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January 1933

Test 214: Caterpillar "Diesel 50"

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

CORRECTED

Copy of Report of Official Tractor Test No. 214

Dates of test: May 17 to June 2, 1933.

Name and model of tractor: "CATERPILLAR" "DIESEL FIFTY"

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 - 40.12 H.P. Bolt - 55.74 H.P.

One fuel pump setting (100% 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:	Fuel Consumption	: Water Consumption :	Temp. :
: shaft:	Gals. :	H. P. :	per hour gallons :	Deg. F.:
: speed:	R.P.M. per	Lbs. per:	Cool- : In :	Cool-: Inches of
: R.P.M. per	hour :	H. P.:	ing : fuel :Total:	ing :Air:Mercury
:	hour :	gal. :	hour :	: med. : :

OPERATING MAXIMUM LOAD TEST. ONE HOUR

61.26 : 851 : 4.567 : 13.41 : 0.537 : 0.000:0.000 :0.000: 181 : 79: 28.440

RATED LOAD TEST. ONE HOUR

55.66 : 851 : 3.942 : 14.12 : 0.510 : 0.000:0.000 :0.000: 173 : 81: 28.470

*VARYING LOAD TEST. TWO HOURS

55.50	: 851	: 3.908	: 14.20	: 0.507	: --	: --	: --	: 173	: 83:	--
0.44	: 928	: 1.263	: 0.35	: 20.659	: --	: --	: --	: 163	: 78:	--
29.19	: 888	: 2.458	: 11.88	: 0.606	: --	: --	: --	: 162	: 80:	--
58.72	: 836	: 4.217	: 13.92	: 0.517	: --	: --	: --	: 175	: 82:	--
15.93	: 905	: 1.938	: 8.22	: 0.876	: --	: --	: --	: 173	: 81:	--
42.61	: 866	: 3.083	: 13.80	: 0.522	: --	: --	: --	: 171	: 81:	--
34.57	: 879	: 2.812	: 12.29	: 0.586	: 0.000:0.000	: 0.000	: 0.000	: 169	: 81:	28.490

*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. :
: pounds:	hour :	R.P.M.:	wheels:	per :	per :	H.P. :	per :
:	:	:	% :	hour :	gal. :	hour :	hour :

RATED LOAD TEST. TEN HOURS. SECOND GEAR.

40.17 : 6160 : 2.45: 851 : 0.71:3.568: 11.26:0.640 :0.000: 169 : 77: 28.790

MAXIMUM LOAD TEST

52.61	: 12765:	1.55:	848	: 2.42:-----:	Not Recorded:	-----:	182	: 90:	28.880
50.08	: 7751:	2.42:	847	: 1.05:-----:	" "	-----:	186	: 91:	28.950
46.51	: 5145:	3.39:	852	: 0.81:-----:	" "	-----:	181	: 91:	28.850
41.04	: 3305:	4.66:	846	: 0.38:-----:	" "	-----:	180	: 91:	28.830

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 1 E 50 Type 4 Cylinder, Vertical, Diesel
Head I Mounting Lengthwise
Bore and stroke: 5 1/4" x 8" Rated R.P.M. 850
Port Diam. Valves: Inlet 2 1/16" Exhaust 2 1/16"
Belt pulley: Diam. 13 3/8" Face 10" R.P.M. 753
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. 1 E 50 Drive Enclosed gear
Clutch: Own Type Single plate dry Operated by hand
Advertised speeds, miles per hour: First 1.6 Second 2.4
Third 3.4 Fourth 4.7 Reverse 1.9
Measured length of track 22.066 feet Face 18 inches
Lugs: Type Cloats integral with shoes No. per track 35 Size 18" x 2"
Extension rims: None
Seat: Upholstered
Total weight as tested (with operator) 20125 pounds.

FUEL AND OIL:

Fuel: Fuel Oil Weight per gallon 7.20 pounds
Oil: S.A.E. Viscosity No. 40 The Oil was drained once - at
the end of the test.
Total oil to motor 5.282 gal
Total drained from motor 3.804 gal
Total time motor was operated 35 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. 214 .

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis
Board of Tractor Test Engineers