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Nebraska Tractor Tests

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Larsen

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January 1923

## Test 091: Case 12-20

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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## UNIVERSITY OF NEBRASKA AGRICULTURAL ENGINEERING DEPARTMENT

## AGRICULTURAL COLLEGE, LINCOLN

## Copy of Report of Official Tractor Test No. 91

Dates of test: April 6th to April 17th, 1923.

Name, model and rating of tractor: Case 12-20.

Serial No. Engine: 44551 Serial No. Chassis 44551

Manufacturer: J. I. Case Threshing Machine Company - Racine, Wisconsin.

Tractor equipment used: Bosch AT4 ED1 Magneto - Kingston L-3 Carburetor

Style and dimensions of wheel lugs: Spade 3" high - 5-1/2" wide. 6" extension rims

## BRAKE HORSE POWER TESTS

H. P. Crank Dev. Shaft Speed R.P.M.	Time of Test Min.	Fuel Consumption			Water Consump. Gals. Per Hour			Temp. in Deg. F.		Average Humidity %	Height of Barometer Inches
		Kind of Fuel	Gals @ Hour	H. P @ Gal.	Cool- ing	In Fuel	Total	Cool- ing Fluid	Air		

## RATED LOAD TEST

20.16	1053	120	Kero	1.996	10.10	0.151	0.370	0.521	195	74	56	28.61
Belt slippage 1.77%												

## \*\* VARYING LOAD TEST

20.34	1062	10	Kero									
20.28	1037	10	"									
1.66	1103	10	"									
5.18	1071.5	10	"	Average Belt Slippage 1.40%								
10.16	1054	10	"									
15.36	1054.5	10	"									
12.27	1064	60	"	1.609	7.63	0.00	0.173	0.173	179	76	56	28.60

## MAXIMUM LOAD TEST

25.54	1055	60	Kero	3.603	7.09	0.163	0.312	0.475	185	71	37	28.54
Belt slippage 1.67%												

## HALF LOAD TEST

10.26	1069	60	Kero	1.633	6.28	0.00	0.202	0.202	178	77	37	28.57
Belt Slippage 1.47%												

\*Taken in discharge line from engine.

\*\*The last line is an average for the hour.

Remarks: The kerosene used as fuel in this test weighed 6.76 pounds per gallon.

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## Drawbar Horse Power Tests

H.P. Dev.	Draw Bar Pull Lbs.	Speed Miles Per Hour	Crank Shaft Speed R.P.M	Slip On Wheels %	Fuel Consumption			Water Used Per Hour Gals.	Temp. Deg. F.		Average Humidity %	Height of Barometer in Inches
					Kind Used	Amt. Per Hour Gal.	H.P. Per Hour Gal.		Cooling Fluid	Air		

## Rated Load Test, Ten Hours

12.83	1557	3.09	1041	9.75 -3.41	Kero	2.358	5.43	0.235	180	54	45.0	28.95
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## Maximum Load Test

17.00	2225	2.87	963	11.37 -1.65	Not Recorded			184	53	42.0	28.99
17.52	3150	2.09	1030	14.51 1.94	" "			184	53	42.0	28.99

\*Taken in discharge line from engine.

\*\*The first figures denote slippage of the wheel at the points of the lugs. The second figure denote slippage of the wheel at the rim.

Remarks: The first maximum test was run in high gear and the second maximum was run in low gear.

Oil Consumption: During the complete test consisting of about 32 hours running the following oil was used: For the engine, 5 gallons of Mobiloil "B" to fill crank case. None was added for the transmission, 1/4 gallons of Mobiloil "C"

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REPAIRS AND ADJUSTMENTS:

There were no repairs necessary during this test.

At the end of the test the tractor was in good working order and there were no indications of undue wear nor that any part might require early repair.

BRIEF SPECIFICATIONS:

Motor: Own, vertical, Valve-in-head, four cylinder;  
Bore 4-1/8", Stroke - 5". Rated speed 1050 r.p.m.  
Own governor.

Chassis: Four wheel, disc clutch. Two speeds - low gear  
2.02 miles per hour, high gear 3.00 miles per hour.  
Total Weight - 4450 pounds.

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. 91.

E. E. Brackett  
Engineer-in-Charge

Oscar W. Sjogren

C. W. Smith

Fred R. Nohavec  
Board of Tractor Test Engineers.