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January 1920

## Test 056: Monarck 18-30

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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**UNIVERSITY OF NEBRASKA**  
**AGRICULTURAL ENGINEERING DEPARTMENT**  
**UNIVERSITY FARM, LINCOLN**

Report of Official Tractor Test No. 56

Dates of test August 21 to August 27, 1920.

Name, model and rating of tractor Monarch 18-30

Serial No. Engine JB 208-108 Serial No. Chassis 3464

Manufacturer General Tractors, Inc., Watertown, Wisconsin

Tractor equipment used Kingston Model L Carb.; KW Model T Mag.

Style and dimensions of wheel lugs Crawler track -- no lugs.

**Brake Horse Power Tests**

Horse Power Developed	Crank Shaft Speed R. P. M.	Length of Test Min.	Fuel Consumption			Water Consumption Gallons per Hour			Temperature *Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Humidity %	Barometric Pressure Inches Mercury
			Kind of Fuel	Amount Used per Hour Gallons	Horse Power Hours per Gallon	In Radiator	In Fuel Mixture	Total				
RATED LOAD TEST												
30.55	952	120	Kero.	3.625	8.43	1.00	0.00	1.00	199	84.5	55.5	28.76
			Belt slippage 1.50%.									
VARYING LOAD TEST												
30.53	950	10	Kero.									
32.22	983	10	"									
1.31	1056	10	"									
9.48	991	10	"									
15.27	960	10	"									
24.93	967	10	"									
18.96	984	60	"	2.89	6.57	0.00	0.00	0.00	190	87	55.5	28.76
MAXIMUM LOAD TEST												
32.40	957	60	Kero.	3.94	7.97	1.00	0.00	1.00	202	86	55.5	28.76
			Belt slippage 1.49%.									
HALF LOAD TEST												
15.28	959	60	Kero.	2.40	6.83	0.125	0.00	0.125	186	87	55.5	28.76
			Belt slippage 1.12%.									

\*Taken in discharge line from engine.

Remarks Fuel used in this test weighed 6.72 lbs. per gallon.

Aver.

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### Drawbar Horse Power Tests

Aug. 21 to 27, 1920.

Horse Power Developed	Draw Bar Pull Pounds	Speed Miles per Hour	Crank Shaft Speed R. P. M.	Slippage of Drive Wheels %	Fuel Consumption			Water Used per Hour Gallons	*Temperature of Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Average Humidity %	Barometric Pressure Inches Mercury
					ind of Fuel Used	Amount Used per Hour Gallons	Horse Power Hours per Gallon					
RATED LOAD TEST. TEN HOURS												
19.28	3443	2.10	946	3.2	Kero.	3.72	5.18	0.72	182	79.5	58	28.7
											-	
MAXIMUM LOAD TEST (1st 87.7' ; 2nd 78.9')												
21.03	4670	1.69	750	4.8	Kero.	Not recorded			175	84	44	28.7
20.57	5852	1.32	900	14.4	"	" " "			178	82	44	28.7

\*Taken in discharge line from engine.

Remarks In computing the slippage the outside length of track (measured on ground) was used.

The first maximum run was made in intermediate gear; the second in low.

### Oil Consumption:

During the complete test consisting of about 31 hours running the following oil was used:

For the engine, 3 1/8 gallons of Mobiloil B

For the transmission, None gallons of 600-W

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Repairs and Adjustments.    Endurance:

Bennett air cleaner was changed to include a shroud and hot-air shut-off gate, and it was agreed that this would be regular equipment on all tractors sold in the state.

No other repairs and adjustments were necessary during this test.

Brief Specifications:

Motor: Beaver, 4 cylinder, valve-in-head, vertical.  
Bore 4  $\frac{3}{4}$  " , stroke 6". Rated speed, 950 r.p.m.  
Chassis: Track-laying type, disc clutch; Rated speeds:  
Low 1 $\frac{1}{2}$ , intermediate 2 $\frac{1}{4}$ , high 3 $\frac{1}{2}$  miles per hour.  
Total weight: 8100 lbs.

General Remarks:

About six hours of the "limbering up" run was made in mud at about  $\frac{3}{4}$  load.

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 these are not excessive or unreasonable, except the following:

"The Monarch will go anywhere."

We, the undersigned, certify that above is a true and correct report of official tractor test No. 56.

Fred R. Mohave  
Engineer-in-Charge

Oscar W. Jorgensen  
E. E. Brackett  
C. W. Smith  
Board of Tractor Test Engineers