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January 1936

Test 256: Caterpillar Model RD-8 (Diesel) 850 r. p. m.

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 256

Dates of test: May 7 to 19, 1936.

Name and model of tractor: CATERPILLAR DIESEL RD-8. (850 R.P.M.)

Manufacturer: Caterpillar Tractor Company, Peoria, Illinois.

Manufacturer's rating: 95 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	: Water Consumption :	Temp. :	: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 : :

TESTS B AND C 100% MAXIMUM LOAD. TWO HOURS

103.21	:	849	:	7.276	:	14.18	:	0.490	:	0.000	:	0.000	:	0.000	:	188	:	78	:	28.990
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TEST D RATED LOAD. ONE HOUR

92.15	:	849	:	6.394	:	14.41	:	0.482	:	0.000	:	0.000	:	0.000	:	191	:	88	:	28.935
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TEST E *VARYING LOAD. TWO HOURS

92.00	:	848	:	6.376	:	14.43	:	0.482	:	--	:	--	:	--	:	192	:	89	:	--
1.07	:	938	:	2.279	:	0.47	:	14.804	:	--	:	--	:	--	:	165	:	90	:	--
48.75	:	896	:	4.239	:	11.50	:	0.604	:	--	:	--	:	--	:	168	:	90	:	--
99.90	:	834	:	6.937	:	14.40	:	0.483	:	--	:	--	:	--	:	191	:	90	:	--
25.40	:	916	:	3.194	:	7.95	:	0.874	:	--	:	--	:	--	:	171	:	92	:	--
70.73	:	877	:	5.245	:	13.49	:	0.515	:	--	:	--	:	--	:	175	:	91	:	--
56.31	:	885	:	4.712	:	11.95	:	0.582	:	0.000	:	0.000	:	0.000	:	177	:	90	:	28.920

*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. :	:Barometer		
: pull :	per :	per :	:speed : :R.P.M.:	:drive: : :wheels:	Gal. : :per :	hour : :per :	Lbs. : :per :	:Gal. : :per :	Cool-: : :ing :	:Inches of :Air:Mercury
:	: pounds:	hour :	:	% :	hour:	gal. :	hour :	hour :	hour :	med. : :

TESTS F AND G MAXIMUM LOAD.

91.75	:	20485	:	1.68	:	849	:	2.86	:	-----Not Recorded-----	:	180	:	76	:	28.810
91.36	:	14529	:	2.36	:	852	:	1.86	:	-----"-----	:	179	:	71	:	28.830
90.92	:	12337	:	2.76	:	849	:	1.38	:	-----"-----	:	181	:	81	:	28.805
85.57	:	9968	:	3.22	:	850	:	1.03	:	-----"-----	:	191	:	85	:	28.745
82.63	:	8058	:	3.85	:	848	:	0.77	:	-----"-----	:	188	:	85	:	28.740
78.20	:	5594	:	5.24	:	851	:	0.68	:	-----"-----	:	185	:	88	:	28.730

TEST H RATED LOAD. TEN HOURS Second GEAR.

72.26	:	11465	:	2.36	:	851	:	1.54	:	6.014	:	12.02	:	0.578	:	0.000	:	170	:	70	:	28.930
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Corrected Copy of Report of Official Tractor Test No. 256

BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 1H425 Type 6 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. 14 1/4" Face 13" R. P. M. 720
Fuel System: Own
Governor: Own No. None Type Centrifugal
Air Cleaner: Donaldson Type Combination oil and wire-screen labyrinth
Lubrication: Pressure

CHASSIS: Type Tracklayer Serial No. 1H425 Drive Enclosed gear
Clutch Own Type Single-plate, dry Operated by Hand
Advertised speeds, miles per hour: First 1.7 Second 2.4 Third 2.8
Fourth 3.2 Fifth 3.9 Sixth 5.3 Reverse 1.7 - 2.8
Measured length of track 25.4011 feet Face 20"
Lugs: Type Cleats integral with shoes No. per wheel 38
Size 2 3/8" x 20"
Seat Upholstered
Total weight as tested (with operator) 33,690 pounds.

FUEL AND OIL:

Fuel: Dieseline Weight per gallon 6.95 pounds.
Oil S.A.E. Viscosity No. 30
Total oil to motor 7.357 gallons
Total drained from motor 5.957 gallons
Total time motor was operated 46 hours

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

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Copy of Report of Official Tractor Test No. 256

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 develop 95 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 91.36 Belt 103.21

Sea level (calculated) maximum horsepower Drawbar 95.84 Belt 108.37
 (Based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings Drawbar 71.88 Belt 92.11
 (As recommended by A.S.A.E. and S.A.E.
 codes)

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 256.

Carlton L. Zink
 Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
 Board of Tractor Test Engineers