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January 1935

Test 245: Caterpillar Model 40

Nebraska Tractor Test Lab

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Copy of Report of Official Tractor Test No. 245

Dates of test: September 18 to 23, 1935.
Name and model of tractor: CATERPILLAR "FORTY"
Manufacturer: Caterpillar Tractor Co., 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 : : per hour gallons :	Temp. : : Deg. F. :	:Barometer
	:speed :	Gals. : H.P. :Lbs. Per:	Cool- : In :	:Cool-:	:Inches of
	: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

56.42	: 999	: 6.928	: 8.14	: 0.758	: 0.000	: 0.000	: 0.000	: 184	: 74	: 28.840
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TEST C OPERATING MAXIMUM LOAD. ONE HOUR

55.59	: 1000	: 5.511	: 10.09	: 0.612	: 0.000	: 0.000	: 0.000	: 186	: 72	: 28.890
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TEST D RATED LOAD. ONE HOUR

50.60	: 1000	: 5.212	: 9.71	: 0.636	: 0.000	: 0.000	: 0.000	: 170	: 66	: 28.895
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TEST E *VARYING LOAD. TWO HOURS

50.35	: 997	: 5.178	: 9.72	: 0.635	: --	: --	: --	: 168	: 64	: --
00.75	: 1044	: 2.100	: 0.36	: 17.280	: --	: --	: --	: 157	: 64	: --
26.24	: 1033	: 3.690	: 7.11	: 0.868	: --	: --	: --	: 156	: 65	: --
55.22	: 997	: 5.489	: 10.06	: 0.613	: --	: --	: --	: 166	: 64	: --
13.52	: 1033	: 2.888	: 4.68	: 1.318	: --	: --	: --	: 162	: 63	: --
38.73	: 1028	: 4.386	: 8.83	: 0.699	: --	: --	: --	: 158	: 62	: --
30.80	: 1022	: 3.950	: 7.80	: 0.791	: 0.000	: 0.000	: 0.000	: 161	: 64	: 28.880

*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	: Water:	Temp. :
	: pull :	per : : pounds:	speed : : R.P.M.:	drive: wheels:	Gal. : hour :	: per : : H.P. :	:Barometer
	: : hour :	: : hour :	: : R.P.M.:	: : wheels:	per : per :	: per : : H.P. :	:Inches of
	: : : :	: : % :	: : hour:	: : gal. :	: hour :	: hour :	:Mercury

TEST F 100% MAXIMUM LOAD. Second GEAR.

48.91	: 6436	: 2.85	: 1001	: 2.29	:-----Not Recorded-----			: 174	: 65	: 28.930
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TEST G OPERATING MAXIMUM LOAD

48.28	: 9466	: 1.91	: 1000	: 3.71	:-----Not Recorded-----			: 194	: 81	: 28.940
46.83	: 6162	: 2.85	: 1001	: 2.29	:-----"			: 163	: 56	: 28.915
45.94	: 4597	: 3.75	: 1000	: 1.69	:-----"			: 185	: 76	: 28.940
42.61	: 2982	: 5.36	: 1000	: 0.77	:-----"			: 193	: 85	: 28.940

TEST H RATED LOAD. TEN HOURS. Second GEAR.

38.56	: 5053	: 2.86	: 1000	: 1.81	: 5.140	: 7.50	: 0.822	: 0.000	: 191	: 84	: 28.817
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AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 245

BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 5G271 Type 4 cylinder vertical
Head I Mounting Crankshaft lengthwise
Bore and stroke: 5 1/8" x 6 1/2" Rated R. P. M. 1000
Port Diam. Valves: Inlet 1 5/8" Exhaust 1 5/8"
Belt pulley: Diam. 12" Face 8 1/2" R. P. M. 1000
Magneto: Eisemann Model CT-4
Carburetor: Zenith Model K-6-A Size 1 1/2"
Governor: Own No. None Type Centrifugal
Air Cleaner: Donaldson Type Combination oil and centrifugal-wire
screen labyrinth
Lubrication: Pressure

CHASSIS: Type Tracklayer Serial No. 5G271 Drive enclosed gear
Clutch: Own Type single-plate dry Operated by hand
Advertised speeds, miles per hour: First 2.0 Second 2.9
Third 3.8 Fourth 5.4 Reverse 2.2
Measured length of track 19.7253' 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
Total oil to motor 3.722 gallons
Total drained from motor 3.764 gallons
Total time motor was operated 40 hours

The Oil was
drained once -
at the end of
the test.

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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 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 98.5% of maximum horsepower.

Observed maximum horsepower (tests B & F) Drawbar 48.91 Belt 56.42

Sea level (calculated) maximum horsepower Drawbar 50.83 Belt 59.30
(Based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings Drawbar 38.12 Belt 50.41
(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. 245.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis

Board of Tractor test Engineers