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Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.
Larsen

January 1932

Test 205: Caterpillar Model 20

Tractor Museum

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 205

Dates of test: May 20 to June 22, 1932.

Name and model of tractor: CATERPILLAR "20"

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 - 17.96 H.P. Bolt - 24.60 H.P. One carburetor setting (97.7% of maximum) was used throughout this test.

B R A K E H O R S E P O W E R T E S T S

| H. P. | :Crank : :shaft : | Fuel Consumption : Gals. : H.P. : Lbs. @ | : Water consumption : per hour gallons | : Temp. : : Deg. F. : | : Barometer |
|----------|----------------------------|---|---|--------------------------|--------------------------|
| :speed : | : R.P.M. : : per hour : | : hrs. @ H.P. : : gal. : hour : | : Cool- : : In : : fuel : Total | : Cool- : : ing : Air | : Inches of : Mercury |
| : | : | : | : | : med. : : | : |

OPERATING MAXIMUM LOAD TEST. ONE HOUR

27.43 : 1251 : 2.887 : 9.50 : 0.641 : 0.00 : 0.00 : 0.00 : 181 : 68 : 29.125

RATED LOAD TEST. ONE HOUR

24.26 : 1249 : 2.583 : 9.39 : 0.648 : 0.00 : 0.00 : 0.00 : 185 : 67 : 29.105

*VARYING LOAD TEST. TWO HOURS

24.42 : 1250 : 2.606 : 9.37 : 0.650 : -- : -- : -- : 184 : 68 : --
 0.72 : 1343 : 1.241 : 0.58 : 10.500 : -- : -- : -- : 170 : 66 : --
 12.63 : 1320 : 1.852 : 6.82 : 0.893 : -- : -- : -- : 173 : 66 : --
 25.42 : 1181 : 2.744 : 9.26 : 0.657 : -- : -- : -- : 183 : 65 : --
 6.22 : 1323 : 1.488 : 4.18 : 1.457 : -- : -- : -- : 178 : 66 : --
 18.41 : 1288 : 2.177 : 8.46 : 0.720 : -- : -- : -- : 181 : 66 : --
 15.07 : 1284 : 2.018 : 7.47 : 0.816 : 0.00 : 0.00 : 0.00 : 178 : 66 : 29.095

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

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 :Speed :Crank :Slip : Fuel Consumption :Water: Temp. : | :Bar :miles :shaft :on : H.P. : Lbs. :used: : Barometer | :pull :per :speed :drive :Gal. : hr. : per :Gal. :Cool-: Air:Inches of | :pounds:hour :R.P.M. :wheels:per : per : H.P. :per :ing : : Mercury | : : : : % :hour : gal. :hour :hour:med. : : : |
|------|--|---|--|---|---|
|------|--|---|--|---|---|

RATED LOAD TEST. TEN HOURS. SECOND GEAR.

18.23 : 2668 : 2.56 : 1251 : 1.36 : 2.481 : 7.35 : 0.826 : 0.00 : 178 : 82 : 28.700

MAXIMUM LOAD TEST

21.88 : 4252 : 1.93 : 1248 : 2.91 : ----- : Not Recorded----- : 185 : 95 : 28.720
 22.18 : 3267 : 2.55 : 1252 : 1.81 : ----- : " " ----- : 183 : 87 : 28.720
 20.80 : 2207 : 3.53 : 1251 : 1.19 : ----- : " " ----- : 181 : 94 : 28.705

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 8 C 1 Type 4 Cylinder, Vortical
Head L Mounting Lengthwise
Bore and stroke: 3 3/4" x 5" Rated R.P.M. 1250
Port Dia. Valves: Inlet 1 1/2" Exhaust 1 5/16"
Belt pulley: Diam. 10 1/2" Face 6 1/2" R.P.M. 950
Magneto: Eisemann Model G V 4
Carburetor: Ensign Model B e V Size 1"
Governor: Own No. None Type Flyball
Air Cleaner: Own under Vortex patents Type Centrifugal, oil and matted/
wire
Lubrication: Pressure

CHASSIS: Type Tracklayer Serial No. 8 C 1 Drive Enclosed gear
Clutch: Own Type Single plate - dry operated by foot pedal
Advertised speeds, miles per hour: Low 2.0
Intermediate 2.6 High 3.6 Reverse 2.1
Measured length of track 15.420 feet Face 10 inches
Lugs: Type Cloats integral with shoes No. per track 30 Size 10" x 1 3/4"
Extension rims: None
Seat: Upholstered
Total weight as tested (with operator) 6325 pounds.

FUEL AND OIL: Gasoline Weight per gallon 6.09 pounds on brake tests
6.07 pounds on drawbar tests
Oil: S.A.E. Viscosity No. 50 The oil was drained once -
at the end of the test.
Total oil to motor 2.473 gallons
Total drained from motor 2.403 gallons
Total time motor was operated 41 hours

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

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. 205.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis
Board of Tractor Test Engineers