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January 1933

Test 213: Caterpillar Model 70

Tractor Museum

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

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.

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			Water Consumption per hour gallons			Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H.P. hr.	Cool- ing	In fuel	Total	Cool- ing med.	Air	

OPERATING MAXIMUM LOAD TEST. ONE HOUR

82.40	700	9.698	8.50	0.724	3.002	0.000	3.002	213	104	28.695
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RATED LOAD TEST. ONE HOUR

77.58	700	9.541	8.13	0.756	0.000	0.000	0.000	177	72	28.900
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*VARYING LOAD TEST. TWO HOURS

77.52	700	9.541	8.12	0.757	--	--	--	178	73	--
1.07	740	4.117	0.26	23.664	--	--	--	162	75	--
40.61	728	6.522	6.23	0.988	--	--	--	174	78	--
82.49	681	8.898	8.33	0.738	--	--	--	193	77	--
20.78	735	5.278	3.94	1.562	--	--	--	179	80	--
59.63	714	7.585	7.86	0.782	--	--	--	174	80	--
47.96	716	7.157	6.70	0.918	0.000	0.000	0.000	176	77	28.910

*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 hr.	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hr.	H. P. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	

RATED LOAD TEST. TEN HOURS. SECOND GEAR.

58.46	9632	2.28	700	0.75	8.730	6.70	0.918	0.000	174	74	28.780
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MAXIMUM LOAD TEST

72.73	16796	1.62	700	2.17	-----	Not Recorded	-----	-----	173	78	28.720
71.38	11790	2.27	701	1.22	-----	"	"	-----	172	83	28.710
67.85	9528	2.67	702	1.19	-----	"	"	-----	178	86	28.665
67.89	8228	3.09	697	0.56	-----	"	"	-----	208	107	28.565
63.55	6453	3.69	699	0.50	-----	"	"	-----	179	89	28.650
59.29	4403	5.05	702	0.38	-----	"	"	-----	175	89	28.635

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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 Vortex 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

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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