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January 1920

Test 023: Titan 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. 23

Dates of test June 14 to June 19, 1920

Name, model and rating of tractor Titan 10-20

Serial No. Engine TY 60909 Serial No. Chassis TY60909

Manufacturer International Harvester Co., Chicago, Illinois.

Tractor equipment used KW Model TX Magneto. Own carburetor.

Style and dimensions of wheel lugs Angle. 1 1/2" x 2 1/2" 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												
20.18	577	120	Kero	2.57	7.86	x	x	6.00	210	74	67	28.5
Belt Slippage 1.32%												
VARYING LOAD TEST												
20.13	576.5	10	Kero.									
21.26	572.5	10	"									
1.055	590	10	"									
5.25	590.5	10	"									
10.425	584.5	10	"									
15.555	583	10	"									
11.80	583	60	Kero	2.39	4.945	x	x	5.00	211	69	67	28.5
MAXIMUM LOAD TEST												
28.15	580	60	Kero	4.64	6.06	x	x	7.00	212	63	67	28.6
Belt Slippage 2.00%												
HALF LOAD TEST												
10.47	586	60	Kero	1.87	5.61	x	x	5.00	212	66	67	28.5
Belt Slippage 0.61 %												

*Taken in discharge line from engine.

Remarks Kerosene used in all tests on this tractor weighed 6.77 per gal.

x Water for radiator and fuel mixture could not be measured separately.

Aver.

Report of Official Tractor Test No. 23

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												
9.94	1827	2.04	573	11.7	Kero	3.01	3.31	5.84	207	67	60	28.7
MAXIMUM LOAD TEST (1st 132.3 ft; 2nd 157.9 ft.)												
13.67	2660	1.93	550	14.4	Kero	---Not	Recorded	-----	208	63	60	28.8
15.65	1850	3.17	540	4.8	"	"	"		210	64	60	28.8

*Taken in discharge line from engine.

Remarks **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.

Oil Consumption:

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

For the engine, 8 gallons of Stanolind Tractor Oil.

For the transmission, none added. gallons of

Report of Official Tractor Test No. 23.

Repairs and Adjustments. Endurance:

Cleaned one spark plug and adjusted magneto breaker points once.
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.

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

Engine: Twin cylinder, cranks parallel, horizontal, valve-in-head. Bore $6\frac{1}{2}$ ", stroke 8", rated speed 575 r.p.m.

Chassis: Four wheel. Rated speeds: Low gear 2.15 mi. per Hr.; high gear 2.90 mi. per hr.
Total weight: 5708 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:

"Chains are the best known final drive for a farm tractor."
(We do not approve this statement for the reason that proof is lacking.)

"It is the most practical cooling system known."

"The throttle governor----- keeps the speed constant at all loads." (The governor gave exceptionally close regulation of speed in this test; but the speed varied some with load changes.)

"The facts are that the Titan 10-20 ----- will pull as many plows as any other tractor of equal rating-----" (We do not approve this statement for the reason that authentic information is not available at the present time on the capacity of some of the tractors included in this comparison.)

We, the undersigned, certify that above is a true and correct report of official tractor test No. 23.

Claude K. Shedd
Engineer-in-Charge

Oscar W. Jorgensen
E. E. Brackett
Filemon Harney
Board of Tractor Test Engineers.