January 1975

Test 1181: White Field Boss 2-105 Diesel (Also White Farm Equipment 2-105 Diesel) 18-Speed

Tractor Museum
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NEBRASKA TRACTOR TEST 1181 – WHITE FIELD BOSS 2-105 DIESEL
ALSO WHITE FARM EQUIPMENT 2-105 DIESEL
18 SPEED

POWER TAKE-OFF PERFORMANCE

Hp	Crank-shaft speed rpm	Fuel Consumption Gal per hr	Fuel Consumption Lb per hp-hr	Hp-hr per gal	Temperature Degrees F Cooling medium	Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1007 rpm)								
105.61	2200	6.702	0.439	15.76	184	65	75	28.653
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
94.48	2319	6.413	0.470	14.73	183	67	76	.....
0.00	2393	2.288	.....	.....	178	66	75	.....
48.04	2358	4.481	0.646	10.72	179	66	75	.....
106.69	2200	6.747	0.438	15.81	184	66	75	.....
24.34	2376	3.406	0.969	7.15	178	66	75	.....
71.59	2339	5.386	0.521	13.29	180	66	76	.....
Av 57.52	**2331**	**4.787**	**0.576**	**12.02**	**180**	**66**	**75**	**28.720**

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank-shaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Fuel Consumption 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 WITHOUT BALLAST											
Maximum Available Power—Two Hours—9th Gear (4 UD)											
84.96	6147	5.18	2199	7.40	6.590	0.537	12.89	187	78	86	28.835
75% of Pull at Maximum Power—Ten Hours—9th Gear (4 UD)											
70.71	4738	5.60	2318	5.16	5.915	0.579	11.95	184	79	87	28.901
50% of Pull at Maximum Power—Two Hours—9th Gear (4 UD)											
48.93	3172	5.79	2347	3.18	4.893	0.692	10.00	181	77	83	28.660
50% of Pull at Reduced Engine Speed—Two Hours—11th Gear (4 DD)											
49.55	3217	5.78	1952	3.55	3.972	0.555	12.48	181	79	89	28.820
MAXIMUM POWER WITHOUT BALLAST											
82.03	9212	3.34	2250	14.94	5th Gear (2 DD)			186	70	76	28.810
86.52	7284	4.45	2198	9.00	8th Gear (3 DD)			186	71	78	28.820
87.23	6298	5.19	2200	7.22	9th Gear (4 UD)			186	71	78	28.820
90.81	5370	6.34	2199	5.99	11th Gear (4 DD)			186	74	81	28.830
89.39	4348	7.71	2199	4.72	13th Gear (4 OD)			186	75	82	28.830
90.50	3814	8.90	2200	4.00	14th Gear (5 DD)			186	77	84	28.840

VARYING DRAWBAR PULL AND TRAVEL SPEED WITHOUT BALLAST—9th Gear (4 UD)

Pounds Pull	6298	6769	7173	7524	7448	7343
Horsepower	87.23	83.59	78.25	71.69	60.25	49.60
Crankshaft Speed rpm	2200	1976	1760	1547	1312	1094
Miles Per Hour	5.19	4.63	4.09	3.57	3.03	2.53
Slip of Drivers %	7.22	7.89	8.78	9.36	9.36	9.07

TRACTOR SOUND LEVEL (with cab)	dB(A)
Maximum Available Power 2 Hours	88.5
75% of Pull at Max. Power 10 Hours	88.5
50% of Pull at Max. Power 2 Hours	87.5
50% of Pull at Reduced Engine Speed 2 Hours	88.0
Bystander 18th Gear (6 OD)	87.5

TIRES, BALLAST AND WEIGHT — **Tested Without Ballast**

Rear Tires	—No., size, ply & psi	Two 20.8-38; 8; 16
Ballast	—Liquid	None
	Cast Iron	None
Front Tires	—No., size, ply & psi	Two 11L-15; 6; 28
Ballast	—Liquid	None
	Cast Iron	None
Height of drawbar		21 inches
Static weight with operator—rear		8500 lb
	front	3310 lb
	total	11810 lb

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
H. W. Ottoson, Director

Department of Agricultural Engineering

Dates of Test: June 16 to June 23, 1975

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

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°** 0.8315 **Weight per gallon** 6.923 lb **Oil SAE** 30 **API service classification** SB/SE-CA/CD **To motor** 4.119 gal **Drained from motor** 3.296 gal **Transmission and final drive lubricant SAE** 80 **Total time engine was operated** 41.0 hours.

ENGINE: Make Perkins Diesel **Type** 6 cylinder vertical with turbo-charger **Serial No.** 354U-334024TL **Crankshaft mounted** lengthwise **Rated rpm** 2200 **Bore and stroke** 3.875" x 5.000" **Compression ratio** 16 to 1 **Displacement** 354 cu in **Cranking system** 12 volt **Lubrication** pressure **Air cleaner** two stage dry paper elements with automatic dust unloader **Oil filter** full flow pleated paper element **Oil cooler** radiator for hydraulic oil Engine coolant heat exchanger for crankcase oil **Fuel filter** pleated paper element **Muffler** vertical **Cooling medium temperature control** thermostat.

CHASSIS: Type standard **Serial No.** 255 879-406 **Tread width** rear 61.5" to 111.5" front 61.5" to 87.5" **Wheel base** 109.6" **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 30.8" Vertical distance above roadway 42.4" Horizontal distance from center of rear wheel tread 0" to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (3) range operator controlled power shift **Advertised speeds mph** first 1.6 second 1.9 third 2.4 fourth 3.0 fifth 3.7 sixth 4.0 seventh 4.5 eighth 4.7 ninth 5.4 tenth 5.6 eleventh 6.5 twelfth 7.4 thirteenth 7.8 fourteenth 9.0 fifteenth 10.8 sixteenth 13.1 seventeenth 15.8 eighteenth 18.9 reverse 2.0, 2.4, 2.8, 4.7, 5.8, 6.9 **Clutch** dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically power actuated and operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 155" left 155" (on concrete surface without brake) right 170" left 170" **Turning space diameter** (on concrete surface with brake applied) right 310" left 310" (on concrete surface without brake) right 350" left 350" **Power take-off** 542, 1007 and 2200 rpm at 2200 engine rpm.

REPAIRS AND ADJUSTMENTS: A leak in the fuel tank was repaired. The oil supply line to the turbocharger leaked and was replaced. Test continued after repairs.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure.

Six gears were selected within the limits of 15% slip and 10 mph.

Fuel temperature at injection pump return was 140 degrees F.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1181.**

LOUIS I. LEVITICUS
Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman
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Board of Tractor Test Engineers