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January 1938

Test 298: McCormick-Deering Tractor Model TD-40

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 298

Dates of test: April 20 to 30, 1938.

Name and model of tractor: McCORMICK-DEERING Tractor TD-40

Manufacturer: International Harvester Company, Chicago, Illinois.

Manufacturer's rating: NOT RATED.

B E L T H O R S E P O W E R T E S T S

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	

TESTS B AND C - 100% MAXIMUM LOAD - TWO HOURS

53.46	1200	3.734	14.32	0.490	0.000	169	85	28.880
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*TEST D - ONE HOUR

48.33	1201	3.389	14.26	0.492	0.000	174	86	28.855
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

48.26	1200	3.380	14.28	0.492	--	174	85	--
0.68	1260	1.184	0.57	12.221	--	161	84	--
24.53	1214	2.141	11.46	0.613	--	164	83	--
53.16	1190	3.620	14.69	0.478	--	172	83	--
12.29	1215	1.620	7.59	0.925	--	166	80	--
36.49	1209	2.739	13.32	0.527	--	167	78	--
29.24	1215	2.447	11.95	0.588	0.000	167	82	28.845

D R A W B A R H O R S E P O W E R T E S T S

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	

TESTS F AND G - 100% MAXIMUM LOAD

48.53	10487	1.74	1203	2.87	----	Not Recorded			----	180	65	29.040
48.11	8213	2.20	1201	2.08	----	"	"	----		180	62	29.050
48.25	6552	2.76	1201	1.48	----	"	"	----		180	57	29.060
46.78	5449	3.22	1199	0.83	----	"	"	----		178	50	29.075
44.31	4109	4.04	1200	0.77	----	"	"	----		180	55	29.075

*TEST H - TEN HOURS - Third GEAR

37.15	5051	2.76	1199	1.48	3.177	11.69	0.600	0.015	180	75	28.850
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*Formerly called RATED LOAD; see REMARKS 4, page 3.

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FUEL, OIL, AND TIME

Fuel Commercial diesel fuel Weight per gallon 7.02 pounds
Oil: S.A.E. No. 30 To motor 3.211 gal. Drained from motor 2.593 gal.
Total time motor was operated 54 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 1.75 Second 2.25
Third 2.75 Fourth 3.25 Fifth 4 Reverse 2.25
Belt pulley: Diameter 16 3/4" Face 9" R.P.M. 645
Clutch: Make Rockford Type Single-plate, dry Operated by Hand
Seat Upholstered
Total weight as tested (with operator) 13080 pounds

MOTOR: Make Own Serial No. TDC 5405 Type 4 cylinder, vertical diesel
Head I Mounting Crankshaft lengthwise Lubrication Pressure
Bore and stroke 4 3/4" x 6 1/2" Rated R.P.M. 1200
Port diameter valves: Inlet 1.781" Exhaust 1.530"
Magneto (for starting only): Make Own Model F - 4
Carburetor (for starting only): Make Own Model C-12 Size 1 1/4"
Fuel system: Make Own Model P - 40
Governor: Make Own Type Variable-speed, centrifugal
Air cleaner: Make Donaldson Type Oil-washed, wire-screen filter

CHASSIS: Type Tracklayer Serial No. TCC 7957 Drive Enclosed gear
Tread width 47 3/4" Measured length of track 19.034'
Cleats: Type Integral with shoes No. per track 38
Size 2" high x 16" long

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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 fuel pumps set to develop approximately 57 belt horsepower (selected by the manufacturer) under standard conditions, 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 the same setting.
2. Observed maximum horsepower (tests F & B) Drawbar 48.25 Belt 53.46
3. Sea level (calculated) maximum horsepower Drawbar 49.55 Belt 56.72
 (based on 60° F. and 29.92" Hg.)
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) Drawbar 37.16 Belt 48.21

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 298.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

Ivan D. Wood

L. W. Hurlbut
Board of Tractor Test Engineers