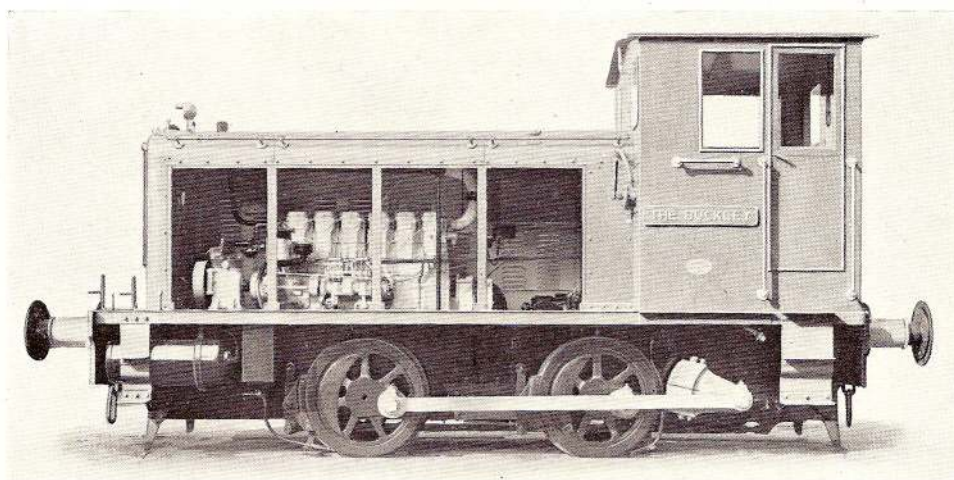




153 B.H.P. DREWRY DIESEL MECHANICAL 0-4-0 LOCOMOTIVE.

(Built in conjunction with the Drewry Car Co. Ltd.).

Various Gauges.



153 B.H.P. Drewry Diesel Mechanical 0-4-0 Locomotive.

THE 153 B.H.P. 0-4-0 Locomotive illustrated above is the predecessor of the 204 B.H.P., 0-6-0 type described on page 26 and is extremely similar in conception and design. It is very popular for industrial duties and yard shunting work.

Thirty-four of these Locomotives have been built at Newton-le-Willows to standard 4 ft. 8½ in. gauge for :—



Landing 153 B.H.P. 0-4-0 Locomotives
in Normandy shortly after D-Day.

Ministry of Supply	25
Ministry of Works	7
Liverpool Gas Co.	1
Vulcan Foundry Ltd.	1

and at the time of going to press a further 9 are in hand for :—

Liverpool Gas Co.	1
Barking Jetty Co. Ltd.	1
New Zealand Government Rlys.	5
Wm. Cory & Son	2

The 5 for New Zealand are for 3 ft. 6 in. (1,067 mm.) gauge.



Those supplied to the Ministries of Supply and Works were all employed in Government Factories, Ordnance Yards and Transportation Stores Depots during hostilities, this being the type of work for which they are admirably suited.

DIMENSIONS : The following are the principal dimensions :—

Wheel Diameter : 3 ft. 3 in. (991 mm.).	Height above Rail : 11 ft. 7 $\frac{3}{4}$ in. (3,550 mm.).
Wheelbase : 6 ft. 3 in. (1,905 mm.).	Fuel Capacity : 100 gallons (454 litres).
Overall Length : 23 ft. 9 in. (7,239 mm.).	Adhesion Ratio : 4.74.
Length over Buffer Beams : 20 ft. 0 $\frac{1}{2}$ in. (6,108 mm.).	Maximum Axle Load : 11.5 tons.
Overall Width : 8 ft. 0 $\frac{1}{2}$ in. (2,451 mm.).	Weight in Working Order : 22.75 tons.

ENGINE : Power is furnished by a Gardner 6.L.3 Engine developing a maximum of 153 B.H.P. at 1,200 r.p.m., and having 6 cylinders 5 $\frac{1}{2}$ in. (140 mm.) bore x 7 $\frac{3}{4}$ in. (197 mm.) stroke giving a swept volume of 18.1 litres. The arrangements for starting, cooling and lubrication are all of the same pattern as those used in the 204 H.P. Locomotives.

TRANSMISSION : Here also a Vulcan-Sinclair rigid traction type fluid coupling is used to transmit the power, together with a Wilson-Drewry Epicyclic gearbox, reverse and reduction gears, jackshaft and driving and coupling rods, all similar to those previously described. In this case, however, the gearbox has only 4 ratios, and at the maximum of 1,200 r.p.m. the following speeds and tractive efforts are obtained :—

<u>Gear</u>	<u>Speed</u>	<u>Tractive Effort</u>
1st	4 m.p.h. (6.43 k.p.h.)	10,750 lbs. (4,867 Kgs.)
2nd	7 m.p.h. (11.26 k.p.h.)	6,150 lbs. (2,790 Kgs.)
3rd	11 m.p.h. (17.7 k.p.h.)	3,900 lbs. (1,769 Kgs.)
4th	16 $\frac{1}{4}$ m.p.h. (26.1 k.p.h.)	2,650 lbs. (1,202 Kgs.)

CONTROLS AND ACCESSORIES : Air brake, accelerator, change speed, reverse and sanding controls are all duplicated on either side of the driver's cab. The Westinghouse straight air brake with self-lapping brake valve, obtains air pressure from a twin cylinder compressor, and sanders and whistle are also air operated.

OPERATING DETAILS : The Locomotive "Matilda" in service at the Vulcan Foundry's own Works at Newton-le-Willows started its duties on June 7th, 1943, and was not withdrawn from service for a major mechanical overhaul until September 1st, 1947, and during these 4 $\frac{1}{4}$ years' service has proved so reliable and economical as to become absolutely indispensable.



Our customers also report most favourably and one of them gives us the following servicing data :—



Series of 153 H.P. Locomotives
for M.O.S. under erection.

Total Hours Worked between April 20th, 1945,
and January 24th, 1946 :—

(7.3 hours per day excluding Sundays)
1,741 hours.

Fuel Oil Used :—

1,260 galls. (5,720 litres).

Average Fuel Consumption :—

0.72 galls./hr. (3.27 litres/hr.).

Lubricating Oil Used :—

28 gallons (127 litres).

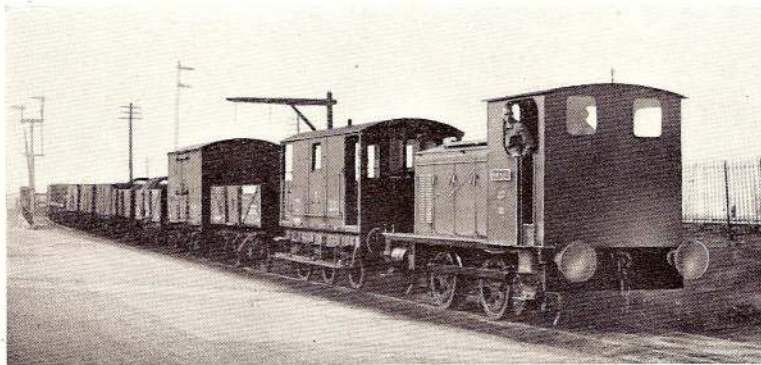
Average Lubricating Oil Consumption :—

0.128 pints/hr. (.072 litres/hr.).

Man Hours per week spent on Routine
Servicing :—

8 hours.

These figures correspond closely with the experience obtained with the "Matilda" which at the Vulcan Works regularly hauls 200 tons up a gradient of 1 in 90 on a curve of 300 ft. (91 ms.) radius.



Operating a Shunt at Vulcan.