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January 1939

Test 317: M-M Twin City Model GT (Gasoline)

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. 317

Dates of test: May 1 to 12, 1939.

Name and model of tractor: M-M TWIN CITY GT (Gasoline)

Manufacturer: Minneapolis-Moline Power Implement Company, Minneapolis, Minnesota.

Manufacturer's rating: NOT RATED.

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

H. P.	Crank shaft speed R.P.M.	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
		Gal. per hr.	H. P. hr. per gal.	Lb. per H. P. hr.		Cool- ing med.	Air	

TEST B - 100% MAXIMUM LOAD - TWO HOURS

55.08	1075	4.808	11.46	0.526	0.000	176	74	29.020
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

53.99	1073	4.647	11.62	0.519	0.000	177	75	29.000
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*TEST D - ONE HOUR

49.02	1074	4.300	11.40	0.529	0.000	173	75	28.990
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

49.01	1076	4.289	11.43	0.528	--	172	74	--
1.37	1206	1.930	0.71	8.496	--	155	74	--
26.42	1147	3.159	8.36	0.721	--	160	77	--
52.07	1023	4.468	11.65	0.517	--	178	79	--
13.40	1166	2.557	5.24	1.151	--	158	78	--
38.38	1110	3.746	10.25	0.589	--	169	78	--
30.11	1122	3.358	8.97	0.673	0.000	165	77	28.950

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 pull pounds	Speed miles per hr.	Crank shaft speed R.P.M.	Slip on drive wheels %	Fuel Consumption			Water used gal. per hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per hr.	H. P. per gal.	Lb. per H.P. hr.		Cool- ing med.	Air	

TEST F - 100% MAXIMUM LOAD - Second - GEAR

44.99	4964	3.40	1074	13.69	----	Not Recorded	----	194	89	28.600
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TEST G - OPERATING MAXIMUM LOAD

31.60	5068	2.34	1076	16.42	----	Not Recorded	----	164	68	28.850
44.31	4866	3.41	1077	13.54	----	"	----	187	82	28.640
47.85	3186	5.63	1075	5.16	----	"	----	178	74	28.690
46.24	1793	9.67	1077	2.89	----	"	----	167	64	28.855

*TEST H - TEN HOURS - Second - GEAR

36.96	3849	3.60	1074	8.63	3.918	9.43	0.639	0.000	163	64	29.020
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*Formerly called RATED LOAD; see REMARKS 4, page 3.

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FUEL, OIL, AND TIME

Fuel Gasoline Octane 70 Weight per gallon 6.03 pounds
Oil: S.A.E. No. 30 To motor 3.004 gal. Drained from motor 2.226 gal.
Total time motor was operated 52 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 2.7 Second 3.8
Third 5.8 Fourth 9.6 Reverse 2.8
Belt pulley: Diam. 16" Face 7 1/2" R.P.M. 650 Belt Speed 2720 f.p.m.
Clutch: Make Twin Disc Type Single plate, dry Operated by hand
Seat Pressed steel
Total weight as tested (with operator) 9445 pounds

MOTOR

Make Own Serial No. GE 903416 Type 4 cylinder, vertical
Head I Mounting Crankshaft lengthwise Lubrication Pressure
Bore and stroke 4 5/8" x 6" Rated R.P.M. 1075
Port Diameter Valves: Inlet 1 5/8" Exhaust 1 1/2"
Magneto: Make Fairbanks-Morse Model FM-4
Carburetor: Make Schebler Model TTX23 Size 1 1/4"
Governor: Make Own Type Centrifugal
Air Cleaner: Make Donaldson Type Ejector precleaner and oil
washed wire-screen filter
Oil Filter: Make H-W Type Renewable waste element
Cooling medium temperature control: Dole thermostat

CHASSIS

Type Standard Serial No. GT160329 Drive Enclosed gear
Tread width: Rear 56 1/2" Front 51"
Rear tires: No. 2 Size 13.50" x 32" - 6 ply Air pressure 16 pounds
Front tires: No. 2 Size 7.50" x 18" - 4 ply Air pressure 28 pounds
Added weight: Per rear wheel (Cast Iron 850 pounds
(Water 420 pounds
Per front wheel (Cast Iron 80 pounds
(Water none pounds

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

1. All results shown on page 1 of this report 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, and H were made with an operating setting of the carburetor (selected by the manufacturer) of 98.0% of maximum belt horsepower.

	<u>DRAWBAR</u>	<u>BELT</u>
2. Observed maximum horsepower (tests F & B)	44.99	55.08
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	48.36	57.56
4. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly A.S.A.E. and S.A.E. ratings)	36.27	48.93

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 317.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
Board of Tractor Test Engineers