

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

January 1940

Test 365: Oliver 80 Standard HC

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

Nebraska Tractor Test Lab, "Test 365: Oliver 80 Standard HC" (1940). *Nebraska Tractor Tests*. 501.
<https://digitalcommons.unl.edu/tractormuseumlit/501>

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.

3 pages-page 1

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 365

Dates of test: November 4 to 8, 1940.

Name and model of tractor: OLIVER STANDARD 80 HC

Manufacturer: Oliver Farm Equipment Company, Charles City, Iowa.

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.		Cool- ing med.	Air	
TEST B - 100% MAXIMUM LOAD - TWO HOURS								
41.27	1200	3.845	10.73	0.569	0.000	179	63	29.180
TEST C - OPERATING MAXIMUM LOAD - ONE HOUR								
38.11	1200	3.311	11.51	0.531	0.000	191	63	29.130
*TEST D - ONE HOUR								
36.25	1200	3.144	11.53	0.530	0.000	198	62	29.115
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
36.15	1199	3.142	11.51	0.531	--	197	61	--
1.40	1302	1.326	1.06	5.786	--	199	60	--
19.47	1260	2.219	8.77	0.696	--	198	60	--
35.16	1112	3.020	11.64	0.525	--	192	61	--
9.77	1289	1.777	5.50	1.112	--	198	60	--
28.34	1239	2.735	10.36	0.590	--	199	60	--
21.72	1233	2.370	9.16	0.667	0.000	197	60	29.100

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.		Barometer Inches of Mercury
					Gal. per hr.	H.P. per gal.	Lb. per H.P. hr.		Deg. F. Cool- ing med.	Air	
TEST F - 100% MAXIMUM LOAD - Second - GEAR											
35.91	3982	3.38	1204	8.59	----- Not Recorded -----			-----	195	53	28.930
TEST G - OPERATING MAXIMUM LOAD											
32.67	5079	2.41	1203	13.07	----- Not Recorded -----			-----	192	55	28.880
33.70	3706	3.41	1201	7.60	----- " " -----			-----	196	52	28.955
33.42	2786	4.50	1202	5.66	----- " " -----			-----	196	51	28.985
32.38	1976	6.14	1200	3.92	----- " " -----			-----	194	50	28.985
*TEST H - TEN HOURS - Second - GEAR											
27.65	3002	3.45	1200	6.31	2.912	9.50	0.643	0.000	195	58	28.810

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

3 pages-page 2

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 365

FUEL, OIL, AND TIME

Fuel Gasoline Octane 73 Weight per gallon 6.11 pounds

Oil: S.A.E. No. 30 To motor 1.949 gal. Drained from motor 1.351 gal.

Total time motor was operated 40 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour First 2.78 Second 3.71

Third 4.79 Fourth 6.44 Reverse 3.44

Belt pulley: Diam. 14-1/2" Face 7-1/4" R.P.M. 742 Belt speed 2815 f.p.m.

Clutch: Make Borg and Beck Type Single plate Operated by foot

Seat Pressed steel

Total weight as tested (with operator) 8145 pounds

MOTOR

Make Own Serial No. 466790 Type 4 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 4-1/4" x 5-1/4" Rated R.P.M. 1200

Port diameter valves: Inlet 1-3/4" Exhaust 1-1/2"

Magneto: Make American Bosch Serial No. MJB4A-308

Carburetor: Make Schebler Model TTX Size 1-1/4"

Governor: Make Own Type Variable speed, centrifugal

Air Cleaner: Make Donaldson Type Oil-washed wire screen filter

Oil Filter: Make H-W Type Renewable felt washer element

Cooling medium temperature control: Pines radiator shutters

CHASSIS

Type Standard Serial No. 807839 Drive Enclosed gear

Tread width: Rear 54" Front 47-1/2"

Rear tires: No. 2 Size 12.75 x 28 - 6 ply Air pressure 14 pounds

Front tires: No. 2 Size 7.50 x 18 - 4 ply Air pressure 28 pounds

Added weight: Per rear wheel {Cast Iron 937 pounds
(Calcium Chloride Solution 434 pounds

Per front wheel {Cast Iron -- pounds
(Calcium Chloride Solution 91 pounds

3 pages-page 3

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 365

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 92.5% of maximum belt horsepower.

	<u>DRAWBAR</u>	<u>BELT</u>
2. Observed maximum horsepower (tests F & B)	35.91	41.27
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	36.88	42.43
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)	27.66	36.07

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 365.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers