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## Test 414: USTRAC Model 10-A

Nebraska Tractor Test Lab

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

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

Department of Agricultural Engineering

Dates of test: June 22 to June 30, 1949

Manufacturer: U. S. TRACTOR CORPORATION, WARREN, OHIO

Manufacturer's rating: Drawbar, 20.4 H. P.

NEBRASKA TRACTOR TEST NO. 414

USTRAC 10-A

BELT HORSE POWER TESTS

H. P.	Crank shaft speed R.P.M.	Fuel Consumption			Wc* used Gal. per hour	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hour	H.P. hr. per gal.	Lb. per H. P. hour		Cooling med.	Air	
TEST B- and C—100% MAXIMUM LOAD—TWO HOURS								
21.33	1899	2.488	8.57	0.713	0.00	173	78	28.738
*TEST D—ONE HOUR								
19.35	1900	2.410	8.03	0.761	0.00	163	74	28.750
TEST E—VARYING LOAD—TWO HOURS (20 minute runs: last line average)								
19.34	1901	2.410	8.02	0.762	- - -	163	74	-- ---
2.26	2053	1.345	1.68	3.637	- - -	146	74	-- ---
10.11	1991	1.851	5.46	1.119	- - -	150	74	-- ---
20.38	1714	2.283	8.93	0.684	- - -	167	74	-- ---
5.19	2037	1.537	3.38	1.809	- - -	147	72	-- ---
14.93	1963	2.180	6.85	0.892	- - -	152	70	-- ---
12.04	1943	1.934	6.23	0.982	0.00	154	73	28.788

DRAWBAR HORSE POWER TESTS

H. P.	Draw bar pull Lbs.	Speed miles per hr.	Crank shaft speed R. P. M.	Slip of drive wheels %	Fuel Consumption			Water used Gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hour	Hp.-hr. per Gal.	Lb. per Hp.-hr.		Cool- ing med.	Air	
TEST F and G—100% MAXIMUM LOAD—											
7.12	3256	0.82	1902	10.11	Not Recorded				151	80	28.900
14.13	3249	1.63	1905	7.86	" "				161	80	28.900
15.26	1747	3.28	1904	2.38	" "				178	92	28.740
12.20	815	5.61	1900	0.66	" "				180	94	28.740
					" "						
					" "						
*TEST H—TEN HOURS— 3rd GEAR											
12.48	1416	3.31	1903	1.45	2.244	5.56	1.099	0.00	168	87	28.918

\* Formerly called RATED LOAD, see horsepower summary.

FUEL, OIL and TIME Fuel: gasoline, octane 74 (octane rating taken from oil company's typical inspection data); weight per gallon 6.111 lbs. Oil: SAE 30; to motor 1.246 gals; drained from motor 1.048 gals. Total time motor was operated 45 hours.

SPECIFICATIONS Type tracklayer; Serial No. 05636; Drive enclosed gear; Tread Width 29 1/2"; Measured Length of Track 14.19 ft. Cleats: Type integral with shoes; No. per track 28; Size 1 1/2" x 7 1/2". Hydraulic Lift Control None. Advertised speeds, mph: First 0.92; Second 1.89; Third 3.45; Fourth 5.87; Reverse: First 1.06; Second 2.17; Third 3.97; Fourth 6.75. Belt Pulley: Diam 8"; Face 6 1/2"; RPM 1750; Belt Speed 3670 fpm. Clutch: Make Rockford (2); Type multiple disc in oil; Operated by hand. Seat upholstered. Brakes: Make own; Type contracting band; Location steering clutch drum; Gear Reduction (brake drum to sprocket) 5.125:1; Operated by lever; Locked by latches. Steering hand levers controlling multiple disc clutches.

ENGINE Make Continental; Serial No. F1249614; Type 4 cylinder vertical; Head L; Mounting crankshaft lengthwise; Lubrication Pressure; Bore and Stroke 3" x 4 3/8"; Rated rpm 1900; Compression Ratio 6.72:1. Port Diameter Valves: Inlet 1 3/8"; Exhaust 1 1/16". Governor: Make Novi; Type centrifugal, variable speed. Carburetor: Make Zenith; Model 161-7; Size 1". Starter Auto-Lite. Generator Auto-Lite. Distributor and Coil Auto-Lite. Battery Auto-Lite, 6 volt. Air Cleaner: Make Donaldson; Type oil washed crimped wire with pre-cleaner. Oil Filter: Make Fram; Type waste packed replaceable element. Cooling medium temperature control thermostat.

TOTAL WEIGHT AS TESTED (with operator) 3695 lbs.

REPAIRS AND ADJUSTMENTS Oil leaked from power take-off shaft during belt test. Ignition coil failed during drawbar tests. Final inspection revealed hood bracket had come loose leaving hole in fuel tank.

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, and H were made with an operating setting of the carburetor (selected by the manufacturer) of 100% maximum belt horsepower.

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	16.37	22.59
2. Observed maximum horsepower (tests B & F)	15.26	21.33
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)	12.28	19.20

We, the undersigned, certify that this is a true and correct report of official tractor test No. 414.

L. F. Larsen  
Engineer in Charge

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



