

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.
Larsen

January 1920

Test 058: Avery 18-36

Tractor Museum

University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

Museum, Tractor, "Test 058: Avery 18-36" (1920). *Nebraska Tractor Tests*. 676.

<https://digitalcommons.unl.edu/tractormuseumlit/676>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 58

Dates of test August 25 to September 9, 1920

Name, model and rating of tractor Avery 18-36

Serial No. Engine 2D 2 Serial No. Chassis 26456

Manufacturer The Avery Company, Peoria, Illinois.

Tractor equipment used Kingston Dual Carb.; KW Model TK Mag.

Style and dimensions of wheel lugs Malleable V-cleats 3" high; 8" ext. 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												
36.70	812	120	Kero.	5.81	6.31	14.00	0.375	14.375	212	71.5	92	28.85
			Belt slippage 1.07%.									
VARYING LOAD TEST												
36.78	817	10	Kero.									
36.58	809	"	"									
1.56	837	"	"									
9.45	833	"	"									
18.72	828	"	"									
27.76	819	"	"									
Aver. 22.00	824	60	Kero.	4.56	4.82	11.00	0.25	11.25	210	75	80	28.9
MAXIMUM LOAD TEST												
44.5	812	60	Kero.	6.84	6.50	14.00	2.00	16.00	212	80	68	28.9
			Belt slippage 1.21%.									
HALF LOAD TEST												
18.7	827	60	Kero.	3.26	5.73	12.00	0.0	12.00	210	80.4	80	28.9
			Belt slippage 1.03%.									

*Taken in discharge line from engine.

Remarks The kerosene used for fuel in this test weighed 6.72# per
Gallon.

Report of Official Tractor Test No. 58

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. 3 min.)												
20.58	3202	2.41	811	9.05	Kero.	5.96	3.45	8.47	210	71	69	28.7
MAXIMUM LOAD TEST (1st 126.5 ft. 2nd 134.5 ft.)												
27.50	4590	2.25	781	14.93	Kero.	Not	Recorded		210	78	76	28.7
26.46	2921	3.40	800	9.55	"	"	"	"	210	78	76	28.7

*Taken in discharge line from engine.

Remarks The rated load test and first maximum test were made with tractor in low gear; the second maximum test was made with tractor in high gear.

For computing slippage the circumference of wheel at point of lugs was taken.

Oil Consumption:

During the complete test consisting of about 30 hours running the following oil was used:

For the engine, 6 gallons of Mobiloil B

For the transmission, None gallons of None

Report of Official Tractor Test No. 58

Repairs and Adjustments. Endurance:

There were no adjustments or repairs necessary during this test.

At the end of the test the tractor was operating in good condition, and there were no indications of wear or weakness which might require early repair.

Brief Specifications:

Motor: Own, 4 cylinder, horizontal, valve-in-head, Bore $5\frac{1}{2}$ ", Stroke 6". Rated speed, 800 r.p.m. Rated H.P. Belt 36, Drawbar 18.
Chassis: 4 wheel. Rated speeds, low 2-4/5, high 4 miles per hour.

Total weight: 9,250#.

General Remarks:

In the advertising literature submitted with the applications 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 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 efficient belt and drawbar transmission system built."

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

"-- a larger percentage of the power developed by the motor in 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 been ever 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. 58.

Fred R. Mohavec
Engineer-in-Charge

Oscar W. Sjogren
E. E. Brackett

C. W. Smith
Board of Tractor Test Engineers.