January 1940

Test 351:Oliver Row-Crop 70 HC

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

Copy of Report of Official Tractor Test No. 351

Dates of test: August 23 to 29, 1940.
Name and model of tractor: OLIVER ROW CROP 70 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: Gal. per hr.	Fuel Consumption: H. P. hr. per gal.	Fuel Consumption: Lb. per H. P. hr.	Water used gal. per hr.	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST B - 100% MAXIMUM LOAD - TWO HOURS								
31.52	1500	2.954	10.67	0.580	0.000	171	78	28.740
TEST C - OPERATING MAXIMUM LOAD - ONE HOUR								
30.37	1499	2.693	11.28	0.549	0.000	180	79	28.745
***TEST D - ONE HOUR**								
28.46	1500	2.532	11.24	0.551	0.000	193	81	28.730
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
28.42	1497	2.530	11.23	0.551	--	193	81	--
1.21	1667	1.178	1.03	6.025	--	195	80	--
14.69	1540	1.793	8.19	0.756	--	197	80	--
29.65	1467	2.598	11.41	0.542	--	179	80	--
7.53	1576	1.352	5.57	1.112	--	201	80	--
21.83	1527	2.118	10.31	0.601	--	196	81	--
17.22	1546	1.928	8.93	0.693	0.000	193	80	28.730

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: Gal. per hr.	Fuel Consumption: H.P. hr. per gal.	Fuel Consumption: Lb. per H.P. hr.	Water used gal. per hr.	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST F - 100% MAXIMUM LOAD - Third - GEAR											
28.63	2528	4.25	1502	5.82	---- Not Recorded ----				176	72	28.700
TEST G - OPERATING MAXIMUM LOAD											
24.79	4170	2.23	1499	12.23	---- Not Recorded ----				177	67	28.705
26.14	3040	3.23	1501	7.17	---- " " ----				177	72	28.685
27.01	2376	4.26	1499	5.30	---- " " ----				176	69	28.715
27.43	1737	5.92	1499	3.66	---- " " ----				178	71	28.715
25.82	1324	7.31	1500	2.67	---- " " ----				176	75	28.690
***TEST H - TEN HOURS - Third - GEAR**											
22.72	1986	4.29	1500	4.76	2.317	9.81	0.631	0.000	194	79	28.690

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

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FUEL, OIL, AND TIME

Fuel Gasoline Octane 73 Weight per gallon 6.19 pounds

Oil: S.A.E. No. 30 To motor 1.216 gal. Drained from motor 1.145 gal.

Total time motor was operated 49 hours

BRIEF SPECIFICATIONS

Advertised speeds miles per hour: First 2.56 Second 3.47

Third 4.55 Fourth 6.17 Fifth 7.61 Sixth 13.44 Reverse 2.56

Belt pulley: Diam. 12-3/4" Face 7-1/4" R.P.M. 774 Belt Speed 2584 f.p.m.

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

Seat Canvas hammock

Total weight as tested (with operator) 6770 pounds

MOTOR

Make Own Serial No. 42120 - G3 Type 6 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 3-1/8" x 4-3/8" Rated R.P.M. 1500

Port diameter valves: Inlet 1-3/8" Exhaust 1-1/16"

Magneto: Make American Bosch Model MJC6C-312

Carburetor: Make Zenith Model 61AXJ7 Size 1"

Governor: Make Own Type Variable speed, centrifugal

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

Oil Filter: Make Michiana Type Replaceable waste-packed element

Cooling medium temperature control: Pines radiator shutters

CHASSIS

Type Tricycle Serial No. 233706 Drive Enclosed gear

Tread width: Rear 60" - 72" Front: Top 13" Bottom 7"

Rear tires: No. 2 Size 11 x 40 - 4 ply Air pressure 16 pounds

Front tires: No. 2 Size 5.50 x 16 - 4 ply Air pressure 25 pounds

Added weight: Per rear wheel (Cast Iron 775 pounds
(Calcium Chloride Solution 432 pounds

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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 96.4% of maximum belt horsepower.

	DRAWBAR	BELT
2. Observed maximum horsepower (tests F & B)	28.63	31.52
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	30.18	33.38
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)	22.64	28.37

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 351.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers