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January 1924

Test 107: Hart-Parr 12-24

Tractor Museum

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UNIVERSITY OF NEBRASKA AGRICULTURAL ENGINEERING DEPARTMENT

AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 107

Dates of test: October 14th to 23rd, 1924
 Name, model and rating of tractor: Hart-Parr 12 - 24
 Serial No. Engine: 36010 Serial No. Chassis: 36010
 Manufacturer: Hart-Parr Company, Charles City, Iowa.
 Tractor Equipment used: Stromberg MB3 carburetor. KW Model T magneto
 Style and dimensions of wheel lugs: Spade, 3-1/2" high, 4" wide

BRAKE HORSE POWER TESTS

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

RATED LOAD TEST

24.24	::	804	:	120	:	Kero	:	2.567	:	9.44	:	1.499	:	**	:	1.499	:	192	:	81	:	44	:	28.93
Belt Slippage 1.61%																								

*** VARYING LOAD TEST

24.14	:	803.0	:	10	:	Kero	:		:		:		:		:		:		:		:		:	
24.12	:	797.0	:	10	:	"	:		:		:		:		:		:		:		:		:	
0.99	:	836.0	:	10	:	"	:		:		:		:		:		:		:		:		:	
6.28	:	828.5	:	10	:	"	:		:		:		:		:		:		:		:		:	
12.41	:	823.5	:	10	:	"	:		:		:		:		:		:		:		:		:	
18.35	:	811.5	:	10	:	"	:		:		:		:		:		:		:		:		:	
14.55	:	817.0	:	60	:	Kero	:	1.829	:	7.96	:	0.770	:	**	:	0.770	:	185	:	85	:	38	:	28.93

MAXIMUM LOAD TEST

26.97	:	799.0	:	60	:	Kero	:	3.142	:	8.53	:	2.254	:	**	:	2.254	:	179	:	76	:	70	:	28.90
Belt Slippage 1.56%																								

HALF LOAD TEST

12.86	:	853.0	:	60	:	Kero	:	1.717	:	7.49	:	0.103	:	**	:	0.103	:	180	:	89	:	64	:	28.86
Belt Slippage 1.25%																								

* Taken in discharge line from engine.

** The water used with the fuel was taken from the cooling system.

*** 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. Dev.	Draw Bar	Speed Miles	Crank Shaft	Slip On	FUEL CONSUMPTION	Water Used	Temp. Deg. F.	Average	Height of Barometer
: Pull	: Per	: Speed	: Drive	: Used	: Per	: Hr.	: Per	: Fluid	: Humidity
: Pounds	: Hour	: R.P.M.	: Wheels	: % ***	: Gal.	: Gal.	: Gal.	: *	: In Inches

RATED LOAD TEST. TEN HOURS

**	11.57	1326	3.27	778	-5.85	8.07	Kero	2,445	4.73	0.782	171	54	41	29.14
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MAXIMUM LOAD TEST

	16.99	3054	2.09	801	5.95	18.30	Kero	--NOT RECORDED--			182	54	38.0	29.22
	17.54	2060	3.16	805	1.01	14.03	Kero	--NOT RECORDED--			180	56	38.0	29.22

- * Taken in discharge line from engine.
- ** Horsepower is below rating due to operator not applying enough load. Tractor would have pulled rating easily.
- *** The first figure denotes slippage at the rim of the wheel. The second figure denotes slippage at the points of the lugs.

REMARKS: The rated load and second maximum tests were run in high gear. The first maximum was run in low gear.
OIL CONSUMPTION:

During the complete test consisting of about 32 hours running the following oil was used:
For the engine, 4-1/2 gallons of Mobiloil "B" of which 1/4 gallon was put into crank case and 4-1/4 gallon in lubricator.
For the transmission, none.

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REPAIRS AND ADJUSTMENTS

During the rated drawbar load one spark plug was cleaned (points had burned together).

No other repairs or adjustments were necessary.

At the close of the test the tractor was in good operating condition and there were no indications of undue wear in any part which might require early repair.

BRIEF SPECIFICATIONS

Hart-Parr 12 - 24

Motor: Own, 2 cylinder, valve-in-head, horizontal, mounted crankshaft crosswise. Bore 5-1/2", stroke 6-1/2". Rated speed, 800 r.p.m. Madison-Kipp Lubricator. Own make fly-ball type governor. United (whirling cone type) dry air cleaner.

Chassis: Four wheels, two drivers, enclosed gear drive. Dry disc clutch. Two speeds: (as advertised) low, 2-1/4 miles per hour; high, 3-1/2 miles per hour.

Total weight as tested - 4,675 lbs.

REMARKS

In the advertising literature submitted with the 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. 107.

E. E. Brackett
Engineer-in-Charge

Oscar W. Sjogren

C. W. Smith

Fred R. Mohavec
Board of Tractor Test Engineers