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January 1920

Test 054: Allis-Chalmers 6-12

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

Report of Official Tractor Test No. 54

Dates of test August 17, August 26, 1920

Name, model and rating of tractor Allis-Chalmers 6-12

Serial No. Engine 14053 Serial No. Chassis 10633

Manufacturer Allis-Chalmers Mfg. Co., Milwaukee, Wisconsin.

Tractor equipment used Dixie Model 46 Magneto Kingston Model L Carburetor.

Style and dimensions of wheel lugs Angle 2-1/4" x 2-1/4" x 12".

Brake Horse Power Tests

Horse Power Developed	Crank Shaft Speed R. P. M.	Length of Test Min.	Fuel Consumption: Kind of Fuel	Fuel Consumption: Amount Used per Hour Gallons	Fuel Consumption: Horse Power Hours per Gallon	Water Consumption Gallons per Hour: In Radiator	Water Consumption Gallons per Hour: In Fuel Mixture	Water Consumption Gallons per Hour: Total	Temperature *Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Humidity %	Barometric Pressure Inches Mercury
RATED LOAD TEST												
12.08	1011	120	Gaso	1.70	7.11	0.00	0.00	0.00	204	77	63	28.85
	Belt Slippage			1.58%								
VARYING LOAD TEST												
11.99	1005.5	10	Gaso									
12.09	1013	10	"									
1.22	1214	10	"									
3.64	1208.5	10	"									
6.96	1158	10	"									
10.03	1113.5	10	"									
Aver. 5.02	1119	60	Gaso	1.34	5.98	0.00	0.00	0.00	199	83	55	28.85
MAXIMUM LOAD TEST												
12.37	1008	60	Gaso	1.75	7.05	0.00	0.00	0.00	205	81	63	28.85
	Belt Slippage			1.66%								
HALF LOAD TEST												
6.34	1054	60	Gaso	1.06	5.95	0.125	0.00	0.125	202	85	55	28.85
	Belt Slippage			0.94%								

*Taken in discharge line from engine.

Remarks Gasoline used for fuel in this test weighed 6.14 lbs per gallon.

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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												
6.29	1046	2.28	1029	14.6	Gaso	1.61	3.99	0.09	205	75.5	63	28.8
MAXIMUM LOAD TEST (1st 175.9#)												
6.27	1142	2.06	975	14.65	Gaso	----Not Recorded----			204	82	50	28.8

*Taken in discharge line from engine.

Remarks ** For cumputing slippage, circumference of the drive wheels was taken at points of lugs.

Oil Consumption:

During the complete test consisting of about 29 hours running the following oil was used:

For the engine, 2 gallons of Sinclair extra heavy, 2 gallons Mobiloil A

For the transmission, 1 gallons of 600-W

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Repairs and Adjustments. Endurance:

After about 13 hours of running the magneto timing was changed.

After about 14 hours of running the valves were ground and a new cylinder head gasket was put in.

Extra shims were put on connecting rod bearings # 2 and 3 after about 15 hours running.

The bearing on belt pulley cut out and was replaced by new pulley assembly and a soft oiler put on in place of hard oil cups after about 16 hours running.

These changes were made before any official data was taken.

After the rated drawbar work the driving segments showed considerable wear also rollers that mesh with the segments were pitted.

Inasmuch as the segments can easily be replaced, it is our opinion that the repairs and adjustments necessary do not indicate a mechanical defect so serious in themselves as to disquality the tractor.

Brief Specifications Allis-Chalmers 6-12 H.P. Tractor.

Motor: Le Roi, 4-cylinder, vertical, L-head. Bore 3-1/8", Stroke 4-1/2". Rated speed 1200 r.p.m. Belt H.P. 12, Drawbar H.P. 6.

Chassis: Two wheel with carriage, disc clutch, speed forward 2-1/2" miles per hour.

Total weight 2500#

General Remarks:

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

Page 3, Exhibit B, "Today it stands forth--- as the most efficient small power unit available."

"There is no loss of power, no dead weight, no lost motion in the Allis-Chalmers general purpose tractor ".

We, the undersigned, certify that above is a true and correct report of official tractor test No. 54

Fred R. Rohacek
Engineer-in-Charge

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