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January 1920

Test 061: Holt Model T-16 40-60

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 61

Dates of test September 2 to September 20, 1920.

Name, model and rating of tractor Holt Model T-16, 40-60

Serial No. Engine 28118 Serial No. Chassis 17872

Manufacturer Holt Mfg. Co., Peoria, Ill.

Tractor equipment used KW Model HK Mag.; Kingston Model E Carb.

Style and dimensions of wheel lugs Caterpillar track.

Brake Horse Power Tests

Horse Power Developed	Crank Shaft Speed R. P. M.	Length of Test Min.	Fuel Consumption			Water Consumption Gallons per Hour			Temperature *Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Humidity %	Barometric Pressure Inches Mercury
			Kind of Fuel	Amount Used per Hour Gallons	Horse Power Hours per Gallon	In Radiator	In Fuel Mixture	Total				
RATED LOAD TEST												
55.25	763	120	Gasol.	7.72	7.16	2.25	0.00	2.25	197	91	30	28.8
			Belt	slippage 1.48%.								
VARYING LOAD TEST												
55.72	769	10	Gasol.									
56.11	760	10	"									
2.03	900	10	"									
16.10	870	10	"									
30.47	838	10	"									
41.81	814	10	"									
Aver. 35.08	825	60	Gasol.	6.17	5.68	0.00	0.0	0.00	184	92	30	28.8
MAXIMUM LOAD TEST												
57.21	772	60	Gasol.	8.94	6.41	2.00	0.00	2.00	206.5	86	54	28.8
			Belt	slippage 1.46%.								
HALF LOAD TEST												
31.67	872	60	Gasol.	5.55	5.71	1.00	0.00	1.00	186	91	33	28.85
			Belt	slippage 1.14%.								

*Taken in discharge line from engine.

Remarks Gasoline used for fuel in the rated, half and varying brake tests on this tractor weighed 6.24 lbs. per gallon; in all other tests gasoline used weighed 6.20 lbs. per gallon.

Report of Official Tractor Test No. 61

Drawbar Horse Power Tests

Horse Power Developed	Draw Bar Pull Pounds	Speed Miles per Hour	** Crank Shaft Speed R. P. M.	Slippage of Drive Wheels %	Fuel Consumption			Water Used per Hour Gallons	**Temperature of Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Average Humidity %	Barometric Pressure Inches Mercury
					Ind of Fuel Used	Amount Used per Hour Gallons	Horse Power Hours per Gallon					
RATED LOAD TEST. TEN HOURS												
42.76	4963	3.23	779	0.6	Gasol.	8.70	4.91	0.60	173	85	61	28.7
MAXIMUM LOAD TEST (1st 120'; 2nd 103!)												
51.59	5250	3.69	830	1.3	Gasol.	Not recorded -			170	86	58	28.6
42.31	9756	1.63	830	15.3	"	"	"	"	170	85	58	28.6

*Taken in discharge line from engine.

Remarks ** For computing slippage the outside perimeter of the track was used.

In the rated and first maximum test the tractor was run in intermediate gear; in the second maximum the tractor was run in low gear.

Oil Consumption:

During the complete test consisting of about 33 hours running the following oil was used:

For the engine, 9 gallons of Mobiloil "BB"

For the transmission, 2 gallons of 600-W

Report of Official Tractor Test No. 61.

Repairs and Adjustments. Endurance:

After about 14 hours of running one valve stem was dressed down. Magneto and valve timing were checked at the same time.

After about 18 hours running all valves were ground.

Cleaned carbon, loosened rings, which were abutting, and again ground valves after about 20 hours running.

The air cleaner was removed before brake tests were made and it was agreed that same would not be sold as regular equipment.

The repairs and adjustments necessary during this test do not indicate any important mechanical defect.

At the end of the test the tractor was apparently in good condition, and there was no indication of undue wear in any part nor of any weakness which might require early repair.

Brief Specifications Holt 40-60 H.P. Tractor:

Motor: 4-cylinder, valve-in-head, vertical, bore $6\frac{1}{2}$ ", stroke 7", rated r.p.m. 750.

Chassis: Crawler type. Rated speeds low 1.77, direct 3.21 and high 5.13 miles per hour.

Total weight: 18,500 lbs.

General Remarks:

This tractor was operated in mud during the last 8 hours of the "limbering up" run, pulling about three fourths of its rated load.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 61.

Fred R. Mohavee.
Engineer-in-Charge

Oscar W. Sjogren
E. E. Brackett
C. W. Smith
Board of Tractor Test Engineers.