

January 1947

## Test 380: John Deere B

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*University of Nebraska*

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT  
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 380

Dates of test: April 28 to May 14, 1947  
Name and model of tractor: John Deere "B" Gasoline  
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

| Horse-power | Crank shaft speed<br>rpm | Fuel Consumption |               |              | Water used<br>gal per hr | Temperature     |        | Barometer<br>Inches of Mercury |
|-------------|--------------------------|------------------|---------------|--------------|--------------------------|-----------------|--------|--------------------------------|
|             |                          | gal per hr       | hp-hr per gal | lb per hp-hr |                          | Cooling med. °F | Air °F |                                |

TEST B - 100% MAXIMUM LOAD - TWO HOURS

|       |      |       |       |       |      |     |    |        |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 27.58 | 1249 | 2.550 | 10.82 | 0.567 | 0.02 | 190 | 64 | 28.870 |
|-------|------|-------|-------|-------|------|-----|----|--------|

TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

|       |      |       |       |       |      |     |    |        |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 25.79 | 1245 | 2.187 | 11.79 | 0.520 | 0.02 | 202 | 69 | 28.875 |
|-------|------|-------|-------|-------|------|-----|----|--------|

\*TEST D - ONE HOUR

|       |      |       |       |       |      |     |    |        |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 24.46 | 1249 | 2.107 | 11.61 | 0.529 | 0.02 | 190 | 68 | 28.865 |
|-------|------|-------|-------|-------|------|-----|----|--------|

TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

|       |      |       |       |       |      |     |    |        |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 24.48 | 1250 | 2.093 | 11.70 | 0.525 | --   | 190 | 69 | -- --  |
| 1.70  | 1328 | 0.973 | 1.75  | 3.512 | --   | 190 | 69 | -- --  |
| 12.80 | 1301 | 1.334 | 9.25  | 0.663 | --   | 190 | 69 | -- --  |
| 25.14 | 1205 | 2.132 | 11.79 | 0.520 | --   | 191 | 69 | -- --  |
| 6.46  | 1315 | 1.071 | 6.03  | 1.017 | --   | 190 | 69 | -- --  |
| 18.73 | 1272 | 1.711 | 10.95 | 0.561 | --   | 189 | 69 | -- --  |
| 14.89 | 1279 | 1.560 | 9.54  | 0.643 | 0.02 | 190 | 69 | 28.865 |

\*Formerly called RATED LOAD; see REMARKS 4, page 5.

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FUEL, OIL, AND TIME

Fuel Regular Grade Gasoline Octane 74\* Weight per gallon 6.136 pounds  
 Oil: S.A.E. No. 20-20W To motor 3.241 gal. Drained from motor 1.946 gal.  
 Total time motor was operated 52 hours

TIRES, WHEELS, AND WEIGHT

|                                      | Tests F, G, & H      | Test J               |
|--------------------------------------|----------------------|----------------------|
| Rear Wheel; Type and Weight (each)   | 325 lb cast iron     | 325 lb cast iron     |
| Liquid Ballast                       | 100 lb               | None                 |
| Added Cast Iron                      | 290 lb               | None                 |
| Rear Tires; No., Size & Ply          | 2 10x38 4-ply        | 2 10x38 4-ply        |
| Type of Tread                        | Champion Ground Grip | Champion Ground Grip |
| Make                                 | Firestone            | Firestone            |
| Air Pressure                         | 14 lb                | 12 lb                |
| Front Wheel; Type and Weight (each)  | Steel Disc 28 lb     | Steel Disc 28 lb     |
| Liquid Ballast                       | None                 | None                 |
| Added Cast Iron                      | None                 | None                 |
| Front Tires; No., Size & Ply         | 2 5.50x16 4-ply      | 2 5.50x16 4-ply      |
| Type of Tread                        | Guide Grip Tractor   | Guide Grip Tractor   |
| Make                                 | Firestone            | Firestone            |
| Air Pressure                         | 28 lb                | 28 lb                |
| Height of Drawbar                    | 16"                  | 16"                  |
| Static Weight; Rear End              | 3980 lb              | 3202 lb              |
| Front End                            | 1040 lb              | 1040 lb              |
| Total Weight as Tested With Operator | 5178 lb              | 4400 lb              |

\*Octane Rating taken from Oil Company's Typical Inspection Data.

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DRAWBAR HORSEPOWER TESTS

| Horse-power | Draw bar pull lb | Speed mph | Crank shaft speed rpm | Slip on drive wheels % | Fuel Consumption |               |              | Water used gal per hr | Temperature     |        | Barometer Inches of Mercury |
|-------------|------------------|-----------|-----------------------|------------------------|------------------|---------------|--------------|-----------------------|-----------------|--------|-----------------------------|
|             |                  |           |                       |                        | gal per hr       | hp-hr per gal | lb per hp-hr |                       | Cooling med. °F | Air °F |                             |

Rear wheels, tires and added weight used in Tests F, G and H; Cast Iron wheels; 10-38 4-ply tires and 390 lb added weight per wheel.

TEST F - 100% MAXIMUM LOAD - 4th GEAR

|       |      |      |      |      |                          |     |    |        |
|-------|------|------|------|------|--------------------------|-----|----|--------|
| 24.62 | 2187 | 4.22 | 1252 | 6.42 | ----- Not Recorded ----- | 200 | 64 | 29.000 |
|-------|------|------|------|------|--------------------------|-----|----|--------|

TEST G - OPERATING MAXIMUM LOAD

|       |      |      |      |       |                          |     |    |        |
|-------|------|------|------|-------|--------------------------|-----|----|--------|
| 11.32 | 3353 | 1.27 | 1249 | 18.36 | ----- Not Recorded ----- | 156 | 55 | 28.960 |
| 18.74 | 3437 | 2.04 | 1254 | 19.55 | " "                      | 175 | 52 | 28.960 |
| 23.51 | 2792 | 3.16 | 1253 | 9.65  | " "                      | 204 | 68 | 28.880 |
| 23.37 | 2067 | 4.24 | 1250 | 5.86  | " "                      | 205 | 66 | 28.880 |
| 23.75 | 1640 | 5.43 | 1250 | 4.73  | " "                      | 199 | 68 | 28.880 |
| 22.03 | 833  | 9.92 | 1252 | 2.32  | " "                      | 205 | 68 | 28.880 |

\*TEST H - TEN HOURS - 4th GEAR

|       |      |      |      |      |       |      |       |      |     |    |        |
|-------|------|------|------|------|-------|------|-------|------|-----|----|--------|
| 19.04 | 1666 | 4.29 | 1249 | 4.78 | 1.928 | 9.88 | 0.621 | 0.01 | 198 | 79 | 28.760 |
|-------|------|------|------|------|-------|------|-------|------|-----|----|--------|

TEST J - OPERATING MAXIMUM LOAD

|       |      |      |      |      |                          |     |    |        |
|-------|------|------|------|------|--------------------------|-----|----|--------|
| 23.67 | 2092 | 4.24 | 1255 | 6.44 | ----- Not Recorded ----- | 198 | 55 | 28.960 |
|-------|------|------|------|------|--------------------------|-----|----|--------|

\*Formerly called RATED LOAD; see REMARKS 4, page 5

See Page 3 for specifications on wheels, tires, and weight.

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## REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

## REMARKS

1. All results shown on page 1 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 93.9% of maximum belt horsepower.

|   | DRAWBAR | BELT  |
|---|---------|-------|
| 2. Observed maximum horsepower (tests F & B)  | 24.62   | 27.58 |
| 3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)   | 25.50   | 28.69 |
| 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) | 19.13   | 24.39 |

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 380.

L. F. Larsen  
Engineer-in-Charge

E. E. Brackett, Chairman

C. W. Smith

F. D. Yung  
BOARD OF TRACTOR TEST ENGINEERS

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## CHASSIS

Type Tricycle Serial No. B201369 Drive Enclosed Gear  
 Tread width; Rear 56" - 88" Front Top 11 1/8" Bottom 7 1/4"  
 Advertised speeds, miles per hour; First 1 1/2 Second 2 1/2 Third 3 1/2  
 Fourth 4 1/2 Fifth 5 3/4 Sixth 10 Reverse 2 1/2  
 Belt pulley; Diam. 9 11/16 Face 7 1/4 RPM 1250 Belt Speed 3110 fpm  
 Clutch; Make Own Type Dry disc Operated by Hand  
 Seat Spring Cushion Padded Back Rest  
 Brakes; Make Own Type Internal Expanding Shoe  
 Location On independent shafts geared to each rear axle  
 Gear Reduction (brake drum to rear wheel) 6.000 - 1  
 Operated by One foot pedal on each brake  
 Locked by Latches anchored on tractor platform  
 Equalization None

ENGINE Make Own Serial No. B201369 Type 2 cylinder, horizontal  
 Head I Mounting Crankshaft Crosswise Lubrication Pressure  
 Bore and stroke 4 11/16 x 5 1/2 Rated RPM 1250  
 Port diameter valves; Inlet 1 9/16 Exhaust 1 3/8  
 Magneto; Make Wico Model No. C-1042B Type CR  
 Carburetor; Make Marvel Schebler Model DLTX-67 Size 1 1/2"  
 Governor; Make Own Type Flyball  
 Air Cleaner; Make Donaldson Type Oil washed wire screen filter  
 Oil Filter; Make Purolator Type Full flow filter with by-pass  
 using impregnated replaceable  
 paper element  
 Cooling medium temperature control Radiator shutter