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Test 475: McCormick Farmall Super M

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NEBRASKA TRACTOR TEST NO. 475

Department of Agricultural Engineering

Dates of test: June 25 to July 2, 1952 Manufacturer: INTERNATIONAL HARVESTER

CO., CHICAGO, ILLINOIS

Manufacturer's rating: 42.0 drawbar hp, 47.5 belt hp (Maximum hp corrected to standard conditions)

BELT HORSEPOWER TESTS

Нр	Crank shaft speed rpm	Fu	el Consump	Water	Temp Deg F		Barometer			
		Gal per hour	Hp-hr per gal	Lb per hp-hour	gal per hour	Cooling med	Air		inches of mercury	
	Т	EST B—1	00% MA	XIMUM LO	DAD—TW	о ног	JRS			
46.26	1451	3.907	11.84	0.513	0.00	190	72	2 2	28.830	
	TEST	C-OPE	RATING	MAXIMU	M LOAD	-ONE	HOUR			
43.92	1450	3.657	12.01	0.505	0.00	199	85	5 2	8.850	
		TEST	D-RA7	TED LOAD	ONE I	HOUR				
41.33	1452	3.508	11.78	0.515	0.00	200	89) 2	8.850	
TEST E	-VARY	ING LO	AD—TW	O HOURS	(20 minu	te runs;	last li	ne aver	age)	
41.45	1455	3.533	11.73	0.517	5167	199	90) .		
1.59	1575	1.527	1.04	5.830		199	9() .		
21.64	1510	2.481	8.72	8.72 0.696		202	9			
41.81	1352	3.489	11.98	11.98 0.507		205	92	2	1450	
11.06	1543	2.006	5.51	1.101		193 93		3		
31.49	1472	2.940	10.71	0.567		200 94		1 .		
24.84	1485	2.663	9.33 0.651		0.00	200	200 92		8.850	
			TORQUI	E (at dynar	nometer)					
Eng RPM	145	2 1369	1299	1227 1160	1064	991	923	845	770	
Lb-ft	326.	2 335.5	344.2	354.7 362.3	365.1	364.9	362.8	362.8	355.3	

DRAWBAR HORSEPOWER TESTS

Нр	Draw bar pull lb	miles si per si	Crank	Slip	Fuel Consumption			Water	Temp Deg F		D
			shaft speed rpm	drive wheels	Gal per hour	Hp-hr per gal	Lb per hp-hr	gal per hour	Cool- ing med	Air	Barometer inches of mercury
		T	EST F-	-100%	MAXIM	UM LO	AD-3r	d Gear			
41.79	3192	4.91	1452	5.53	(4)	Not Re	ecorded		191	81	28.830
			TEST (-OPE	RATING	MAXI	MUM I	OAD			
37.03	5676	2.45	1451	12.53	25.00	Not Re	ecorded		164	92	28.900
39.81	4024	3.71	1453	7.11	1414141414	Not Re	ecorded	witte	184	81	28.850
40.08	3054	4.92	1453	5.18		Not Re	corded	****	200	80	28.840
39.66	2166	6.87	1453	3.89		Not Re	corded		185	81	28.860
35.88	772	17.43	1457	0.67	74 W W W W	Not Re	ecorded	Person	201	81	28.870
		TEST	H-R	ATED I	LOAD-	TEN I	HOURS-	-3rd (Gear		
33.33	2520	4.96	1449	4.24	3.236	10.30	0.589	0.00	190	89	28.932
		TEST	' J—OP	ERATIN	IG MAX	KIMUM	LOAD-	-3rd G	ear		
38.71	3092	4.69	1452	10.66		Not Re	ecorded	*****	194	98	28.900
		TEST	K—OI	PERATIN	NG MA	XIMUM	LOAD-	—3rd (Gear		
33.59	3058	4.12	1453	15.46	SHOOL OF	Not Re	ecorded		180	100	28,900

TIRES, WHEELS and WEIGHT

	Tests F, G, & H	Test J	Test K	
Rear wheels Type	Cast spoke	Cast spoke	Cast spoke	
Liquid ballast	963 lb each	None	None	
Added cast iron	700 lb each	None	None	
Rear tires No. and size	Two 13-38	Two 13-38	Two 11-38	
Ply	6	6	4	
Air pressure	16 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	21½ inches	23 inches	20½ inches	
Static weight Rear end	7083 lb	3758 lb	3559 lb	
Front end	1667 lb	1670 lb	1654 lb	
Total weight as tested with operator	8925 lb	5603 lb	5388 lb	

McCORMICK FARMALL SUPER M

FUEL, OIL and TIME Gasoline octane No. ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.071 lb Oil SAE 20 to motor 2.163 gal; drained from motor 1.804 gal Total time motor was operated 45 hours

CHASSIS Type tricycle Serial No F1947] Tread width rear 52" to 88" front 8\%" to 17\\(\frac{1}{2}\)" Wheel Base 89\%" Hydraulic control system driven by clutch Advertised speeds mph first 2% second 3% third 5 fourth 6% fifth 16% reverse 3% Belt pulley diam 11" face 7½" rpm 899 Belt speed 2588 fpm Clutch single plate dry disc operated by foot pedal Seat upholstered seat on conical spring with shock absorber Brakes double disc brakes operated by two foot pedals Equalized by locking two brake pedals together Power take-off standard type.

ENGINE Make International Harvester Type 4 cylinder vertical Serial No 2029 Crankshaft mounted lengthwise Head I Lubrication pressure Bore and Stroke 4" x 5 1/4" Rated rpm 1450 Compression ratio 5.9 to 1 Displacement 264 cu in Port Diameter Valves inlet 1 19/32" exhaust 1 7/16" Governor variable speed centrifugal Carburetor Size 1¼" Ignition System battery Starting System 6 volt battery Air Cleaner oil washed wire mesh Muffler was used Oil Filter replaceable treated paper element Cooling medium temperature control thermostat and radiator

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 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 an operating setting of the carburetor (selected by the manufacturer) of 96.1% of maximum belt horsepower.

HORSEPOWER SUMMARY

	Draw- bar	Belt
 Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg) 	44.24	48.56
2. Observed maximum horsepower (tests F & B)	41.79	46.26
 Seventy-five per cent of calculated maximum drawbar horsepower and cighty-five per cent of calculated maximum belt horsepower (form- erly ASAE and SAE ratings) 	33.18	41.28
We, the undersigned, certify that this		ue and

correct report of official tractor test No. 475.

L. F. LARSEN Engineer in Charge

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