

January 1952

Test 482: Case LA

Follow this and additional works at: <http://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

"Test 482: Case LA" (1952). *Nebraska Tractor Tests*. 599.
<http://digitalcommons.unl.edu/tractormuseumlit/599>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

The Experiment Station
University of Nebraska College of Agriculture
W. V. Lambert, Director, Lincoln, Nebraska

NEBRASKA TRACTOR TEST NO. 482

Department of Agricultural Engineering
Dates of test: August 21 to September 6, 1952
Manufacturer: J. I. CASE COMPANY, RACINE,
WISCONSIN
Manufacturer's rating: Not rated.

CASE LA

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury
		Gal per hour	Hp-hr per gal	Lb per hp-hour		Cooling med	Air	
TEST B—100% MAXIMUM LOAD—TWO HOURS								
59.60	1150	6.662	8.95	0.466	0.00	177	62	28.860
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
57.89	1150	6.146	9.42	0.443	0.00	177	66	28.875
TEST D—RATED LOAD—ONE HOUR								
52.67	1150	5.607	9.39	0.444	0.00	176	67	28.900
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
52.70	1152	5.583	9.44	0.442	...	176	68	.....
1.28	1241	1.719	0.74	5.602	...	166	67	.....
27.86	1212	3.748	7.43	0.561	...	175	67	.....
54.85	1094	5.835	9.40	0.444	...	178	68	.....
14.19	1230	2.590	5.48	0.761	...	172	68	.....
40.95	1189	4.698	8.72	0.478	...	175	68	.....
31.97	1186	4.029	7.93	0.525	0.00	174	68	28.910

TORQUE (at dynamometer)

Eng RPM	1150	1100	1050	997	950	902	850	802	750	699
Lb-ft	410.9	410.2	410.6	410.9	414.2	416.7	417.7	419.3	418.3	413.0

DRAWBAR HORSEPOWER TESTS

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury
					Gal per hour	Hp-hr per gal	Lb per hp-hr		Cooling med	Air	
TEST F—100% MAXIMUM LOAD—3rd Gear											
51.73	4181	4.64	1151	5.39	.....	Not Recorded	.....	177	81	28.940
TEST G—OPERATING MAXIMUM LOAD											
41.68	6874	2.27	1151	15.47	.....	Not Recorded	.....	174	83	28.930
50.12	5558	3.38	1150	8.32	.....	Not Recorded	.....	177	83	28.930
49.75	4022	4.64	1151	5.45	.....	Not Recorded	.....	177	81	28.940
48.26	1801	10.05	1151	1.76	.....	Not Recorded	.....	176	82	28.945
TEST H—RATED LOAD—TEN HOURS—3rd Gear											
40.90	3274	4.68	1151	4.49	5.023	8.14	0.512	0.03	174	72	28.910
TEST J—OPERATING MAXIMUM LOAD—3rd Gear											
49.64	4129	4.51	1151	9.56	.....	Not Recorded	.....	179	90	28.920
TEST K—OPERATING MAXIMUM LOAD—3rd Gear											
44.53	4232	3.95	1152	16.34	.....	Not Recorded	.....	175	88	28.915

FUEL, OIL and TIME Commercial Propane octane No 100 (rating taken from oil company's typical inspection data); weight per gallon 4.170 lb Oil SAE 20 to motor 4.174 gal; drained from motor 2.543 gal Total time motor was operated 53 hours.

CHASSIS Type Standard Serial No 5522054LA Tread width rear 59 1/4" front 62" Wheel Base 82" Hydraulic control system driven through transmission Advertised speeds mph first 2 1/2 second 3 1/2 third 4 1/2 fourth 10 reverse 2 3/4 Belt pulley diam 13" face 8 1/4" rpm 814 Belt speed 2770 fpm Clutch single plate wet disc operated by hand lever Seat pressed steel with sponge rubber cushion which can swing from side to side and tilt upward Brakes double disc on differential shaft operated by two foot pedals Equalized by locking brake pedals together Power take-off standard type.

ENGINE Make J. I. Case Type 4 cylinder vertical Serial No 5522054LA Crankshaft mounted lengthwise Head I Lubrication pressure Bore and Stroke 4 1/2" x 6" Rated rpm 1150 Compression ratio 7.58 to 1 Displacement 403.2 cu in Port Diameter Valves inlet 1 26/32" exhaust 1 21/32" Governor variable speed centrifugal Carburetor Size 1 1/2" Ignition System magneto Starting System 6 volt battery Air Cleaner oil washed metal mesh Muffler was used Oil Filter replaceable treated paper element Cooling medium temperature control thermostat.

REPAIRS AND ADJUSTMENTS No repairs or adjustments.

REMARKS All test results 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 97.4% of maximum belt horsepower.

TIRES, WHEELS and WEIGHT

	Tests F, G, & H	Test J	Test K
Rear wheels			
Type	Cast iron	Cast iron	Cast iron
Liquid ballast	936 lb each	None	None
Added cast iron	690 lb each	None	None
Rear tires			
No. and size	Two 15-30	Two 15-30	Two 14-30
Ply	8	8	6
Air pressure	14 lb	12 lb	12 lb
Front wheels			
Type	Cast iron	Cast iron	Cast iron
Liquid ballast	None	None	None
Added cast iron	None	None	None
Front tires			
No. and size	Two 7.50-18	Two 7.50-18	Two 7.50-18
Ply	4	4	4
Air pressure	28 lb	28 lb	28 lb
Height of drawbar	16 1/2 inches	17 inches	15 1/2 inches
Static weight			
Rear end	8560 lb	5308 lb	5181 lb
Front end	2280 lb	2282 lb	2275 lb
Total weight as tested with operator	11015 lb	7765 lb	7631 lb

HORSEPOWER SUMMARY

	Drawbar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)	54.55	61.91
2. Observed maximum horsepower (tests F & B)	51.73	59.60
3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings)	40.91	52.62

We, the undersigned, certify that this is a true and correct report of official tractor test No. 482.

L. F. LARSEN
Engineer in Charge

C. W. SMITH
F. D. YUNG
L. W. HURLBUT
Board of Tractor
Test Engineers