locomotives ordered under the initial modernisation programme, will be allocated to Crewe North motive power depot, and will be employed in hauling main-line expresses including such well-known trains as "The Irish Mail" and "The Mid-day Scot", and other fast passenger and parcels services between Euston and Crewe, Carlisle, and Glasgow.

The London Midland Region are to name the locomotives after peaks in the Lake District, the Pennines, and North Wales, which are either the highest in their respective areas or have some other distinctive characteristics. The names selected for locomotives No's D.2-D.10 are:-

D.2 Helvellyn	D.6 Whernside
D.3 Skiddaw	D.7 Ingleborough
D.4 Great Gable	D.8 Penyghent
D.5 Cross Fell	D.9 Snowdon
D.10 Tryfan	

The other 137 locomotives, which were ordered earlier this year, will be allocated to depots on delivery. All the locomotives are expected to be in service by the end of 1961.

The locomotives have driving cabs at either end, can work singly or in multiple with other diesel-electric locomotives, and have a maximum service speed of 90 m.p.h. They are classified as Type 4 in the British Railways classification of main-line diesel locomotives. They have a 1CC1 wheel arrangement (two four-axled bogies, each of which has three of the four axles driven by separate electric traction motors), electrical equipment supplied by Crompton Parkinson Ltd., and Sulzer diesel engines of 2,300 or alternatively 2,500 h.p., built at Vickers-Armstrongs Works at Barrow-in-Furness for Sulzer Bros.(London) Ltd.

(Principal details of the locomotives are given below)

BRITISH RAILWAYS MAIN-LINE DIESEL-ELECTRIC LOCOMOTIVES  
No's D.1-D.147

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Length (over buffers)	67 ft. 11 ins
Height (overall)	12 ft. 10½ ins.
Width (overall)	9 ft. 1¼ ins.
Wheel arrangements	1CC1 (two four-axled bogies)
Wheel diameter : motored	3 ft. 9 ins.
: carrying	3 ft. 0 ins.
Weight in working order	138 tons 2 cwts.
Engine	Sulzer diesel Type 12LDA28, of 2,300/2,500 H.P.
Transmission	Crompton Parkinson, Electric
Maximum Tractive Effort	70,000 lbs.
Maximum Service Speed	90 m.p.h.
Fuel Capacity	840 gallons