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Nebraska Tractor Tests

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Larsen

January 1920

Test 003: Case 10-18

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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Official Tractor Test No. 3

Miscellaneous Tests: None

Repairs and Adjustments. Endurance:

The friction drive on the fan was tightened after about a 15 hours run. No. other repairs or adjustments were made.

At the close of the test the tractor was in good running condition and there was no evidence of undue wear in any part nor of any weakness which might call for early repairs.

Brief specifications Case 10-18 H. P. Tractor

Engine: Four cylinder, vertical, valve-in-head. Bore 3-7/8", stroke 5", rated speed 1050 r.p.m.

Chassis: Four wheel. Rated speeds: low gear 2.25 mi. per hr., high gear 3.50 mi. per hr.

Total weight 3760 lbs.

General Remarks:

In the advertising literature submitted with the application for test of this tractor we find some statements and claims which cannot be directly compared with results of this test as reported above. It is our opinion that none of these statements or claims are unreasonable or excessive.

We, the undersigned, certify that above is a true and correct report of official Tractor Test No. 3.

Claude K. Shedd

Engineer-in-Charge

Oscar W. Sjogren

E. E. Brackett

Jiles W. Haney

Board of Tractor Test Engineers.

Drawbar Horse Power Tests

Hp	Draw bar pull lbs	Speed miles per hour	Crank shaft speed rpm	Slip of drivers %	Kind of Fuel used	Gal per hr	Hp hr per gal	Water used per hr gals	Cooling med	Air	Average Humidity	Barometer inches of Mercury
Rated Load Test							Ten Hours (10 Hrs. 3 Min.)					
9.61*	1540	2.35	1149	**17.6	Kero.	1.847	5.20	0.202	177.8	65.8	65	28.1
Maximum Load Test							(11.3 Ft.)					
11.24	1730	2.41	1170	11.4	Kero.	Not	Recorded		170.0	59	38	28.8

Remarks: *The tractor would have carried 10 H.P. during the 10 hour test without difficulty. The load being a little under a 10. H.P. was due to the operator of the dynamometer car and not to any fault in the tractor. The load was a little more than 10 H.P. during the last half of this test, but was only about $8\frac{1}{2}$ H.P. during the first three hours.

** In computing the slippage the circumference of the drive wheels was taken at the points of the lugs. The slippage was a little higher in the forenoon and lower in the afternoon due to improved condition of the track.

Drawbar tests were made with the tractor in low gear.

Oil Consumption:

During the complete test consisting of about 40 hours running the following oil was used:

For Engine 8 gallons of Mobiloil BB

For the transmission 0 gallons of none was added.

University of Nebraska
Agricultural Engineering Department
University Farm, Lincoln

Official Tractor Test No. 3

Dates of test April 7, 8, 9 and 15, 1920. Name, model and rating of tractor Case 10-18 Serial No. Engine 26541 Rated Speed 1050 RPM Manufacturer J. I. Case Threshing Machine Co., Racine Wis. Tractor equipment used Kingston "L" Carburetor, Kingston Mag. Style and dimensions of wheel lugs Spade, 3" high x 4" long.

Brake Horse Power Tests

Hp	Crank shaft speed rpm	Length of test min	Fuel Consumption			Water Consumption Gallons Per Hour			Temp Deg. F.		Humidity	Barometer inches of Mercury
			Kind of Fuel	Gal per hr	Hp hr per gal	In radiator	In fuel mixture	Total	Cooling med	Air		
Rated Load Test												
18.41	1058	120	Kero.	2.948	6.24	.078	.420	.498	180.3	60.7	59	28.8
Belt Slippage 2.24%												
Varying Load Test												
17.68	1016	10	Kero.						180	60		
17.78	1003	10	Kero						180	57		
1.74	1244	10	Kero						175	59		
5.40	1229	10	Kero						175	55		
10.50	1213	10	Kero						175	55		
15.40	1182	10	Kero						176	57		
Av. 11.45	1152	60	Kero	2.179	5.25	.062	.086	.148	176.7	57.4	59	28.8
Maximum Load Test												
18.145	1043	60	Kero	2.748	6.60	.000	.3405	.3405	179.7	53.1	61	28.7
Belt Slippage 2.25%												
Half Load Test												
10.65	1204	60	Kero	1.410	7.55	.000	.103	.103	182.4	66.6	42	28.7
Belt Slippage 1.95%												

Remarks: Ther kerosene used in this test weighed 6.71 lbs per gal.