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January 1920

Test 006: Case 10-20

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 6

Dates of test April 9, to May 5, 1920.

Name, model and rating of tractor Case 10-20

Serial No. Engine 18849 ~~Serial No. Chassis~~ Rated Speed 900 RPM

Manufacturer J. I. Case Threshing Machine Co., Racine, Wis.

Tractor equipment used Kingston H.T. Magneto. Kingston "L" Carburetor

Style and dimensions of wheel lugs Spade 2-3/4" high x 4" 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												
20.19	911	120	Kero	2.398	8.42	2.17	0.24	2.41	204	70	45	28.3
	Belt slippage			2.14%								
VARYING LOAD TEST												
20.23	914	10	Kero									
20.25	881	10	"									
1.64	980	10	"									
5.40	972.5	10	"									
10.64	958.5	10	"									
15.95	958.5	10	"									
12.63	944	60	"	1.866	6.77	0.55	0.32	0.87	188	57	82	28.8
MAXIMUM LOAD TEST												
22.81	895	60	Kero	2.608	8.75	1.61	0.38	1.99	204	71	56	28.3
	Belt slippage			2.12%								
HALF LOAD TEST												
10.72	965	60	Kero	1.669	6.41	0.09	0.12	0.21	185	61	66	28.1
	Belt slippage			1.88%								

*Taken in discharge line from engine.

Remarks The Kerosene used in brake tests weighed 6.71 lbs 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												
11.63	1904	2.29	919	12.66	Kero.	1.771	6.57	0.407	174.5	67	55	28.9
MAXIMUM LOAD TEST												
15.28	2631	2.18	950	17.83	Kero	-----Not recorded-----			165	64	58	28.7

*Taken in discharge line from engine.

Remarks The Kerosene used in drawbar tests weighed 6.80 lbs per gallon.

** For calculating slippage, the circumference of drive wheel was taken at points of lugs.

Oil Consumption:

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

For the engine, 8-1/4 gallons of Mobiloil BB

For the transmission, gallons of None added, except 1 qt. crank case oil in open gear oiler

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Miscellaneous Tests. None

Repairs and Adjustments. Endurance:

The stuffing box nuts on the waterpump were tightened because of water leakage. This did not entirely stop the leakage.

During the drawbar tests the clutch gave some trouble from sticking so that it could not be disengaged with the engine running. Oil was applied to the friction surface but this did not entirely remedy the trouble.

The fan belt was tightened once.

With the exceptions noted above the engine was apparently in good condition at the end of the test and there was no evidence of undue wear in any part nor of any weakness which might require early repairs.

Repairs and adjustments during this test do not, in our opinion, indicate any defects of more than minor importance.

Brief Specifications Case 10-20 H.P. Tractor.

Engine : Four cylinder, vertical, valve-in-head, Bore 4-1/4", stroke 6", rated speed 900 r.p.m.

Chassis: Three wheel. Rated speed 2-1/4 mi. per hr.

Total weight: 5080 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 results of this test as reported above. It is our opinion that none of these statements or claims are unreasonable or excessive.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 7.

Claude K. Shedd
Engineer-in-Charge

(R)

Oscar W. Soper
E. E. Brackets
Giles W. Haney
Board of Tractor Test Engineers.