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January 1966

Test 943: Oliver 1550 Diesel

Nebraska Tractor Test Lab

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**NEBRASKA TRACTOR TEST 943 - OLIVER 1550 DIESEL
(ALSO MINNEAPOLIS-MOLINE G550 DIESEL)
ALSO OLIVER 1555 DIESEL**

POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft speed rpm	Fuel Consumption		Temperature Degrees F					Barometer inches of Mercury
		Gal per hr	Lb per hp-hr	Hp-hr per gal	Cooling medium	Air wet bulb	Air dry bulb		
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed—Two Hours									
53.50	2200	4.331	0.565	12.35	172	64	75	29.010	
VARYING POWER AND FUEL CONSUMPTION—TWO HOURS									
48.07	2327	3.990	0.580	12.05	168	64	75	.....
0.00	2405	1.581	.....	.....	159	63	74	.....
24.42	2364	2.732	0.781	8.94	162	63	75	.....
53.38	2202	4.329	0.567	12.33	174	64	76	.....
12.30	2383	2.173	1.234	5.66	160	64	75	.....
36.31	2344	3.329	0.640	10.91	166	64	75	.....
Av 29.08	2337	3.022	0.726	9.62	165	64	75	28.990	

DRAWBAR PERFORMANCE

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

VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

Maximum Available Power—Two Hours—4th Gear Hydra-Power											
45.72	3800	4.51	2201	5.57	4.384	0.670	10.43	175	64	77	29.070
75% of Pull at Maximum Power—Ten Hours—4th Gear Hydra-Power											
36.88	2848	4.86	2331	4.10	3.650	0.691	10.10	175	71	81	28.615
50% of Pull at Maximum Power—Two Hours—4th Gear Hydra-Power											
26.47	1990	4.99	2369	3.07	3.037	0.801	8.72	170	64	74	29.075

MAXIMUM POWER WITH BALLAST

42.03	6636	2.38	2206	14.84	2nd Gear Hydra-Power		175	65	77	28.850
44.91	5540	3.04	2196	9.52	3rd Gear Hydra-Power		176	65	77	28.850
43.85	4713	3.49	2194	7.62	2nd Gear		176	65	77	28.850
44.39	3866	4.31	2199	5.97	3rd Gear		178	64	76	28.830
45.77	3821	4.49	2197	5.84	4th Gear Hydra-Power		178	64	76	28.830
45.53	3044	5.61	2200	4.54	5th Gear Hydra-Power		178	64	76	28.830
44.98	2701	6.24	2201	4.05	4th Gear		179	64	76	28.830
43.98	2129	7.75	2202	3.21	5th Gear		176	65	75	28.820
44.19	1690	9.80	2198	2.71	6th Gear Hydra-Power		176	65	75	28.820
40.85	1131	13.54	2205	1.84	6th Gear		176	65	75	28.820

MAXIMUM POWER WITHOUT BALLAST

45.90	3845	4.48	2201	6.45	4th Gear Hydra-Power		175	68	81	28.910
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VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST

4th Gear Hydra-Power										
Pounds pull			3821	4193	4429	4648	4497	4418		
Horsepower			45.77	44.99	41.94	38.38	31.82	26.04		
Crankshaft speed, rpm			2197	1982	1758	1541	1317	1095		
Miles per hour			4.49	4.02	3.55	3.10	2.65	2.21		
Slip of drivers, %			5.84	6.44	6.97	7.49	7.23	6.97		

TIRES, BALLAST and WEIGHT

		With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 15.5-38; 6; 16	Two 15.5-38; 6; 14
Ballast	—Liquid	698 lb each	None
	—Cast iron	140 lb each	None
Front tires	—No, size, ply & psi	Two 6.00-16; 4; 32	Two 6.00-16; 4; 32
Ballast	—Liquid	None	None
	—Cast iron	None	None
Height of drawbar		19½ inches	19½ inches
Static weight with operator	—Rear	6780 lb	5105 lb
	—Front	1950 lb	1915 lb
	—Total	8730 lb	7020 lb

Department of Agricultural Engineering

Dates of Test: JUNE 8 to JUNE 15, 1966

Manufacturer: OLIVER CORPORATION,
CHARLES CITY, IOWA

FUEL, OIL and TIME Fuel No 2 diesel Cetane No 57.0 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8388 Weight per gallon 6.985 lb Oil SAE 10W API service classification MS, DS To motor 1.694 gal Drained from motor 1.175 gal Transmission and final-drive lubricant SAE 80 multi-purpose Total time engine was operated 41½ hours.

ENGINE Make Oliver diesel Type 6 cylinder vertical Serial No 103623 Crankshaft mounted lengthwise Rated rpm 2200 Bore and stroke 3½" x 3¾" Compression ratio 16.5 to 1 Displacement 232 cu in Cranking system 12 volt electric (two 6-volt batteries) Lubrication pressure Air cleaner dry type with built-in pre-cleaner and automatic dust unloader using replaceable paper element Oil filter full flow replaceable pleated paper cartridge Oil cooler engine coolant heat exchanger for transmission oil and radiator for hydraulic oil Fuel filter primary filter with replaceable cotton element and final filter with replaceable pleated paper element Muffler was used Cooling medium temperature control thermostat.

CHASSIS Type Tricycle Serial No 165753-504 Tread width rear 55" to 90¾" front 7½" or 13¼" Wheel base 99¼" Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 28.1" Vertical distance above roadway 31.6" 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 2.63 second 3.73 third 4.52 fourth 6.42 fifth 7.89 sixth 13.57 reverse 2.95 and 5.07 (using Hydra-Power drive) first 1.93 second 2.74 third 3.32 fourth 4.71 fifth 5.79 sixth 9.96 reverse 2.16 and 3.72 Clutch single plate dry disc operated by foot pedal Brakes multiple disc operated by two foot pedals which can be locked together Steering hydraulic with power assist Turning radius (on concrete surface with brake applied) right 146" left 146" (on concrete surface without brake) right 166" left 166" Turning space diameter (on concrete surface with brake applied) right 300" left 300" (on concrete surface without brake) right 340" left 340" Belt pulley 1035 rpm at 2200 engine rpm diam 11⅞" face 8" Belt speed 3106 fpm Power take-off 550 or 994 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 Hydra-Power drive and first gear direct 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 943.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

J. J. SULEK

D. E. LANE

Board of Tractor Test Engineers

The University of Nebraska Agricultural Experiment Station
E. F. Frolik, Dean; H. H. Kramer, Director, Lincoln, Nebraska