January 1932

Test 204: Caterpiller Model 50

Nebraska Tractor Test Lab
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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 204

Dates of test: May 18 to June 11, 1932.
Name and model of tractor: CATERPILLAR "50"
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 - 38.96 H.P. Belt - 51.64 H.P.
One carburetor setting (98.0% of maximum) was used thruout 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 speed R.P.M.	Fuel Consumption: Gals. per hour	Fuel Consumption: H. P. hrs. @ gal.	Fuel Consumption: Lbs. @ H.P. hour	Water consumption per hour gallons: Cooling	Water consumption per hour gallons: In fuel	Water consumption per hour gallons: Total	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
OPERATING MAXIMUM LOAD TEST. ONE HOUR										
56.14	850	6.709	8.37	0.728	0.00	0.00	0.00	198	87	28.615
RATED LOAD TEST. ONE HOUR										
51.75	850	5.990	8.64	0.705	0.00	0.00	0.00	196	89	28.580
*VARYING LOAD TEST. TWO HOURS										
51.52	849	5.961	8.64	0.705	--	--	--	197	89	--
0.50	902	2.468	0.20	30.060	--	--	--	183	90	--
25.54	871	3.941	6.73	0.904	--	--	--	190	89	--
53.98	822	6.458	8.36	0.729	--	--	--	203	88	--
13.88	896	3.133	4.43	1.375	--	--	--	190	88	--
39.38	866	4.921	8.00	0.761	--	--	--	192	88	--
31.64	868	4.480	7.06	0.862	0.00	0.00	0.00	192	88	28.545

*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 bar pull pounds	Speed miles per hour	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption: Gal. per hour	Fuel Consumption: H. P. hr. per gal.	Fuel Consumption: Lbs. per H.P. hour	Water used Gal. per hour	Temp.: Cool-ing med.	Temp.: Air	Barometer Inches of Mercury
RATED LOAD TEST. TEN HOURS. SECOND GEAR.											
39.23	6070	2.42	850	1.34	5.718	6.86	0.887	0.00	179	80	28.750
MAXIMUM LOAD TEST											
49.30	12061	1.53	850	2.86	-----	Not Recorded	-----		186	84	28.650
48.15	7457	2.42	849	1.26	-----	" "	-----		184	85	28.645
44.80	4996	3.36	849	1.09	-----	" "	-----		185	85	28.670
41.28	3337	4.64	849	0.83	-----	" "	-----		180	87	28.670

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 5 A 98 Type 4 Cylinder, Vertical

Head I Mounting Lengthwise

Bore and stroke: 5 1/2" x 6 1/2" Rated R.P.M. 850

Port Dia. Valves: Inlet 1 7/8" Exhaust 2"

Belt pulley: Diam. 13 3/8" Face 10" R.P.M. 753

Magneto: Eisemann Model G V 4

Carburetor: Ensign Model K o Size 1 1/2"

Governor: Own No. None Type Flyball

Air Cleaner: Own under Vortox patents Type Centrifugal, oil and matted wire

Lubrication: Pressure

CHASSIS: Type Tracklayer Serial No. 5 A 98 Drive Enclosed gear

Clutch: Own Type Single plate - dry operated by hand lever

Advertised speeds, miles per hour: First 1.6 Second 2.4

Third 3.4 Fourth 4.7 Reverse 1.9

Measured length of track: 22.009 feet Face 15 inches

Lugs: Type Cleats integral with shoe No. per track 35 Size 15" x 2"

Extension rims: None

Seat: Upholstered

Total weight as tested (with operator) 18,245 pounds.

FUEL AND OIL:

Fuel: Gasoline Weight per gallon 6.00 pounds

Oil: S. A. E. Viscosity No. 50 The oil was drained once - at the end of the test.

Total oil to motor 6.474 gallons

Total drained from motor 5.839 gallons

Total time motor was operated 67 hours

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REPAIRS AND ADJUSTMENTS

During the maximum drawbar tests a valve push rod tube yoke was found to be loose. This was tightened.

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. 204.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis
Board of Tractor Test Engineers