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January 1975

Test 1176: Leyland 255 Diesel 10-Speed

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NEBRASKA TRACTOR TEST 1176 - LEYLAND 255 DIESEL 10 SPEED

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—655 rpm)								
47.91	2199	3.193	0.463	15.00	185	64	75	28.887
Standard Power Take-off Speed (540 rpm)—One Hour								
43.85	1813	2.671	0.423	16.42	185	65	75	28.880
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
42.40	2289	3.017	0.194	14.05	183	66	76	.....
0.00	2477	1.232	.....	.....	172	66	76	.....
22.02	2376	2.200	0.693	10.01	175	66	77	.....
48.29	2198	3.203	0.460	15.08	186	66	79	.....
11.21	2422	1.798	1.113	6.23	173	65	79	.....
32.32	2327	2.632	0.565	12.28	181	65	80	.....
Av 26.04	2348	2.347	0.626	11.10	178	66	77	28.880

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—6th Gear (3-Hi)											
40.50	3351	4.53	2199	7.08	3.170	0.543	12.78	188	72	79	28.695
75% of Pull at Maximum Power—Ten Hours—6th Gear (3-Hi)											
33.61	2604	4.84	2294	4.90	2.845	0.588	11.81	187	73	87	28.420
50% of Pull at Maximum Power—Two Hours—6th Gear (3-Hi)											
23.60	1743	5.08	2367	3.26	2.485	0.731	9.50	179	71	78	28.455
50% Pull at Reduced Engine Speed—Two Hours—7th Gear (4-Lo)											
23.52	1747	5.05	1659	3.55	1.729	0.510	13.60	182	76	88	28.470
MAXIMUM POWER WITH BALLAST											
33.42	5891	2.13	2285	14.99	3rd Gear (2-Lo)	.....	185	72	83	.....	28.460
40.63	5776	2.64	2199	13.73	4th Gear (2-Hi)	.....	185	68	74	.....	28.680
42.54	4591	3.48	2199	9.67	5th Gear (3-Lo)	.....	186	69	75	.....	28.680
42.86	3544	4.53	2200	7.08	6th Gear (3-Hi)	.....	185	67	72	.....	28.680
43.00	2449	6.58	2198	4.84	7th Gear (4-Lo)	.....	186	70	76	.....	28.690
42.36	1879	8.46	2199	3.84	8th Gear (4-Hi)	.....	185	70	76	.....	28.680

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST—6th Gear (3-Hi)

Pounds Pull	3514	3738	3974	4110	4225	4368	4316
Horsepower	42.86	40.37	38.09	34.73	30.10	25.73	20.25
Crankshaft Speed rpm	2200	1974	1762	1550	1319	1096	872
Miles Per Hour	4.53	4.05	3.59	3.15	2.67	2.21	1.76
Slip of Drivers %	7.08	7.44	8.02	8.60	8.71	9.17	9.05

TRACTOR SOUND LEVEL (with cab) dB(A)

Maximum Available Power 2 Hours	97.5
75% of Pull at Max. Power 10 Hours	97.5
50% of Pull at Max. Power 2 Hours	97.5
50% of Pull at Reduced Engine Speed 2 Hours	96.0
Bystander 10th Gear (5Hi)	82.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi	Two 16.9-28, 8; 16	Two 16.9-28, 8; 16
	—Liquid Ballast	None	None
	Cast Iron	970 lb each	None
Front Tires	—No., size, ply & psi	Two 7.50-15, 6; 28	Two 7.50-16, 6; 28
	—Liquid Ballast	None	None
	Cast Iron	185 lb each	None
Height of drawbar		19 inches	19 inches
Static weight with operator	—rear	5930 lb	3990 lb
	—front	2680 lb	2310 lb
	—total	8610 lb	6300 lb

Department of Agricultural Engineering

Dates of Test: May 6 to May 22, 1975

Manufacturer: BRITISH LEYLAND (UK) LIMITED, Bathgate, West Lothian, Scotland

FUEL, OIL AND TIME Fuel No. 2 Diesel Cetane No 51.7 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8336 Weight per gallon 6.941 lb Oil SAE 20W-20 API service classification CC, SE, MS To motor 2.368 gal Drained from motor 1.949 gal Transmission and final drive lubricant SAE 20W-20 Total time engine was operated 50½ hours.

ENGINE Make Leyland Dsl. Type 4 cylinder vertical Serial No 4/98DT/1679/4727 Crankshaft mounted lengthwise Rated rpm 2200 Bore and stroke 3.858" x 4.921" Compression ratio 17.8 to 1 Displacement 230 cu in Cranking system 12 volt electric Lubrication pressure Air cleaner two stage with replaceable dry paper element and centrifugal precleaner Oil filter one full flow replaceable paper element Fuel filter two replaceable paper elements Muffler vertical Cooling medium temperature control thermostat.

CHASSIS Type standard Serial No 255N/306952/-191800 Tread width rear 52" to 80" front 52" to 76" Wheel base 80.25" 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 28.2" Vertical distance above roadway 34.2" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio Advertised speeds mph first 1.4 second 1.8 third 2.3 fourth 2.9 fifth 3.6 sixth 4.6 seventh 6.6 eighth 8.3 ninth 13.9 tenth 17.6 reverse 4.2, 5.4 Clutch single disc operated by foot pedal Brakes multiple dry disc operated by hand lever and two foot pedals that can be locked together Steering power assist Turning radius (on concrete surface with brake applied) right 135.5" left 126" (on concrete surface without brake) right 149" left 145.5" Turning space diameter (on concrete surface with brake applied) right 280" left 265" (on concrete surface without brake) right 308" left 292" Power take-off 540 rpm at 1813 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 and second gears were not run as it was necessary to limit the pull in third gear to avoid excessive wheel slippage.

Fuel temperature at injection pump was 139 degrees F.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1176.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers