University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

1-1-1952

Test 480: Case LA

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

Part of the Applied Mechanics Commons

"Test 480: Case LA" (1952). *Nebraska Tractor Tests*. Paper 597.
http://digitalcommons.unl.edu/tractormuseumlit/597

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

Department of Agricultural Engineering
Dates of test: August 15 to August 28, 1952
Manufacturer: J. I. CASE COMPANY, RACINE, WISCONSIN
Manufacturer's rating: Not rated.

NEBRASKA TRACTOR TEST NO. 480

CASE LA

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption: Gal per hour	Fuel Consumption: Hp-hr per gal	Fuel Consumption: Lb per hp-hour	Water used gal per hour	Temp Deg F: Cooling med	Temp Deg F: Air	Barometer inches of mercury
TEST B—100% MAXIMUM LOAD—TWO HOURS								
58.53	1150	5.776	10.13	0.602	0.00	185	83	28.970
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
55.60	1151	4.726	11.76	0.518	0.00	189	88	28.960
TEST D—RATED LOAD—ONE HOUR								
52.58	1150	4.490	11.71	0.521	0.00	186	88	28.950
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
52.57	1151	4.488	11.71	0.520	...	186	88	.....
1.23	1268	1.639	0.75	8.122	...	175	88	.....
27.71	1208	3.051	9.08	0.671	...	180	88	.....
54.18	1112	4.552	11.90	0.512	...	190	90	.....
14.20	1234	2.323	6.11	0.997	...	177	88	.....
40.45	1177	3.720	10.87	0.561	...	182	88	.....
31.72	1191	3.296	9.62	0.633	0.00	182	88	28.945

TORQUE (at dynamometer)

Eng RPM	1149	1101	1047	999	951	899	853	801	748	699
Lb-ft	399.0	402.2	407.4	412.7	418.4	423.3	427.5	433.1	428.8	424.0

DRAWBAR HORSEPOWER TESTS

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption: Gal per hour	Fuel Consumption: Hp-hr per gal	Fuel Consumption: Lb per hp-hr	Water used gal per hour	Temp Deg F: Cooling med	Temp Deg F: Air	Barometer inches of mercury
TEST F—100% MAXIMUM LOAD—3rd Gear											
51.68	4187	4.63	1151	5.93	..... Not Recorded				181	87	28.800
TEST G—OPERATING MAXIMUM LOAD											
40.20	6659	2.26	1148	15.76	..... Not Recorded				181	89	28.830
49.44	5484	3.38	1151	8.58	..... Not Recorded				185	88	28.825
48.87	3945	4.65	1150	5.46	..... Not Recorded				183	86	28.800
46.73	1769	9.91	1152	2.90	..... Not Recorded				182	89	28.850
TEST H—RATED LOAD—TEN HOURS—3rd Gear											
41.63	3347	4.66	1149	5.05	4.067	10.24	0.596	0.03	176	81	28.821
TEST J—OPERATING MAXIMUM LOAD—3rd Gear											
47.75	3949	4.53	1151	8.35	..... Not Recorded				178	74	29.020
TEST K—OPERATING MAXIMUM LOAD—3rd Gear											
44.74	4188	4.01	1151	15.28	..... Not Recorded				179	78	29.020

FUEL, OIL and TIME Gasoline octane No ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.096 lb **Oil** SAE 20 to motor 3.197 gal; drained from motor 2.943 gal **Total time motor was operated** 46 hours.

CHASSIS Type Standard **Serial No** 5523277LA **Tread width** rear 59¾" front 62" **Wheel Base** 82" **Hydraulic control system** driven through transmission **Advertised speeds mph** first 2½ second 3⅓ third 4⅓ fourth 10 reverse 2¾ **Belt pulley** diam 13" face 8¼" 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** 5523277 LA **Crankshaft mounted** lengthwise **Head** I **Lubrication** pressure **Bore and Stroke** 4⅝" x 6" **Rated rpm** 1150 **Compression ratio** 5.75 to 1 **Displacement** 403.2 cu in **Port Diameter Valves** inlet 1 25/32" exhaust 1 21/32" **Governor** variable speed centrifugal **Carburetor Size** 1½" **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 Clutch was adjusted following Test F.

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 C 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 95.5% 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	886 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	16½ inches	17 inches	15½ inches
Static weight Rear end	8360 lb	5208 lb	5114 lb
Front end	2240 lb	2238 lb	2226 lb
Total weight as tested with operator	10775 lb	7621 lb	7515 lb

HORSEPOWER SUMMARY

	Drawbar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)	55.07	61.77
2. Observed maximum horsepower (tests F & B)	51.68	58.53
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)	41.30	52.50

We, the undersigned, certify that this is a true and correct report of official tractor test No. 480.

L. F. LARSEN
Engineer in Charge

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