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Larsen

January 1925

Test 114: Heider 15-27

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. 114

Dates of test: May 7th to 13th, 1925
 Name, model and rating of tractor: Heider 15 - 27
 Serial No. Engine 51405 P Serial No. Chassis 8621
 Manufacturer: Rock Island Plow Company, Rock Island, Illinois
 Tractor equipment used: Dixie 46 magneto. Kingston L carburetor
 Style and dimensions of wheel lugs: Cone 3" high.

BRAKE HORSE POWER TESTS

H.P.	Dev.	Crank	Shaft	Time	of	Speed	R.P.M.	Min	Fuel	Kind	Gals	per	Hour	H.P.	@	ing	Fuel	Total	Cool-	Air	Temp.	Average	Humidity	Height of	Barometer	In	Inches
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	

RATED LOAD TEST

27.16	: 904	: 120	: Kero	: 3.567	: 7.62	: 0.00	: .515	: .515	: 181	: 67	: 31	: 28.96
Belt Slippage 1.25%												

** VARYING LOAD TEST

27.01	: 904	: 10	: Kero	:	:	:	:	:	:	:	:	:
26.72	: 891	: 10	: "	:	:	:	:	:	:	:	:	:
0.89	: 957	: 10	: "	:	:	:	:	:	:	:	:	:
7.22	: 936	: 10	: "	:	:	:	:	:	:	:	:	:
14.20	: 930	: 10	: "	:	Average Belt Slippage 0.98%			:	:	:	:	:
21.01	: 928	: 10	: "	:	:	:	:	:	:	:	:	:
16.53	: 924	: 60	: Kero	: 2.687	: 6.17	: 0.00	: .317	: .317	: 169	: 70	: 27	: 28.95

MAXIMUM LOAD TEST

30.00	: 906	: 60	: Kero	: 4.608	: 6.51	: 0.00	: 1.161	: 1.161	: 169	: 73	: 27	: 28.88
Belt Slippage 1.42%												

HALF LOAD TEST

14.25	: 935	: 60	: Kero	: 2.445	: 5.83	: 0.00	: 0.00	: 0.00	: 168	: 72	: 27	: 28.92
Belt Slippage 0.93%												

- * Taken in discharge line from engine
- ** The last line is an average for the hour

REMARKS: The kerosene used as fuel in this test weighed 6.78 pounds per gallon.

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DRAWBAR HORSE POWER TESTS

H. P.	Draw Bar	Speed Miles	Crank Shaft	Slip on	Fuel Consumption Kind	Amt.	H.P.	Water Used	Temp. deg. F.	Average Humidity	Height of Barometer
Dev	Pull	Per Hour	Speed R.P.M.	Drive Wheels	Used	Per Hour	Per Hour	Per Hour	Fluid	%	In Inches
::	Pounds	:	:	:	:	:	:	:	:	:	:
:	:	:	:	% **	:	:	Gal.	:	:	:	:

RATED LOAD TEST . TEN HOURS

17.06	2461	2.60	909	10.59	Kero	3.302	5.17	0.00	177	70	57	28.64
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MAXIMUM LOAD TEST

21.54	3302	2.45	898	12.43	Kero	- - NOT RECORDED - -			173	64	54	28.78
19.24	2557	2.83	902	11.47	"	"	"	"	180	72	54	28.78
16.72	1993	3.15	826	9.83	"	"	"	"	190	72	54	28.78

* Taken in discharge line from engine

** The first figure denotes slippage at the rim of the wheel. The second figure denotes slippage at the point of the lug

REMARKS: The rated load run and the first maximum run were made with speed change lever in the first notch. The second maximum run was made with speed change lever in the center notch. The third maximum run was made with the speed change lever in the rear notch

OIL CONSUMPTION: During the complete test consisting of about 36 hours running the following oil was used:
 For the engine, 2-1/2 gallons of Mobiloil "BB", 2 gallons to fill crank case and 1/2 gallon was added
 For the transmission, none.
 Other lubrication, 1 lb. cup grease.

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REPAIRS AND ADJUSTMENTS

During the belt runs but before any data were taken, the right pulley shaft bearing heated excessively. It was removed and balls found chipped, ball retainer bent and broken, and inner race broken. It appeared that the trouble was caused by a defective inner race. A new bearing was installed.

The friction drive ring was found slightly burned (probably due to excessive slip when bearing failed) and was replaced by new ring.

No other repairs or adjustments were necessary during this test.

At the end of the test the tractor was in good running order and there were no indications of undue wear nor of any weakness which might require early repair.

BRIEF SPECIFICATIONS

Model 15 - 27

Motor: Waukesha, 4 cylinder, vertical, L head - head not removable, mounted crankshaft lengthwise. Bore, 4-3/4"; stroke, 6-3/4". Rated speed, 900 r.p.m.

Governor: Waukesha (fly-ball)
Air Cleaner: United (whirling vane)

Chassis: Four wheel, 2 drivers; open gears; friction drive. Advertised speeds; 1 to 4 miles per hour.

Total weight as tested (with operator) 6,290 pounds.

REMARKS

In the advertising literature submitted with the specifications and application for test of this tractor, we find some claims and statements 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.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 114.

E. E. Brackott
Engineer-in-Charge

Oscar W. Sjogren

C. W. Smith

Fred R. Nohavec
Board of Tractor Test Engineers