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January 1938

Test 305: John Deere B

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AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 305

Dates of test: September 6 to 16, 1938
Name and model of tractor: John Deere B
Manufacturer: John Deere Tractor Company, Waterloo, Iowa.
Manufacturer's rating: NOT RATED.

B E L T H O R S E P O W E R T E S T S

H. P.	Crank Shaft speed R.P.M	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H.P. hr.		Cool-ing med.	Air	
TEST B - 100% MAXIMUM LOAD - TWO HOURS								
18.53	1150	1.870	9.91	9.695	0.352	208	96	28.915
TEST C - OPERATING MAXIMUM LOAD - ONE HOUR								
18.31	1150	1.734	10.56	0.653	0.384	207	98	28.880
*TEST D - ONE HOUR								
16.94	1149	1.662	10.19	0.676	0.328	207	97	28.875
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
16.98	1151	1.672	10.16	0.678	-----	208	96	------
2.13	1230	0.993	2.145	3.211	-----	194	95	------
8.97	1205	1.128	7.95	0.866	-----	200	94	------
17.75	1094	1.672	10.62	0.649	-----	207	93	------
4.54	1221	1.036	4.38	1.573	-----	200	92	------
13.23	1177	1.398	9.46	0.728	-----	198	91	------
10.60	1180	1.316	8.05	0.856	0.136	201	93	28.880

8*Formerly called RATED LOAD: see REMARKS 4, page 4.

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D R A W B A R H O R S E P O W E R T E S T S

H.P.	Draw bar pull pounds	Speed miles per hr.	Crank shaft speed R.P.M	Slip on drive wheels %	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hr.	H.P. hr. per gal.	lb. per H.P. hr.		Cool-ing med.	Air	
STEEL WHEELS											
TEST F - 100% MAXIMUM LOAD - Second - GEAR											
13.41	1508	3.34	1147	2.44	------ Not Recorded ------				207	93	28.835
TEST G - OPERATING MAXIMUM LOAD											
14.03	2088	2.52	1151	3.19	------ Not Recorded ------				207	90	28.800
13.32	1497	3.34	1149	2.58	------ " " ------				206	88	28.855
11.5	974	4.33	1149	2.65	------ " " ------				207	98	28.800
9.57	616	5.83	1149	0.50	------ " " ------				205	95	28.775
*TEST H - TEN HOURS - Second-GEAR											
10.84	1228	3.31	1149	0.66	1.589	6.82	1.010	0.005	202	65	28.975
FUEL ECONOMY TEST - FOUR HOURS - Third - GEAR											
8.67	738	4.41	1149	0.90	1.555	5.58	1.236	0.034	204	92	28.815
RUBBER TIRES											
TEST G - OPERATING MAXIMUM LOAD											
15.92	2690	2.22	1151	11.27	----- Not Recorded ------				203	80	28.925
16.25	2005	3.04	1150	7.80	----- " " ------				200	78	28.880
16.44	1518	4.06	1149	4.96	----- " " ------				198	74	28.880
16.05	1105	5.45	1152	3.53	----- " " ------				198	72	28.880
FUEL ECONOMY TESTS - FOUR HOURS EACH - Second and Third - GEARS											
13.26	1584	3.14	1151	4.78	1.396	9.50	0.725	0.003	194	77	28.825
13.12	1195	4.12	1149	3.70	1.451	9.04	0.762	0.011	196	70	28.795

*Formerly called RATED LOAD; see REMARKS 4, page 4.

FUEL, OIL, AND TIME

Fuel: Distillate Octane 65 Weight per gallon 6.89 pounds
Oil: S.A.E. No. 30 To motor 3.219 Gal. Drained from motor 1.150 Gal.
Total time motor was operated 66 hours

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BRIEF SPECIFICATIONS

Advertised speeds, miles per hour (steel wheels): First 2.33

Second 3.00 Third 4.00 Fourth 5.25 Reverse 3.75

Belt pulley: Diameter 10 5/8" Face 6" R.P.M. 1150

Clutch Own Type Double Disc Operated by hand

Seat Pressed steel

Total weight as tested (with operator): (Steel 3390 pounds) (Rubber 4360 pounds)

MOTOR: Make Own Serial No. B 60003 Type 2 cylinder, horizontal full

Head I Mounting Crankshaft crosswise Lubrication pressure

Bore and stroke 4 1/2" x 5 1/2" Rated R.P.M. 1150

Port diameter valves: Inlet 1 1/2" Exhaust 1 3/8"

Magneto: Make Wico Model AP - 477 - B

Carburetor: Make Schebler Model DLTX10 Size 1 1/8"

Governor: Make Own Type Centrifugal

Air Cleaner: Make Donaldson Type Oil-washed, wire screen filter

CHASSIS: Type Tricycle Serial No. B 60003 Drive Enclosed Gear

Tread width: Rear 56" - 84" Front: Top 10.9" Bottom 5.2"

Steel: Drive wheels: Type Standard No. 2 Diameter 48" Face 5 1/4"

Lugs: Type Spade No. per wheel 10 size 4 3/4" high x 3 3/8" wide

Extension rims: Face 5 1/4" No. lugs per rim 10

Front wheels: Type Standard No. 2 Diameter 22" Face 3 1/4"

Rubber: Rear tires: No. 2 Size 9.00" x 36" - 6 ply Air pressure 14 pounds

Front tires: No. 2 Size 5.00" x 15" - 4 ply Air pressure 25 pounds

Added weight: Per rear wheel: Cast iron 276 pounds

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REPAIRS AND ADJUSTMENTS

Before the drawbar tests were run, a leak was discovered at the fuel tank outlet flange soldered joint. This was repaired.

REMARKS

1. All results shown on pages 1 and 2 of this report were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with carburetor set for 100% maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, and H were made with an operating setting of the carburetor (selected by the manufacturer) of 98.8% of maximum belt horsepower.

	(Steel Wheels)
2. Observed maximum horsepower (tests F & B)	Drawbar 13.41 Belt 18.53
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	Drawbar 14.35 Belt 19.83
4. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings).	Drawbar 10.76 Belt 16.86

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 305.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers