January 1958

Test 657: Massey-Ferguson MF-65 (LPG)

Tractor Museum
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The Experiment Station
University of Nebraska College of Agriculture
W. V. Lambert, Director, Lincoln, Nebraska

Department of Agricultural Engineering
Dates of test: June 16 to 27, 1958
Manufacturer: MASSEY-FERGUSON INCORPORATED, DETROIT, MICHIGAN
Manufacturer's rating: Not Rated

NEBRASKA TRACTOR TEST NO. 657

MASSEY-FERGUSON MF-65 LPG

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Temp. Deg. F.			Barometer inches of mercury
		Gal per hr	Hp-hr per gal	Lb per hp-hr	Cooling medium	Air wet bulb	Air dry bulb	
TESTS B & C—100% MAXIMUM POWER—TWO HOURS								
42.60	2000	5.174	8.23	0.516	172	66	70	28.735
TEST D—RATED POWER—ONE HOUR								
38.15	2128	4.962	7.69	0.553	162	63	70	28.765
TEST E—VARYING POWER—TWO HOURS (20 minute runs; last line average)								
38.19	2129	4.913	7.77	0.547	162	63	71	
1.51	2244	2.308	0.65	6.497	162	63	70	
19.90	2214	3.685	5.40	0.787	160	63	71	
42.91	2002	5.195	8.26	0.515	171	63	72	
10.10	2241	2.915	3.46	1.227	170	65	75	
29.59	2192	4.384	6.75	0.630	171	64	75	
23.70	2170	3.901	6.08	0.700	166	63	72	28.775

DRAWBAR HORSEPOWER TESTS

Hp	Drawbar pull lbs	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption			Temp. Deg. F.			Barometer inches of mercury
					Gal per hr	Hp-hr per gal	Lb per hp-hr	Cooling med	Air wet bulb	Air dry bulb	
TEST H—RATED POWER—TEN HOURS—4th Gear											
31.24	2078	5.64	2181	3.20	4.731	6.60	0.643	161	63	69	28.62
TESTS —F & G—100% MAXIMUM POWER											
20.66	6825	1.14	1995	14.69	1st Gear (part throttle)			158	56	64	28.95
31.16	6832	1.71	2007	14.66	2nd Gear (part throttle)			160	56	64	28.950
37.81	4259	3.33	1998	9.20	3rd Gear			161	62	68	28.620
38.54	2870	5.04	2002	5.76	4th Gear			174	63	74	28.590
37.19	1804	7.73	1999	3.35	5th Gear			169	63	74	28.590
33.91	874	14.55	2005	0.96	6th Gear			170	64	76	28.575
TEST J—OPERATING MAXIMUM POWER											
37.55	2960	4.76	2003	13.35	4th Gear			178	62	76	29.080

TEST K—SPEED-PULL CHARACTERISTIC							
Pounds Pull	2078	2870	3000	3150	3200	3050	2800
Horsepower	31.24	38.54	36.0	33.6	29.9	24.4	18.7
Miles Per Hour	5.64	5.04	4.5	4.0	3.5	3.0	2.5

FUEL, OIL, WATER and TIME Fuel Commercial Propane **Weight per gallon** 4.25 lb **Oil** SAE 10-30 **To motor** 1.224 gal **Drained from motor** 0.999 gal **Water used** 0.102 gal **Total time motor was operated** 49 hours.

CHASSIS Type Standard **Serial No.** SBM 650183 **Tread width rear** 52" to 88" **front** 48" to 80" **Wheel base** 83.99" **Hydraulic control system** constant running—transmission driven **Advertised speeds mph** first 1.294 second 1.941 third 3.560 fourth 5.176 fifth 7.764 sixth 14.234 reverse first 1.762 second 7.050 **Belt pulley diam** 9" **face** 6½" **rpm** 1337 **Belt speed** 3150 fpm **Belt** flat **Length** 71' **Width** 6" **Thickness** 0.215" **Maximum slip** 0.79% **Clutch** dual dry disc operated by single foot pedal **Seat** upholstered bucket seat **Brakes** double disc operated by two independent pedals on the right side of tractor **Equalized** by pedal lock **Power take-off** continuous running—controlled by secondary clutch **Steering** power steering not used.

ENGINE Make Continental LPG **Type** 4 cylinder vertical **Serial No.** GB 176-9891 **Crankshaft mounted** lengthwise **Head** I **Lubrication** pressure **Bore and stroke** 3.578" x 4.375" **Rated rpm** 2000 **Compression ratio** 8.1 to 1 **Displacement** 176 cu. in. **Valves port diameter Inlet** 1⅜" **Exhaust** 1⅛" **Governor** variable speed centrifugal **Carburetor size** 1¼" **Ignition system** battery **Starting system** 12 volt battery **Air cleaner** oil washed wire mesh **Muffler** was used **Oil filter** replaceable paper element **Cooling medium temperature control** thermostat.

REPAIRS AND ADJUSTMENTS During Test "H" the wheel weights used on each rear wheel fell off.

REMARKS All test results were determined from observed data and without allowances, additions or deductions. Tests B and F were made with carburetor set for 100% maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, H, J, and K were made with the same setting.

TIRES, WHEELS AND WEIGHT

	Tests F, G, H & K	Test J
Rear wheels		
Type	Pressed Steel	Pressed Steel
Liquid ballast	405 lb each	None
Added cast iron	1575 lb each	None
Rear tires		
No. and size	Two 13-28	Two 13-28
Ply	6	6
Air pressure	18 lb	14 lb
Front wheels		
Type	Pressed Steel	Pressed Steel
Liquid ballast	65 lb each	None
Added cast iron	420 lb each	None
Front tires		
No. and size	Two 6.00-16	Two 6.00-16
Ply	6	6
Air pressure	48 lb	48 lb
Height of drawbar	22 inches	23½ inches
Static weight		
Rear end	6530 lb	2570 lb
Front end	2410 lb	1440 lb
Total weight as tested with operator	9115 lb	4185 lb

HORSEPOWER SUMMARY

	Drawbar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)	40.87	44.78
2. Observed maximum horsepower (tests F and B)	38.54	42.60
3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (ASAE and SAE ratings)	30.65	38.06

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 657.

L. F. LARSEN
Engineer-in-Charge

L. W. HURLBUT, Chairman
G. W. STEINBRUEGGE
J. J. SULEK
Board of Tractor Test Engineers