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January 1933

Test 218: Caterpillar "Diesel 75"

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 218

Dates of test: October 10 to 31, 1933.
 Name and model of tractor: "CATERPILLAR" "DIESEL SEVENTY-FIVE"
 Manufacturer: Caterpillar Tractor Company, Peoria, Illinois.
 Manufacturer's rating: Drawbar - 82.00 H.P. Maximum, 2nd Gear, Standard Conditions.
 Belt - Not Rated.
 Highest rating permissible under the recommendations of the A.S.A.E. and
 S.A.E. Tractor Rating Codes: Drawbar - 62.18 H.P. Belt - 83.22 H.P.
 One fuel pump setting to develop the maximum specified by the manufacturer 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 :	Fuel Consumption	: Water consumption	: Temp.	:
		:Gals. :H. P. :Lbs. @:	: per hour gallons	: Deg. F.	: Barometer
		:speed :R.P.M.:	: Cool- : In :	: Cool-:	: Inches of
		: per :hrs. @:H.P. :	: ing : fuel :Total :	: ing : Air :	: Mercury
		: : hour :gal. :hour :	: : : : : : : :	: med. : :	: :

OPERATING MAXIMUM LOAD TEST. ONE HOUR

92.85	: 820	: 6.509	: 14.26	: 0.510	: 0.000	: 0.000	: 0.000	: 186	: 76	: 28.795
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RATED LOAD TEST. ONE HOUR

83.34	: 819	: 5.700	: 14.62	: 0.497	: 0.000	: 0.000	: 0.000	: 188	: 87	: 28.765
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*VARYING LOAD TEST. TWO HOURS

83.53	: 819	: 5.691	: 14.68	: 0.495	: --	: --	: --	: 189	: 88	: --
1.01	: 882	: 1.836	: 0.55	: 13.218	: --	: --	: --	: 160	: 87	: --
43.18	: 845	: 3.594	: 12.01	: 0.605	: --	: --	: --	: 165	: 87	: --
88.18	: 801	: 6.099	: 14.46	: 0.503	: --	: --	: --	: 189	: 88	: --
22.27	: 863	: 2.695	: 8.26	: 0.880	: --	: --	: --	: 165	: 88	: --
63.27	: 833	: 4.502	: 14.05	: 0.517	: --	: --	: --	: 171	: 88	: --
51.39	: 840	: 4.069	: 12.63	: 0.576	: 0.000	: 0.000	: 0.000	: 173	: 87	: 28.755

*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. : hour :per	: Gal. :Cool-:	: Air:	: Inches of
	: pounds :hour :R.P.M.:	: wheels:per : per	: H.P. :per	: ing :	: Mercury
	: : : : %	: hour :gal. :hour	: hour :hour	: med. :	: :

RATED LOAD TEST. TEN HOURS. SECOND GEAR.

63.62	: 10455	: 2.28	: 820	: 1.19	: 5.167	: 12.31	: 0.590	: 0.000	: 170	: 76	: 28.625
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MAXIMUM LOAD TEST

80.51	: 18697	: 1.61	: 820	: 3.24	: -----: Not Recorded:-----:		: 160	: 55	: 28.800
80.57	: 13334	: 2.27	: 820	: 1.87	: -----: " " :-----:		: 160	: 52	: 28.850
77.96	: 10985	: 2.66	: 821	: 1.65	: -----: " " :-----:		: 164	: 60	: 28.810
76.89	: 9311	: 3.10	: 821	: 1.16	: -----: " " :-----:		: 160	: 50	: 28.770
72.88	: 7346	: 3.72	: 823	: 1.14	: -----: " " :-----:		: 170	: 64	: 28.600
69.72	: 5196	: 5.03	: 820	: 0.01	: -----: " " :-----:		: 166	: 68	: 28.600

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 2 E 111 Type 6 Cylinder, Vertical, Diesel
Head I Mounting Lengthwise
Bore and stroke: 5 1/4" x 8" Rated R.P.M. 820
Port Dia. Valves: Inlet 2 1/16" Exhaust 2 1/16"
Belt pulley: Diam. 14 7/16" Face 13" R.P.M. 820
Fuel System: Own
Governor: Own No. None Type Centrifugal Flyball
Air Cleaner: Vortex Type Combination Centrifugal oil and matted wire
Lubrication: Pressure

CHASSIS: Type Tracklayer Serial No. 2 E 111 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 - 2.7
Measured length of track 25.3508 feet Face 18 inches
Lugs: Type Cleats integral with shoes No. per track 38 Size 18" x 2 1/2"
Extension rims: None
Seat: Upholstered
Total weight as tested (with operator) 32,050 pounds

FUEL AND OIL:

Fuel: Fuel Oil Weight per gallon 7.27 pounds
Oil: S.A.E. Viscosity No. 40
Total oil to motor 7.522 gallons The oil was drained once -
Total drained from motor 5.356 gallons at the end of the test.
Total time motor was operated 57 1/2 hours

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

The tests herein reported were conducted with one fuel pump 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. 218.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis
Board of Tractor Test Engineers