January 1941

Test 367: Case Model SC (Distillate)

Nebraska Tractor Test Lab
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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

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Dates of test: April 29 to May 16, 1941
Name and model of tractor: CASE SC (Distillate)
Manufacturer: J. I. Case Company, Racine, Wisconsin
Manufacturer's rating: NOT RATED

BRAKE HORSEPOWER TESTS

Hp.	Crank-shaft Speed R.P.M.	Fuel Consumption			Water Used	Temperature Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	Hp.-hr. per Gal.	Lb. per Hp.-hr.	Gal. per Hr.	Cooling Medium	Air	
Test B - 100% MAXIMUM LOAD - TWO HOURS								
22.29	1550	2.290	9.73	0.711	0.000	185	79	28.625
Test C - OPERATING MAXIMUM LOAD - ONE HOUR								
21.62	1550	2.049	10.55	0.656	0.000	186	81	28.600
***Test D - ONE HOUR**								
20.24	1550	2.014	10.05	0.688	0.000	184	85	28.590
Test E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
20.24	1550	2.012	10.06	0.688	- - - -	185	85	- - - -
1.01	1665	0.954	1.06	6.535	- - - -	181	86	- - - -
10.61	1622	1.439	7.37	0.939	- - - -	181	87	- - - -
20.08	1490	1.973	10.18	0.680	- - - -	193	86	- - - -
5.35	1615	1.153	4.64	1.492	- - - -	190	86	- - - -
15.62	1586	1.708	9.15	0.757	- - - -	186	84	- - - -
12.15	1588	1.540	7.89	0.877	0.000	186	85	28.555

*Formerly called RATED LOAD; see REMARKS 4, page 5.

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D R A W B A R H O R S E P O W E R T E S T S

Hp.	Draw-bar Pull Lbs.	Speed Miles per hr.	Crank-shaft Speed R.P.M.	Slip of Drive Wheels %	Fuel Consumption			Water Used Gal. per Hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per Hr.	Hp.-hr. per Gal.	Lb. per Hp.-Hr.		Cool-ing Med.	Air	
Rear wheels, tires and added weight used in Tests F, G and H: Cast iron wheels; 10-38, 4 ply tires and 470 lbs. added weight per wheel.											
Test F - 100% MAXIMUM LOAD - Second Gear											
19.44	2177	3.35	1552	5.86	——Not Recorded——			198	92		28.400
Test G - OPERATING MAXIMUM LOAD											
19.33	3166	2.29	1544	8.88	——Not Recorded——			184	73		28.630
18.71	2096	3.35	1548	5.66	" "			205	95		28.410
19.16	1534	4.68	1551	4.34	" "			179	73		28.615
17.03	656	9.73	1550	2.34	" "			180	74		28.625
*Test H - TEN HOURS - Second Gear											
16.18	1794	3.38	1550	4.80	1.782	9.08	0.762	0.000	183	76	28.685
Test J - OPERATING MAXIMUM											
Same wheels and tires as used in Tests F, G and H. All added weight removed from tractor (liquid, cast iron or any other added forms) Second Gear.											
19.44	2193	3.33	1550	6.45	——Not Recorded——			174	63		28.940
Test K - OPERATING MAXIMUM											
Rear wheels, tires and added weight used: Cast iron wheels; 9-38, 4 ply tires and no added weight per wheel (**Combination No. 1). Second Gear.											
19.15	2314	3.10	1554	9.84	——Not Recorded——			179	68		28.940

*Formerly called RATED LOAD; see REMARKS 4, page 5.
**Combination No. 1; includes wheels, tires and added weight recommended in the manufacturer's published specifications.
Combination No. 2; when the manufacturer does not make a specific recommendation, then the tires used are the smallest size and ply and the wheels are the lightest listed in published specifications or the application for test.

See page 3 for specifications on wheels, tires and weight.

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FUEL, OIL AND TIME

Fuel: Distillate Octane 38 Weight per gallon 6.92 pounds

Oil: S.A.E. No. 20 To motor 3.333 gal. Drained from motor 1.360 gal.

Total time motor was operated 61 hours

TIRES, WHEELS and WEIGHT

		Tests F, G, & H	Test J	Test K
Rear Wheel: (each)	Type & Weight	Cast Iron, 265 lbs.	Cast Iron, 265 lbs.	Cast Iron, 265 lbs.
	Liquid Ballast	160 lbs.	None	None
	Added Cast Iron	310 lbs.	None	None
Rear Tires:	No., Size & Ply	2, 10-38, 4 ply	2, 10-38, 4 ply	2, 9-38, 4 ply
	Type of Tread	Ground Grip	Ground Grip	Ground Grip
	Make	Firestone	Firestone	Firestone
	Air Pressure	14 lbs.	14 lbs.	14 lbs.
Front Wheel: (each)	Type & Weight	Steel Disc. 21 lbs.	Steel Disc. 21 lbs.	Steel Disc. 21 lbs.
	Liquid Ballast	None	None	None
	Added Cast Iron	74 lbs.	None	None
Front Tires:	No., Size, & Ply	2, 5.00-15, 4 ply	2, 5.00-15, 4 ply	2, 5.00-15, 4 ply
	Type of Tread	Guide-Grip Single Rib	Guide-Grip Single Rib	Guide-Grip Single Rib
	Make	Firestone	Firestone	Firestone
	Air Pressure	28 lbs.	28 lbs.	28 lbs.
Height of Drawbar		15 1/2"	16"	14 1/2"
Static Weight:	Rear End	4070 lbs.	3040 lbs.	2970 lbs.
	Front End	1150 lbs.	980 lbs.	970 lbs.
Total Weight as Tested (With Operator)		5400 lbs.	4200 lbs.	4120 lbs.

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CHASSIS

Type Tricycle Serial No. 4500637 SC Drive Enclosed gear and chain

Tread width: Rear 44"-80" Front: Top 10 1/2" Bottom 5 1/2"

Advertised speeds, miles per hour: First 2 1/2 Second 3 1/2 Third 4 3/4

Fourth 9 2/3 Reverse 2 3/4

Belt pulley: Diam. 9 1/4" Face 6 1/4" R.P.M. 1078 Belt Speed 2610 f.p.m.

Clutch: Make Twin Disc. Type Single plate, operating in oil mist Operated by Hand

Seat: Pressed steel with canvas covered felt pad

Brakes: Make Auto Specialities Co. Type Disc

Location Differential Shaft

Gear reduction (brake drum to rear wheel) 5.000 to 1

Operated by Left foot on left pedal and right foot on right pedal

Locked by Pawl

Equalization None

MOTOR

Make Own Serial No. SQ 4500637 Type 4 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 3 1/2" x 4" Rated R.P.M. 1550

Port diameter valves: Inlet 1 9/32" Exhaust 1 1/3"

Magneto: Make Edison-Splitdorf Serial No. W15587 Type RM03189

Carburetor: Make Zenith Model 161AXJ7 Size 1"

Governor: Make Own Type Variable speed, centrifugal

Air Cleaner: Make United Type Oil-washed crimped wire

Oil Filter: Make None

Cooling medium temperature control: Pines radiator shutters and Dole thermostat

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REPAIRS AND ADJUSTMENTS

During the belt test after approximately 30 hours of operation on oil metering plug with a 1/16 inch hole was installed in the oil feed line to the valve rocker shaft.

REMARKS

1. All results shown on pages 1 and 2 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, H, J and K, were made with an operating setting of the carburetor (selected by the manufacturer) of 97.3% of maximum belt horsepower.

		DRAWBAR	BELT
2	2. Observed maximum horsepower (tests F & B)	19.44	22.29
	3. Sea level (calculated maximum horsepower (based on 60° F. and 29.92" Hg.)	21.09	23.72
	4. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings)	15.82	20.16

We the undersigned, certify that the above is a true and correct report of official tractor test No. 367.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers