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January 1931

Test 191: Massey-Harris "General Purpose"

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 191

Dates of test: May 22 to June 12, 1931.

Name and model of tractor: MASSEY-HARRIS "GENERAL PURPOSE"

Manufacturer: The Massey-Harris Co., Racine, Wisconsin.

Manufacturer's rating: NOT RATED.

Highest rating permissible under the recommendations of the A.S.A.E. and

S.A.E. Tractor Rating Codes: Drawbar - 13.02 H.P. Belt - 20.31 H.P.

One carburetor setting (98.5% of maximum) was used thruout this test.

B R A K E H O R S E P O W E R T E S T S

H. P.	: Crank : : shaft :	Fuel Consumption : Gals. : H.P. : Lbs. @ :	Water consumption : : per hour gallons :	Temp. : : Deg. F. :	Barometer
:	: speed : : R.P.M. :	: per : hrs. : H.P. : : gal. : hour :	: Cool- : In : : ing : fuel : Total : : : : : med. : :	: Cool- : : ing : Air :	: Inches of : Mercury

OPERATING MAXIMUM LOAD TEST. ONE HOUR

22.50	: 1202	: 2.901	: 7.76	: 0.888	: 0.00	: 0.00	: 0.00	: 187	: 69	: 28.320
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RATED LOAD TEST. ONE HOUR

20.11	: 1204	: 2.472	: 8.14	: 0.847	: 0.00	: 0.00	: 0.00	: 196	: 82	: 28.660
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*VARYING LOAD TEST. TWO HOURS

20.08	: 1205	: 2.460	: 8.16	: 0.844	: --	: --	: --	: 197	: 82	: --
0.71	: 1311	: 0.954	: 0.74	: 9.254	: --	: --	: --	: 170	: 83	: --
10.78	: 1274	: 1.646	: 6.55	: 1.052	: --	: --	: --	: 184	: 85	: --
20.52	: 1177	: 2.652	: 7.74	: 0.890	: --	: --	: --	: 203	: 86	: --
5.42	: 1295	: 1.280	: 4.23	: 1.627	: --	: --	: --	: 183	: 87	: --
15.62	: 1256	: 2.099	: 7.44	: 0.926	: --	: --	: --	: 188	: 83	: --
12.48	: 1253	: 1.849	: 6.75	: 1.020	: 0.00	: 0.00	: 0.00	: 187	: 85	: 28.655

*20 minute runs. Last line is average for two hours.

D R A W B A R H O R S E P O W E R T E S T S

H. P.	: Draw : : Bar :	Speed : : miles :	Crank : : shaft :	Slip : : on :	Fuel Consumption : H.P. : Lbs. : : Gal. : hr. : : per : per : : H.P. : per : : gal. : hour :	Water: : used : : Gal. : : per : : hour :	Temp. : : : : Cool- : : ing : : med. : :	Barometer : Inches of : Mercury
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RATED LOAD TEST. TEN HOURS. Intermediate Gear.

12.63	: 1326	: 3.57	: 1204	: 2.67	: 2.478	: 5.10	: 1.352	: 0.014	: 186	: 80	: 28.600
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MAXIMUM LOAD TEST

14.30	: 1239	: 4.33	: 1198	: 3.21	: -----	: Not Recorded	: -----	: 185	: 84	: 28.460
16.17	: 1703	: 3.56	: 1201	: 2.63	: -----	: " "	: -----	: 188	: 80	: 28.720
16.79	: 2764	: 2.28	: 1196	: 9.06	: -----	: " "	: -----	: 181	: 83	: 28.580

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BRIEF SPECIFICATIONS

MOTOR: Make Hercules Serial No. 224033 Type 4 Cylinder vertical
Head L Mounting Lengthwise
Bore and stroke: 4 x 4 1/2 in. Rated R.P.M. 1200
Port Dia. Valves: Inlet 1 1/2" Exhaust 1 3/8"
Belt pulley: Diam. 12 in. Face 6 1/2 in. R.P.M. 802
Magneto: American Bosch Model U4 ED 2
Carburetor: Zenith Model T094E Size 1"
Governor: Hercules No. None Type Centrifugal
Air Cleaner: Own Type Oil circulated over wool
Lubrication: Pressure feed

CHASSIS: Type 4 wheels, all drivers Serial No. 302164 Drive Enclosed gear
Clutch: Twin Disc Type Twin disc friction operated by hand
Advertised speeds, miles per hour: Low 2.2
Intermediate 3.2 High 4 Reverse 2.5
Drive wheels: Diameter 38" Face 8"
Lugs: Type Spade No. per wheel 20 Size 3 1/2" high x 2 1/2" wide
Extension rims: None
Seat Pressed steel
Total weight as tested (with operator) 4120 pounds.

FUEL AND OIL:

Fuel: Distillate Weight per gallon 6.89 pounds

Oil: S.A.E. Viscosity #30 and #40 The oil was drained twice.
Due to a change in weather conditions the S.A.E. #30 oil was
Total oil to motor 3.163 gallons drained after 26 hrs. of operation. This was at the end
Total drained from motor 2.672 gallons of the preliminary belt tests
and before any official runs
Total time motor was operated 68 hours had been made. S.A.E. #40 oil
was used for the balance of
the test.

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REPAIRS AND ADJUSTMENTS

Just before starting the rated belt test, the key, which holds the belt pulley bevel gear to the power take-off shaft, sheared off. The shaft, gear and key were replaced with new parts.

During the preliminary drawbar tests one of the differential brakes was found to be dragging and was adjusted at this time.

During the 100% Intermediate Maximum drawbar tests the connection on #3 spark plug was broken. A new plug was used in its place. The spark plug in #2 cylinder was cleaned twice during the maximum drawbar tests.

During the drawbar tests three lug bolts lost out and were replaced with new ones.

REMARKS

The tests herein reported were conducted with one carburetor setting which remained unchanged thruout the tests. This condition should be recognized when comparing this test with any Nebraska test conducted prior to 1928.

The drawbar tests were run with drive wheels equipped with spade lugs as listed on Page 2 of this report.

In the advertising literature submitted with the specifications and application for test of this tractor we find no claims and statements which, in our opinion, are unreasonable or excessive.

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 191.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis
Board of Tractor Test Engineers