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January 1935

Test 240: Caterpillar Model 50 (Diesel)

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. 240

Dates of test: August 19 to 29, 1935.

Name and model of tractor: CATERPILLAR DIESEL FIFTY

Manufacturer: Caterpillar Tractor Co., Peoria, Ill.

Manufacturer's rating: 56 Drawbar Horsepower Maximum in 2nd gear (standard conditions)

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	: H. P. :	Lbs. per :	Cool- : In :	Water Consumption : per hour gallons	: Deg. F. :	Temp. : :Barometer	:Cool-: :Inches of	:Air:Mercury
:	:R.P.M. per :	:Hrs. per :	H. P. :	ing :	fuel : Total :	:ing :	:med. :	:	:	:
:	: hour :	: Gal. :	: hour :	:	:	:	:	:	:	:

TESTS B AND C 100% MAXIMUM LOAD. TWO HOURS

61.04	:	850	:	4.139	:	14.75	:	0.474	:	0.000	:	0.000	:	0.000	:	161	:	60	:	28.940
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TEST D RATED LOAD. ONE HOUR

54.30	:	851	:	3.813	:	14.24	:	0.491	:	0.000	:	0.000	:	0.000	:	161	:	61	:	28.955
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TEST E *VARYING LOAD. TWO HOURS

54.27	:	852	:	3.798	:	14.29	:	0.489	:	--	:	--	:	--	:	161	:	61	:	--
0.70	:	943	:	1.498	:	0.47	:	14.957	:	--	:	--	:	--	:	157	:	60	:	--
28.85	:	900	:	2.472	:	11.67	:	0.599	:	--	:	--	:	--	:	158	:	61	:	--
59.88	:	840	:	4.279	:	13.99	:	0.499	:	--	:	--	:	--	:	160	:	61	:	--
14.84	:	907	:	1.944	:	7.63	:	9.158	:	--	:	--	:	--	:	158	:	60	:	--
41.59	:	874	:	3.137	:	13.26	:	0.527	:	--	:	--	:	--	:	159	:	62	:	--
34.33	:	886	:	2.855	:	12.02	:	0.581	:	0.000	:	0.000	:	0.000	:	159	:	61	:	28.955

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

TESTS F AND G MAXIMUM LOAD,

50.57	:	13109	:	1.45	:	845	:	7.68	:	-----Not Recorded-----	:	166	:	81	:	28.910
52.99	:	8268	:	2.40	:	850	:	1.92	:	-----"-----	:	166	:	84	:	28.805
51.32	:	5745	:	3.35	:	850	:	1.32	:	-----"-----	:	165	:	81	:	28.800
47.96	:	3877	:	4.64	:	850	:	0.99	:	-----"-----	:	165	:	79	:	28.800

TEST H RATED LOAD. TEN HOURS Second GEAR.

42.32	:	6591	:	2.41	:	851	:	1.98	:	3.507	:	12.07	:	0.579	:	0.000	:	160	:	61	:	28.945
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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLNCopy of Report of Official Tractor Test No. 240BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 5E7522 Type 4 cylinder, vertical diesel
 Head I Mounting Crankshaft lengthwise
 Bore and stroke: 5 3/4" 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. 752
 Fuel System: Own
 Governor: Own No. None Type Centrifugal
 Air Cleaner: Donaldson Type Combination oil and wire screen labyrinth
 Lubrication: Pressure

CHASSIS: Type Track layer Serial No. 5E7522 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 21.9113 feet Face 18"
 Lugs: Type Cleats integral with shoes No. per track 35
 Size 18" x 2 1/8"
 Seat Upholstered
 Total weight as tested (with operator) 20790 pounds.

FUEL AND OIL:

Fuel: Dieseline Weight per gallon 6.99
 Oil: S.A.E. Viscosity No. 40 The oil was drained
 once - at the end of
 Total oil to motor 4.360 gallons the test.
 Total drained from motor 4.062 gallons
 Total time motor was operated 48 hours

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 240

REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

All results shown on page 1 of this report were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with the fuel pumps set to deliver 56 drawbar horsepower maximum in second gear, under standard conditions. These figures were used in determining the ratings recommended by the A.S.A.E. and S.A.E. tractor rating codes. Tests C, D, E, G and H were made with the same setting.

Observed maximum horsepower (tests B & F) Drawbar 52.99 Belt 61.04

Sea level (calculated) maximum horsepower Drawbar 56.28 Belt 63.12
 (Based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings Drawbar 42.21 Belt 53.65
 (As recommended by A.S.A.E. and S.A.E. codes)

The 100% maximum belt and drawbar tests were not included in reports issued from 1928 to 1934 inclusive, except in those cases where the 100% maximum setting was used throughout the complete test.

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 240

Carlton L. Zink

 Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis
