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January 1939

Test 316: Allis-Chalmers Model RC (Distillate)

Nebraska Tractor Test Lab

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3 pages-page 1

UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 316

Dates of test: April 19 to 24, 1939.

Name and model of tractor: ALLIS-CHALMERS RC (Distillate)

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

18.21	1500	1.510	12.06	0.574	0.000	179	70	28.935
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

18.14	1501	1.480	12.26	0.564	0.000	163	65	28.950
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*TEST D - ONE HOUR

16.24	1500	1.374	11.82	0.586	0.000	179	67	28.935
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

16.31	1499	1.400	11.65	0.594	--	180	67	--
1.63	1650	0.731	2.23	3.105	--	193	67	--
8.40	1570	0.980	8.57	0.807	--	181	68	--
17.39	1421	1.418	12.26	0.564	--	174	65	--
4.48	1669	0.871	5.14	1.346	--	191	68	--
12.41	1578	1.162	10.68	0.648	--	190	68	--
10.10	1564	1.094	9.23	0.750	0.000	185	67	28.950

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 - Third - GEAR

15.25	1551	3.69	1500	5.12	-----	Not Recorded	-----	191	77	28.770
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TEST G - OPERATING MAXIMUM LOAD

12.60	2840	1.66	1501	17.38	-----	Not Recorded	-----	185	81	28.730
14.88	2067	2.70	1499	7.75	-----	"	"	202	82	28.725
14.84	1509	3.69	1500	5.09	-----	"	"	191	72	28.800
13.93	716	7.30	1500	2.02	-----	"	"	197	83	28.740

*TEST H - TEN HOURS - Third - GEAR

12.11	1221	3.72	1500	4.29	1.282	9.45	0.732	0.000	186	77	28.550
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*Formerly called RATED LOAD; see REMARKS 4, page 3.

3 pages-page 2

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FUEL, OIL, AND TIME

Fuel Distillate Octane 39 Weight per gallon 6.92 pounds
Oil: S.A.E. No. 30 To motor 1.963 gal. Drained from motor 0.771 gal.
Total time motor was operated 51 hours

TRF SPECIFICATIONS

Advertised speeds, miles per hour: First 2.0 Second 2.8
Third 3.75 Fourth 7.5 Reverse 1.75
Belt pulley: Diam. 8" Face 5 1/2" R.P.M. 1350 Belt Speed 2827 f.p.m.
Clutch: Make Rockford Type Single plate, dry Operated by foot
Seat Pressed steel (with sponge rubber pad)
Total weight as tested (with operator) 4,005 pounds

MOTOR

Make Own Serial No. R 3060 K Type 4 cylinder, vertical
Head I Mounting Crankshaft lengthwise Lubrication Pressure
Bore and stroke 3 3/8" x 3 1/2" Rated R.P.M. 1500
Port diameter valves: Inlet 1.199" Exhaust 1.030"
Magneto: Make Fairbanks - Morse Model FM-4-B
Carburetor: Make Zenith Model 61-AJ-7 Size 7/8"
Governor: Make Own Type Centrifugal
Air Cleaner: Make Donaldson Type Oil-washed, wire-screen filter
Oil Filter: Make Own Type Renewable element
Cooling medium temperature control: Own adjustable curtain

CHASSIS

Type Tricycle Serial No. RC3004 Drive Enclosed gear
Tread width: Rear 65" - 76" Front: Top 13 5/8" Bottom 9 3/8"
Rear tires: No. 2 Size 10 x 28" - 4 ply Air pressure 12 pounds
Front tires: No. 2 Size 4.75" x 15" - 4 ply Air pressure 22 pounds
Added weight: Per rear wheel (Cast Iron 425 pounds
(Calcium Chloride Solution 199 pounds
Per front wheel (Cast Iron None pounds
(Calcium Chloride Solution 25 pounds

3 pages-page 3

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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 99.1% of maximum belt horsepower.

	<u>DRAWBAR</u>	<u>BELT</u>
2. Observed maximum horsepower (tests F & B)	15.25	18.21
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	16.12	19.01
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)	12.09	16.16

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 316.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers