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January 1939

Test 338: Allis-Chalmers Model L

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. 338

Dates of test: November 23 to 28, 1939.

Name and model of tractor: ALLIS-CHALMERS "L"

Manufacturer: Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin.

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	

TESTS B AND C - 100% MAXIMUM LOAD - TWO HOURS

108.84	1050	10.538	10.33	0.584	0.000	139	43	29.075
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*TEST D - ONE HOUR

93.65	1051	9.169	10.21	0.590	0.000	158	55	29.135
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

93.15	1048	9.139	10.19	0.592	--	160	57	--
1.74	1204	4.338	0.40	15.034	--	170	57	--
50.34	1128	7.035	7.16	0.843	--	163	53	--
99.01	962	9.682	10.23	0.590	--	160	59	--
26.14	1170	6.010	4.35	1.386	--	142	60	--
72.73	1087	8.219	8.85	0.681	--	140	58	--
57.19	1100	7.404	7.72	0.781	0.000	156	57	29.155

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. Deg. F.		Barometer Inches of Mercury
					Gal. per hr.	H.P. hr. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	

TESTS F AND G - 100% MAXIMUM LOAD

90.42	23851	1.42	1050	4.32	-----	Not Recorded	-----	143	38	29.390
91.99	18410	1.87	1051	3.44	-----	"	"	141	37	29.390
90.67	12919	2.63	1055	2.36	-----	"	"	144	39	29.175
90.12	9770	3.46	1050	1.32	-----	"	"	131	23	29.450
84.14	6448	4.89	1053	0.71	-----	"	"	132	28	29.490
77.06	4520	6.39	1051	0.48	-----	"	"	135	36	29.355

*TEST H - TEN HOURS - Second - GEAR

69.34	13727	1.89	1050	2.40	8.300	8.35	0.722	0.022	177	42	29.395
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*Formerly called RATED LOAD; see REMARKS 4, page 3.

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FUEL, OIL, AND TIME

Fuel Gasoline Octane 71 Weight per gallon 6.03 pounds

Oil: S.A.E. No. 30 To motor 7.163 gal. Drained from motor 5.012 gal.

Total time motor was operated 37 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 1.48 Second 1.94

Third 2.68 Fourth 3.50 Fifth 4.90 Sixth 6.41 Reverse 1.72 - 2.25

Belt pulley: Diam. 20" Face 15" R.P.M. 580 - 444 Belt Speed 3040 - 2330 fpm.

Clutch: Make Own Type Double plate Operated by hand

Seat Upholstered

Total weight as tested (with operator) 26,105 pounds

MOTOR

Make Own Serial No. ML3634A Type 6 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke 5 1/4" x 6 1/2" Rated R.P.M. 1050

Port diameter valves: Inlet 2" Exhaust 2"

Magneto: Make Fairbanks-Morse Model RV6B

Carburetor: No. 2 Make Zenith Model 62AX - J10 Size 1 1/4"

Governor: Make Own Type Variable-speed, centrifugal

Air Cleaner: Make Vortex Type Oil-washed wire filter with United pre-cleaner

Oil Filter: Make Purolator Type Partial flow, metal element

Cooling medium temperature control: Bishop and Babcock thermostat with hand operated by-pass

CHASSIS

Type Tracklayer Serial No. L3133 Drive Enclosed gear

Tread width: 68" Measured length of track 22.9325'

Cleats: Type Integral with shoes No. per track 35

Size 2 1/2" high x 20" long

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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 100% of maximum belt horsepower.

	<u>DRAWBAR</u>	<u>BELT</u>
2. Observed maximum horsepower (tests F & B)	91.99	108.84
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	91.53	110.15
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)	68.65	93.63

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 338.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers