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January 1920

Test 064: Uncle Sam 20-30

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 64

Dates of test Sept. 21 to Sept. 28, 1920.

Name, model and rating of tractor Uncle Sam 20-30

Serial No. Engine 226-2 JB Serial No. Chassis 1152

Manufacturer U. S. Tractor & Machine Co., Menasha, Wis.

Tractor equipment used Dixie Model 46C Magneto; Bennett Carburetor.

Style and dimensions of wheel lugs Spade 3½" 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 *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 | | | | | | | | | | | | |
| 30.75 | 1025 | 120 | Kero | 6.34 | 4.85 | 0.50 | 0.00 | 0.50 | 181 | 90 | 42 | 28.9 |
| | | | Belt Slippage | 1.73% | | | | | | | | |
| VARYING LOAD TEST | | | | | | | | | | | | |
| 30.00 | 1009.5 | 10 | Kero. | | | | | | | | | |
| 28.40 | 952.5 | 10 | " | | | | | | | | | |
| 4.10 | 1099 | 10 | " | | | | | | | | | |
| 7.99 | 1074 | 10 | " | | | | | | | | | |
| 15.70 | 1054 | 10 | " | Average belt slippage | | | | | 1.42% | | | |
| 23.10 | 1035.5 | 10 | " | | | | | | | | | |
| 18.65 | 1037 | 60 | Kero | 3.90 | 4.78 | 0.21 | 0.00 | 0.21 | 186 | 77.5 | 56 | 28.3 |
| MAXIMUM LOAD TEST | | | | | | | | | | | | |
| 32.20 | 1041 | 60 | Kero | 6.41 | 5.02 | 0.14 | 0.00 | 0.14 | 192 | 88 | 32 | 28.6 |
| | | | Belt Slippage | 1.77% | | | | | | | | |
| HALF LOAD TEST | | | | | | | | | | | | |
| 15.17 | 1053 | 60 | Kero | 2.63 | 5.78 | 0.23 | 0.00 | 0.23 | 187 | 84 | 42 | 28.6 |
| | | | Belt Slippage | 1.39% | | | | | | | | |

*Taken in discharge line from engine.

Remarks Kerosene used for fuel in this test weighed 6.78# per gallon.

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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 | | | | | | | | | | | | |
| 21.98 | 2954 | 2.79 | 1027 | 18.2 | Kero | 5.74 | 3.83 | 0.23 | 185 | 71 | 40.5 | 28.8 |
| MAXIMUM LOAD TEST (1st 122.3 ft; 2nd 134.5 ft.) | | | | | | | | | | | | |
| 22.40 | 3264 | 2.57 | 980 | 18.0 | Kero | ----Not Recorded---- | | | 180 | 64 | 27 | 28.9 |
| 21.66 | 2180 | 3.73 | 985 | 9.85 | " | " | " | | 180 | 64 | 27 | 28.9 |

*Taken in discharge line from engine.

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

The rated and first maximum tests were made in low gear, the second maximum was made in high gear.

Oil Consumption:

During the complete test consisting of about 34 hours running the following oil was used:

For the engine, 4 1/2 gallons of Mobiloil B

For the transmission, none added gallons of " C

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Repairs and Adjustments. Endurance:

During the limbering up run the drawbar hitch casting was broken and replaced; also 13 lugs were lost due to wheel slippage on hard surface.

After about 14 hours of running the magneto timing was changed.

At the end of the brake test the motor was taken down to stop oil leak around rear crankcase gasket under rear crankshaft bearing. During this operation the radiator was punctured and had to be repaired.

At the end of the test the pump packing had to be tightened.

With the exception of the above repairs and adjustments the tractor was in good condition at the end of the test.

It is our opinion that the repairs and adjustments necessary during this test do not indicate any mechanical defect so serious as to disqualify the tractor.

Brief Specifications Uncle Sam 20-30 H.P. Tractor.

Motor: Bever, 4-cylinder, valve-in-head, vertical, Bore $4\frac{1}{4}$ "
Stroke 6". Rated speed 1000 r.p.m. Rated H.P., belt 30, drawbar 20.

Chassis: 4 wheel. Rated speeds: low 2.5, high $3\frac{1}{4}$ miles per Hr.

Total weight 4500#

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 are excessive or unreasonable.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 63.

Fred R. Mohavee.
Engineer-in-Charge

Oscar V. Jorgensen
E. E. Brackett.
C. W. Smith

Board of Tractor Test Engineers.