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# 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.

## $\underline{\mathtt{B}} \ \underline{\mathtt{E}} \ \underline{\mathtt{L}} \ \underline{\mathtt{T}} \quad \underline{\mathtt{H}} \ \underline{\mathtt{O}} \ \underline{\mathtt{R}} \ \underline{\mathtt{S}} \ \underline{\mathtt{E}} \ \underline{\mathtt{P}} \ \underline{\mathtt{O}} \ \underline{\mathtt{W}} \ \underline{\mathtt{E}} \ \underline{\mathtt{R}} \quad \underline{\mathtt{T}} \ \underline{\mathtt{E}} \ \underline{\mathtt{S}} \ \underline{\mathtt{T}} \ \underline{\mathtt{S}}$

| н. Р.                            | Crank<br>shaft                | Fuel Consumption                             |                               |                                  | *Water Consumption per hour gallons | Te<br>Deg                  |                       |                        |
|----------------------------------|-------------------------------|--|-------------------------------|----------------------------------|-------------------------------------|----------------------------|-----------------------|------------------------|
|                                  | speed                         | Gals.  | н. Р.                         | Lbs. per                         | For Cooling                         | Cool-                      | 1                     | Barometer<br>Inches of |
|                                  | R.P.M.                        | per .  | hrs. per                      |                                  | and                                 | ing /                      |                       |                        |
|                                  |                               | ·hour  | Gal.                          | hour                             | in fuel, Total                      |                            |                       | Mercury                |
| *Water                           | for the                       | e fuel mi                                    | xture tak                     | en from th                       | e cooling system.                   |                            |                       |                        |
|                                  |                               |  | TEST B -                      | 100% MAXI                        | MUM LOAD - TWO HOURS                | S                          |                       |                        |
| 42.05                            | 900                           | 4.764  | 8.83                          | 0.786                            | 3.238                               | 188                        | 88                    | 28.810                 |
|                                  |                               | TE   | EST C - OF                    | ERATING MA                       | XIMUM LOAD - ONE HO                 | UR ·                       |                       |                        |
| 40.24                            | 900                           | 3.968  | 10.14                         | 0.684                            | 2.432                               | 199-                       | 90                    | 28.805                 |
|                                  | a. ria                        |  |                               | *TEST D -                        | ONE HOUR                            |                            |                       |                        |
| 76 75                            | 899                           | 3.872  | 9.85                          | 0.704                            | 0.902                               | 210                        | 96                    | 28.815                 |
| 00.10                            | !                             |  |                               |                                  |                                     |                            |                       |                        |
| 00.10                            | TEST                          | ••••••                                       | ING LOAD                      | - TWO HOUR                       | S (20 minute runs;                  | last lir                   | ne aver               | age)                   |
|                                  |                               | ••••••                                       | ING LOAD                      | - TWO HOUR                       | S (20 minute runs;                  | last lir                   | .,                    | age)                   |
|                                  | TEST                          | E - VARY                                     |                               |                                  | S (20 minute runs;                  |                            |                       | age)                   |
| 38.18_<br>1.53                   | TEST<br>901_                  | E - VARY                                     | 9.89                          | 0.702                            | S (20 minute runs;                  | 210                        | 96                    | rage)                  |
| 38.18_<br>1.53<br>20.02          | TEST<br>901_<br>959           | E - VARY<br>3.860<br>1.820                   | 9.89<br>0.84                  | 0.702<br>8.255                   | S (20 minute runs;                  | 210<br>187                 | 96<br>97              | age)                   |
| 38.18_<br>1.53<br>20.02<br>40.09 | TEST<br>901<br>959<br>937     | E - VARY<br>3.860<br>1.820<br>2.602          | 9.89<br>0.84<br>7.69          | 0.702<br>8.255<br>0.902          | S (20 minute runs;                  | 210 -<br>187<br>192        | 96<br>97<br>98        | -age)<br><br><br>      |
| 38.18_                           | TEST<br>901 959<br>937<br>879 | E - VARY<br>3.860<br>1.820<br>2.602<br>3.947 | 9.89<br>0.84<br>7.69<br>10.16 | 0.702<br>8.255<br>0.902<br>0.683 | S (20 minute runs;                  | 210 -<br>187<br>192<br>205 | 96<br>97<br>98<br>101 | -age)                  |

#### DRAWBAR HORSEPOWER TESTS

|       |        |       |        | ,               |                  |          |                 |         | p     |      |           |
|-------|--------|-------|--------|-----------------|------------------|----------|-----------------|---------|-------|------|-----------|
|       | Draw   | Speed | Crank  | Slip            | Fuel Consumption |          |                 | Water   | Temp. |      |           |
| н. Р. | bar    | miles | shaft  | on              |                  | н. Р.    | Lb.             | used    | Deg   | · F. |           |
|       | pull   | per   | speed  | drive           | Gal.             | hr.      | per             | gal.    | Cool- |      | Barometer |
|       | pounds | hour  | R.P.M. | wheels          | per              | per      | н.Р.            | per     | ing   | Air  | Inches of |
|       |        |       |        | %               | hr.              | gal.     | hr.             | hour    | med.  |      | Meroury   |
|       |        |       | TEST F | · <b>-</b> 100% | MAXIMU           | M LOAD - | - Seco          | ond - G | EAR   |      |           |
| 38.02 | 3641   | 3.92  | 901    | 8.61            |                  | -Not Rec | orded-          |         | 190   | 83   | 28.640    |
|       |        | ,     |        | TEST G          | - OPERA          | TING MAX | KIMUM L         | OAD     | ÷     |      |           |
| 34.50 | 4830   | 2.68  | 808    | 14.97           | ~                | -Not Rec | orded-          |         | 206   | 104  | 28.640    |
| 37.12 | 3537   | 3,94  | 900    | 8.11            |                  | _ 1/     | -               |         | 201   | 85   | 28.625    |
| 37.02 | 2661   | 5.22  | 903    | 5.94            |                  | _ 11     | <sup>11</sup> _ |         | 198   | 89   | 28.610    |
|       |        |       | *TE    | est h - 1       | TEN HOU          | RS - Se  | ec ond          | - GEAR  | ,     |      |           |
| 30.77 | 2907   | 3.97  | 900    | 7.30            | 3.505            | 8.78     | 0.790           | 1.198   | 196   | 87   | 28.570    |

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Copy of Report of Official Tractor Test No. 350

| FUEL,                                   | OIL, AND TIME  |
|---|--|
| *************************************** | Fuel Distillate Octane 38 Weight per gallon 6.94 pounds                                  |
| ٠.                                      | Oil: S.A.E. No. 40 To motor 3.639 gal. Drained from motor 2.992 gal.                     |
| BRIEF                                   | Total time motor was operated 45 hours SPECIFICATIONS                                    |
|   | Advertised speeds miles per hour: First 3 Second 4 Third $5 \frac{1}{4}$                 |
| · · · .                                 | 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   |
| - MOTOR                                 | Total weight as tested (with operator) 8125 pounds                                       |
|   | 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 25/16" Exhaust 25/16"  |
|   | 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 Cleener: Make Donaldson Type Oil-washed wire screen filter                           |
|   | Oil Filter: Make Motor Improvements, Inc. Type Partial flow, with replace-               |
|   | able impregnated paper element   |
| CHASSI                                  | Cooling medium temperature control: Pines radiator shutters                              |
|   | 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

|    | Tests B and F were made with carburetor set horsepower and data from these tests were a horsepower to be developed in tests D and F C, D, E, G, and H were made with an operation buretor (selected by the manufacturer) of S | used in determining<br>I, respectively. T<br>ing setting of the | the<br>Tests<br>car- |
|----|---|---|----------------------|
| 2. | horsepower.  Observed maximum horsepower (tests F & B)  |   | ELT<br>2.05          |
| 3. | Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)  | 40.61 44  | 1.83                 |
| 4. | Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five  | 30.46 38  | 3.11                 |

1. All results shown on page 1 of this report were determined from observed data and without allowances, additions, or deductions.

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 350.

per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings)

Carlton L. Zink Engineer-in-charge E. E. Brackett

C. W. Smith

L. W. Hurlbut Board of Tractor Test Engineers

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