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Test 1318: White 4-210 Field Boss Diesel 18-Speed

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NEBRASKA TRACTOR TEST 1318 — WHITE 4-210 FIELD BOSS DIESEL ALSO WHITE FARM EQUIPMENT 4-210 DIESEL 18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			Barometer inch Hg (kPa)
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb	

MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—Two Hours (PTO Speed—1000 rpm)								
182.44 (136.04)	2800	12.792 (48.423)	0.490 (0.298)	14.26 (2.809)	181 (82.8)	66 (18.8)	75 (23.8)	28.787 (97.208)

VARYING POWER AND FUEL CONSUMPTION—Two Hours

158.80 (118.42)	2869	11.065 (41.886)	0.487 (0.296)	14.35 (2.827)	178 (81.4)	66 (18.9)	75 (23.9)	.....
0.00 (0.00)	3014	4.482 (16.965)	.....	.....	174 (78.9)	66 (18.9)	75 (23.9)	.....
81.81 (61.01)	2952	7.514 (28.443)	0.642 (0.391)	10.89 (2.145)	177 (80.6)	66 (18.9)	76 (24.2)	.....
183.81 (137.07)	2801	12.755 (48.282)	0.485 (0.295)	14.41 (2.839)	182 (83.1)	66 (18.6)	73 (22.8)	.....
41.31 (30.81)	2981	5.927 (22.436)	1.004 (0.610)	6.97 (1.373)	175 (79.4)	66 (19.2)	76 (24.2)	.....
120.84 (90.11)	2912	9.135 (34.580)	0.529 (0.322)	13.23 (2.606)	178 (81.1)	67 (19.4)	76 (24.2)	.....
Av 97.76 (72.90)	2921	8.480 (32.099)	0.607 (0.369)	11.53 (2.271)	177 (80.7)	66 (19.0)	75 (23.8)	28.783 (97.197)

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 11th (4D) Gear											
158.77 (118.40)	10120 (45.02)	5.88 (9.47)	2799	3.06	12.866 (48.704)	0.567 (0.345)	12.34 (2.431)	190 (87.8)	74 (23.1)	82 (27.8)	28.740 (97.051)
75% of Pull at Maximum Power—Ten Hours 11th (4D) Gear											
126.70 (94.48)	7744 (34.45)	6.14 (9.87)	2896	2.31	10.472 (39.640)	0.578 (0.352)	12.10 (2.383)	183 (83.8)	72 (22.0)	82 (27.9)	28.554 (96.423)
50% of Pull at Maximum Power—Two Hours 11th (4D) Gear											
86.65 (64.61)	5179 (23.04)	6.27 (10.10)	2944	1.80	8.452 (31.996)	0.682 (0.415)	10.25 (2.019)	180 (82.2)	62 (16.4)	72 (22.2)	28.735 (97.034)
50% of Pull at Reduced Engine Speed—Two Hours 15th (5O) Gear											
86.28 (64.34)	5151 (22.91)	6.28 (10.11)	1680	1.63	6.040 (22.864)	0.490 (0.298)	14.28 (2.814)	181 (82.8)	65 (18.1)	79 (26.1)	28.775 (97.169)

MAXIMUM POWER IN SELECTED GEARS

140.19 (104.54)	22934 (102.02)	2.29 (3.69)	2818	14.85	2nd (1D) Gear			183 (83.6)	59 (15.0)	69 (20.6)	28.710 (96.949)
145.79 (108.71)	21369 (95.05)	2.56 (4.12)	2798	11.33	3rd (2U) Gear			186 (85.6)	75 (23.9)	85 (29.4)	28.730 (97.017)
151.84 (113.22)	19316 (85.92)	2.95 (4.74)	2798	7.65	4th (1O) Gear			187 (86.1)	74 (23.3)	84 (28.9)	28.740 (97.051)
158.09 (117.89)	18184 (80.89)	3.26 (5.25)	2799	6.64	5th (2D) Gear			186 (85.6)	74 (23.3)	83 (28.3)	28.740 (97.051)
157.12 (117.17)	16219 (72.15)	3.63 (5.85)	2797	5.47	6th (3U) Gear			187 (85.8)	74 (23.3)	83 (28.3)	28.740 (97.051)
157.93 (117.77)	14933 (66.43)	3.97 (6.38)	2799	4.79	7th (2O) Gear			186 (85.6)	70 (21.1)	78 (25.6)	28.760 (97.118)
161.70 (120.58)	13615 (60.56)	4.45 (7.17)	2798	4.19	8th (3D) Gear			186 (85.6)	70 (21.1)	77 (25.0)	28.760 (97.118)
161.26 (120.25)	12521 (55.70)	4.83 (7.77)	2800	3.72	9th (4U) Gear			185 (85.0)	70 (21.1)	77 (25.0)	28.760 (97.118)
158.34 (118.08)	11050 (49.15)	5.37 (8.65)	2800	3.18	10th (3O) Gear			185 (85.0)	70 (21.1)	77 (25.0)	28.760 (97.118)
162.25 (120.99)	10333 (45.96)	5.89 (9.48)	2800	3.02	11th (4D) Gear			185 (84.7)	67 (19.4)	71 (21.7)	28.770 (97.152)
155.40 (115.88)	8235 (36.63)	7.08 (11.39)	2800	2.39	12th (4O) Gear			186 (85.6)	73 (22.8)	81 (27.2)	28.750 (97.084)
157.76 (117.64)	8220 (36.56)	7.20 (11.58)	2799	2.31	13th (5U) Gear			186 (85.6)	74 (23.3)	82 (27.8)	28.750 (97.084)
158.75 (118.38)	6807 (30.28)	8.75 (14.07)	2798	1.84	14th (5D) Gear			186 (85.6)	74 (23.3)	82 (27.8)	28.750 (97.084)

Department of Agricultural Engineering

Dates of Test: June 12 — 20, 1979

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

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 49.0 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8401 **Fuel weight** 6.995 lbs/gal (0.838 kg/l) **Oil SAE 10W-30 API service classification SD-SF/CC-CD To motor** 4.359 gal (16.499 l) **Drained from motor** 1.867 gal (7.067 l) **Transmission and final drive lubricant** Universal Tractor Hydraulic-Transmission Fluid **Total time engine was operated** 36.0 hours

ENGINE: Make Caterpillar Diesel Type Eight cylinder vee **Serial No.** 90N36922 **Crankshaft** lengthwise **Rated rpm** 2800 **Bore and stroke** 4.5" x 5.0" (114.3 mm x 127 mm) **Compression ratio** 16.5 to 1 **Displacement** 636 cu in (10424 ml) **Cranking system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements with aspirator **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper cartridge **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** two thermostats.

CHASSIS: Type Four wheel drive with duals **Serial No.** 275804-418 **Tread width** rear 63" (1600 mm) to 126" (3200 mm) front 63" (1600 mm) to 126" (3200 mm) **Wheel base** 117.8" (2991 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 72.4" (1839 mm) Vertical distance above roadway 43.7" (1110 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 3.2 (5.1) fifth 3.4 (5.5) sixth 3.8 (6.1) seventh 4.1 (6.6) eighth 4.6 (7.4) ninth 5.0 (8.0) tenth 5.5 (8.8) eleventh 6.0 (9.6) twelfth 7.2 (11.6) thirteenth 7.3 (11.7) fourteenth 8.8 (14.2) fifteenth 10.5 (16.9) sixteenth 12.7 (20.4) seventeenth 15.2 (24.5) eighteenth 18.3 (29.4) reverse 2.5 (4.0), 3.1 (5.0), 3.7 (5.9), 4.4 (7.1), 5.3 (8.5), 6.4 (10.3) **Clutch** dual dry disc operated by foot pedal **Brakes** single wet disc hydraulically power actuated and operated by foot pedal **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 210" (5.33 m) left 210" (5.33 m) **Turning space diameter** (on concrete surface without brake) right 450" (11.43 m) left 450" (11.43 m) **Power take-off** 1000 rpm at 2800 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments

LUGGING ABILITY IN 11th (4D) GEAR

Crankshaft Speed rpm	2800	2526	2248	1963	1680	1395	1113
Pull—lbs (kN)	10333 (45.96)	11357 (50.52)	12234 (54.42)	12831 (57.08)	13449 (59.83)	13932 (61.97)	13695 (60.92)
Increase in Pull %	0	10	18	24	30	35	33
Power—Hp (kW)	162.25 (120.99)	160.34 (119.56)	153.26 (114.28)	139.95 (104.36)	125.29 (93.43)	107.49 (80.16)	84.38 (62.92)
Speed—Mph (km/h)	5.89 (9.48)	5.29 (8.52)	4.70 (7.56)	4.09 (6.58)	3.49 (5.62)	2.89 (4.66)	2.31 (3.72)
Slip %	3.02	3.34	3.64	3.96	4.11	4.26	4.26

TRACTOR SOUND LEVEL WITH CAB dB(A)

Maximum Available Power—Two Hours	78.5
75% of Pull at Maximum Power—Ten Hours	81.0
50% of Pull at Maximum Power—Two Hours	81.5
50% of Pull at Reduced Engine Speed—Two Hours	79.5
Bystander in 18th (6O) gear	93.0

TIRES, BALLAST AND WEIGHT

Rear Tires —No., size, ply & psi (kPa)
 Ballast —Liquid (each)
 —Cast Iron (each)

Front Tires —No., size, ply & psi (kPa)
 Ballast —Liquid (each)
 —Cast iron (each)

Height of Drawbar

Static Weight with Operator—Rear
 Front
 Total

Tested Without Ballast

Four 18.4-38; 8; 12 (85)
 None
 None

Four 18.4-38; 8; 12 (85)
 None
 None

22 in (560 mm)

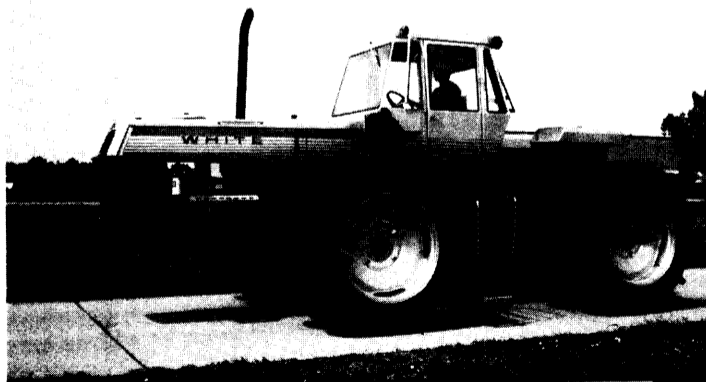
9660 lb (4382 kg)
 14075 lb (6384 kg)
 23735 lb (10766 kg)

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 162°F (72.1° C). Thirteen 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 **1318**.

LOUIS I. LEVITICUS
 Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman
 W. E. SPLINTER
 K. VON BARGEN
 Board of Tractor Test Engineers



White 4-210 Field Boss Diesel