H.Q. MECHANICAL DEVELOPMENT COMMITTEE

5.7.51

REPORT NO. 6
on
THE FOWLER MARSHALL V.F. TRACTOR.

ORIGIN.

Two Fowler Marshall V.F. Tractors have been on trial in the Commission for 2 years. The object of this experiment was to find a British made tractor which could fill the role hitherto filled by the American Caterpillar D.4. and Internation T.D.9. tractors which are the present mainstay of the Commission's ploughing tractor fleet.

DESCRIPTION.

The Fowler Marshall V.F. is powered by a single cylinder diesel engine developing 40 Belt h.p. driving through A 6 speed gearbox to 16" tracks. The weight is 4.1 tons. A detailed Specification and photographs are given as an Appendix to this report.

OUTPUT.

During a trial lasting 893 hours ploughing with an R.L.R. plough at 5 ft. spacing the time taken per acre was 5.73 hours. This time included all stops for maintenance and the tractor becoming bogged on a number of occasions. It is estimated that The rate of output by a D.4 or T.D.9 would be about 25% better than the above figure

CAPITAL COST.

The price of the Fowler is £1,060 which gives an annual-depreciation rate of £106 based on a 10 year life.
No directly comparable figures can be quoted for the D.4. and T.D.9 as they are no longer available but it is understood that at the present rate of exchange the D.4. would cost about £2,600 which would give an annual depreciation rate of £260.

RUNNING COSTS.

The only item of running costs which shows any material variation from that of the American tractors is fuel oil consumption, which in the case of the Fowler Marshall is 0.427 gallons per hour compared with a typical figure of 0.771 gallons per hour for A D.4.

MAINTENANCE.

GENERAL REMARKS.

1. The single cylinder 2 stroke engine sets up a vibration which is very noticeable when running light. Under load, however, the effect is much reduced and no complaints have been made by the operators amongst whom the tractor is popular.
2. A marked tail heaviness is considered to be a feature which, if it could be eliminated, would considerably improve the performance over soft ground.
3. The 16 inch (width) tracks are a handicap when negotiating really soft ground. It is known that 20 inch tracks are now available but they have not yet been tested.

CONCLUSIONS.

The Fowler Marshall V.F. tractor is not considered to fully equal the performance of either the Caterpillar D.4. or the International T.D.9. when considered as a tractor for use with the heavier ploughs such as the R.L.R. The two American machines can give about 25% more output in a given time. This lower output, however, is considered to be ~~fully~~ offset by very much lower depreciation rates and fuel consumption.

The Fowler Marshall has proved to be a very reliable tractor and it is considered to be a suitable alternative to the American machines which have hitherto filled the Class IV tractor role.

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APPENDIX to REPORT NO.

THE FOWLER MARSHALL V.F. TRACTOR.

SPECIFICATION.

ENGINE.	Marshall single cylinder diesel 2 stroke water cooled delivering 40 Belt h.p.
ENGINE CLUTCH.	Multi plate fabric disc type with foot and hand controls.
GEAR BOX.	6 Forward and 2 Reverse speeds are provided.
TRACKS.	Dry pin and bush type. Speeds integral with track shoes. 16 inches wide.
DRAWBAR.	Swinging type with anchor bracket well forward under transmission case. Maximum drawbar pull in first speed = 10,000 lbs.
WEIGHT.	9,200 lbs.
GROUND PRESSURE.	5.5 lbs. per sq. in.
DIMENSIONS.	Overall height - 6' - 8½"
	" width - 6' - 0"
	" length - 8' - 4½"
GROUND CLEARANCE.	10 3/4 ins.

PHOTOS see file 356/4