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January 1975

Test 1177: Leyland 245 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1177 - LEYLAND 245 DIESEL

POWER TAKE-OFF PERFORMANCE

Hp	Crank-shaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Cooling medium	Temperature Degrees F Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—670 rpm)								
39.73	2248	2.579	0.451	15.41	180	59	75	29.030
Standard Power Take-Off Speed—One Hour (540 rpm)								
36.38	1812	2.232	0.426	16.30	181	59	75	29.070
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
34.95	2324	2.295	0.456	15.23	176	59	76	.....
0.00	2394	0.743	.....	.....	164	58	75	.....
17.74	2359	1.504	0.588	11.79	168	58	75	.....
39.84	2250	2.602	0.453	15.31	181	58	75	.....
8.90	2370	1.124	0.876	7.92	165	58	75	.....
26.43	2344	1.876	0.493	14.09	172	58	75	.....
Av 21.31	2340	1.691	0.551	12.60	171	58	75	29.073

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank-shaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temp Degrees F Cool-ing med	Air wet bulb	Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours (6th Gear—3-Hi)											
33.06	2778	4.46	2249	7.24	2.539	0.533	13.02	183	72	78	28.690
75% of Pull at Maximum Power—Ten Hours (6th Gear—3-Hi)											
27.51	2183	4.73	2333	5.12	2.172	0.548	12.67	178	78	86	28.773
50% of Pull at Maximum Power—Two Hours (6th Gear—3-Hi)											
19.32	1509	4.80	2348	4.22	1.711	0.615	11.29	174	72	83	28.690
50% of Pull at Reduced Engine Speed—Two Hours (7th Gear—4-Lo)											
19.20	1500	4.80	1650	4.13	1.351	0.488	14.21	173	70	81	28.690
MAXIMUM POWER WITH BALLAST											
28.70	5056	2.13	2329	13.11	3rd Gear (2-Lo)		176	68	72		28.700
33.41	4748	2.64	2250	12.76	4th Gear (2-Hi)		180	68	72		28.700
34.16	3731	3.43	2249	9.97	5th Gear (3-Lo)		181	70	75		28.690
35.09	2942	4.47	2249	7.04	6th Gear (3-Hi)		179	66	69		28.700
34.18	1978	6.48	2250	5.00	7th Gear (4-Lo)		180	70	75		28.690
33.37	1504	8.32	2252	4.10	8th Gear (4-Hi)		181	70	76		28.690

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

Pounds Pull	2942	3148	3352	3481	3547	3469	3351
Horsepower	35.09	33.54	31.64	28.77	24.84	20.39	15.76
Crankshaft Speed rpm	2249	2021	1798	1582	1341	1127	898
Miles Per Hour	4.47	4.00	3.54	3.10	2.63	2.20	1.76
Slip of Drivers %	7.04	7.44	7.77	8.22	8.22	8.22	8.00

TRACTOR SOUND LEVEL (with cab) dB (A)

Maximum Available Power 2 Hours	100.0
75% of Pull at Max. Power 10 Hours	99.5
50% of Pull at Max. Power 2 Hours	98.5
50% of Pull at Reduced Engine Speed 2 Hours	97.0
Bystander 10th Gear (5th-Hi)	83.5

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires		
—No., size, ply & psi	Two 14.9-28; 8; 14	Two 14.9-28; 8; 11
Ballast	None	None
—Liquid	790 lb each	None
Cast Iron	None	None
Front tires		
—No., size, ply & psi	Two 7.50-16; 6; 28	Two 7.50-16; 6; 28
Ballast	None	None
—Liquid	195 lb each	None
Cast Iron	None	None
Height of drawbar	18 inches	18 inches
Static weight with operator —rear	5570 lb	3990 lb
front	2280 lb	1890 lb
total	7850 lb	5880 lb

Department of Agricultural Engineering

Dates of Test: May 5 to May 26, 1975

Manufacturer: BRITISH LEYLAND (UK) LIMITED, BATHGATE, WEST LOTHIAN, SCOTLAND

FUEL, OIL AND TIME Fuel 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 1.952 gal Drained from motor 1.587 gal Transmission and final drive lubricant SAE 20W-20 Total time engine was operated 48½ hours

ENGINE Make LEYLAND Type 3 cylinder vertical Serial No 152U 74400D Crankshaft Mounted lengthwise Rated rpm 2250 Bore and stroke 3.6" x 5.0" Compression ratio 18.5 to 1 Displacement 152.7 cu in Cranking system 12 volt electric Lubrication pressure Air cleaner replaceable paper element Oil filter one screw on cartridge Fuel filter one replaceable paper element Muffler vertical Cooling medium temperature control thermostat

CHASSIS Type standard Serial No 245N/306951/-191869 Tread width rear 56" 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 22.8" Vertical distance above roadway 30.4" 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 1.3 second 1.7 third 2.1 fourth 2.7 fifth 3.4 sixth 4.3 seventh 6.0 eighth 7.7 ninth 12.8 tenth 16.2 reverse 3.9, 4.9 Clutch single dry disc operated by foot pedal Brakes multiple dry disc operated by hand level and two foot pedals that can be locked together Steering power assist Turning radius (on concrete surface with brake applied) right 128" left 121" (on concrete surface without brake) right 148.5" left 136.5" Turning space diameter (on concrete surface with brake applied) right 261" left 262" (on concrete surface without brake) right 305" left 281" Power take-off 540 rpm at 1813 engine rpm and 670 rpm at 2250 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 due to tangential pull limit of tires.

Fuel temperature at injection pump return was 140 degrees F.

The tractor did not meet manufacturers claim of 40 PTO horsepower.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1177.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers