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January 1939

Test 336: Allis-Chalmers Model WK

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. 336

Dates of test: November 21 to 27, 1939.

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

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	
TEST B - 100% MAXIMUM LOAD - TWO HOURS								
62.22	1050	6.160	10.10	0.597	0.000	138	56	28.980
TEST C - OPERATING MAXIMUM LOAD - ONE HOUR								
62.15	1050	6.027	10.31	0.585	0.000	129	49	28.985
*TEST D - ONE HOUR								
54.54	1050	5.247	10.39	0.580	0.000	143	69	28.80
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
54.48	1050	5.239	10.40	0.580	--	143	70	--
2.56	1167	2.701	0.95	6.363	--	119	69	--
29.03	1114	3.821	7.60	0.794	--	124	68	--
58.69	1000	5.672	10.35	0.583	--	128	49	--
15.01	1148	3.239	4.63	1.301	--	163	64	--
41.90	1080	4.284	9.78	0.816	--	171	68	--
33.61	1093	4.159	8.08	0.746	0.000	141	64	28.970

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. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	
TEST F - 100% MAXIMUM LOAD - Second - GEAR											
53.60	7813	2.57	1053	1.63	----- Not Recorded -----			143	54	28.980	
TEST G - OPERATING MAXIMUM LOAD											
51.85	11785	1.65	1050	4.32	----- Not Recorded -----			143	56	28.910	
52.89	7727	2.57	1051	1.61	----- " " -----			129	45	28.945	
53.08	6165	3.23	1046	1.07	----- " " -----			146	60	28.955	
44.60	2815	5.94	1054	0.62	----- " " -----			145	57	28.945	

*TEST H - TEN HOURS - Second - GEAR

41.50	6063	2.57	1050	1.52	4.630	8.96	0.673	0.009	170	38	29.080
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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 4.746 gal. Drained from motor 3.467 gal.

Total time motor was operated 36 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 1.72 Second 2.59

Third 3.26 Fourth 5.92 Reverse 2.10

Belt pulley: Diam. 12" Face 8 3/4" R.P.M. 1050 Belt Speed 3300 f.p.m.

Clutch: Make Own Type Single plate Operated by hand

Seat Upholstered

Total weight as tested (with operator) 13340 pounds

MOTOR

Make Own Serial No. 12078 G Type 4 cylinder, vertical

Head I Mounting Crankshaft lengthwise Lubrication Pressure

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

Port diameter valves: Inlet 2" Exhaust 2"

Magneto: Make Fairbanks-Morse Model FMO4B

Carburetor: Make Zenith Model 62AJ12 Size 1 1/2"

Governor: Make Own Type Variable-speed, centrifugal

Air Cleaner: Make Vortex Type Oil-washed 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. WK8276 Drive Enclosed gear

Tread width 63" Measured length of track 18.5269'

Cleats: Type Integral with shoes No. per track 34

Size 2" high x 18" 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 99.2% of maximum belt horsepower.

	<u>DRAWBAR</u>	<u>BELT</u>
2. Observed maximum horsepower (tests F & B)	53.60	62.22
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	54.99	63.96
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)	41.24	54.37

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 336.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers