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Tractor Test and Power Museum, The Lester F. Larsen

January 1948

Test 394: Massey-Harris Model 55

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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Copy of Report of Official Tractor Test No. 394

Dates of test; May 18, 1948 to May 27, 1948
 Name and model of tractor; MASSEY-HARRIS 55
 Manufacturer; THE MASSEY-HARRIS COMPANY, Racine, Wisconsin
 Manufacturer's rating; None

HORSEPOWER SUMMARY

| | DRAWBAR | BELT |
|--|---------|-------|
| 1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.) | 54.20 | 61.39 |
| 2. Observed maximum horsepower (tests F & B) | 52.47 | 58.98 |
| 3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings) | 40.65 | 52.18 |

REMARKS

No repairs or adjustments.

FUEL, OIL, and TIME

Fuel Gasoline Octane 74* Weight per gallon 6.120 pounds
Oil SAE No. 20-20W To motor 2.498 gal. Drained from motor 2.359 gal.
Total time motor was operated 4 1/4 hours

* Octane rating taken from oil company's typical inspection data.

We, the undersigned, certify that this is a true and correct report of official tractor test No. 394.

L. F. Larsen
 Engineer in Charge

C. W. Smith

F. D. Yung

L. W. Hurlbut
 BOARD OF TRACTOR TEST ENGINEERS

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All results shown on pages 2 and 3 were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with carburetor set for 100% maximum belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G, H, and J were made with an operating setting of the carburetor (selected by the manufacturer) of 95.3% of maximum belt horsepower.

B E L T H O R S E P O W E R T E S T S

| Horse- power | Crank shaft speed rpm | Fuel Consumption | | | Water used gal per hr | Temperature | | Barometer Inches of Mercury |
|-----------------|------------------------------------|------------------|------------------|-----------------|------------------------------------|---------------------------|---------------|---------------------------------------|
| | | gal per hr | hp-hr per gal | lb per hp-hr | | Cool- ing med °F | Air °F | |

TEST B - 100% MAXIMUM LOAD - TWO HOURS

| | | | | | | | | |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 58.98 | 1349 | 5.170 | 11.41 | 0.536 | 0.00 | 167 | 70 | 29.020 |
|-------|------|-------|-------|-------|------|-----|----|--------|

TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

| | | | | | | | | |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 55.72 | 1350 | 4.730 | 11.78 | 0.520 | 0.00 | 171 | 81 | 29.063 |
|-------|------|-------|-------|-------|------|-----|----|--------|

*TEST D - ONE HOUR

| | | | | | | | | |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 52.22 | 1350 | 4.592 | 11.37 | 0.538 | 0.00 | 170 | 86 | 29.050 |
|-------|------|-------|-------|-------|------|-----|----|--------|

TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

| | | | | | | | | |
|-------|------|-------|-------|-------|-------|-----|----|---------|
| 52.32 | 1352 | 4.603 | 11.37 | 0.538 | - - - | 171 | 88 | - - - - |
| 1.75 | 1511 | 1.804 | 0.97 | 6.310 | - - - | 146 | 87 | - - - - |
| 28.32 | 1458 | 3.108 | 9.11 | 0.672 | - - - | 160 | 88 | - - - - |
| 52.93 | 1282 | 4.529 | 11.68 | 0.524 | - - - | 184 | 90 | - - - - |
| 14.44 | 1484 | 2.441 | 5.92 | 1.035 | - - - | 154 | 90 | - - - - |
| 41.23 | 1419 | 3.848 | 10.71 | 0.571 | - - - | 166 | 92 | - - - - |
| 31.83 | 1418 | 3.389 | 9.39 | 0.652 | 0.00 | 164 | 89 | 29.025 |

* Formerly called RATED LOAD, see HORSEPOWER SUMMARY 3, page 1.

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

| Horse- power | Draw bar pull lb | Speed mph | Crank shaft speed rpm | Slip on drive wheels % | Fuel Consumption | | | Water used gal per hr | Temperature | | Barometer Inches of Mercury |
|-----------------|-------------------------------|------------------|------------------------------------|--|------------------|------------------|-----------------|------------------------------------|---------------------------|-----------|---------------------------------------|
| | | | | | gal per hr | hp-hr per gal | lb per hp-hr | | Cool- ing med °F | Air °F | |

Rear wheels, tires and added weight used in Tests F, G, and H; Cast Disc wheels;
 14-34, 6 ply tires and 1231 lb added weight per wheel.

TEST F - 100% MAXIMUM LOAD - 3rd GEAR

| | | | | | | | | | | | |
|-------|------|------|------|------|------------------------|--|--|--|-----|----|--------|
| 52.47 | 4028 | 4.89 | 1353 | 6.90 | -----Not Recorded----- | | | | 174 | 66 | 29.130 |
|-------|------|------|------|------|------------------------|--|--|--|-----|----|--------|

TEST G - OPERATING MAXIMUM LOAD

| | | | | | | | | | | | |
|-------|------|-------|------|-------|------------------------|--|--|--|-----|----|--------|
| 37.81 | 5674 | 2.50 | 1349 | 15.89 | -----Not Recorded----- | | | | 172 | 66 | 29.011 |
| 48.29 | 4624 | 3.92 | 1354 | 7.90 | " " | | | | 170 | 75 | 29.000 |
| 48.68 | 3695 | 4.94 | 1354 | 5.90 | " " | | | | 172 | 75 | 29.000 |
| 45.60 | 1446 | 11.83 | 1354 | 2.65 | " " | | | | 174 | 74 | 29.000 |

*TEST H - TEN HOURS - 3rd GEAR

| | | | | | | | | | | | |
|-------|------|------|------|------|-------|-------|-------|------|-----|----|--------|
| 41.10 | 3101 | 4.97 | 1350 | 5.09 | 4.072 | 10.09 | 0.606 | 0.00 | 175 | 79 | 29.003 |
|-------|------|------|------|------|-------|-------|-------|------|-----|----|--------|

TEST J - OPERATING MAXIMUM LOAD - 3rd GEAR

| | | | | | | | | | | | |
|-------|------|------|------|------|------------------------|--|--|--|-----|----|--------|
| 47.22 | 3720 | 4.76 | 1351 | 9.58 | -----Not Recorded----- | | | | 172 | 72 | 28.950 |
|-------|------|------|------|------|------------------------|--|--|--|-----|----|--------|

* Formerly called RATED LOAD; see HORSEPOWER SUMMARY 3, page 1.

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TIRES, WHEELS, and WEIGHT

| | | Tests F, G, & H | Test J |
|---|-----------------|-------------------------|-------------------------|
| Rear Wheel; (each) | Type | Cast Disc | Cast Disc |
| | Liquid Ballast | 811 lb | None |
| | Added Cast Iron | 420 lb | None |
| Rear Tires: | No. Size & Ply | 2 14-34 6 ply | 2 14-34 6 ply |
| | Type of Tread | Champion Ground Grip | Champion Ground Grip |
| | Make | Firestone | Firestone |
| | Air Pressure | 14 lb | 12 lb |
| Front Wheel; (each) | Type | Cast Disc | Cast Disc |
| | Liquid Ballast | None | None |
| | Added Cast Iron | None | None |
| Front Tires: | No. Size & Ply | 2 7.50-18 4 ply | 2 7.50-18 4 ply |
| | Type of Tread | Triple Rib | Triple Rib |
| | Make | Goodyear | Goodyear |
| | Air Pressure | 28 lb | 28 lb |
| Height of Drawbar | | 16 inches | 16 $\frac{1}{2}$ inches |
| Static Weight: Rear End | | 7305 lb | 4843 lb |
| Front End | | 2205 lb | 2205 lb |
| Total Weight as Tested (with Operator) | | 9685 lb | 7223 lb |

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SPECIFICATIONS

Type Standard Serial No. 55-GS 1498 Drive Enclosed gear

Tread width: Rear 57 in Front 52 in

Advertised speeds, miles per hour: First 2.96 Second 4.22 Third 5.22
Fourth 12.07 Reverse 2.54

Belt pulley: Diam. 16 in Face 8½ in RPM 730 Belt speed 3059 fpm

Clutch: Make Borg & Beck Type Dry disc Operated by Foot pedal

Seat Monroe

Brakes: Make Own Type Internal expanding

Location Differential brake shaft driven by master gear

Gear reduction (brake drum to rear wheel) 6.55 to 1

Operated by Foot pedal

Locked by Latches

Equalization None

Engine: Make Own Serial No. 2651 Type 4 cylinder vertical

Head I Mounting Lengthwise Lubrication Pressure

Bore and stroke 4½ in x 6 in Rated rpm 1350

Port diameter valves: Inlet 1.609 in Exhaust 1.489 in

Generator and starter: Make Auto-Lite

Distributor & Coil: Make Auto-Lite Battery Exide

Carburetor: Make Zenith Model 62AJ10 Size 1¼ in

Governor: Make Own Type Variable speed centrifugal

Air Cleaner: Make Donaldson Type Oil washed wire screen

Oil Filter: Make Purolator Type Replaceable paper element

Cooling medium temperature control: Thermostat