January 1920

Test 009: Rumely Oil Pull Model "H" 16-30

Tractor Museum

University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

Follow this and additional works at: http://digitalcommons.unl.edu/tractormuseumlit

Part of the Applied Mechanics Commons

http://digitalcommons.unl.edu/tractormuseumlit/645

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.
UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 9

Dates of test April 24 to May 21, 1920.

Name, model and rating of tractor Oil Pull Model "H" 16-30

Serial No. Engine 4925 Serial No. Chassis

Manufacturer Advance-Rumely Co., La Porte, Ind.

Tractor equipment used Bosch DU2 Magneto. Own make Carburetor.

Style and dimensions of wheel lugs Angle 2 inches high.

Brake Horse Power Tests

<table>
<thead>
<tr>
<th>Horse Power Developed</th>
<th>Crank Shaft Speed R. P. M.</th>
<th>Length of Test Min.</th>
<th>Fuel Consumption Kind of Fuel</th>
<th>Amount Used per Hour Gallons</th>
<th>Horse Power Hours per Gallon</th>
<th>Water Consumption Gallons per Hour</th>
<th>Temperature of Cooling Fluid Deg. F.</th>
<th>Temperature of Atmosphere Deg. F.</th>
<th>Humidity %</th>
<th>Barometric Pressure Inches Mercury</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.50</td>
<td>532</td>
<td>120</td>
<td>Kero</td>
<td>3.070</td>
<td>none</td>
<td>9.94</td>
<td>3.28</td>
<td>3.28</td>
<td>197</td>
<td>68</td>
</tr>
<tr>
<td>Belt slippage 1.54%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RATED LOAD TEST

| 30.40                 | 531                       | 10                  | Kero                        | 3.060                        | none                        | 9.28                             | 3.26                                | 3.26                                | 190       | 69                               | 58                             | 28.9          |
| VARYING LOAD TEST     |                           |                     |                             |                              |                             |                                  |                                     |                                     |           |                                  |                                |               |

Aver.

| 10.35                 | 530                       | 10                  | Kero                        | 3.060                        | none                        | 9.28                             | 3.26                                | 3.26                                | 190       | 69                               | 58                             | 28.9          |

MAXIMUM LOAD TEST

| 33.52                 | 537                       | 60                  | Kero                        | 5.960                        | none                        | 5.62                             | 7.37                                | 7.37                                | 164       | 68                               | 54                             | 28.9          |
| Belt slippage 1.37%   |                           |                     |                             |                              |                             |                                  |                                     |                                     |           |                                  |                                |               |

HALF LOAD TEST

| 15.93                 | 553                       | 60                  | Kero                        | 1.976                        | none                        | 1.06                             | 1.31                                | 1.31                                | 193       | 69                               | 64                             | 28.9          |
| Belt slippage 1.12%   |                           |                     |                             |                              |                             |                                  |                                     |                                     |           |                                  |                                |               |

* Taken in discharge line from engine.

Remarks

The kerosene used weighed 6.80 lbs per gallon.


Engine: Twin cylinder, opposed crank, horizontal, valve-in-head. Bore 7", stroke 8½". Rated speed 530 r.p.m.

Chassis: Four-wheel. Rated speeds: low gear, 2.1 mi. per Hr. high gear 3 mi. per Hr.

Total weight 9506 lbs.
Report of Official Tractor Test No. 9

Drawbar Horse Power Tests

<table>
<thead>
<tr>
<th>Horse Power</th>
<th>Draw Bar Pull</th>
<th>Speed Miles</th>
<th>Crank Shaft</th>
<th>Slippage</th>
<th>**</th>
<th>Fuel Consumption</th>
<th>Water Used</th>
<th>Temperature</th>
<th>Temperature</th>
<th>Average</th>
<th>Barometric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed</td>
<td>Founds</td>
<td>per Hour</td>
<td>R. P. M.</td>
<td>of Drive Wheels</td>
<td>%</td>
<td>Ind of Fuel Used</td>
<td>Amount Used</td>
<td>Horse Power</td>
<td>Deg. F.</td>
<td>Deg. F.</td>
<td>%</td>
</tr>
<tr>
<td>16.68</td>
<td>3036</td>
<td>2.06</td>
<td>540</td>
<td>8.9</td>
<td>Kero</td>
<td>2.662</td>
<td>6.27</td>
<td>2.75</td>
<td>186</td>
<td>74</td>
<td>55</td>
</tr>
<tr>
<td>22.90</td>
<td>4674</td>
<td>1.84</td>
<td>535</td>
<td>16.29</td>
<td>Kero</td>
<td>---- Not recorded----</td>
<td>182</td>
<td>78</td>
<td>54</td>
<td>28.7</td>
<td></td>
</tr>
<tr>
<td>21.22</td>
<td>2673</td>
<td>2.77</td>
<td>530</td>
<td>9.22</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>165</td>
<td>81</td>
<td>54</td>
<td>28.7</td>
</tr>
</tbody>
</table>

*Taken in discharge line from engine.

Remarks ** For computing slippage the circumference of the drive wheels was taken at points of lugs.

The rated load test and the first maximum test were made with the tractor in low gear. The second maximum test was made with the tractor in high gear.

Oil Consumption:

During the complete test consisting of about 35 hours running the following oil was used:

For the engine, 7 gallons of Mobilol B and 8-1/2 gal. of Veedol extra heavy.

For the transmission, added 1/2 gallons of 600 W and 1-3/4 gallon of used crank case oil.

Miscellaneous Tests: None.

Repairs and Adjustments. Endurance.

April 30. Put in new intake valves. The valves removed had been ground leaving shoulders. All valves were re-ground; push rods adjusted, breaker points on magneto adjusted; and new spark plugs put in. Spark plugs removed were dirty.

May 21. Clutch was adjusted.

May 22. At the end of the test the cylinder head was removed and the valves found to be in good condition. The gasoline line between pump and carburetor leaked.

With the exception noted above the tractor was apparently in good order at the end of the test and there was no indication of undue wear in any part nor of any weakness which might require early repairs.

Repairs and adjustments necessary during this test do not, in our opinion, indicate any mechanical defect of more than minor importance in this model of tractor.

General Remarks:

In the advertising literature submitted with the application for test of this tractor we find some statements and claims which cannot be directly compared with the results of the test as reported above. It is our opinion that none of these statements or claims are unreasonable or excessive except the following, statements quoted from their general catalog:

Page 6. "And the proper weight, plus proper distribution of weight gives 100 per cent traction even under adverse conditions."

Page 8. "-- the two cylinder, low speed engines are much better suited to tractor use than any other types now in use-- that the former show an advantage of approximately 20% greater drawbar efficiency."

Page 9. "Its record of .7 lbs. kerosene per brake horse power has not been equalled in public demonstrations by any other kerosene burning tractor, before or since."

"Take any official tests or demonstrations held since 1912-- figure the average on any and all tests and you will find that the Oil Pull not only hold the record for the best average and uniformity, on maximum power developed and low fuel consumption -- but that no tractor has yet demonstrated by consecutive tests its ability to rank second to the Oil Pull."

Page 13. "--our own and public tests have proved it to be without exception, the most efficient and economical system of oil combustion."

Page 14. "--All air going into the engine must first pass thru a patented air cleaner which removes all dirt and grit--".

We, the undersigned, certify the above is a true and correct report of Official Tractor Test No. 9.

Claude W. Smith
Engineer-in-Charge

Oscar W. Bracken

C. W. Smith

Board of Tractor Test Engineers.