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January 1920

## Test 042: Avery 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. 42

Dates of test July 23 to August 2, 1920.

Name, model and rating of tractor Avery 14-28

Serial No. Engine A 1568 Serial No. Chassis 26030

Manufacturer The Avery Co., Peoria, Illinois.

Tractor equipment used KW Model T Mag. Kingston Dual Carb.

Style and dimensions of wheel lugs Angle 3" x 3" x 28"; 8" Extension rims

**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												
28.16	901	120	Kero	3.42	8.24	10.00	0.00	10.00	212	77	86	28.9
	Belt	Slippage	1.70%									
VARYING LOAD TEST												
27.91	894	10	Kero									
28.03	874.5	10	"									
2.06	958.5	10	"									
7.29	937	10	"									
14.60	940.5	10	"									
21.24	903	10	"									
17.20	918	60	Kero	2.57	6.69	10.00	0.00	10.00	212	83	62	28.9
MAXIMUM LOAD TEST												
31.83	898	60	Kero	4.17	7.63	10.00	0.69	10.69	212	88	39	28.9
	Belt	Slippage	1.92%									
HALF LOAD TEST												
14.22	916	60	Kero	2.26	6.29	8.00	0.00	8.00	212	86	50	28.9
	Belt	Slippage	1.49%									

\*Taken in discharge line from engine.

Remarks Kerosene used for fuel in this test weighed 6.75 lbs per gallon.

Aver.

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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. 08 Min.)												
17.68	2646	2.505	787	8.3	Kero	3.575	4.94	10.35	210	87	52	28.9
MAXIMUM LOAD TEST (1st 79.2 ft; 2nd 172.8 ft.)												
21.52	3049	2.65	810	8.3	Kero	---Not	Recorded ----	210	85	44	28.9	
15.98	1278	4.69	874	4.5	"	"	"	210	85	44	28.9	

\*Taken in discharge line from engine.

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

During the ten-hour test and the first maximum test the tractor was operated in low gear; during the second maximum test the tractor was operated in high gear.

Oil Consumption:

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

For the engine, 7 $\frac{3}{4}$  gallons of Mobiloil "B"

For the transmission, 2 gallons of 600 W

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Repairs and Adjustments. Endurance:

Impulse starter loosened on shaft and was tightened.

Clutch was adjusted once.

Hand throttle connection broke and was replaced.

Valves were ground after about 32 hours run.

At the end of the test the tractor was apparently in good condition. There was no indication of undue wear in any part nor of any weakness which might require early repairs.

Repairs and adjustments necessary during this test do not indicate any mechanical defect of more than minor importance.

Brief Specifications Avery 14-28 H.P. Tractor.

Engine: Four cylinder, horizontal, opposed, valve-in-head.

Bore 4-5/8", stroke 7", rated speed 700 to 900 r.p.m.

Chassis: Four wheel. Rated speeds: low gear 2-1/3 mi. per hr; high gear 3 1/2 mi. per hr.

Total weight 7540 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 except the following:

"Avery tractors have---motors---with---patented gasifiers that turn kerosene or distillate into gas and burn it all."

"---Avery---is the most "direct drive" transmission system built."

"Avery---is the---most efficient belt and drawbar transmission system built."

"---a larger percentage of the power developed by the motor in the Avery tractor is delivered to the belt wheel and to the drawbar than in any other tractor built."

"---Avery opposed motors are superior to any tractor motor built."

"The opposed type of motor---is much better adapted for use in tractor work."

"The fuel system used on the Avery tractors from the 8-16 H.P. to the 40-80 H.P. size burns kerosene, distillate or any other low grade fuel more successfully than it has ever been done before."

"---Avery tractors are the simplest tractors built."

"Averys are the best all-around drawbar and belt tractors built."

We do not approve the comparisons with other tractors quoted above for the reason that proof is lacking.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 42.

Claude K. Shedd  
Engineer-in-Charge

Oscar W. Goguen  
E. E. Brackett  
Fred R. Mohr  
Board of Tractor Test Engineers.