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Test 1252: Massey-Ferguson 245 Gasoline

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NEBRASKA TRACTOR TEST 1252 — MASSEY FERGUSON 245 GASOLINE

POWER TAKE-OFF PERFORMANCE

Power Hp *(kW)*	Crank shaft speed rpm	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temperature °F *(°C)* Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg *(kPa)*
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—722 rpm)								
41.09 *(30.64)*	2250	3.582 *(13.559)*	0.539 *(0.328)*	11.47 *(2.260)*	197 *(91.7)*	64 *(17.9)*	75 *(24.1)*	29.037 *(98.052)*
Standard Power Take-off Speed (540 rpm)—One Hour								
34.15 *(25.47)*	1684	2.909 *(11.011)*	0.526 *(0.320)*	11.74 *(2.313)*	201 *(93.7)*	64 *(17.8)*	75 *(24.0)*	29.040 *(98.064)*
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
35.48 *(26.46)*	2284	3.199 *(12.108)*	0.557 *(0.339)*	11.09 *(2.185)*	192 *(88.6)*	64 *(18.1)*	76 *(24.2)*	....
0.00 *(0.00)*	2510	1.257 *(4.759)*	....	....	174 *(78.9)*	64 *(17.8)*	75 *(23.9)*	....
18.66 *(13.91)*	2403	2.199 *(8.323)*	0.728 *(0.443)*	8.49 *(1.672)*	186 *(85.6)*	64 *(17.8)*	75 *(23.9)*	....
41.20 *(30.72)*	2250	3.558 *(13.467)*	0.534 *(0.325)*	11.58 *(2.281)*	196 *(91.1)*	64 *(18.1)*	75 *(23.9)*	....
9.44 *(7.04)*	2435	1.684 *(6.375)*	1.102 *(0.670)*	5.61 *(1.105)*	180 *(81.9)*	64 *(17.8)*	75 *(23.9)*	....
27.12 *(20.22)*	2328	2.640 *(9.995)*	0.602 *(0.366)*	10.27 *(2.023)*	190 *(87.8)*	64 *(17.8)*	74 *(23.6)*	....
Av 21.98	**2368**	**2.423**	**0.681**	**9.07**	**186**	**64**	**75**	**29.043**
Av (16.39)		***(9.171)***	***(0.414)***	***(1.787)***	***(85.6)***	***(17.9)***	***(23.9)***	***(98.075)***

DRAWBAR PERFORMANCE

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F *(°C)* Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power—Two Hours 4th (4 L) Gear											
33.03 *(24.63)*	2582 *(11.49)*	4.80 *(7.72)*	2250	7.84	3.478 *(13.167)*	0.651 *(0.396)*	9.50 *(1.871)*	193 *(89.4)*	71 *(21.4)*	81 *(27.2)*	29.050 *(98.097)*
75% of Pull at Maximum Power—Ten Hours 4th (4L) Gear											
26.88 *(20.05)*	2032 *(9.04)*	4.96 *(7.98)*	2277	5.79	2.965 *(11.223)*	0.682 *(0.415)*	9.07 *(1.786)*	189 *(87.4)*	73 *(22.7)*	82 *(27.8)*	28.797 *(97.243)*
50% of Pull at Maximum Power—Two Hours 4th (4L) Gear											
18.80 *(14.02)*	1345 *(5.98)*	5.24 *(8.44)*	2373	4.52	2.386 *(9.033)*	0.785 *(0.477)*	7.88 *(1.552)*	179 *(81.4)*	54 *(11.9)*	62 *(16.4)*	28.990 *(97.895)*
50% of Pull at Reduced Engine Speed—Two Hours 6th (2H) Gear											
18.74 *(13.97)*	1334 *(5.94)*	5.27 *(8.48)*	1337	4.18	1.840 *(6.966)*	0.607 *(0.369)*	10.18 *(2.006)*	187 *(86.1)*	55 *(12.8)*	70 *(20.8)*	29.005 *(97.946)*
MAXIMUM POWER IN SELECTED GEARS											
24.25 *(18.08)*	4298 *(19.12)*	2.12 *(3.40)*	2365	13.07	2nd (2 L) Gear			179 *(81.7)*	50 *(10.0)*	55 *(12.8)*	28.980 *(97.861)*
33.86 *(25.25)*	3328 *(14.80)*	3.82 *(6.14)*	2251	10.07	3rd (3 L) Gear			190 *(87.8)*	68 *(20.0)*	74 *(23.3)*	29.050 *(98.097)*
34.41 *(25.66)*	2690 *(11.96)*	4.80 *(7.72)*	2250	7.76	4th (4 L) Gear			190 *(87.8)*	64 *(17.8)*	68 *(20.0)*	29.050 *(98.097)*
35.50 *(26.47)*	2257 *(10.04)*	5.90 *(9.49)*	2252	6.53	5th (1 H) Gear			190 *(87.8)*	68 *(20.0)*	75 *(23.9)*	29.050 *(98.097)*
34.62 *(25.81)*	1466 *(6.52)*	8.85 *(14.25)*	2251	4.32	6th (2 H) Gear			190 *(87.8)*	68 *(20.0)*	75 *(23.9)*	29.050 *(98.097)*

LUGGING ABILITY IN RATED GEAR 4th (4 L)

Crankshaft Speed rpm	2250	2023	1801	1580	1345	1119	899
Pull—lbs *(kN)*	2690 *(11.96)*	2868 *(12.76)*	2954 *(13.14)*	3036 *(13.50)*	3021 *(13.44)*	3025 *(13.46)*	2901 *(12.91)*
Increase in Pull %	0	7	10	13	12	12	8
Power—Hp *(kW)*	34.41 *(25.66)*	32.70 *(24.39)*	29.95 *(22.33)*	26.89 *(20.05)*	22.82 *(17.02)*	19.02 *(14.19)*	14.71 *(10.97)*
Speed—Mph *(km/h)*	4.80 *(7.72)*	4.28 *(6.88)*	3.80 *(6.12)*	3.32 *(5.35)*	2.83 *(4.56)*	2.36 *(3.80)*	1.90 *(3.06)*
Slip %	7.76	8.65	8.75	9.06	8.96	9.06	8.65

Department of Agricultural Engineering

Dates of Test: August 26 to September 9, 1977

Manufacturer: Massey-Ferguson Inc., 1901 Bell Avenue, Des Moines, IA 50315

FUEL, OIL AND TIME: Fuel lead free gasoline **Octane No. Motor** 83.6 **Research** 92.9 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° *(15°/15°)*** 0.7425 **Fuel weight** 6.181 lbs/gal *(0.742 kg/l)* **Oil SAE** 20W **API service classification** SB/SE-CA/CC **To motor** 1.224 gal *(4.633 l)* **Drained from motor** 0.998 gal *(3.777 l)* **Transmission and final drive lubricant** Massey-Ferguson Permatran Oil **Total time engine was operated** 50.5 hours

ENGINE Make Continental **Type** 4 cylinder vertical **Serial No.** 52810 **Crankshaft** lengthwise **Rated rpm** 2250 **Bore and stroke** 3.375″ × 4.062″ *(85.7 mm × 103.2 mm)* **Compression ratio** 7.4 to 1 **Displacement** 145 cu in *(2382 ml)* **Carburetor size** 1.18″ *(30 mm)* **Ignition system** battery **Cranking system** 12 volt **Lubrication** pressure **Air cleaner** paper primary and felt safety elements with centrifugal precleaner **Oil filter** full flow paper screw-on cartridge **Fuel filter** in line filter **Muffler** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type standard **Serial No.** 9A259661 **Tread width** rear 56″ *(1422 mm)* to 72″ *(1829 mm)* front 48″ *(1219 mm)* to 80″ *(2032 mm)* **Wheel base** 73.1″ *(1857 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 28.3″ *(718 mm)* Vertical distance above roadway 26.6″ *(676 mm)* Horizontal distance from center of rear wheel tread 0″ *(0 mm)* to the right/left **Hydraulic control system** constant running except when PTO clutch is disengaged **Transmission** selective gear fixed ratio **Advertised speeds mph *(km/h)*** first 1.6 *(2.5)* second 2.3 *(3.7)* third 4.2 *(6.8)* fourth 5.2 *(8.3)* fifth 6.3 *(10.1)* sixth 9.2 *(14.8)* seventh 16.9 *(27.2)* eighth 20.8 *(33.4)* reverse 2.2 *(3.5)*, 8.6 *(13.8)* **Clutch** single plate dry disc with PTO clutch operated by single foot pedal **Brakes** drum and shoe operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 112.5″ *(2.86 m)* left 111.2″ *(2.83 m)* (on concrete surface without brake) right 123.2″ *(3.13 m)* left 121.4″ *(3.08 m)* **Turning space diameter** (on concrete surface with brake applied) right 236″ *(5.99 m)* left 233″ *(5.92 m)* (on concrete surface without brake) right 258″ *(6.55 m)* left 254″ *(6.45 m)* **Power take-off** 540 rpm at 1684 engine rpm.

REPAIRS and ADJUSTMENTS: Radiator neck was resoldered during break-in period.

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)
Maximum Available Power—Two Hours	95.5
75% of Pull at Maximum Power—Ten Hours	95.5
50% of Pull at Maximum Power—Two Hours	94.5
50% of Pull at Reduced Engine Speed—Two Hours	93.5
Bystander in 7th (3H) gear	81.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 13.6-28; 4; 14 *(100)*	Two 13.6-28; 4; 14 *(100)*
Ballast	—Liquid (each)	440 lb *(200 kg)*	None
	—Cast Iron (each)	495 lb (225 kg)	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 6.00-16; 4; 32 *(220)*	Two 6.00-16; 4; 32 *(220)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	125 lb *(57 kg)*	None
Height of Drawbar		21.5 in *(550 mm)*	21.5 in *(550 mm)*
Static weight with operator—rear		4330 lb *(1964 kg)*	2460 lb *(1116 kg)*
front		1690 lb *(767 kg)*	1440 lb *(653 kg)*
total		6020 lb *(2731 kg)*	3900 lb *(1769 kg)*

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. Five gears were chosen between tangential pull limit of driving tires and 15 mph *(24.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1252.**

LOUIS I. LEVITICUS
Engineer-in Charge

G. W. STEINBRUEGGE, Chairman
W. E. SPLINTER
K. VON BARGEN
Board of Tractor Test Engineers

Massey Ferguson 245 Gasoline

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