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Test 1276: White Field Boss 2-155 DSL 18-Speed

Nebraska Tractor Test Lab
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NEBRASKA TRACTOR TEST 1276 — WHITE FIELD BOSS 2-155 DSL ALSO WHITE FARM EQUIPMENT 2-155 DIESEL 18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1015 rpm)								
157.73	2200	10.434	0.458	15.12	189	56	75	28.997
(117.62)		(39.495)	(0.278)	(2.978)	(87.4)	(13.2)	(23.8)	(97.917)
Standard Power Take-Off Speed (1000 rpm)—One Hour								
162.37	2167	10.555	0.450	15.38	190	56	75	29.015
(121.08)		(39.955)	(0.274)	(3.030)	(87.9)	(13.1)	(24.0)	(97.979)
VARYING POWER AND FUEL CONSUMPTION—Two Hours—								
138.09	2264	9.656	0.484	14.30	186	56	76	.....
(102.97)		(36.552)	(0.294)	(2.817)	(85.6)	(13.3)	(24.2)	.....
0.00	2397	3.308	.....	.....	175	56	75	.....
(0.00)		(12.523)	.....	.....	(79.4)	(13.1)	(23.9)	.....
71.49	2348	6.434	0.623	11.11	178	56	76	.....
(53.31)		(24.357)	(0.379)	(2.189)	(81.4)	(13.3)	(24.2)	.....
158.53	2199	10.436	0.455	15.19	189	56	76	.....
(118.22)		(39.506)	(0.277)	(2.992)	(87.2)	(13.3)	(24.4)	.....
36.29	2376	4.887	0.932	7.43	175	55	74	.....
(27.06)		(18.498)	(0.567)	(1.463)	(79.4)	(12.8)	(23.6)	.....
105.83	2315	8.121	0.531	13.03	184	56	76	.....
(78.92)		(30.742)	(0.323)	(2.567)	(84.2)	(13.3)	(24.7)	.....
Av 85.04	**2317**	**7.140**	**0.581**	**11.91**	**181**	**56**	**76**	**29.017**
Av (63.41)		***(27.030)***	***(0.353)***	***(2.346)***	***(82.9)***	***(13.2)***	***(24.2)***	***(97.985)***

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 10th (3-O) Gear											
131.33	9145	5.39	2200	5.56	10.352	0.545	12.69	188	58	71	28.790
(97.93)	(40.68)	(8.67)			(39.186)	(0.332)	(2.499)	(86.4)	(14.4)	(21.7)	(97.220)
75% of Pull at Maximum Power—Ten Hours 10th (3-O) Gear											
106.18	6969	5.71	2295	3.95	9.210	0.600	11.53	184	57	66	28.800
(79.18)	(31.00)	(9.19)			(34.864)	(0.365)	(2.271)	(84.2)	(13.9)	(18.8)	(97.402)
50% of Pull at Maximum Power—Two Hours 10th (3-O) Gear											
73.30	4645	5.92	2343	2.58	7.353	0.694	9.97	178	58	64	28.850
(54.66)	(20.66)	(9.52)			(27.834)	(0.422)	(1.964)	(81.1)	(14.2)	(17.8)	(97.422)
50% of Pull at Reduced Engine Speed—Two Hours 14th (5-D) Gear											
73.62	4661	5.92	1433	2.50	5.221	0.491	14.10	179	60	69	28.895
(54.90)	(20.73)	(9.53)			(19.764)	(0.298)	(2.778)	(81.7)	(15.3)	(20.3)	(97.574)
MAXIMUM POWER IN SELECTED GEARS											
121.17	14512	3.13	2218	14.95	5th (2-D) Gear			183	55	60	28.850
(90.36)	(64.55)	(5.04)						(83.9)	(12.8)	(15.6)	(97.422)
123.74	13799	3.36	2200	14.70	6th (3-U) Gear			187	63	76	28.730
(92.27)	(61.38)	(5.41)						(86.1)	(17.2)	(24.4)	(97.017)
130.78	12410	3.95	2198	9.64	7th (2-O) Gear			189	63	76	28.740
(97.52)	(55.20)	(6.36)						(86.9)	(17.2)	(24.4)	(97.051)
135.29	11616	4.37	2198	8.04	8th (3-D) Gear			190	62	76	28.750
(100.89)	(51.67)	(7.03)						(87.5)	(16.7)	(24.4)	(97.084)
135.63	10597	4.80	2199	6.83	9th (4-U) Gear			189	61	75	28.760
(101.14)	(47.14)	(7.72)						(86.9)	(16.1)	(23.9)	(97.118)
133.59	9302	5.39	2200	5.52	10th (3-O) Gear			188	59	72	28.780
(99.62)	(41.38)	(8.67)						(86.4)	(15.0)	(22.2)	(97.186)
138.70	8843	5.88	2200	5.28	11th (4-D) Gear			189	63	76	28.740
(103.43)	(39.33)	(9.47)						(87.2)	(17.2)	(24.4)	(97.051)
135.88	7132	7.14	2200	4.01	12th (4-O) Gear			189	63	76	28.740
(101.33)	(31.72)	(11.50)						(86.9)	(17.2)	(24.4)	(97.051)
137.35	6914	7.45	2200	3.77	13th (5-U) Gear			187	63	76	28.730
(102.43)	(30.76)	(11.99)						(86.1)	(17.2)	(24.4)	(97.017)
139.68	5795	9.04	2200	3.12	14th (5-D) Gear			187	63	76	28.730
(104.16)	(25.78)	(14.55)						(86.1)	(17.2)	(24.4)	(97.017)

Department of Agricultural Engineering

Dates of Test: May 12 to May 19, 1978

Manufacturer: WHITE FARM EQUIPMENT CO., 2625 Butterfield Road, Oak Brook, Illinois 60521

FUEL, OIL AND TIME Fuel No. 2 diesel **Cetane No.** 50.4 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° *(15°/15°)*** 0.8310 **Fuel weight** 6.919 lbs/gal *(0.829 kg/l)* **Oil SAE** 30 **API service classification** SB/SE - CA/CD **To motor** 3.643 gal *(13.789 l)* **Drained from motor** 3.225 gal *(12.207 l)* **Transmission and final drive lubricant** Universal tractor hydraulic and transmission fluid **Total time engine was operated** 35.0 hours

ENGINE: Make White Diesel **Type** 6 cylinder vertical with turbocharger **Serial No.** 4005651 **Crankshaft** lengthwise **Rated rpm** 2200 **Bore and stroke** 4.56″ x 4.87″ *(115.8 mm x 123.7 mm)* **Compression ratio** 17.0 to 1 **Displacement** 478 cu in *(7834 ml)* **Cranking system** 12 volt **Lubrication** pressure **Air Cleaner** primary and secondary paper elements with aspirator **Oil Filter** two full flow paper spin-on cratridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper elements **Muffler** vertical **Cooling medium temperature control** thermostat

CHASSIS: Type Standard with duals **Serial No.** 278741-414 **Tread width** rear 63″ *(1600 mm)* to 126″ *(3200 mm)* front 60″ *(1524 mm)* to 84″ *(2134 mm)* **Wheel base** 113″ *(2870 mm)* **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 31.3″ *(794 mm)* Vertical distance above roadway 41.6″ *(1057 mm)* Horizontal distance from center of rear wheel tread 0″ *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (3) range operator controlled power shift **Advertised speeds** mph *(km/h)* first 2.2 *(3.5)* second 2.6 *(4.2)* third 2.8 *(4.5)* fourth 3.1 *(5.0)* fifth 3.4 *(5.5)* sixth 3.7 *(5.9)* seventh 4.1 *(6.6)* eighth 4.4 *(7.1)* ninth 4.8 *(7.7)* tenth 5.3 *(8.5)* eleventh 5.8 *(9.3)* twelfth 7.0 *(11.3)* thirteenth 7.2 *(11.6)* fourteenth 8.7 *(14.0)* fifteenth 10.4 *(16.7)* sixteenth 12.3 *(19.8)* seventeenth 14.8 *(23.8)* eighteenth 17.8 *(28.6)* reverse 2.5 *(4.0)*, 3.0 *(4.8)*, 3.6 *(5.8)*, 4.3 *(6.9)*, 5.2 *(8.4)*, 6.2 *(10.0)* **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc hydralically power actuated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 146″ *(3.71 m)* left 146″ *(3.71 m)* (on concrete surface without brake) right 165″ *(4.19 m)* left 165″ *(4.19 m)* **Turning space diameter** (on concrete surface with brake applied) right 298″ *(7.58 m)* left 298″ *(7.58 m)* (on concrete surface without brake) right 336″ *(8.55 m)* left 336″ *(8.55 m)* **Power take-off** 1000 rpm at 2167 engine rpm

LUGGING ABILITY IN 10th (3-O) Gear

Crankshaft Speed rpm	2200	1978	1752	1543	1305	1097
Pull—lbs	9302	11314	12316	12377	11059	9197
(kN)	*(41.38)*	*(50.33)*	*(54.78)*	*(55.05)*	*(49.19)*	*(40.91)*
Increase in Pull %	0	22	32	33	19	−1
Power—Hp	133.59	143.22	135.51	119.97	92.32	65.85
(kW)	*(99.62)*	*(106.80)*	*(101.05)*	*(89.46)*	*(68.85)*	*(49.11)*
Speed—Mph	5.39	4.75	4.13	3.63	3.13	2.69
(km/h)	*(8.67)*	*(7.64)*	*(6.64)*	*(5.85)*	*(5.04)*	*(4.32)*
Slip %	5.52	7.44	9.06	9.06	7.44	5.60

TRACTOR SOUND LEVEL WITH CAB	**dB(A)**
Maximum Available Power—Two Hours	80.5
75% of Pull at Maximum Power—Ten Hours	79.5
50% of Pull at Maximum Power—Two Hours	80.0
50% of Pull at Reduced Engine Speed—Two Hours	79.5
Bystander in 18th (6-O) gear	87.5

TIRES, BALLAST AND WEIGHT		**Tested Without Ballast**
Rear Tires	—No., size, ply & psi *(kPa)*	Four 20.8-38; 8; 12 *(80)*
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 14L-16; 1; 6; 28 *(190)*
Ballast	—Liquid (each)	None
	—Cast Iron (each)	None
Height of Drawbar		21.0 in *(535 mm)*
Static Weight with Operator—Rear		12520 lb *(5679 kg)*
	—Front	4130 lb *(1873 kg)*
	—Total	16650 lb *(7552 kg)*

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. Temperature at injection pump was 166°F *(74.5°C)*. Ten gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1276.**

LOUIS I. LEVITICUS
Engineer-in-Charge

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White Field Boss 2-155 DSL

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