

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.  
Larsen

---

January 1923

## Test 097: Hart-Parr 40

Tractor Museum

University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

---

Museum, Tractor, "Test 097: Hart-Parr 40" (1923). *Nebraska Tractor Tests*. 718.

<https://digitalcommons.unl.edu/tractormuseumlit/718>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

UNIVERSITY OF NEBRASKA AGRICULTURAL ENGINEERING DEPARTMENT

AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 97

Dates of test: July 10th to 19th, 1923.

Name, model and rating of tractor: Hart-Parr 40

Serial No. Engine: 70006                      Serial No. Chassis      70006

Manufacturer: Hart-Parr Company, Charles City, Iowa.

Tractor equipment used: KV (TK) No. 0172406 Magneto - Schebler "D" Carburetor

Style and dimensions of wheel lugs: Spades 3-1/2" high - 18 to the wheel.

BRAKE HORSE POWER TESTS

		Fuel Consumption		Water Consump.		Temp.		Deg.			
		Gals.		Per hour.		F.		F.			
H.P.	Crank	Time	Kind	Gals.	H. P.	Cool-	In	Total	Cool-	Air	Average
Dev.	Shaft	of	of	@	Hrs. @	ing	Fuel	ing	ing	ing	Humidity.
:Speed	:Test	: of	: @	: Hrs. @	: ing	: Fuel	: ing	: ing	: ing	: ing	: %
:R.P.M.	:Min.	:Fuel	:Hour	:Gal.	:Gal.	:Gal.	:Gal.	:Fluid:	:Fluid:	:Fluid:	Height of
											Diameter
											Inches.

RATED LOAD TEST

40.66	: 802	: 120	: Kero	: 4.959	: 8.20	: 2.50	: 2.50	: 5.00	: 210	: 91	: 57	: 28.75
Belt Slippage 1.43%												

VARYING LOAD TEST \*\*\*

40.57	: 800.5	: 10	: Kero	:	:	:	:	:	:	:	:	:
41.26	: 798.0	: 10	: "	:	:	:	:	:	:	:	:	:
1.22	: 854.0	: 10	: "	:	:	:	:	:	:	:	:	:
10.69	: 838.0	: 10	: "	:	Average Belt Slippage 1.06%		:	:	:	:	:	:
21.16	: 831.0	: 10	: "	:	:	:	:	:	:	:	:	:
51.09	: 815.0	: 10	: "	:	:	:	:	:	:	:	:	:
24.77	: 823.0	: 60	: "	: 3.726	: 6.65	: 1.00	: 1.00	: 2.00	: 198	: 92	: 57	: 28.75

MAXIMUM LOAD TEST

46.40	: 798.0	: 60	: Kero	: 7.416	: 6.26	: 0.00	: 4.50	: 4.50	: 196	: 88	: 60	: 28.85
Belt Slippage 1.37%												

HALF LOAD TEST

21.16	: 831.0	: 60	: Kero	: 2.546	: 8.31	: 1.50	: 0.25	: 1.75	: 210	: 92	: 58	: 28.75
Belt Slippage 0.99%												

\* Taken in discharge line from engine.

\*\*\* The last line is an average for the hour.

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

Copy of Report of Official Tractor Test No. 97.

DRAWBAR HORSE POWER TESTS

H. P.	Draw	Speed	Speed	Slip	Fuel Consumption	Water	Temp. Deg. F.	Average	Height of
Dev.	Bar	Miles	Crank	on	Amt.	H.P.	Used	Humidity	Barometer
	Pull	Per	Shaft	Drive	Kind	Per	Hrs.	Cooling	Air
	Lbs.	Hour	R.P.M.	%	Used	Hour	Per	Fluid	%
				***	Gal.	Gal.	Gal.		

RATED LOAD, TEN HOURS

21.62	2447	3.313	807	- 3.60	Kero	4.74	4:55	1.82	205	87	62	28.88
-------	------	-------	-----	--------	------	------	------	------	-----	----	----	-------

MAXIMUM LOAD TEST

28.23	3750	2.82	749	3.71	Kero		Not Recorded	210	90	58		28.85
24.71	4830	1.90	850	16.35	"	"	"	210	90	58		28.85

\*Taken in discharge line from engine.

\*\*\*The first figure denotes slippage at the points of the lugs, the second figure denotes slippage at the rim of the wheel.

REMARKS: The rated load and the first maximum test were made in high gear. The second maximum test was made in low gear.

OIL CONSUMPTION:

During the complete test consisting of about 34 hours running the following oil was used:  
 For the engine, 12 gallons of Mobiloil "B"  
 For the transmission, none.

Copy of Report of Official Tractor Test No. 97

REPAIRS AND ADJUSTMENTS

- July 16: Before any official data were taken the water circulating pump was replaced by a larger one (outside diameter of shell 11 inches) which is to be standard equipment for this tractor. The fan shroud was set closer to the radiator. Spark plug No. 2 was found to be broken and was replaced. Plug No. 3 had bad points and was replaced.
- July 18: During the rated drawbar test plug No. 1 broke and was replaced. Plug No. 3 had bad points and was replaced.

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 Hart-Parr 40

Motor: Own, four cylinder, horizontal, valve-in-head. Bore - 5-1/2", stroke - 6-1/2". Rated speed 800 r.p.m.

Chassis: Four wheel, contracting band clutch. Two speeds forward, low - 2.14 miles per hour, high 3.12 miles per hour.

Total weight - 8300 pounds.

REMARKS

In the advertising literature submitted with the application for test of this tractor, we find 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. 97.

E. E. Brackett  
Engineer in Charge

Oscar W. Sjogren

C. W. Smith

Fred R. Nohavec

Board of Tractor Test Engineers.