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January 1935

## Test 244: Caterpillar Model 40

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. 244

Dates of test: September 16 to 20, 1935.  
Name and model of tractor: CATERPILLAR "FORTY"  
Manufacturer: Caterpillar Tractor Company, Peoria, Ill.  
Manufacturer's rating: NOT RATED.

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. :	:	:	:	:
	speed :	Gals. :	H.P. :	Lbs. Per :	Cool- :	In :	Cool- :	Inches of	Barometer	
	:R.P.M.:	per	hrs.per:	H.P. :	ing	fuel :	Total :	ing	Air:	Mercury
	:	hour	Gal. :	hour	:	:	:	med.:	:	:

TEST B 100% MAXIMUM LOAD. TWO HOURS

48.57 : 850 : 5.943 : 8.17 : 0.755 : 0.000 : 0.000 : 0.000 : 175 : 80 : 28.745

TEST C OPERATING MAXIMUM LOAD. ONE HOUR

47.27 : 850 : 5.172 : 9.14 : 0.675 : 0.000 : 0.000 : 0.000 : 174 : 75 : 28.750

TEST D RATED LOAD. ONE HOUR

43.95 : 850 : 4.757 : 9.24 : 0.668 : 0.000 : 0.000 : 0.000 : 168 : 75 : 28.750

TEST E \*VARYING LOAD. TWO HOURS

44.05 : 852 : 4.765 : 9.24 : 0.667 : -- : -- : -- : 171 : 77 : --

0.69 : 914 : 1.959 : 0.35 : 17.522 : -- : -- : -- : 155 : 76 : --

22.96 : 896 : 3.399 : 6.76 : 0.913 : -- : -- : -- : 155 : 79 : --

46.43 : 826 : 5.071 : 9.16 : 0.674 : -- : -- : -- : 171 : 79 : --

11.92 : 904 : 2.742 : 4.35 : 1.419 : -- : -- : -- : 162 : 81 : --

33.23 : 870 : 4.065 : 8.17 : 0.755 : -- : -- : -- : 160 : 81 : --

26.55 : 875 : 3.667 : 7.24 : 0.852 : 0.000 : 0.000 : 0.000 : 163 : 78 : 28.760

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

TEST F 100% MAXIMUM LOAD. Second GEAR.

41.78 : 6436 : 2.41 : 851 : 2.57:-----Not Recorded-----: 172 : 79 : 28.805

TEST G OPERATING MAXIMUM LOAD

40.57 : 9496 : 1.60 : 850 : 5.03:-----Not Recorded-----: 190 : 95 : 28.740

40.67 : 6321 : 2.42 : 850 : 2.57:-----" "-----: 174 : 77 : 28.825

39.22 : 4613 : 3.19 : 850 : 1.65:-----" "-----: 181 : 83 : 28.805

37.43 : 3086 : 4.55 : 851 : 0.97:-----" "-----: 176 : 88 : 28.770

TEST H RATED LOAD. TEN HOURS. Second GEAR.

33.25 : 5151 : 2.42 : 850 : 2.23:4.544: 7.32 :0.843 :0.000:177 : 82 : 28.730

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BRIEF SPECIFICATIONS

Motor: Make Own Serial No. 5G278 Type 4 cylinder vertical  
 Head I Mounting crankshaft lengthwise  
 Bore and stroke: 5 1/8" x 6 1/2" Rated R. P. M. 850  
 Port Diam. Valves: Inlet 1 5/8" Exhaust 1 5/8"  
 Belt pulley: Diam. 12" Face 8 1/2" R. P. M. 850  
 Magneto: Eisemann Model C-T-4  
 Carburetor: Ensign Model K-3 Size 1 1/4"  
 Governor: Own No. None Type Centrifugal  
 Air Cleaner: Donaldson Type Combination oil and Centrifugal-wire  
screen labyrinth  
 Lubrication: Pressure

CHASSIS: Type Tracklayer Serial No. 5G278 Drive Enclosed gear  
 Clutch: Own Type single plate-dry Operated by hand  
 Advertised speeds, miles per hour: First 1.7 Second 2.5  
 Third 3.2 Fourth 4.6 Reverse 1.9  
 Measured length of track 19.7173' Face 16"  
 Lugs: Type Cleats integral with shoes No. per track 35  
 Size 16" x 1 7/8"  
 Seat Upholstered  
 Total weight as tested (with operator) 13,625 pounds.

FUEL AND OIL:

Fuel: Gasoline Weight per gallon 6.17 Pounds.  
 Oil: S.A.E. No. 40 The oil was drained  
 once - at the end of  
 Total oil to motor 3.722 gallons the test.  
 Total drained from motor 3.176 gallons  
 Total time motor was operated 48 hours

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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 carburetor set for 100% maximum horsepower and 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 an operating setting of the carburetor (selected by the manufacturer) of 97.3% of maximum horsepower.

Observed maximum horsepower (tests B & F) Drawbar 41.78 Belt 48.57

Sea level (calculated) maximum horsepower Drawbar 44.19 Belt 51.53  
(Based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings Drawbar 33.14 Belt 43.80  
(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. 244.

Carlton L. Zink  
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis  
Board of Tractor Test Engineers