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1-1-1948

## Test 393: Ford Model 8-N

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT  
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 393

Dates of test: May 11, 1948 to May 13, 1948  
 Name and model of tractor: FORD 8N  
 Manufacturer: FORD MOTOR COMPANY, Dearborn, Michigan  
 Manufacturer's rating: None

HORSEPOWER SUMMARY

	DRAWBAR	BELT
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	22.76	26.42
2. Observed maximum horsepower (tests F & B)	21.72	25.77
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)	17.07	22.46

REMARKS

Following test "B" a decrease in horsepower occurred. The engine head was removed, the combustion chamber cleaned, and the valves lapped lightly. The test was resumed with improved performance.

Final inspection of the tractor revealed evidence of deterioration in the center area of the connecting rod bearings.

FUEL, OIL, and TIME

<u>Fuel</u>	Gasoline	<u>Octane</u>	7 1/4*	<u>Weight per gallon</u>	6.110 pounds
<u>Oil</u>	SAE No. 20-20W	<u>To motor</u>	1.893 gal.	<u>Drained from motor</u>	1.087 gal.
<u>Total time motor was operated</u>	67 1/2 hours				

\* Octane rating taken from oil company's typical inspection data.

We, the undersigned, certify that this is a true and correct report of official tractor test No. 393.

L. F. Larsen  
 Engineer in Charge

C. W. Smith

F. D. Yung

L. W. Hurlbut  
 BOARD OF TRACTOR TEST ENGINEERS

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All results shown on pages 2 and 3 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, and J were made with an operating setting of the carburetor (selected by the manufacturer) of 97.4% of maximum belt horsepower.

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

Horse- power	Crank shaft speed  rpm	Fuel Consumption			Water used  gal per hr	Temperature		Barometer  Inches of Mercury
		gal per hr	hp-hr per gal	lb per hp-hr		Cool- ing med °F	Air °F	

TEST B - 100% MAXIMUM LOAD - TWO HOURS

25.77	2003	2.381	10.82	0.564	0.00	181	55	29.043
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

24.62	2000	2.290	10.75	0.568	0.00	187	68	28.850
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\*TEST D - ONE HOUR

22.57	2001	2.250	10.03	0.609	0.00	189	73	28.840
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

22.57	1995	2.259	9.99	0.611	- - -	190	74	- - - -
1.98	2168	1.070	1.85	3.303	- - -	157	76	- - - -
11.77	2085	1.531	7.44	0.821	- - -	177	73	- - - -
24.02	1891	2.234	10.75	0.568	- - -	191	78	- - - -
6.08	2114	1.336	4.55	1.342	- - -	157	78	- - - -
17.28	2017	1.929	8.96	0.632	- - -	177	79	- - - -
13.95	2055	1.735	8.04	0.760	0.00	175	76	28.800

\* Formerly called RATED LOAD, see HORSEPOWER SUMMARY 3, page 1.

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

Horse- power	Draw bar pull  lb	Speed  mph	Crank shaft speed  rpm	Slip on drive wheels  %	Fuel Consumption			Water used  gal per hr	Temperature		Barometer  Inches of Mercury
					gal per hr	hp-hr per gal	lb per hp-hr		Cool- ing med °F	Air °F	

Rear wheels, tires and added weight used in Tests F, G, and H: Steel Disc wheels; 10-28, 4 ply tires and 670 lb added weight per wheel.

TEST F - 100% MAXIMUM LOAD - 2nd GEAR

21.72	2229	3.65	1750	8.65	-----Not Recorded-----				188	75	28.965
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TEST G - OPERATING MAXIMUM LOAD

19.89	2751	2.71	1752	13.00	-----Not Recorded-----				183	77	29.015
21.21	2171	3.67	1749	8.36	" "				185	74	28.965
21.21	1528	5.21	1753	5.59	" "				183	73	28.930
20.08	670	11.24	1750	2.19	" "				185	78	28.920

\*TEST H - TEN HOURS - 2nd GEAR

17.43	1753	3.73	1749	6.73	1.831	9.52	0.642	0.00	177	75	28.900
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TEST J - OPERATING MAXIMUM LOAD - 2nd GEAR

15.17	1713	3.32	1750	17.38	-----Not Recorded-----				183	86	28.902
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\* Formerly called RATED LOAD; see HORSEPOWER SUMMARY 3, page 1.

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TIRES, WHEELS, and WEIGHT

		Tests F, G, & H	Test J
Rear Wheel; Type (each)		Steel Disc	Steel Disc
Liquid Ballast		None	None
Added Cast Iron		670 lb	None
Rear Tires: No. Size & Ply		2 10-28 4 ply	2 10-28 4 ply
Type of Tread		Champion Ground Grip	Champion Ground Grip
Make		Firestone	Firestone
Air Pressure		12 lb	12 lb
Front Wheel; Type		Steel Disc	Steel Disc
Liquid Ballast		None	None
Added Cast Iron		100 lb	None
Front Tires: No. Size & Ply		2 4.00-19 4 ply	2 4.00-19 4 ply
Type of Tread		Guide Grip	Guide Grip
Make		Firestone	Firestone
Air Pressure		28 lb	28 lb
Height of Drawbar		20 inches	21 inches
Static Weight: Rear End		2832 lb	1492 lb
Front End		1128 lb	928 lb
Total Weight as Tested (with Operator)		4140 lb	2600 lb

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SPECIFICATIONS

<u>Type</u>	Standard	<u>Serial No.</u>	8N-49380	<u>Drive</u>	Enclosed gear
<u>Tread width;</u>	Rear	48 in to 76 in		Front	48 in to 76 in
<u>Advertised speeds, miles per hour;</u>	First	2.97		Second	3.83
	Third	5.27		Fourth	10.97
	Reverse	4.89			
<u>Belt pulley;</u>	Diam.	9 in	<u>Face</u>	6 $\frac{1}{2}$ in	<u>RPM</u>
					1358
				<u>Belt speed</u>	3199 fpm
<u>Clutch;</u>	<u>Make</u>	Long	<u>Type</u>	Dry plate	<u>Operated by</u>
					Foot pedal
<u>Seat</u>	Pressed steel				
<u>Brakes;</u>	<u>Make</u>	Ford	<u>Type</u>	Internal expanding	
	<u>Location</u>	Main axle			
	<u>Gear reduction (brake drum to rear wheel)</u>	Direct			
	<u>Operated by</u>	Independent brake pedals on right hand side of tractor			
	<u>Locked by</u>	Latches anchored to differential housing			
	<u>Equalization</u>	None			
<u>Engine;</u>	<u>Make</u>	Ford	<u>Serial No.</u>	8N-49380	<u>Type</u>
					4 cylinder vertical
	<u>Head</u>	L	<u>Mounting</u>	Lengthwise	<u>Lubrication</u>
					Pressure
	<u>Bore and stroke</u>	3 3/16 in x 3 3/4 in		<u>Rated rpm</u>	Belt 2000
					Drawbar 1750
	<u>Port diameter valves;</u>	<u>Inlet</u>	1.380 in	<u>Exhaust</u>	1.125 in
	<u>Distributor &amp; Coil;</u>	<u>Make</u>	Ford	<u>Battery</u>	Ford
	<u>Carburetor;</u>	<u>Make</u>	Marvel-Schebler	<u>Model</u>	TS X 33
				<u>Size</u>	7/8 in
	<u>Governor;</u>	<u>Make</u>	Novi	<u>Type</u>	Variable speed centrifugal
	<u>Air Cleaner;</u>	<u>Make</u>	Oakes	<u>Type</u>	Oil washed wire screen
	<u>Oil Filter;</u>	<u>Make</u>	Fram	<u>Type</u>	Removable cartridge
	<u>Cooling medium temperature control;</u>	Thermostat			