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January 1940

## Test 342: McCormick-Deering Model W-4

Nebraska Tractor Test Lab

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Copy of Report of Official Tractor Test No. 342

Dates of test: May 9 to May 25, 1940.

Name and model of tractor: McCORMICK-DEERING W-4

Manufacturer: International Harvester Company, Chicago, Illinois.

Manufacturer's rating: NOT RATED.

BELT HORSEPOWER TESTS

H. P.	Crank shaft speed R.P.M.	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H. P. hr.		Cool- ing med.	Air	

TEST B - 100% MAXIMUM LOAD - TWO HOURS

23.11	1651	2.005	11.53	0.600	0.000	191	89	28.560
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

22.16	1653	1.906	11.63	0.595	0.000	191	97	28.510
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\*TEST D - ONE HOUR

21.18	1653	1.871	11.32	0.611	0.000	191	98	28.460
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

21.22	1655	1.877	11.31	0.612	--	192	95	--
1.18	1800	0.871	1.35	5.110	--	194	94	--
11.31	1758	1.374	8.23	0.841	--	194	93	--
21.58	1643	1.864	11.58	0.598	--	191	93	--
5.75	1780	1.079	5.33	1.299	--	193	92	--
16.55	1724	1.691	9.79	0.707	--	192	92	--
13.23	1727	1.460	9.06	0.763	0.000	192	93	28.465

DRAWBAR HORSEPOWER TESTS

H. P.	Draw bar pull pounds	Speed miles per hr.	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hr.	H.P. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	

TEST F - 100% MAXIMUM LOAD - Second - GEAR

21.38	2573	3.11	1650	6.40	-----	Not Recorded	-----	188	76	28.885
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TEST G - OPERATING MAXIMUM LOAD

19.46	3297	2.21	1651	9.44	-----	Not Recorded	-----	187	68	28.840
19.89	2377	3.14	1650	5.68	-----	"	"	189	74	28.875
19.74	1844	4.01	1650	4.56	-----	"	"	187	65	28.810
19.77	1455	5.10	1650	3.59	-----	"	"	187	64	28.775

\*TEST H - TEN HOURS - Second - GEAR

16.92	2004	3.17	1648	4.80	1.733	9.76	0.709	0.020	191	79	28.575
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\*Formerly called RATED LOAD; see REMARKS 4, page 3.

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FUEL, OIL, AND TIME

Fuel Distillate Octane 41 Weight per gallon 6.92 pounds

Oil: S.A.E. No. 20 To motor 1.883 gal. Drained from motor 1.099 gal.

Total time motor was operated 59 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 2-3/8 Second 3-1/4

Third 4 Fourth 5-1/8 Fifth 14-3/4 Reverse 2-3/4

Belt pulley: Diam. 9-3/4" Face 7-1/2" R.P.M. 1019 Belt Speed 2600 f.p.m.

Clutch: Make Rockford Type Single plate Operated by foot

Seat Pressed steel with sponge rubber pad

Total weight as tested (with operator) 5690 pounds

MOTOR

Make Own Serial No. WBH 502 Type 4 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 3-3/8" x 4-1/4" Rated R.P.M. 1650

Port diameter valves: Inlet 1.343" Exhaust 1.217"

Magneto: Make Own Model H-4

Carburetor: Make Own Model D-10 Size 1"

Governor: Make Own Type Variable speed, centrifugal

Air cleaner: Make Donaldson Type Oil-washed wire screenfilter

Oil Filter: Make Motor Improvements Inc. Type Partial flow with replaceable  
bakelite impregnated paper element

Cooling medium temperature control: Bishop and Babcock thermostat and Pines  
radiator shutters

CHASSIS

Type Standard Serial No. WBH 502 Drive Enclosed gear

Tread width: Rear 52" Front 46"

Rear tires: No. 2 Size 12.75" x 24" - 6 ply Air pressure 16 pounds

Front tires: No. 2 Size 6.00" x 16" - 6 ply Air pressure 25 pounds

Added weight: Per rear wheel (Cast Iron 560 pounds  
(Water 320 pounds  
(Cast Iron 84 pounds  
Per front wheel (Water none pounds

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

1. All results shown on page 1 of this report 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, and H were made with an operating setting of the carburetor (selected by the manufacturer) of 96.8% of maximum belt horsepower.

	<u>DRAWBAR</u>	<u>BELT</u>
2. Observed maximum horsepower (tests F & B)	21.38	23.11
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	22.49	24.87
4. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings)	16.87	21.14

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 342.

Carlton L. Zink  
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut  
Board of Tractor Test Engineers