

January 1950

Test 443: Ford 8N

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Department of Agricultural Engineering
 Dates of test: June 16 to June 27, 1950.
 Manufacturer: FORD MOTOR CO.,
 DETROIT, MICHIGAN
 Manufacturer's rating: Not rated.

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

NEBRASKA TRACTOR TEST NO. 443
 FORD 8N

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer in Hg
		Gal per hour	Hp-hr per gal	Lb per hp-hour		Cooling med	Air	
TEST B—100% MAXIMUM LOAD—TWO HOURS								
26.19	1999	2.352	11.14	0.546	0.00	181	68	28.900
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
25.49	2001	2.280	11.18	0.544	0.00	182	70	28.900
TEST D—RATED LOAD—ONE HOUR								
23.24	2000	2.107	11.03	0.551	0.00	178	73	28.900
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
23.27	2000	2.137	10.89	0.558	...	179	73
2.09	2191	1.007	2.08	2.928	...	143	73
12.21	2091	1.530	7.98	0.762	...	145	73
24.93	1919	2.241	11.12	0.546	...	186	74
6.33	2160	1.209	5.24	1.161	...	130	74
17.85	2043	1.846	9.67	0.629	...	158	74
14.45	2084	1.661	8.70	0.699	0.00	157	73	28.880

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 in Hg
					Gal per hour	Hp-hr per gal	Lb per hp-hr		Cooling med	Air	
TEST F—100% MAXIMUM LOAD—2nd GEAR											
21.95	2236	3.68	1754	7.78	Not Recorded			181	76	28.785	
TEST G—OPERATING MAXIMUM LOAD											
20.75	2810	2.77	1752	10.74	Not Recorded			180	68	28.785	
21.55	2189	3.69	1749	7.29	" "			181	75	28.785	
21.55	1552	5.21	1752	5.13	" "			182	77	28.785	
20.07	669	11.25	1755	1.94	" "			181	78	28.790	
TEST H—RATED LOAD—TEN HOURS—2nd GEAR											
17.65	1759	3.76	1749	5.46	1.742	10.13	0.600	0.00	167	81	28.788
TEST J—OPERATING MAXIMUM LOAD—2nd GEAR											
18.58	2072	3.36	1752	16.86	Not Recorded			190	64	29.000	

FUEL, OIL and TIME Gasoline octane No. ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.079 lb Oil SAE 20; to motor 1.242 gal; drained from motor 1.152 gal Total time motor was operated 39 hours.

CHASSIS Type standard Serial No 8N273570 Tread width rear 48" to 76" front 48" to 76" Wheel Base 70" Hydraulic control system operates only when clutch is engaged Advertised speeds mph first 3.23 second 4.16 third 5.72 fourth 11.92 reverse 5.31 Belt pulley diam 9" face 6 1/2" rpm 1358 Belt speed 3199 fpm Clutch dry disk operated by foot pedal Seat pressed steel Brakes internal expanding shoe operated by two pedals located on right hand side of tractor Equalization none Power take-off standard type.

ENGINE Make Ford Type 4 cylinder vertical Serial No 8N273570 Crankshaft mounted lengthwise Head L Lubrication pressure Bore and Stroke 3 3/16" x 3 3/4" Rated rpm belt 2000 drawbar 1750 Compression ratio 6.5 to 1 Displacement 119.7 cu in Port Diameter Valves inlet 1.38" exhaust 1.13" Governor variable speed flyball Carburetor Size 7/8" Ignition System 6 volt battery Air Cleaner oil washed wire screen Muffler used Oil Filter partial flow removable cartridge Cooling medium temperature control thermostat.

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 and J were made with an operating setting of the carburetor (selected by the manufacturer) of 97.5% of maximum belt horsepower.

During Test H engine misfired occasionally at test course turns. Misfiring did not occur in subsequent test J.

TIRES, WHEELS and WEIGHT

	Tests F, G & H	Test J	Test K
Rear wheels			
Type	Pressed steel	Pressed steel	
Liquid ballast	213 lb each	None	
Added cast iron	450 lb each	None	
Rear tires			
No. and size	Two 10-28	Two 10-28	
Ply	4	4	
Air pressure	12 lb	12 lb	
Front wheels			
Type	Pressed steel	Pressed steel	
Liquid ballast	None	None	
Added cast iron	None	None	
Front tires			
No. and size	Two 4.00-19	Two 4.00-19	
Ply	4	4	
Air pressure	26 lb	26 lb	
Height of drawbar	21 1/2 inches	22 1/2 inches	
Static weight			
Rear end	2908 lb	1582 lb	
Front end	950 lb	950 lb	
Total weight as tested with operator	4043 lb	2717 lb	

No smaller tires suggested by manufacturer.

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg)	23.16	27.32
2. Observed maximum horsepower (tests F and B)	21.95	26.19
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)	17.37	23.22

We, the undersigned, certify that this is a true and correct report of official tractor test No. 443.

L. F. Larsen
 Engineer in Charge

C. W. Smith
 F. D. Yung
 L. W. Hurlbut
 Board of Tractor
 Test Engineers