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January 1927

## Test 134: Wallis 20-30

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# UNIVERSITY OF NEBRASKA AGRICULTURAL ENGINEERING DEPARTMENT

## AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 134

Dates of test: April 29th to May 10th, 1927

Name, model and rating of tractor: Wallis 20-30.

Serial No. Engine: 49999

Serial No. Chassis: 50470

Manufacturer: J. I. Case Plow Works, Racine, Wisconsin

Tractor equipment used: Amer. Bosch "ZR4Ed26" Mag., Kingston "L" Carb.

Style and dimensions of wheel lugs: Spade 4" high x 4" x 2-1/2": 28 per wheel.

### BRAKE HORSE POWER TESTS

H. P.	Dev.	Crank : Shaft : Speed : R.P.M.	Time : of : Test : Min.	Fuel Consumption : Kind : of : Fuel	Gals. : per : hrs.	H. P. : Cool- : ing	Water Consumption : Gals. per hour : In : fuel	Temp. : Deg. F. : ing	Average Humidity %	Height of Barometer Inches

### RATED LOAD TEST

30.24 : 1052 : 60 : Dist. : 2.942 : 10.28 : 0.95 : 0.00 : 0.95 : 210 : 70 : 33 : 28.04

### \*\*VARYING LOAD TEST

30.26	: 1051	: 10	:	:	:	:	:	:	:	:	:	:	:
30.11	: 1043	: 10	:	:	:	:	:	:	:	:	:	:	:
0.91	: 1234	: 10	:	:	:	:	:	:	:	:	:	:	:
8.45	: 1163	: 10	:	:	:	:	:	:	:	:	:	:	:
16.04	: 1111	: 10	:	:	:	:	:	:	:	:	:	:	:
23.38	: 1080	: 10	:	:	:	:	:	:	:	:	:	:	:
18.95	: 1113	: 60	:	Dist.	: 2.130	: 8.90	: 0.82	: 0.00	: 0.82	: 182	: 70	: 37	: 28.04

### MAXIMUM LOAD TEST

35.29 : 1050 : 120 : Dist. : 4.232 : 8.34 : 0.00 : 0.00 : 0.00 : 183 : 63 : 50 : 28.68

### HALF LOAD TEST

15.74 : 1090 : 60 : Dist. : 1.843 : 8.54 : 0.00 : 0.00 : 0.00 : 163 : 68 : 43 : 28.04

\* Taken in discharge line from engine.

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

REMARKS: The distillate used as fuel in these tests weighed 6.90 lbs. per gallon.

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DRAWBAR HORSE POWER TESTS

H. P. Dev.	:Draw :Bar :Pull :Pounds :	:Speed :Miles :Per :Hour :	:Crank :Shaft :Speed :R.P.M. :	:Slip :on :Drive :Wheels : % :	:Fuel Consumption :Amt. :Kind :Used :Gals. :	:H. P. :Used :Hrs. :Per :Gal. :	:Water :Used :Per :Hour :Gals. :	:Temp. Deg. F. :Cooling :Air :Fluid : * :	:Average :Humidity : % :	:Height of :Barometer : In Inches :
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RATED LOAD TEST. TEN HOURS

19.80	:	2452	:	3.03	:	1048	:	9.30	:	Dist. : 2.579	:	7.68	:	0.00	:	173	:	46	:	60.5	:	28.61
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MAXIMUM LOAD TEST

27.015	:	3409	:	2.98	:	1047.5	:	10.95	:	Dist. : --	:	NOT RECORDED	:	--	:	171	:	69	:	37	:	28.81
26.36	:	2625	:	3.77	:	1054	:	7.90	:	Dist. : --	:	NOT RECORDED	:	--	:	175	:	69.5	:	37	:	28.81

\* Taken in discharge line from engine.

REMARKS: The rated load and first maximum load tests were made in low gear, the second maximum load test was made in high gear. The distance advanced by the tractor without load on level ground for several complete revolutions of the drive wheels was taken as a basis for calculating the slippage.

OIL CONSUMPTION:

During the complete test consisting of about 38 hours running the following oil was used:  
For the engine, 3-1/2 gallons of Mob. A 1-3/4 gallons to fill crankcase. 1-3/4 gallons added during test.  
For the transmission, None gallons of Heavy transmission oil.

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments were necessary during this test. At the end of the test the tractor was in good running order and there were no indications of undue wear nor of any weakness which might require early repair.

BRIEF SPECIFICATIONS

Motor: Own, 4 cylinder, valve-in-head, vertical, mounted crankshaft lengthwise. Bore 4-3/8"; stroke 5-3/4". Rated speed 1050 R.P.M.

Magneto: American Bosch "ZR4Ed26".

Carburetor: Kingston "L".

Air cleaner: Wallis, dry, "cloth screen type".

Governor: Pickering fly ball type.

Chassis: Four wheels, two drivers, enclosed gear drive, clutch, dry plate, twin disc. Advertised speeds: Low, 2-3/4 miles per hour; high, 3-1/3 miles per hour; reverse, 2-3/4 miles per hour.

Total weight as tested (with operator) 4523 pounds.

REMARKS

The rate of travel of this tractor is: Low, 2.88 miles per hour; high, 3.49 miles per hour; reverse, 2.88 miles per hour. The above speeds are calculated at the rim of the drive wheels and at 1050 R.P.M. of the engine. In the advertising literature submitted with the specifications and application for test of this tractor, we find some claims and statements 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 except as noted above.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 134.

Lew Wallace  
Engineer-in-Charge

Oscar W. Sjogren

E. E. Brackett

C. W. Smith  
Board of Tractor Test Engineers