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January 1920

Test 014: Minneapolis 22-44

Nebraska Tractor Test Lab

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UNIVERSITY FARM, LINCOLN
 AGRICULTURAL ENGINEERING DEPARTMENT
 UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 14

Dates of test May 18 to June 3, 1920

Name, model and rating of tractor Minneapolis 22-44

Serial No. Engine 1754 Serial No. Chassis _____

Manufacturer Minneapolis Threshing Machine Co., Hopkins, MN

Tractor equipment used KW Model HT Mag. Kingston Model E Carb.

Style and dimensions of wheel lugs Malleable 1-3/4' high

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 of Cooling Fluid Deg. C.	Temperature of Atmosphere Deg. F.	Humidity %	Barometric Pressure Inches Mercury
			Kind of Fuel	Amount Used per Hour Gallon	Horse Power Hours per Gallon	In Radiator	In Fuel Mixture	Total				
RATED LOAD TEST												
44.15	705	120	Kero	5.97	7.40	x	x	3.74	173	78	64	28.7
Belt slippage 1.37%												
VARYING LOAD TEST												
44.26	706.5	10	Kero									
44.82	701.5	10	"									
1.60	746	10	"									
11.66	734	10	"									
23.14	729.5	10	"									
34.44	725.0	10	"									
27.03	725	60	Kero	4.09	6.61	x	x	1.23	169.5	83	74	28.5
MAXIMUM LOAD TEST												
46.04	701	60	Kero	6.74	6.83	x	x	3.68	178	88	74	28.5
Belt slippage 1.35%												
HALF LOAD TEST												
23.17	731	60	Kero	2.69	8.62	x	none	x	178	84	54	28.7
Belt slippage 1.07%												

*Taken in discharge line from engine.

Remarks Water used for radiator and fuel mixture could not be measured separately.

Note 2. The kerosene used in the rated load brake test weighed 6.80 lbs per gallon.

The kerosene used in all other tests on this tractor weighed 6.74 lbs per gallon.

Note 3. In the varying load test it was necessary to shut off water to fuel mixture for no load and to open it again for 3/4 loads.

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Drawbar Horse Power Tests

Horse Power Developed	Draw Bar Pull Pounds	Speed Miles per Hour	Crack Shaft Speed R. P. M.	XX 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
					Kind of Fuel Used	Amount Used per Hour Gallons	Horse Power Hours per Gallon					
RATED LOAD TEST. TEN HOURS (10 hr. 30 min.)												
25.35	3523	2.70	701	6.98	Kero	5.51	4.60	3.90	167	67	74	28.6
MAXIMUM LOAD TEST (150.3 ft.)												
33.21	5104	2.44	680	12.36	Kero	--- Not recorded ---			164	65	58	28.9

*Taken in discharge line from engine.

Remarks **For computing slippage, circumference of drive wheels was taken at points of lugs.

Oil Consumption:

During the complete test consisting of about 33 hours running the following oil was used:

For the engine, 6 1/2 gallons of Mobiloil "BB", 2 gal. Mobiloil "B"

For the transmission, 3-3/4 gallons of Polarine Heavy

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Miscellaneous Tests: None

Repairs and Adjustments. Endurance:

During the limbering up run the kerosene pump was packed and a leaky joint in the pipe line to this pump was repaired by screwing threads up tighter.

At the end of the limbering up run the valve push rods were adjusted.

One valve push rod was adjusted again after the brake tests were completed.

At the end of the test the radiator cap was broken and the oil pipe leading to left bearing of rear jack shaft was broken. With the exceptions noted above the tractor was in good condition and there was no indication of undue wear in any part nor of any weakness which might require early repairs.

The repairs and adjustments during this test do not in our opinion, indicate any defect of more than minor importance.

Brief Specifications Minneapolis 22-44 H.P. Tractor

Engine: 4 cylinder, horizontal, valve-in-head. Bore 6", stroke 7".

Rated speed 700 r.p.m.

Chassis: 4 wheel. Rated speed: 2.7 mi. per hr.

Total weight: 12410 lbs.

General Remarks:

In the advertising literature submitted with the application for test of this tractor we find some statements and claims which cannot be directly compared with the results of this test as reported above. It is our opinion that none of these statements or claims are unreasonable or excessive.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 14.

Claude K. Shedd

Engineer-in-Charge

Oscar W. Sjogren

E. E. Brackett

Jiles W. Haney

Board of Tractor Test Engineers