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January 1963

Test 839: Oliver 1800 Series B Gasoline

Nebraska Tractor Test Laboratory Submitted by Larsen Museum
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NEBRASKA TRACTOR TEST 839 - OLIVER 1800 SERIES B GASOLINE

The University of Nebraska Agricultural Experiment Station

E. F. Frolik, Dean; H. H. Kramer, Director, Lincoln, Nebraska

POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft speed rpm	Fuel Consumption		Hp-hr per gal	Temperature Degrees F			Barometer inches of Mercury
		Gal per hr	Lb per hp-hr		Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours								
80.16	2200	6.601	0.505	12.14	173	58	75	29.058
VARYING POWER AND FUEL CONSUMPTION—TWO HOURS								
70.31	2269	6.205	0.541	11.33	174	58	76	..
0.00	2400	2.378	166	57	73	..
36.14	2334	4.311	0.731	8.38	173	58	75	..
80.15	2200	6.581	0.503	12.18	174	58	75	..
18.31	2365	3.347	1.121	5.47	168	58	74	..
53.63	2309	5.314	0.607	10.09	174	57	73	..
Av 43.09	2313	4.689	0.667	9.19	172	57	74	29.043

DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft speed rpm	Slip of drivers %	Fuel Consumption		Hp-hr per gal	Temp Degrees F			Barometer inches of Mercury
					Gal per hr	Lb per hp-hr		Cooling med	Air wet bulb	Air dry bulb	

VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

Maximum Available Power—Two Hours—4th Gear Hydra-Power											
67.81	6839	3.72	2204	7.16	6.875	0.622	9.86	182	67	79	28.900
75% of Pull at Maximum Power—Ten Hours—4th Gear Hydra-Power											
55.47	5275	3.94	2289	5.27	6.033	0.667	9.19	180	64	77	29.037
50% of Pull at Maximum Power—Two Hours—4th Gear Hydra-Power											
37.96	3493	4.08	2325	3.69	4.934	0.797	7.69	179	72	85	28.813

MAXIMUM POWER WITH BALLAST

58.33	10827	2.02	2258	14.94	2nd Gear Hydra-Power		172	55	62	29.010
67.72	8946	2.84	2201	10.09	2nd Gear		178	56	63	29.000
68.49	8805	2.92	2201	9.77	3rd Gear Hydra-Power		177	56	63	29.000
69.52	7042	3.70	2201	7.53	4th Gear Hydra-Power		178	56	58	28.890
69.04	6282	4.12	2204	6.57	3rd Gear		178	61	68	28.920
69.01	5013	5.16	2199	5.17	4th Gear		178	61	68	28.920
70.13	4429	5.94	2199	4.67	5th Gear Hydra-Power		180	61	68	28.920
68.81	3145	8.20	2199	3.28	5th Gear		182	61	68	28.920
67.25	2410	10.46	2197	2.69	6th Gear Hydra-Power		180	65	75	28.920
62.41	1623	14.42	2201	1.63	6th Gear		180	65	75	28.920

MAXIMUM POWER WITHOUT BALLAST

64.99	6815	3.58	2203	11.30	4th Gear Hydra-Power		182	75	85	28.830
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VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST

4th Gear Hydra-Power

Pounds pull	7042	7378	7541	7580	7628	7658	7415
Horsepower	69.52	65.22	58.80	51.75	44.61	37.03	29.03
Crankshaft speed rpm	2201	1982	1750	1534	1316	1089	879
Miles per hour	3.70	3.31	2.92	2.56	2.19	1.81	1.47
Slip of drivers %	7.53	8.14	8.27	8.27	8.40	8.40	8.27

TIRES, BALLAST and WEIGHT

		With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 18.4-34; 8; 20	Two 18.4-34; 8; 16
Ballast	—Liquid	1170 lb each	None
	Cast iron	1350 lb each	None
Front tires	—No, size, ply & psi	Two 7.50-15; 8; 40	Two 7.50-15; 8; 32
Ballast	—Liquid	None	None
	Cast iron	208 lb each	None
Height of drawbar		20½ inches	21 inches
Static weight	—Rear	11300 lb	6260 lb
	—Front	2960 lb	2545 lb
Total weight with operator		14435 lb	8980 lb

Department of Agricultural Engineering

Dates of Test: May 22 to June 4, 1963

Manufacturer: OLIVER CORPORATION,
CHARLES CITY, IOWA

Manufacturer's Power Rating: Not rated

FUEL, OIL and TIME Fuel regular gasoline Octane No Motor 84.4 Research 92.2 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.7365 Weight per gallon 6.131 lb Oil SAE 10W API service classification MS DM To motor 1.977 gal Drained from motor 1.596 gal Transmission and final-drive lubricant SAE 80 Total time engine was operated 43 hours.

ENGINE Make Oliver gasoline Type 6 cylinder vertical Serial No 221120 Crankshaft mounted lengthwise Rated rpm 2200 Bore and stroke 3⅞" x 4" Compression ratio 8.5 to 1 Displacement 283 cu in Carburetor size 1½" Ignition system battery Cranking system 12 volt electric Lubrication pressure Air cleaner oil washed wire screen Oil filter full flow replaceable paper element Oil cooler engine coolant heat exchanger for Hydra-Power oil Fuel filter screen in sediment bowl Muffler was used Cooling medium temperature control thermostat.

CHASSIS Type standard Serial No 124925844 Tread width rear 68" to 89¼" front 60" to 84" Wheel base 109¼" Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from centerline of rear wheels 30.9" Vertical distance above roadway 35.5" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial range operator controlled power shifting Advertised speeds mph first 1.60 second 3.09 third 4.31 fourth 5.34 fifth 8.32 sixth 14.37 reverse 1.81 and 4.87 (using Hydra-Power drive) first 1.17 second 2.27 third 3.16 fourth 3.92 fifth 6.11 sixth 10.55 reverse 1.33 and 3.57 Clutch single plate dry disc operated by foot pedal Brakes double disc operated by two foot pedals which can be locked Steering mechanical with power assist Turning radius (on concrete surface with brake applied) right 152" left 152" (on concrete surface without brake) right 172" left 172" Turning space diameter (on concrete surface with brake applied) right 312" left 312" (on concrete surface without brake) right 352" left 352" Belt pulley 1056 rpm at 2200 engine rpm diam 11⅝" face 8¾" Belt speed 3111 fpm Power take-off 1004 rpm at 2200 engine rpm.

REPAIRS and ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data obtained in accordance with the SAE and ASAE test code.

First gear and first gear Hydra-Power drive were not run as it was necessary to limit the pull in second gear Hydra-Power drive to avoid excessive wheel slippage.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 839.

L. F. LARSEN

Engineer-in-Charge

L. W. HURLBUT, Chairman
G. W. STEINBRUEGGE
J. J. SULEK
Board of Tractor Test
Engineers