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January 1947

Test 389: Massey-Harris Model 44-RT

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. 389

Dates of test: October 29 to November 12, 1947
 Name and model of tractor: Massey Harris 44 RT
 Manufacturer: THE MASSEY-HARRIS COMPANY, Racine, Wisconsin
 Manufacturer's rating: None

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

| | | | | | | | | |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 45.64 | 1351 | 3.969 | 11.50 | 0.515 | 0.00 | 180 | 61 | 29.055 |
|-------|------|-------|-------|-------|------|-----|----|--------|

TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

| | | | | | | | | |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 44.07 | 1351 | 3.704 | 11.90 | 0.498 | 0.00 | 177 | 58 | 29.050 |
|-------|------|-------|-------|-------|------|-----|----|--------|

*TEST D - ONE HOUR

| | | | | | | | | |
|-------|------|-------|-------|-------|------|-----|----|--------|
| 40.00 | 1350 | 3.397 | 11.78 | 0.503 | 0.00 | 176 | 59 | 29.050 |
|-------|------|-------|-------|-------|------|-----|----|--------|

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

| | | | | | | | | |
|-------|------|-------|-------|-------|-------|-----|----|---------|
| 39.91 | 1349 | 3.370 | 11.84 | 0.501 | - - - | 176 | 60 | - - - - |
| 1.43 | 1469 | 1.342 | 1.07 | 5.559 | - - - | 171 | 60 | - - - - |
| 20.97 | 1409 | 2.238 | 9.37 | 0.632 | - - - | 173 | 60 | - - - - |
| 42.56 | 1307 | 3.566 | 11.94 | 0.496 | - - - | 178 | 59 | - - - - |
| 10.77 | 1447 | 1.778 | 6.06 | 0.978 | - - - | 172 | 59 | - - - - |
| 30.78 | 1384 | 2.867 | 10.74 | 0.552 | - - - | 173 | 59 | - - - - |
| 24.40 | 1394 | 2.527 | 9.66 | 0.614 | 0.00 | 174 | 59 | 29.050 |

*Formerly called RATED LOAD; see REMARKS 4, page 5.

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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. of | Air of | |

Rear wheels, tires, and added weight used in Tests F, G, and H; Steel Disc wheels; 12-38, 6 ply tires and 1245 lb. added weight per wheel.

TEST F - 100% MAXIMUM LOAD - 3rd GEAR

| | | | | | | | | | | | |
|-------|------|------|------|------|------------------------|--|--|--|-----|----|--------|
| 39.90 | 3197 | 4.68 | 1349 | 6.32 | -----Not Recorded----- | | | | 177 | 47 | 28.500 |
|-------|------|------|------|------|------------------------|--|--|--|-----|----|--------|

TEST G - OPERATING MAXIMUM LOAD

| | | | | | | | | | | | |
|-------|------|-------|------|-------|------------------------|---|--|--|-----|----|--------|
| 25.73 | 4612 | 2.09 | 1350 | 16.19 | -----Not Recorded----- | | | | 175 | 50 | 28.500 |
| 37.72 | 4101 | 3.45 | 1350 | 8.35 | " | " | | | 177 | 52 | 28.500 |
| 38.07 | 3028 | 4.71 | 1351 | 5.74 | " | " | | | 178 | 58 | 28.500 |
| 37.98 | 2279 | 6.25 | 1356 | 4.31 | " | " | | | 178 | 60 | 28.550 |
| 32.91 | 908 | 13.59 | 1350 | 2.19 | " | " | | | 177 | 56 | 28.425 |

*TEST H - TEN HOURS - 3rd GEAR

| | | | | | | | | | | | |
|-------|------|------|------|------|-------|-------|-------|------|-----|----|--------|
| 31.24 | 2472 | 4.74 | 1350 | 5.23 | 3.065 | 10.19 | 0.581 | 0.00 | 175 | 44 | 28.756 |
|-------|------|------|------|------|-------|-------|-------|------|-----|----|--------|

TEST J - OPERATING MAXIMUM LOAD - 3rd GEAR

Same wheels and tires as used in Tests F, G, and H. All added weight removed from tractor (liquid, cast iron, or any other added forms).

| | | | | | | | | | | | |
|-------|------|------|------|-------|------------------------|--|--|--|-----|----|--------|
| 28.89 | 2452 | 4.42 | 1351 | 11.72 | -----Not Recorded----- | | | | 171 | 33 | 29.000 |
|-------|------|------|------|-------|------------------------|--|--|--|-----|----|--------|

*Formerly called RATED LOAD; see REMARKS 4, page 5.

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FUEL, OIL, and TIME

Fuel Gasoline Octane 74* Weight per gallon 5.923 pounds

Oil: S.A.E. No. 10-10W To motor 2.210 gal. Drained from motor 1.633 gal.

Total time motor was operated 56 hours.

TIRES, WHEELS, and WEIGHT

| | | Tests F, G, & H | Test J |
|--------------------------------------|--|----------------------|----------------------|
| Rear Wheel; Type and Weight (each) | | Steel Disc 175 lb. | Steel Disc 175 lb. |
| Liquid Ballast | | 544 lb. | None |
| Added Cast Iron | | 701 lb. | None |
| Rear Tires; No., Size & Ply | | 2 12-38 6 ply | 2 12-38 6 ply |
| Type of Tread | | Champion Ground Grip | Champion Ground Grip |
| Make | | Firestone | Firestone |
| Air Pressure | | 14 lb. | 12 lb. |
| Front Wheel; Type and Weight (each) | | Steel Disc 17.5 lb. | Steel Disc 17.5 lb. |
| Liquid Ballast | | None | None |
| Added Cast Iron | | 81 lb. | None |
| Front Tires; No., Size & Ply | | 2 5.50-16 4 ply | 2 5.50-16 4 ply |
| Type of Tread | | Guide Grip | Guide Grip |
| Make | | Firestone | Firestone |
| Air Pressure | | 28 lb. | 28 lb. |
| Height of Drawbar | | 20 inches | 20-3/4 inches |
| Static Weight; Rear End | | 5142 lb. | 2653 lb. |
| Front End | | 1598 lb. | 1436 lb. |
| Total Weight as Tested with Operator | | 6925 lb. | 4274 lb. |

*Octane rating taken from Oil Company's Typical Inspection Data

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CHASSIS

Type Tricycle Serial No. 44-GR1018 Drive Enclosed Gear

Tread width; Rear 52" to 88" Front 6"

Advertised speeds, miles per hour: First 2.48 Second 3.75 Third 4.98

Fourth 6.47 Fifth 13.80 Reverse 2.89

Belt pulley: Diam. 13 $\frac{1}{2}$ " Face 6 $\frac{1}{4}$ " RPM 863 Belt speed 3050 fpm

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

Seat Monroe

Brakes: Make Own Type Internal Expanding

Location Differential shaft

Gear reduction (brake drum to rear wheel) 4.125 to 1

Operated by Two foot pedals

Locked by Latches

Equalization None

ENGINE

Make Own Serial No. MHA 260G2250 Type 4 Cylinder - Vertical

Head I Mounting Lengthwise Lubrication Pressure

Bore and stroke 3-7/8" x 5-1/2" Rated RPM 1350

Port diameter valves: Inlet 1.42" Exhaust 1.30"

Battery Exide XT-151 Starter - Autolite

Distributor Auto-Lite Model Generator Auto-Lite Coil Auto-Lite

Carburetor: Make Zenith Model 62AJ10 Size 1 $\frac{1}{4}$ "

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

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REPAIRS AND ADJUSTMENTS

None

REMARKS

1. All results shown on pages 1 and 2 of this report were determined from observed data and are 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 96.3% of maximum belt horsepower.

| | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------|
| 2. Observed maximum horsepower (tests F & B) | DRAWBAR 39.90 | BELT 45.64 |
| 3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.) | 41.36 | 47.04 |
| 4. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings) | 31.02 | 39.98 |

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 389.

L. F. Larsen
 Engineer-in-Charge

C. W. Smith

F. D. Yung

L. W. Hurlbut
 BOARD OF TRACTOR TEST ENGINEERS