

January 1940

## Test 350: John Deere D

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT  
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 350

Dates of test: July 22 to July 26, 1940.  
 Name and model of tractor: JOHN DEERE D  
 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<br>shaft<br>speed<br>R.P.M. | Fuel Consumption     |                           |                           | *Water Consumption<br>per hour gallons<br>For Cooling<br>and<br>in fuel, Total | Temp.<br>Deg. F.     |     | Barometer<br>Inches of<br>Mercury |
|-------|-----------------------------------|----------------------|---------------------------|---------------------------|--|----------------------|-----|-----------------------------------|
|       |                                   | Gals.<br>per<br>hour | H. P.<br>hrs. per<br>Gal. | Lbs. per<br>H. P.<br>hour |  | Cool-<br>ing<br>med. | Air |                                   |

\*Water for the fuel mixture taken from the cooling system.

TEST B - 100% MAXIMUM LOAD - TWO HOURS

|       |     |       |      |       |       |     |    |        |
|-------|-----|-------|------|-------|-------|-----|----|--------|
| 42.05 | 900 | 4.764 | 8.83 | 0.786 | 3.238 | 188 | 88 | 28.810 |
|-------|-----|-------|------|-------|-------|-----|----|--------|

TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

|       |     |       |       |       |       |     |    |        |
|-------|-----|-------|-------|-------|-------|-----|----|--------|
| 40.24 | 900 | 3.968 | 10.14 | 0.684 | 2.432 | 199 | 90 | 28.805 |
|-------|-----|-------|-------|-------|-------|-----|----|--------|

\*TEST D - ONE HOUR

|       |     |       |      |       |       |     |    |        |
|-------|-----|-------|------|-------|-------|-----|----|--------|
| 38.15 | 899 | 3.872 | 9.85 | 0.704 | 0.902 | 210 | 96 | 28.815 |
|-------|-----|-------|------|-------|-------|-----|----|--------|

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

|       |     |       |       |       |       |     |     |        |
|-------|-----|-------|-------|-------|-------|-----|-----|--------|
| 38.18 | 901 | 3.860 | 9.89  | 0.702 | --    | 210 | 96  | --     |
| 1.53  | 959 | 1.820 | 0.84  | 8.255 | --    | 187 | 97  | --     |
| 20.02 | 937 | 2.602 | 7.69  | 0.902 | --    | 192 | 98  | --     |
| 40.09 | 879 | 3.947 | 10.16 | 0.683 | --    | 205 | 101 | --     |
| 10.14 | 945 | 2.304 | 4.40  | 1.577 | --    | 193 | 102 | --     |
| 29.39 | 923 | 3.108 | 9.46  | 0.734 | --    | 205 | 104 | --     |
| 23.23 | 924 | 2.940 | 7.90  | 0.878 | 0.491 | 199 | 100 | 28.815 |

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<br>bar<br>pull<br>pounds | Speed<br>miles<br>per<br>hour | Crank<br>shaft<br>speed<br>R.P.M. | Slip<br>on<br>drive<br>wheels<br>% | Fuel Consumption   |                      |                           | Water<br>used<br>gal.<br>per<br>hour | Temp.<br>Deg. F.     |     | Barometer<br>Inches of<br>Mercury |
|-------|-------------------------------|-------------------------------|-----------------------------------|------------------------------------|--------------------|----------------------|---------------------------|--------------------------------------|----------------------|-----|-----------------------------------|
|       |                               |                               |                                   |                                    | Gal.<br>per<br>hr. | H. P.<br>per<br>gal. | Lb.<br>per<br>H.P.<br>hr. |                                      | Cool-<br>ing<br>med. | Air |                                   |

TEST F - 100% MAXIMUM LOAD - Second - GEAR

|       |      |      |     |      |                        |  |  |     |    |        |
|-------|------|------|-----|------|------------------------|--|--|-----|----|--------|
| 38.02 | 3641 | 3.92 | 901 | 8.61 | -----Not Recorded----- |  |  | 190 | 83 | 28.640 |
|-------|------|------|-----|------|------------------------|--|--|-----|----|--------|

TEST G - OPERATING MAXIMUM LOAD

|       |      |      |     |       |                        |  |  |     |     |        |
|-------|------|------|-----|-------|------------------------|--|--|-----|-----|--------|
| 34.50 | 4830 | 2.68 | 898 | 14.97 | -----Not Recorded----- |  |  | 206 | 104 | 28.640 |
| 37.12 | 3537 | 3.94 | 900 | 8.11  | ----- " " -----        |  |  | 201 | 85  | 28.625 |
| 37.02 | 3661 | 5.22 | 903 | 5.94  | ----- " " -----        |  |  | 198 | 89  | 28.610 |

\*TEST H - TEN HOURS - Second - GEAR

|       |      |      |     |      |       |      |       |       |     |    |        |
|-------|------|------|-----|------|-------|------|-------|-------|-----|----|--------|
| 30.77 | 2907 | 3.97 | 900 | 7.30 | 3.505 | 8.78 | 0.790 | 1.198 | 196 | 87 | 28.570 |
|-------|------|------|-----|------|-------|------|-------|-------|-----|----|--------|

\*Formerly called RATED LOAD; see REMARKS 4, page 3.

Copy of Report of Official Tractor Test No. 350

FUEL, OIL, AND TIME

Fuel Distillate Octane 38 Weight per gallon 6.94 pounds

Oil: S.A.E. No. 40 To motor 3.639 gal. Drained from motor 2.992 gal.

Total time motor was operated 45 hours

BRIEF SPECIFICATIONS

Advertised speeds miles per hour: First 3 Second 4 Third 5 1/4

Reverse 2

Belt pulley: Diam. 13 1/4" Face 8 1/2" R.P.M. 900 Belt Speed 3122 f.p.m.

Clutch: Make Own Type Dry disc Operated by hand

Seat Pressed steel

Total weight as tested (with operator) 8125 pounds

MOTOR

Make Own Serial No. 147824 Type 2 cylinder, horizontal

Head I Mounting Crankshaft crosswise Lubrication Pressure

Bore and stroke 6 3/4" x 7" Rated R. P. M. 900

Port diameter valves: Inlet 2 5/16" Exhaust 2 5/16"

Magneto: Make Edison-Splitdorf Model CD-2

Carburetor: Make Marvel-Schebler Model DLTX 16 Size 1 1/2"

Governor: Make Own Type Variable speed, centrifugal

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

Oil Filter: Make Motor Improvements, Inc. Type Partial flow, with replace-  
able impregnated paper element

Cooling medium temperature control: Pines radiator shutters

CHASSIS

Type Standard Serial No. 147824 Drive Enclosed gear and chain

Tread width: Rear 55 1/2" Front 54 1/2"

Rear tires: No. 2 Size 13.50" x 28" - 6 ply Air Pressure 12 pounds

Front tires: No. 2 Size 7.50" x 18" - 4 ply Air Pressure 28 pounds

Added weight: Per rear wheel (Cast Iron 556 pounds  
(Calcium Chloride Solution 478 pounds)

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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 95.9% of maximum belt horsepower.

2. Observed maximum horsepower (tests F & B)

|   | DRAWBAR | BELT  |
|---|---------|-------|
| 2. Observed maximum horsepower (tests F & B)  | 38.02   | 42.05 |
| 3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)   | 40.61   | 44.83 |
| 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) | 30.46   | 38.11 |

3. Sea level (calculated) maximum horsepower (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. 350.

Carlton L. Zink  
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut  
Board of Tractor Test Engineers