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January 1972

Test 1107: Long R9500 Special Diesel

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NEBRASKA TRACTOR TEST 1107 – LONG R9500 SPECIAL DIESEL

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 (PTO Speed—643 rpm)								
97.72	2250	6.253	0.446	15.63	186	65	75	28.960
Standard Power Take-off Speed (540 rpm)—One Hour								
88.13	1890	5.437	0.430	16.21	186	65	76	28.945
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
86.43	2339	5.427	0.437	15.93	183	65	75	.....
0.00	2429	1.719	.....	.....	177	65	74	.....
43.59	2364	3.398	0.543	12.83	179	65	75	.....
98.29	2251	6.306	0.447	15.59	187	65	75	.....
22.07	2385	2.550	0.805	8.65	176	65	74	.....
64.93	2345	4.393	0.471	14.78	181	65	75	.....
Av 52.55	2352	3.966	0.526	13.25	180	65	75	28.923

DRAWBAR PERFORMANCE

Hp	Draw-bar 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—8th Gear (VB1)											
79.65	4849	6.16	2251	5.78	6.119	0.535	13.02	192	73	85	28.570
75% of Pull at Maximum Power—Ten Hours—8th Gear (VB1)											
65.83	3823	6.46	2318	4.23	5.025	0.531	13.10	187	75	85	28.854
50% of Pull at Maximum Power—Two Hours—8th Gear (VB1)											
43.77	2478	6.62	2345	2.87	3.930	0.625	11.14	186	71	85	28.800
50% of Pull at Reduced Engine Speed—Two Hours—10th Gear (VB2)											
44.99	2566	6.57	1526	2.76	3.086	0.477	14.58	188	70	81	28.800

MAXIMUM POWER WITH BALLAST

63.83	10216	2.34	2320	14.78	4th Gear (RB2)	186	69	75	28.560
80.96	7197	4.22	2249	9.45	7th Gear (VA1)	188	66	76	28.890
82.94	5077	6.13	2249	6.36	8th Gear (VB1)	189	66	77	28.890
81.66	4578	6.69	2250	5.68	9th Gear (VA2)	189	67	78	28.890
82.31	3216	9.60	2250	3.63	10th Gear (VB2)	191	69	80	28.890
79.42	2490	11.96	2251	2.47	11th Gear (VA3)	191	69	80	28.890

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 8th Gear (VB1)

Pounds Pull	5077	5347	5487	5636	5599	5416
Horsepower	82.94	77.98	71.24	63.45	54.52	43.97
Crankshaft Speed rpm	2249	2016	1798	1562	1352	1124
Miles Per Hour	6.13	5.47	4.87	4.22	3.65	3.04
Slip of Drivers %	6.36	6.83	6.97	7.10	7.24	6.83

TRACTOR SOUND LEVEL

	dB (A)
Maximum Available Power 2 Hours	97.5
70% of Pull at Max. Power 10 Hours	99.0
50% of Pull at Max. Power 2 Hours	98.5
50% of Pull at Reduced Engine Speed 2 Hours	92.5
Bystander 12th Gear (VB3)	89.5

TIRES, BALLAST and WEIGHT

	With Ballast	Without Ballast
Rear tires	Two 18.4-34; 6; 16	Two 18.4-34; 6; 16
Ballast	1195 lb each	None
	Cast Iron	None
Front tires	Two 9.50-20; 8; 24	Two 9.50-20; 8; 24
Ballast	70 lb each	None
	Cast Iron	None
Height of drawbar	26½ inches	27½ inches
Static weight with operator—rear	9570 lb	5080 lb
front	4130 lb	3090 lb
total	13700 lb	8170 lb

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

Department of Agricultural Engineering

Dates of Test: September 13 to September 19, 1972

Manufacturer: MASSEY-FERGUSON-LANDINI S P A, FABRICO, REGGIO EMILIA, ITALY

FUEL, OIL AND TIME Fuel No. 2 Diesel Cetane No. 54.5 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60°** 0.8365 **Weight per gallon** 6.965 lb. **Oil SAE** 20-20W API service classification SB/SE-CA/CD **To motor** 4.615 gal **Drained from motor** 3.548 gal. **Transmission and final drive lubricant** SAE 90-EP **Total time engine was operated** 45 hours

ENGINE Make Perkins Type 6 cylinder vertical Serial No.354 UA32373 **Crankshaft Mounted** lengthwise **Rated rpm** 2250 **Bore and stroke** 3.875"x5.0" **Compression ratio** 16 to 1 **Displacement** 354 cu. in. **Cranking system** 12 volt electric **Lubrication pressure** **Air cleaner** dry replaceable paper element with automatic dust unloader **Oil filter** replaceable pleated paper cartridge **Fuel filter** replaceable primary paper element and replaceable secondary paper element **Muffler** was used **Cooling medium temperature control** thermostat

CHASSIS Type standard Serial No. 1190261 **Tread width rear** 64" to 88" **front** 56" to 81" **Wheel base** 95.5" **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 37" **Vertical distance** above roadway 33.5" **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 7th, 8th, 9th, 10th, 11th, & 12th gears synchronized **Advertised speeds mph** first 1.1 second 1.6 third 1.7 fourth 2.4 fifth 2.9 sixth 4.1 seventh 4.1 eighth 5.8 ninth 6.3 tenth 8.8 eleventh 10.9 twelfth 15.3 **reverse** 1.7, 2.4, 6.3, & 8.8 **Clutch** dry disc dual clutch operated by foot pedal and hand lever for pto **Brakes** double disc operated by two foot pedals that can be locked together **Steering power assist** **Turning radius** (on concrete surface with brake applied) right 150" left 150" (On concrete surface without brake) right 160" left 160" **Turning space diameter** (on concrete surface with brake applied) right 300" left 300" (on concrete surface without brake) right 320" left 320" **Power take-off** 540 rpm at 1890 engine rpm.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. First, second and third gears were not run as it was necessary to limit the pull in fourth gear because of excessive slippage. Fifth, sixth and twelfth gears were not run as test procedure requires only six travel speeds. We, the undersigned, certify that this is a true and correct report of official Tractor Test 1107.

L. F. LARSEN

Engineer-in-charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers