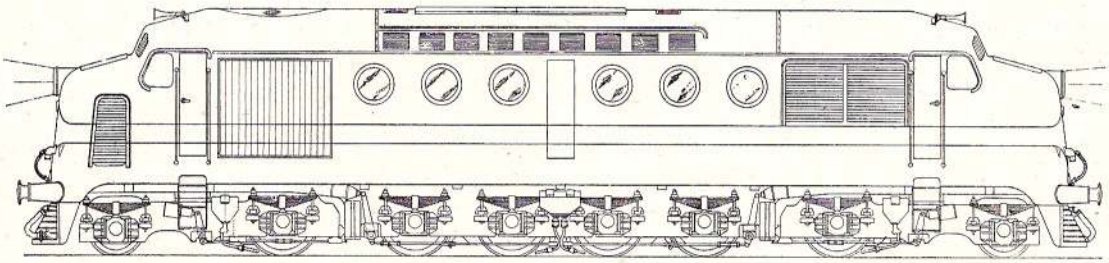
1,600 B.H.P. DIESEL ELECTRIC LOCOMOTIVES. EGYPTIAN STATE RAILWAYS.

(Under construction in conjunction with Messrs. English Electric Co. Ltd.).

4 ft. 8½ in. Gauge.



Outline diagram of 1,600 B.H.P. Diesel Electric Locomotive, E.S.R.

Under construction at the Vulcan Foundry at the time of going to press are the Mechanical Parts for six 1,600 B.H.P. Diesel Electric Locomotives forming part of an order for 12 Locomotives received by Messrs. English Electric Co. Ltd., for the Egyptian State Railways. The other 6 units are being constructed throughout by English Electric Co. Ltd. with whom the Vulcan Foundry have collaborated in the mechanical design.

English Electric Co. Ltd. are supplying the complete power transmissions for all the Locomotives, the leading particulars of which are as follows :—

Locomotive Type : 1-Ao-Do-Ao-1 (4-8-4 with inner axles of each bogie motored.

Diesel Engine : E.E. Co. 16 SVT 16-Cylinder Supercharged, 10 in. (254 mm.) bore, 12 in. (305 mm.) stroke, 1,600 h.p. at 750 r.p.m.

Transmission : Electric.

Traction Motors : 6.

Tractive Effort (continuous) : 15,600 lbs. at 29 m.p.h. (7,076 kgs. at 47 k.p.h.).

Tractive Effort (Hourly Rating) : 18,000 lbs. at 25 m.p.h. (8,165 kgs. at 40 k.p.h.).

Tractive Effort (max.) : 35,000 lbs. (15,875 kgs.).

Wheel Diam. (Motored) : 3 ft. 9 in. (1,143 mm.).

Wheel Diam. (Carrying) : 3 ft. 0 in. (914 mm.).

Rigid Wheelbase : 16 ft. 0 in. (4,877 mm.).

Fuel Capacity : 760 gallons (3,453 litres).

Maximum Axle Load : 17 tons.

Adhesive Weight : 100 tons.

Weight in Working Order : 124 tons (approx.).

Maximum Service Speed : 75 m.p.h. (121 k.p.h.).

From the illustration showing the outline of the Locomotive, it will be seen that a rigid frame design has been adopted in which all four axles are motored by means of axlehung, single reduction, force-ventilated traction motors. In addition a traction motor also drives the inner axle on each of the two 4-axle bogies. The adoption of this form of wheel arrangement was in some measure dictated by the permitted axle-loading.

A driving cab is provided at each end behind the partially streamlined nose which houses certain items of auxiliary equipment.

The body space between the driving cabs is occupied by the main engine and generator set, cooling equipment and control apparatus.

Special precautions have been taken to ensure an adequate supply of clean air being available for the engine and electrical equipment and to prevent the ingress of dust and other impurities in the Locomotive body.

Power operated air braking will be provided on all driving wheels of the Locomotive, which also carries exhausters for brake operation of vacuum fitted stock. Roller bearings are fitted to all wheels.

The Locomotives are being arranged for multiple unit operation.

We are indebted to the following for a number of the photographs reproduced :—

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