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January 1937

Test 285: Allis-Chalmers Model WK-0

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. 285

Dates of test: August 26 to September 2, 1937.

Name and model of tractor: ALLIS-CHALMERS WK-0

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

Manufacturer's rating: NOT RATED.

B R A K E 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 Consumption per hour gallons			Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H. P. hr.	Cool- ing	In fuel	Total	Cool- ing med.	Air	

TESTS B AND C - MAXIMUM LOAD - TWO HOURS

59.06	1050	4.618	12.79	0.550	0.000	0.000	0.000	153	85	28.860
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*TEST D - ONE HOUR

53.41	1050	4.505	11.86	0.593	0.000	0.000	0.000	154	82	28.860
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs: last line average)

53.42	1049	4.502	11.87	0.592	--	--	--	156	84	--
0.88	1091	1.686	0.52	13.466	--	--	--	127	85	--
27.20	1068	2.953	9.21	0.763	--	--	--	138	85	--
56.63	1000	4.523	12.52	0.562	--	--	--	163	88	--
13.72	1079	2.279	6.02	1.168	--	--	--	142	89	--
40.20	1066	3.580	11.23	0.626	--	--	--	147	89	--
32.01	1059	3.254	9.84	0.715	0.000	0.000	0.000	145	86	28.880

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.		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 - MAXIMUM LOAD

50.45	11685	1.62	1050	6.24	-----	Not Recorded		-----	166	92	28.840
49.26	7209	2.56	1052	1.86	-----	"	"	-----	174	98	28.840
49.62	5731	3.25	1052	1.13	-----	"	"	-----	170	93	28.870
40.62	2565	5.94	1051	0.44	-----	"	"	-----	173	96	28.860

*TEST H - TEN HOURS - Second GEAR

39.80	5814	2.57	1050	1.59	4.194	9.49	0.741	0.000	159	92	28.790
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*Formerly called RATED LOAD; see REMARKS 4, page 3.

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLNCopy of Report of Official Tractor Test No. 285FUEL, OIL, AND TIME

Fuel Commercial diesel fuel Weight per gallon 7.03 pounds
Oil: S.A.E. No. 30 To motor 3.903 gal. Drained from motor 4.286 gal.
Total time motor was operated 54 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: Diameter 12" Face 8 3/4" R.P.M. 1050

Clutch: Make Own Type Single-plate, dry Operated by Hand

Seat Upholstered

Total weight as tested (with operator) 13000 Pounds
4 cylinder, vertical, fuel

MOTOR: Make Own Serial No. MO 21154 Type injection, spark ignition

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 2.25" Exhaust 1.875"

Fuel system: Make Deco Model PB - 100 - 4

Ignition system: Make Mallory Model MO - 90 AT

Governor: Make Own Type Variable-speed, centrifugal

Air cleaner: Make United Type Oil-washed, steel wool filter

CHASSIS: Type Tracklayer Serial No. WKO 6989 Drive Enclosed gear

Tread width 63" Measured length of track 18.53'

Cleats: Type Integral with shoes No. per track 34

Size 2" high x 18" long

Copy of Report of Official Tractor Test No. 285

REPAIRS AND ADJUSTMENTS

The fuel injectors were cleaned during the belt test.

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 fuel pumps set to develop 7200 pounds observed maximum drawbar pull in second gear (selected by the manufacturer) 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 the same setting.
2. Observed maximum horsepower (tests F & B) Drawbar 49.26 Belt 59.06
3. Sea level (calculated) maximum horsepower Drawbar 52.95 Belt 62.66
 (based on 60° F. and 29.92" Hg.)
4. Seventy-five per cent of calculated maximum Drawbar 39.71 Belt 53.26
 drawbar horsepower and eighty-five per cent
 of calculated maximum belt horsepower (form-
 erly A.S.A.E. and S.A.E. ratings)

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 285.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

Ivan D. Wood

L. W. Hurlbut
Board of Tractor Test Engineers