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January 1938

Test 308: Case Model R

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy or Report of Official Tractor Test No. 308

Dates of test: October 10 to 20, 1938.
 Name and model of tractor: CASE "R"
 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								
20.52	1425	2.166	9.47	0.649	0.000	198	74	28.895
TEST C - OPERATING MAXIMUM LOAD - ONE HOUR								
19.25	1425	1.836	10.48	0.586	0.000	199	79	28.900
*TEST D - ONE HOUR								
18.48	1423	1.800	10.27	0.599	0.000	198	78	28.900
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
18.45	1423	1.810	10.19	0.603	--	198	77	--
1.31	1609	0.849	1.54	3.985	--	174	76	--
10.06	1540	1.307	7.70	0.799	--	187	75	--
18.75	1389	1.776	10.56	0.582	--	195	75	--
5.16	1584	1.039	4.97	1.238	--	187	74	--
14.56	1499	1.420	10.25	0.600	--	189	74	--
11.38	1507	1.367	8.32	0.739	0.000	188	75	28.905

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. per gal.	Lb. per H.P. hr.		Cooling med.	Air	
TEST F - 100% MAXIMUM LOAD - Second - GEAR											
18.23	1979	3.45	1426	6.45	----- Not Recorded -----			194	63	28.950	
TEST G - OPERATING MAXIMUM LOAD											
15.58	2574	2.27	1424	12.59	----- Not Recorded -----			192	62	28.950	
17.02	1832	3.48	1425	5.62	----- " " -----			191	60	28.965	
16.53	1264	4.90	1426	3.59	----- " " -----			190	56	28.980	
*TEST H - TEN HOURS - Second GEAR											
14.19	1512	3.52	1425	4.63	1.660	8.55	0.719	0.000	154	61	28.875

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

3 pages-page 2

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FUEL, OIL, AND TIME

Fuel Gasoline Octane 57 Weight per gallon 6.15 pounds
Oil: S.A.E. No. 20 To motor 1.479 gal. Drained from motor 1.351 gal.
Total time motor was operated 43 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour (rubber tires): First 2.33
Second 3.33 Third 4.50 Reverse 2.50
Belt pulley: Diameter 10 1/8" Face 6 1/4" R.P.M. 991
Clutch: Make Twin Disc Type Single plate, dry Operated by hand lever
Seat Pressed steel
Total weight as tested (with operator) 4140 pounds

MOTOR:

Make Waukesha Serial No. 433794 Type 4 cylinder, vertical
Head L Mounting Crankshaft lengthwise Lubrication Pressure
Bore and stroke: 3 1/4" x 4" Rated R.P.M. 1425
Port diameter valves: Inlet 1 3/16" Exhaust 1 3/16"
Magneto: Make American Bosch Model MJB4A108
Carburetor: Make Zenith Model 193 1/2 Size 7/8"
Governor: Make Waukesha - Case Type Variable-speed, centrifugal
Air Cleaner: Make United Type Oil-washed, crimped wire

CHASSIS:

Type Standard Serial No. 4230270 Drive Enclosed gear and chain
Tread width: Rear 46" Front 41 1/2"
Rear tires: No. 2 Size 11.25" x 24" - 6 ply Air pressure 16 pounds
Front tires: No. 2 Size 5.00" x 15" - 4 ply Air pressure 25 pounds
Added weight: Per rear wheel: Water 220 pounds
Per front wheel: Cast Iron 69 pounds

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REPAIRS AND ADJUSTMENTS

Throughout the complete test there was a slight grease leak at a welch plug in the front of the transmission case cover.

During the rated load drawbar test, dust particles between the front wheel dust shield and the hub momentarily locked the wheel and caused the shield to revolve about 1/8 turn, bending the dust shield mounting clips. These clips were straightened and the test resumed.

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 those 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.

	DRAWBAR	<u>RUBBER TIRES</u>	BELT
2. Observed maximum horsepower (tests F & B)	18.23		20.52
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	18.89		21.53
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).	14.17		18.30

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 308.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers