January 1940

Test 340: Case Model DC

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. 340

Dates of test: April 18 to May 4, 1940.
Name and model of tractor: CASE DC
Manufacturer: J. I. Case Company, Racine, Wisconsin.
Manufacturer's rating: NOT RATED

B E L T H O R S E P O W E R T E S T S

H. P.	Crank shaft speed R.P.M.	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H. P. hr.		Cooling med.	Air	
TEST B - 100% MAXIMUM LOAD - TWO HOURS								
37.28	1100	3.401	10.96	0.550	0.000	186	63	28.950
TEST C - OPERATING MAXIMUM LOAD - ONE HOUR								
35.51	1100	2.927	12.13	0.497	0.000	187	61	28.895
*TEST D - ONE HOUR								
32.94	1099	2.728	12.07	0.499	0.000	183	64	28.915
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
32.75	1096	2.726	12.01	0.502	--	184	64	--
1.28	1236	1.179	1.09	5.555	--	161	63	--
17.60	1173	1.920	9.17	0.658	--	173	63	--
34.48	1070	2.841	12.14	0.497	--	190	62	--
8.92	1188	1.547	5.77	1.046	--	163	62	--
25.32	1119	2.299	11.01	0.547	--	172	64	--
20.06	1147	2.085	9.62	0.627	0.000	173	63	28.910

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 pull pounds	Speed miles per hr.	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hr.	H.P. hr. per gal.	Lb. per H.P. hr.		Cooling med.	Air	
TEST F - 100% MAXIMUM LOAD - Second - GEAR											
33.06	3616	3.43	1102	8.58	------ Not Recorded -----				186	55	28.875
TEST G - OPERATING MAXIMUM LOAD											
24.39	4128	2.22	1099	15.88	------ Not Recorded -----				172	54	28.955
31.30	3413	3.44	1100	8.12	------ " " -----				175	62	28.855
31.34	2395	4.91	1102	5.06	------ " " -----				183	71	28.800
28.70	1058	10.17	1103	2.51	------ " " -----				179	73	28.765
*TEST H - TEN HOURS - Second - GEAR											
25.74	2730	3.54	1099	5.46	2.578	9.98	0.604	0.000	192	67	28.860

*Formerly called RATED LOAD; see REMARKS 4, page 3.

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FUEL, OIL, AND TIME

Fuel Gasoline Octane 71 Weight per gallon 6.03 pounds

Oil: S.A.E. No. 20 To motor 3.038 gal. Drained from motor 2.316 gal.

Total time motor was operated 78 hours

BRIEF SPECIFICATIONS

Advertised speeds miles per hour: (Given for 9.00 x 36" tires only) First 2-1/2

Second 3-1/2 Third 5 Fourth 10 Reverse 2-3/4

Belt pulley: Diam. 11-3/4" Face 6-1/2" R.P.M. 846 Belt Speed 2600 f.p.m.

Clutch: Make Twin Disc Type Single Plate Operated by hand

Seat Pressed steel

Total weight as tested (with operator) 7010 pounds

MOTOR

Make Own Serial No. D4302471 Type 4 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 3-7/8" x 5-1/2" Rated R.P.M. 1100

Port diameter valves: Inlet 1-1/2" Exhaust 1-1/2"

Magneto: Make Own Serial No. 10334

Carburetor: Make Zenith Model 62AXJ9 Size 1-1/4"

Governor: Make Own Type Variable speed, centrifugal

Air Cleaner: Make Own Type Oil-washed wire screen

Oil Filter: None

Cooling medium temperature control: Pines radiator shutters

CHASSIS

Type Tricycle Serial No. D4302471 Drive Enclosed gear & chain

Tread width: Rear 48" - 84" Front 9-1/2"

Rear tires: No. 2 Size 11.25 x 36" - 6 ply Air pressure 16 pounds

Front tires: No. 2 Size 5.50 x 16" - 4 ply Air pressure 28 pounds

Added weight: Per rear wheel (Cast Iron 600 pounds
(Water 240 pounds

Per front wheel (Cast Iron 101 pounds
(Water None pounds

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REPAIRS AND ADJUSTMENTS

During the last few hours of the drawbar test H, intermittent missing developed. An inspection at the end of this test revealed an accumulation of lead oxide on the stems of the exhaust valves. The enlarged stems did not permit the valves to seat properly.

REMARKS

1. 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 belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, and H were made with an operating setting of the carburetor (selected by the manufacturer) of 95.3% of maximum belt horsepower.

	DRAWBAR	BELT
2. Observed maximum horsepower (tests F & B)	33.06	37.28
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	34.08	38.62
4. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings)	25.56	32.83

We, the undersigned, certify that the above is a true and correct report of offical tractor test No. 340.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers