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January 1924

Test 108: Monarch Model D 6-60 40-60

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. 108

Dates of test: October 24th to November 1st, 1924
 Name, model and rating of tractor: Monarch D 6 - 60 40 - 60
 Serial No. Engine: JD525-4 Serial No. Chassis: 6044
 Manufacturer: Monarch Tractors Incorporated, Watertown, Wisconsin
 Tractor equipment used: Stromberg M4 carburetor. Bosch AT6 Ic magneto
 Style and dimensions of wheel lugs: 1-1/2" high, straight sharp cleat

BRAKE HORSE POWER TESTS

H. P.	:	Crank	:	Time	:	Fuel Consumption	:	Water Consumption	:	Temp.	:	%
Dev.	:	Shaft	:	of	:	Kind: Gals : H.P.	:	Gals. Per Hour	:	Deg. F.	:	
:	:	Speed	:	Test	:	of : Per : Hrs. @	:	ing : Fuel : Total: ing	:	Air:	:	
:	:	R.P.M.	:	Min	:	Fuel: Hour : Gal.	:	:	:	:	:	
:	:	:	:	:	:	:	:	:	:	:	:	

RATED LOAD TEST

60.21	:	1200	:	120	:	Gasol	:	6.7085	:	8.98	:	0.163	:	0.00	:	0.163	:	192	:	78	:	23:28.51
Belt Slippage 1.74%																						

**VARYING LOAD TEST

59.68	:	1189.5	:	10	:	Gasol	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
60.39	:	1199.0	:	10	:	"	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
1.06	:	1176.0	:	10	:	"	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
16.58	:	1313.0	:	10	:	"	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
29.63	:	1178.0	:	10	:	"	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
45.79	:	1214.0	:	10	:	"	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
35.79	:	1212.0	:	60	:	Gasol	:	5.074	:	7.05	:	0.00	:	0.00	:	0.00	:	169	:	77	:	23:28.51

MAXIMUM LOAD TEST

70.74	:	1202.0	:	60	:	Gasol	:	9.327	:	7.59	:	0.00	:	0.00	:	0.00	:	176	:	60	:	68: 28.57
Belt Slippage 1.97%																						

HALF LOAD TEST

30.20	:	1201.0	:	60	:	Gasol	:	4.167	:	7.25	:	0.00	:	0.00	:	0.00	:	157	:	73	:	23:28.51
Belt Slippage 1.59%																						

* Taken in discharge line from engine

** The last line is an average for the hour

REMARKS: The gasoline used as fuel in this test weighed 6.24 pounds per gallon.

Copy of Report of Official Tractor Test No. 108

DRAWBAR HORSE POWER TESTS

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

RATED LOAD TEST. TEN HOURS

40.06	7312	2.05	1218	3.45	Gas	6.757	5.93	0.043	171	69	36	28.26
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MAXIMUM LOAD TEST

51.51	12922	1.50	1198	8.72	Gas	- - NOT RECORDED	- -	172	68	38	28.32
53.25	9967	2.01	1199	4.97	"	"	" " "	170	68	38	28.32
49.55	5678	3.27	1183	2.79	"	"	" " "	162	68	38	28.32

* Taken in discharge line from engine

** The distance advanced by the tractor without load on level earth for one complete revolution of the tracks was taken as a basis for calculating track slippage.

REMARKS: The rated load and second maximum test were run in 2nd gear. The first maximum test was run in low gear. The third maximum test was run in high gear.

OIL CONSUMPTION:

During the complete test consisting of about 38 hours running the following oil was used:
For the engine, 14-1/2 gallons of Mobiloil "BB", 3-1/2 gallons to fill crank case and 11 gallons were added.
For the transmission, none.

COPY OF REPORT OF OFFICIAL TRACTOR TEST NO. 108

REPAIRS AND ADJUSTMENTS

Six cotter keys in track shoe pins broke off: two of them were replaced during the test.

During the limber up run the gear shift lock spring weakened and gears had to be locked in mesh when the drawbar tests were run.

No other adjustments or repairs were necessary during this test.

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

BRIEF SPECIFICATIONS

MONARCH D 6-60

40-60

MOTOR: Beaver, 6 cylinder, vertical, valve-in-head. Mounted crankshaft lengthwise. Bore 4-3/4", stroke 6", Rated speed, 1200 r.p.m. Pharo (oil type) governor. No air cleaner.

CHASSIS: Track layer type (two tracks). Open chain drive. Disc clutch. Brake bands for steering control. Advertised speeds: low, 1.5 miles per hour: 2nd, 2.5 miles per hour; 3rd, 3.5miles per hour.

Total weight as tested (with driver) 16,789 lbs.

The tractor tested was equipped with Bosch electric starter and generator.

REMARKS

In the advertising literature submitted with 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.

E. E. Brackett
Engineer-in-charge

Oscar W. Sjogran

G. W. Smith

Fred A. Nonavac

Board of Tractor Test Engineer