1-1-1951

Test .460: McCormick Farmall MD

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

Department of Agricultural Engineering
Dates of test: June 1 to June 16, 1951
Manufacturer: INTERNATIONAL HARVESTER COMPANY, CHICAGO, ILLINOIS
Manufacturer's rating: Not rated.

NEBRASKA TRACTOR TEST NO. 460

McCORMICK FARMALL MD

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury
		Gal per hour	Hp-hr per gal	Lb per hp-hour		Cooling med	Air	
TESTS B AND C—100% MAXIMUM LOAD—TWO HOURS								
38.21	1451	2.711	14.09	0.488	0.00	205	73	28.850
TEST D—RATED LOAD—ONE HOUR								
34.12	1450	2.417	14.12	0.487	0.00	192	71	28.850
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
34.13	1448	2.423	14.09	0.488	...	191	70	.....
1.42	1501	0.856	1.66	4.141	...	195	70	.....
17.46	1477	1.515	11.52	0.596	...	196	71	.....
37.39	1415	2.610	14.33	0.480	...	201	72	.....
8.86	1495	1.187	7.46	0.921	...	178	71	.....
25.86	1461	1.938	13.34	0.515	...	193	72	.....
20.85	1466	1.755	11.88	0.578	0.00	192	71	28.850

DRAWBAR HORSEPOWER TESTS

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury
					Gal per hour	Hp-hr per gal	Lb per hp-hr		Cooling med	Air	
TESTS F AND G—100% MAXIMUM LOAD											
31.00	5051	2.30	1453	14.62	—Not Recorded—				197	85	28.910
33.40	3791	3.30	1452	7.74	—Not Recorded—				193	82	28.900
34.38	3133	4.12	1453	6.18	—Not Recorded—				205	80	28.900
34.14	2535	5.05	1451	4.90	—Not Recorded—				204	82	28.910
30.03	672	16.76	1459	0.78	—Not Recorded—				200	84	28.910
TEST H—RATED LOAD—TEN HOURS—3RD GEAR											
27.54	2485	4.16	1449	4.91	2.213	12.44	0.552	0.00	188	78	28.700
TEST J—OPERATING MAXIMUM LOAD—3RD GEAR											
33.58	3151	4.00	1454	9.51	—Not Recorded—				192	74	28.700
TEST K—OPERATING MAXIMUM LOAD—3RD GEAR											
26.84	2892	3.48	1450	15.67	—Not Recorded—				177	79	28.700

FUEL, OIL and TIME Diesel Fuel cetane No 47 (rating taken from oil company's typical inspection data); weight per gallon 6.873 lb **Oil** SAE 20; to motor 2.262 gal; drained from motor 1.835 gal **Total time motor was operated** 37 hours.

CHASSIS Type tricycle **Serial No** FDBK261013 **Tread width** rear 52" to 88" front 8½" 11½" 13¾" and 16¾" **Wheel Base** 90⅞" **Hydraulic control system** yes **Advertised speeds mph** first 2⅝ second 3½ third 4¼ fourth 5⅛ fifth 16¼ reverse 3⅛ **Belt pulley** diam 11" face 7½" rpm 899 **Belt speed** 2588 fpm **Clutch** dry single plate clutch operated by foot pedal **Seat** pressed steel with canvas covered felt pad **Brakes** external contracting bands operated by right foot on pedals either independently or interlocked **Equalized** by springs when pedals are locked together **Power take-off** standard type.

ENGINE Make International Harvester **Type** 4 cylinder vertical diesel **Serial No** FDBKM18321 **Crankshaft mounted** lengthwise **Head** 1 **Lubrication** pressure **Bore and Stroke** 3⅞" x 5¼" **Rated rpm** 1450 **Compression ratio** 16.8 to 1 **Displacement** 247.7 cu in **Port Diameter Valves** inlet 1.500" exhaust 1.316" **Governor** variable speed centrifugal **Carburetor Size** ¾" (for starting only) **Ignition System** magneto (for starting only) **Starting System** 12 volt **Air Cleaner** oil washed wire mesh **Muffler** was used **Fuel Filter** one cotton auxiliary filter and one final radial fin paper filter **Oil Filter** partial flow radial fin replaceable element **Cooling medium temperature control** thermostat and shutters.

REPAIRS AND ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data and without allowances, additions or deductions. Tests B and F were made with fuel pumps set to develop approximately 40 corrected 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.

Oil leaked at gasket between belt pulley housing flange and transmission case.

TIRES, WHEELS and WEIGHT

	Tests F, G, & H	Test J	Test K
Rear wheels Type	Cast spoke	Cast spoke	Cast spoke
Liquid ballast	662 lb each	None	None
Added cast iron	685 lb each	None	None
Rear tires No. and size	Two 12-38	Two 12-38	Two 10-38
Ply	6	6	6
Air pressure	18 lb	12 lb	12 lb
Front wheels Type	Cast spoke	Cast spoke	Cast spoke
Liquid ballast	None	None	None
Added cast iron	None	None	None
Front tires No. and size	Two 6.00-16	Two 6.00-16	Two 6.00-16
Ply	4	4	4
Air pressure	28 lb	28 lb	28 lb
Height of drawbar	20½ inches	21½ inches	18½ inches
Static weight Rear end	6502 lb	3808 lb	3684 lb
Front end	1870 lb	1878 lb	1866 lb
Total weight as tested with operator	8547 lb	5861 lb	5725 lb

HORSEPOWER SUMMARY

	Drawbar	Belt
1. Sea level (calculated)maximum horsepower (based on 60° F and 29.92" Hg)	36.27	40.12
2. Observed maximum horsepower (tests F & B)	34.38	38.21
3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings)	27.20	34.10

We, the undersigned, certify that this is a true and correct report of official tractor test No. 460.

L. F. LARSEN
Engineer in Charge

C. W. SMITH
F. D. YUNG
L. W. HURLBUT
Board of Tractor Test Engineers