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January 1949

Test 436: Oliver DD

Nebraska Tractor Test Lab

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Dates of test: November 8 to November 22, 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. 436

OLIVER DD

BELT HORSE POWER TESTS

I. 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 Band C—100% MAXIMUM LOAD—TWO HOURS								
73.30	1300	4.730	15.50	0.452	0.00	154	57	29.382
*TEST D—ONE HOUR								
63.27	1299	4.283	14.77	0.474	0.00	150	53	29.395
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
63.16	1299	4.266	14.81	0.473	- -	150	54	-- ---
1.32	1354	1.213	1.09	6.432	- -	140	58	-- ---
32.26	1319	2.499	12.91	0.542	- -	144	58	-- ---
71.09	1253	4.947	14.37	0.487	- -	156	59	-- ---
16.30	1332	1.805	9.03	0.775	- -	148	58	-- ---
47.99	1311	3.284	14.61	0.479	- -	150	59	-- ---
38.69	1311	3.002	12.89	0.543	0.00	148	58	29.348

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—											
55.73	14735	1.42	1304	3.39	Not Recorded				155	55	28.950
57.94	9632	2.26	1302	2.45	" "				158	53	28.865
58.81	7277	3.03	1300	1.28	" "				158	52	28.875
51.50	3978	4.85	1297	0.81	" "				159	40	28.850
*TEST H—TEN HOURS— 3rd GEAR											
45.60	5634	3.04	1300	1.16	4.136	11.03	0.635	0.00	158	52	28.866

Formerly called RATED LOAD, see horsepower summary.

FUEL, OIL and TIME Fuel: Diesel fuel; cetane 47 (cetane rating taken from oil company's typical inspection data); weight per gallon 6.998 lb. Oil: SAE 20; to motor 4.022 gal; drained from motor 3.537 gal. Total time motor was operated 44 hours.

SPECIFICATIONS Type tracklayer; Serial No. 2L3368; Drive enclosed gear. Tread Width: Rear 61". Measured Length of Track 18.82 ft. Cleats: Type integral with shoes; No. per track 31; Size 2 1/4" x 20". Advertised speeds, mph: First 1.45; Second 2.28; Third 3.04; Fourth 4.85; Reverse 1.72 and 3.62. Belt Pulley: Diam 13"; Face 11"; RPM 958; Belt Speed 3260 fpm. Clutch: Make Long; Type double dry plate; Operated by foot pedal. Seat upholstered. Brakes: Make own; Type contracting band; Location differential shaft; Gear Reduction (brake drum to sprocket) 5.909:1; Operated by hand levers; Locked by latches. Steering hand levers controlling differential compound planetary gear system.

ENGINE Make Hercules; Serial No. 5389458; Type 6 cylinder vertical; Head I; Mounting crankshaft lengthwise; Lubrication pressure; Bore and Stroke 4 3/8" x 5 1/4"; Rated RPM 1300; Compression Ratio 15:1. Port Diameter Valves: Inlet 2"; Exhaust 1 1/8". Governor: Make Hercules; Type centrifugal, variable speed. Fuel Injection System Bosch. Starting System Delco-Remy, 24 volt. Generator Delco-Remy. Battery Williard, 12 volt (2 used). Air Cleaner: Make Vortox; Type oil washed wire screen. Oil Filter: Make Purolator; Type permanent element. Fuel Filters Make Cletrac (1), Purolator (2), Bosch (1); Type permanent cloth, permanent cloth and replaceable paper elements respectively. Cooling medium temperature control: Thermostat.

TOTAL WEIGHT AS TESTED (with Operator) 15,515 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 fuel pumps set by the manufacturer to develop approximately 73 observed 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 the same setting.

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	60.47	74.43
2. Observed maximum horsepower (tests F & B)	58.81	73.30
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)	45.35	63.27

We, the undersigned, certify that this is a true and correct report of official tractor test No. 436.

L. F. Larsen
Engineer in Charge

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

