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January 1938

## Test 305: John Deere B

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT  
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
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

18.31	1150	1.734	10.56	0.653	0.384	207	98	28.880
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\*TEST D - ONE HOUR

16.94	1149	1.662	10.19	0.676	0.328	207	97	28.875
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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
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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
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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
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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 35 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 Drawbar 14.35 Belt 19.83  
(based on 60° F. and 29.92" Hg.)
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).

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