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January 1920

## Test 021: Wisconsin Model "E" 16-30

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA  
AGRICULTURAL ENGINEERING DEPARTMENT  
UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 21

Dates of test June 9, to June 18, 1920.  
Name, model and rating of tractor Wisconsin Model "E" 16-30  
Serial No. Engine 2669 Serial No. Chassis 2450  
Manufacturer Wisconsin Farm Tractor Co., Sauk City, Wisconsin.  
Tractor equipment used Eisemann Model G4 Magneto; Schebler Model A Carb.  
Style and dimensions of wheel lugs Angle 4" high, 1 1/2" long.

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												
40.24	901	120	Kero	5.54	5.455	none	0.50	0.50	189	87	55	29.7
	Belt	Slippage	1.23%									
VARYING LOAD TEST												
10.11	902	10	Kero									
10.11	903	10	"									
1.22	906	10	"									
8.13	963	10	"									
15.90	944	10	"									
24.50	933	10	"									
17.64	936	60	"	4.39	4.25	none	0.14	0.14	171	92	55	29.7
MAXIMUM LOAD TEST												
31.50	914	60	Kero	5.64	5.58	none	0.36	0.36	200	92	56	29.6
	Belt	Slippage	1.84%									
HALF LOAD TEST												
15.82	936	60	Kero	2.62	6.04	none	0.23	0.23	171	86	56	29.6
	Belt	Slippage	0.40%									

\*Taken in discharge line from engine.

Remarks Kerosene used in brake tests weighed 6.74 lbs per gallon.  
In the varying load test it was necessary to turn the air heater switch to "Hot" for 0, 1/4 and 1/2 loads.

## 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					
(See Note 1)												
RATED LOAD TEST. TEN HOURS ( 10 Hr. 5 Min.)												
15.60	2500	2.34	899	16.8	Kero	5.38	2.90	0.336	173	70	78	28.45
MAXIMUM LOAD TEST (1st 132.7 ft., 2nd 139.3 ft.)												
22.22	3426	2.43	927	15.3	Kero	--Not Recorded	-----	156	66	60	28.35	
17.00	1933	3.30	806	11.5	"	"	"	162	66	60	28.85	

\*Taken in discharge line from engine.

Remarks tractor Note 1. The load in the 10-hour test being a little less than the rated horse power of the tractor was due to the operator of the dynamometer car not applying quite enough load. The would have carried 16 horse power without difficulty.

\*\* For computing slippage, the circumference of the drive wheels was taken at points of lugs. The rated load test and the first maximum test were made with the tractor in low gear. The second maximum test was made with the tractor in high gear.

Kerosene used in drawbar tests weighed 6.77 lbs per gallon.

Brief Specifications Wisconsin Model "E" 16-30 H.P. Tractor.

Engine: Four cylinder, vertical, L-head, bore 5", stroke 6". Rated speed 900 r.p.m.

Chassis: Four wheel. Rated speeds (as equipped for test): low gear 2.53 mi. per Hr.; high gear 3.60 mi. per Hr. Gears may be changed so as to give rated speeds: low gear 1.83 mi. per Hr. and high gear 2.57 mi. per Hr.

Total weight: 6060 lbs.

## Oil Consumption:

During the complete test consisting of about 34 hours running the following oil was used:For the engine, 3 gallons of Veedol Extra Heavy.For the transmission,                      gallons of None added.

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Miscellaneous Tests: None.

Repairs and Adjustments. Endurance:

Fan belt broke and was replaced with new one after about 28 hours operation.

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.

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 quoted from their catalog:

Page 6. "Because of this simplicity, for which all tractor manufacturers have been striving unsuccessfully, the Wisconsin Farm Tractor is most desirable for the average farmer."

Page 7. "The cooling system of the Wisconsin Farm Tractor is the most compact, simple and efficient type made."

Page 12 & 17. Lubrication. "---- full pressure system." (The pistons and wrist pins are lubricated by throw off from crank bearings and therefore it should not be called the full pressure system)

Page 13. "By breaking up and gasifying the raw fuel we insure complete combustion----."

Page 13 & 17. "Air or water cleaner ----- prevents the possibility of any dirt or grit entering the engine cylinders---"

Page 18 "Operator can control tractor with one lever under any conditions-----".

Page 22. "This type of (rear axle) construction is much superior to the split axle type of rear axle shaft---" (The University board of engineers is not convinced that the superiority of this type of axle construction has been proven.

Page. 31. "Pulls three or four plows under all conditions." (We would approve a three to four plow rating for this tractor but believe that there are some extreme conditions under which it would not pull three plows.)

The engine speed rating is given in the catalog as 300 to 950. This should be changed to 900 for the maximum speed to conform to specifications certified to us.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 21.

Claude K. Shedd  
Engineer-in-Charge

Oscar V. Sjogren  
E. E. Brabett  
File B. W. Haney  
Board of Tractor Test Engineers.