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January 1940

Test 349: Case Model D

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Corrected Copy of Report of Official Tractor Test No. 349

Dates of test: June 18 to 27, 1940.

Name and model of tractor: CASE D

Manufacturer: J. I. Case Company, Racine, Wisconsin.

Manufacturer's rating: NOT RATED.

BELT HORSEPOWER TESTS

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.		Cool- ing med.	Air	

TEST B - 100% MAXIMUM LOAD - TWO HOURS

35.36	1200	3.308	10.69	0.549	0.000	205	82	28.855
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

33.45	1199	2.621	12.76	0.544	0.000	189	71	28.805
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*TEST D - ONE HOUR

31.87	1199	2.488	12.81	0.542	0.000	192	82	28.870
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

31.84	1199	2.494	12.77	0.544	---	192	82	---
2.66	1317	0.925	2.88	2.414	---	187	84	---
16.73	1254	1.586	10.55	0.658	---	183	85	---
29.84	1108	2.269	13.15	0.528	---	197	84	---
8.83	1321	1.236	7.14	0.972	---	194	87	---
24.36	1221	1.941	12.55	0.553	---	191	86	---
19.04	1237	1.742	10.93	0.635	0.000	190	84	28.850

DRAWBAR HORSEPOWER TESTS

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. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	

TEST F - 100% MAXIMUM LOAD - Second - GEAR

30.67	3091	3.72	1199	6.84	-----	Not recorded	-----	204	89	28.550
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TEST G - OPERATING MAXIMUM LOAD

26.78	4192	2.40	1200	14.88	-----	Not Recorded	-----	197	90	28.540
28.10	2807	3.75	1199	6.00	-----	Not Recorded	-----	199	87	28.530
27.57	1948	5.31	1200	3.53	-----	Not Recorded	-----	202	90	28.540
25.84	885	10.95	1200	1.42	-----	Not Recorded	-----	189	90	28.520

*TEST H - TEN HOURS - Second - GEAR

24.86	2465	3.78	1200	5.34	2.197	11.32	0.613	0.000	198	88	28.595
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*Formerly called RATED LOAD; see REMARKS 4, Page 3.

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FUEL, OIL, AND TIME

Fuel _____ Distillate _____ Octane _____ 38 _____ Weight per gallon 6.94 pounds

Oil: S.A.E. No. 30 _____ To motor 2.775 gal. _____ Drained from motor 1.154 gal. _____

Total time motor was operated _____ 60 _____ hours

BRIEF SPECIFICATIONS

Advertised speeds miles per hour: First _____ 2.75 _____ Second _____ 4.00 _____

Third _____ 5.50 _____ Fourth _____ 11.00 _____ Reverse _____ 3.08 _____

Belt Pulley: Diam. 10-1/4" _____ Face 6-1/2" _____ R.P.M. 1061.5 _____ Belt Speed 2849 f.p.m. _____

Clutch: Make Twin Disc _____ Type Single plate _____ Operated by _____ hand _____

Seat _____ Pressed Steel _____

Total weight as tested (with operator) _____ 7005 _____ pounds

MOTOR

Make _____ Own _____ Serial No. D4401035 _____ 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. _____ 1200 _____

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

Magneto: Make _____ Own _____ Serial No. X4498 _____

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: Dole thermostat and Pines radiator shutters _____

CHASSIS

Type _____ Standard _____ Serial No. D4401035 _____ Drive _____ Enclosed gear and chain _____

Tread width: Rear _____ 50-1/2" _____ Front _____ 48" _____

Rear Tires: No. 2 _____ Size 12.75" x 24" - 6 ply _____ Air pressure 16 pounds _____

Front tires: No. 2 _____ Size 7.50" x 16" - 4 ply _____ Air pressure 26 pounds _____

Added weight:	Per rear wheel	(Cast Iron _____	763	pounds
		(Water _____	343	pounds
	Per front wheel	(Cast Iron _____	99	pounds
		(Water _____	none	pounds

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REPAIRS AND ADJUSTMENTS

No. repairs or adjustments.

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 93.8% of maximum belt horsepower.

	<u>DRAWBAR</u>	<u>BELT</u>
2. Observed maximum horsepower (tests F & B)	30.67	35.36
3. Sea level (calculated) maximum horsepower (based on 50° F. and 29.92" hg.)	33.03	37.45
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)	24.77	31.83

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 349.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers