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January 1949

Test 434 Oliver HG

Nebraska Tractor Test Lab

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Department of Agricultural Engineering

Dates of test: November 11 to November 21, 1949

Manufacturer: THE OLIVER CORPORATION, CLEVELAND, OHIO

Manufacturer's rating: Not Rated

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

NEBRASKA TRACTOR TEST NO. 434

OLIVER HC

BELT HORSE POWER TESTS

H. P.	Crank shaft speed R. P. M.	Fuel Consumption			Water 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—100% MAXIMUM LOAD—TWO HOURS								
25.30	1700	2.293	11.03	0.554	0.00	166	64	28.825
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
24.70	1701	2.233	11.06	0.553	0.00	143	57	28.885
*TEST D—ONE HOUR								
22.54	1700	2.075	10.86	0.563	0.00	137	57	28.875
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
22.56	1701	2.075	10.87	0.563	- - -	135	56	-- ---
1.16	1957	0.942	1.23	4.966	- - -	118	55	-- ---
12.09	1811	1.491	8.11	0.754	- - -	118	56	-- ---
24.08	1647	2.178	11.06	0.553	- - -	141	57	-- ---
5.23	1867	1.182	5.27	1.161	- - -	127	57	-- ---
17.59	1766	1.825	9.64	0.634	- - -	130	58	-- ---
33.95	1791	1.615	8.64	0.708	0.00	128	57	28.880

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—100% MAXIMUM LOAD— 2nd GEAR											
21.30	2604	3.07	1696	4.42	Not Recorded				160	51	28.910
TEST G—OPERATING MAXIMUM LOAD											
29.64	3940	1.87	1710	8.53	Not Recorded				159	54	28.950
2.61	2512	3.08	1697	4.19	" "				161	51	28.910
20.21	1472	5.15	1700	2.70	" "				159	50	28.910
*TEST H—TEN HOURS— 2nd GEAR											
16.53	2029	3.05	1700	5.03	1.951	8.47	0.716	0.02	149	45	28.903

* 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 6.116 lb. Oil: SAE 20; to motor 1.428 gal; drained from motor 1.153 gal. Total time motor was operated 44 hours.

SPECIFICATIONS Type tracklayer; Serial No. 52 GA 000; Drive enclosed gear. Tread Width: Rear 68". Measured Length of Track 14.83 ft. Cleats: Type integral with shoes; No. per track 30; Size 1 1/4" x 12". Advertised speeds, mph: First 2.01; Second 3.19; Third 5.24; Reverse 2.33. Belt Pulley: Diam 8 1/2"; Face 6 1/2"; RPM 1038; Belt Speed 2310 fpm. Clutch: Make Long; Type dry single plate, semi-centrifugal; Operated by foot pedal. Seat upholstered. Brakes: Make own; Type contracting band; Location differential shaft; Gear Reduction (brake drum to sprocket) 4.800:1; Operated by hand levers; Locked by latches. Steering hand levers controlling differential compound planetary gear system.

ENGINE Make Hercules; Serial No. 2428943; Type 4 cylinder vertical; Head L; Mounting crankshaft lengthwise; Lubrication pressure; Bore and Stroke 3 1/4" x 4"; Rated RPM 1700; Compression Ratio 6.66:1. Port Diameter Valves: Inlet 1 1/4"; Exhaust 1 1/8". Governor: Make Handy; Type centrifugal, variable speed. Carburetor: Make Marvel-Schebler; Model TSX-403; Size 7/8". Starter Delco-Remy. Generator Delco-Remy. Magneto Wico. Battery Williard. Air Cleaner: Make Vortox; Type oil washed wire screen. Oil Filter: Make Michiana; Type replaceable waste pack. Cooling medium temperature control: Thermostat.

TOTAL WEIGHT AS TESTED (with operator) 4183 lbs.

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 and H were made with an operating setting of the carburetor (selected by the manufacturer) of 96.8% of maximum belt horsepower.

HORSEPOWER SUMMARY

	Draw- bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	21.65	26.36
2. Observed maximum horsepower (tests F & B)	21.30	25.30
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)	16.39	22.41

We, the undersigned, certify that this is a true and correct report of official tractor test No. 434.

L. F. Larsen
Engineer in Charge

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

