January 1933

Test 213: Caterpillar Model 70

Tractor Museum

University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

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Copy of Report of Official Tractor Test No. 213

Dates of test: May 15 to June 6, 1933.
Name and model of tractor: "CATERPILLAR" "SEVENTY"
Manufacturer: Caterpillar Tractor Company, Peoria, Illinois.
Manufacturer's rating: NOT RATED.

Highest rating permissible under the recommendations of the A.S.A.E. and S.A.E. Tractor Rating Codes: Drawbar - 58.28 H.P., Belt - 77.44 H.P.
One carburetor setting (98.0% of maximum) was used throughout this test.

**BRAKE HORSEPOWER TESTS**

<table>
<thead>
<tr>
<th>H. P.</th>
<th>Crank shaft speed R.P.M.</th>
<th>Fuel Consumption</th>
<th>Water Consumption</th>
<th>Temp. Deg. F.</th>
<th>Barometer Inches of Mercury</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gal. per hr.</td>
<td>H. P. per gal.</td>
<td>Lb. per hr.</td>
<td>Cooling in fuel</td>
</tr>
<tr>
<td>82.40</td>
<td>700</td>
<td>9.598</td>
<td>8.60</td>
<td>0.724</td>
<td>3.002</td>
</tr>
<tr>
<td>77.58</td>
<td>700</td>
<td>9.541</td>
<td>8.13</td>
<td>0.756</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*VARYING LOAD TEST. TWO HOURS*

<table>
<thead>
<tr>
<th>H. P.</th>
<th>Crank shaft speed R.P.M.</th>
<th>Fuel Consumption</th>
<th>Water Consumption</th>
<th>Temp. Deg. F.</th>
<th>Barometer Inches of Mercury</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gal. per hr.</td>
<td>H. P. per gal.</td>
<td>Lb. per hr.</td>
<td>Cooling in fuel</td>
</tr>
<tr>
<td>77.52</td>
<td>700</td>
<td>9.541</td>
<td>8.12</td>
<td>0.757</td>
<td>--</td>
</tr>
<tr>
<td>1.07</td>
<td>740</td>
<td>4.117</td>
<td>0.26</td>
<td>23.664</td>
<td>--</td>
</tr>
<tr>
<td>40.61</td>
<td>728</td>
<td>6.522</td>
<td>6.23</td>
<td>0.988</td>
<td>--</td>
</tr>
<tr>
<td>82.49</td>
<td>681</td>
<td>8.898</td>
<td>8.33</td>
<td>0.738</td>
<td>--</td>
</tr>
<tr>
<td>20.76</td>
<td>735</td>
<td>5.278</td>
<td>3.94</td>
<td>1.562</td>
<td>--</td>
</tr>
<tr>
<td>59.63</td>
<td>714</td>
<td>7.685</td>
<td>7.86</td>
<td>0.782</td>
<td>--</td>
</tr>
<tr>
<td>47.36</td>
<td>716</td>
<td>7.157</td>
<td>6.70</td>
<td>0.918</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*20 minute runs. Last line is average for two hours.

**DRAWBAR HORSEPOWER TESTS**

<table>
<thead>
<tr>
<th>H. P.</th>
<th>Drawbar pull pounds hr.</th>
<th>Speed miles per hour</th>
<th>Crankshaft on speed drive %</th>
<th>Fuel Consumption</th>
<th>Water used</th>
<th>Temp. Deg. F.</th>
<th>Barometer Inches of Mercury</th>
</tr>
</thead>
<tbody>
<tr>
<td>58.46</td>
<td>9632</td>
<td>2.28</td>
<td>0.75</td>
<td>8.730</td>
<td>6.70</td>
<td>0.918</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**MAXIMUM LOAD TEST**

<table>
<thead>
<tr>
<th>H. P.</th>
<th>Drawbar pull pounds hr.</th>
<th>Speed miles per hour</th>
<th>Crankshaft on speed drive %</th>
<th>Fuel Consumption</th>
<th>Water used</th>
<th>Temp. Deg. F.</th>
<th>Barometer Inches of Mercury</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.73</td>
<td>16786</td>
<td>1.62</td>
<td>700</td>
<td>2.17</td>
<td>--</td>
<td>Not Recorded</td>
<td>--</td>
</tr>
<tr>
<td>71.38</td>
<td>11790</td>
<td>2.27</td>
<td>701</td>
<td>1.22</td>
<td>--</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>67.86</td>
<td>9528</td>
<td>2.67</td>
<td>702</td>
<td>1.19</td>
<td>--</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>67.39</td>
<td>8228</td>
<td>3.09</td>
<td>697</td>
<td>0.56</td>
<td>--</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>63.55</td>
<td>6453</td>
<td>3.69</td>
<td>699</td>
<td>0.50</td>
<td>--</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>59.29</td>
<td>4403</td>
<td>5.05</td>
<td>702</td>
<td>0.38</td>
<td>--</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
</tbody>
</table>
UNIVERSITY OF NEBRASKA * AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 213

BRIEF SPECIFICATIONS

MOTOR:  Make Own  Serial No. 8 D 39  Type 4 cylinder, vertical

Head I Mounting lengthwise

Bore and stroke: 7" x 8 1/2"  Rated R.P.M. 700

Port Dia. Valves: Inlet 2 5/16" Exhaust 2 5/16"

Belt pulley: Diam. 15"  Face 11"  R.P.M. 700

Magneto: Eisemann  Model G V 4

Carburetor: Ensign  Model K e B  Size 1 3/4"

Governor: Own  No. None  Type Centrifugal

Air Cleaner: Own under Vortox patents  Type Combination centrifugal, oil and matted wire.

Lubrication: Pressure

CHASSIS:  Type Tracklayer  Serial No. 8 D 39  Drive Enclosed gear

Clutch Own  Type single plate - dry  Operated by hand

Advertised speeds, miles per hour: First 1.7  Second 2.3  Third 2.7

Fourth 3.1  Fifth 3.7  Sixth 5.0  Reverse 1.7 and 2.7

Measured length of track 25,371 feet  Face 18 inches

Lugs: Type Cleats integral with shoe No. per track 38  Size 18" x 2 1/2"

Extension rims: None

Seat: Upholstered

Total weight as tested (with operator) 30,800 pounds.

FUEL AND OIL:

Fuel: Gasoline  Weight per gallon 6.15 pounds

Oil: S.A.E. Viscosity No. 40  The oil was drained once at the end of the test

Total oil to motor 7.351 gallons

Total drained from motor 4,814 gallons

Total time motor was operated 51 hours
REPAIRS AND ADJUSTMENTS

The exhaust valve spring on #2 cylinder failed at the end of the rated load drawbar test after 51 hours of operation.

REMARKS

The tests herein reported were conducted with one carburetor setting which remained unchanged throughout the tests. This condition should be recognized when comparing this test with any Nebraska test conducted prior to 1928.

The track and lug equipment used in the drawbar tests is the same as that described on page 2 of this report.

In the advertising literature submitted with the specifications and application for test of this tractor we find no claims and statements which, in our opinion, are unreasonable or excessive.

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 213.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis
Board of Tractor Test Engineers