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Nebraska Tractor Tests

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January 1920

## Test 053: Allwork 14-28

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. 53

Dates of test August 16, to Sept 14, 1920

Name, model and rating of tractor Allwork 14-28

Serial No. Engine 5043 Serial No. Chassis 5043

Manufacturer Electric Wheel Co., Quincy, Illinois.

Tractor equipment used Kingston Model L Mag. Kingston Model E Carb.

Style and dimensions of wheel lugs Pyramid 3" high; Ext. rims 8" wide.

**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												
28.41	915	120	Kero	4.21	6.75	0.51	0.00	0.51	209	100	67	28.7
Belt slippage 1.59%												
VARYING LOAD TEST												
28.18	906	10	Kero.									
28.31	910.5	10	"									
1.53	967.5	10	"									
7.60	987.5	10	"									
15.73	994.5	10	"									
23.67	1009	10	"									
17.72	963	60	Kero	3.31	5.37	0.30	0.00	0.30	192	100	67	28.7
MAXIMUM LOAD TEST												
28.86	915	60	Kero	4.95	5.83	0.26	0.00	0.26	207	101	76	28.7
Belt Slippage 1.47%												
HALF LOAD TEST												
16.06	1015	60	Kero	2.405	6.68	0.00	0.00	0.00	194.5	103.5	63	28.6
Belt Slippage 1.13%												

Aver.

\*Taken in discharge line from engine.

Remarks Kerosene used for fuel in this test weighed 6.72# per gallon.

Report of Official Tractor Test No. 53

Drawbar Horse Power Tests

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 ( 10 Hr. 20 Min.)												
15.24	2133	2.68	903	7.2	Kero	4.57	3.33	0.07	178	81	75	28.5
MAXIMUM LOAD TEST (1st. 120.0 ft; 2nd 127.8 ft.)												
19.69	3950	1.87	950	15.1	Kero	---Not Recorded---			180	82	76	28.5
18.10	2442	2.79	960	9.6	"	"	"		190	82	76	28.5

\*Taken in discharge line from engine.

Remarks \*\* For computing slippage, the circumference of the drive wheels was taken at points of lugs.  
 During the rated and second maximum test the tractor was operated in high gear; during the first maximum the tractor was operated in low gear.

Oil Consumption:

During the complete test consisting of about 35 hours running the following oil was used:

For the engine, 9 gallons of Mobiloil B

For the transmission, 1/2 gallons of 600-W

## Report of Official Tractor Test No. 53

### Repairs and Adjustments. Endurance:

After about 20 hours of running the clutch pin lost out and was replaced.

After about 22 hours of running exhaust valve on cylinder No. 4 was ground, and then about 2 hours later all valves were ground.

After about 26 hours running a larger carburetor of same make was put on and hot air line remodeled to allow control of hot air intake.

The above repairs and adjustments were made before any official data was taken and all changes made are to be made standard.

The tractor was operating in good condition at the end of this test and there was no indication of undue wear in any part nor of any weakness which might require early repair.

It is our opinion that the above repairs and adjustments are ~~not~~ serious as to disqualify the tractor .

### Brief Specifications Allwork 14-28 H.P. Tractor:

Motor: Own, 4 cylinder, vertical L-head, Bore 5", stroke 6".  
Rated speed 900 r.p.m. Rated H.P. belt 28, drawbar 14.

Chassis: 4 wheel, disc clutch. Rated speeds, low 1.75 high 2.50 miles per hour.

Total weight 5000#

### General 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 unreasonable or excessive.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 53

Fred R Mohavee  
Engineer-in-Charge

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