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January 1938

Test 296: Graham-Bradley Model 503.103

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. 296

Dates of test: April 6 to 14, 1938.
Name and model of tractor: GRAHAM-BRADLEY 503.103
Manufacturer: Graham-Paige Motors Corporation, Detroit, Michigan.
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: Gal. per hr.	Fuel Consumption: H. P. hr. per gal.	Fuel Consumption: Lb. per H. P. hr.	Water used gal. per hr.	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST B - 100% MAXIMUM LOAD - TWO HOURS								
30.38	1502	3.083	9.85	0.618	0.000	157	62	28.700
TEST C - OPERATING MAXIMUM LOAD - ONE HOUR								
28.27	1497	2.721	10.39	0.586	0.000	161	68	28.845
*TEST D - ONE HOUR								
27.06	1498	2.690	10.06	0.605	0.000	165	72	28.875
TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)								
27.06	1501	2.690	10.06	0.605	--	166	72	--
0.83	1709	1.345	0.62	9.867	--	131	72	--
14.34	1577	2.039	7.03	0.866	--	147	73	--
27.73	1467	2.660	10.42	0.584	--	164	73	--
7.54	1651	1.680	4.49	1.357	--	140	72	--
20.90	1536	2.404	8.69	0.700	--	155	73	--
16.40	1573	2.136	7.68	0.793	0.000	150	72	28.880

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: Gal. per hr.	Fuel Consumption: H. P. hr. per gal.	Fuel Consumption: Lb. per H.P. hr.	Water used gal. per hr.	Temp. Deg. F.: Cooling med.	Temp. Deg. F.: Air	Barometer Inches of Mercury
TEST F - 100% MAXIMUM LOAD - Second GEAR											
25.20	2283	4.14	1495	9.29	---- Not Recorded -----				167	72	28.785
TEST G - OPERATING MAXIMUM LOAD											
19.11	3013	2.38	1501	17.26	---- Not Recorded -----				166	75	28.800
23.92	2163	4.15	1498	9.34	---- " " -----				162	73	28.790
24.01	1640	5.49	1498	6.47	---- " " -----				160	74	28.780
*TEST H - TEN HOURS - Second GEAR											
20.03	1751	4.29	1500	6.35	2.414	8.30	0.734	0.000	157	76	28.660

*Formerly called RATED LOAD; see REMARKS 4, page 3.

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FUEL, OIL, AND TIME

Fuel Gasoline Octane 68 - 70 Weight per gallon 6.09 pounds

Oil: S.A.E. No. 30 To motor 1.149 gal. Drained from motor 1.056 gal.

Total time motor was operated 43 hours

BRIEF SPECIFICATIONS

Advertised speeds, miles per hour: First 2.77 Second 4.42

Third 5.67 Fourth 19.8 Reverse 2.03

Belt pulley: Diameter 15" Face 7 1/4" R.P.M. 714

Clutch: Make Long Type Single-plate, dry Operated by Foot pedal

Seat Upholstered

Total weight as tested (with operator) 4955 pounds

MOTOR: Make Graham-Paige Serial No. 300600 Type 6 cylinder, vertical

Head L Mounting Crankshaft lengthwise Lubrication Pressure

Bore and stroke: 3 1/4" x 4 3/8" Rated R.P.M. 1500

Port diameter valves: Inlet 1.375" Exhaust 1.1875"

Ignition: Type Battery Make Delco-Remy Distributor Model 1110503

Generator: Make Delco-Remy Model 1101351 Serial No. 7F11

Starter: Make Delco-Remy Model 1107405 Serial No. 7F29

Carburetor: Make Schebler Model TRX-15 Size 1"

Governor: Make Handy Type Variable-speed, centrifugal

Air cleaner: Make Donaldson Type Oil-washed, wire screen filter

CHASSIS: Type Tricycle Serial No. 50560 Drive Enclosed gear

Tread width: Rear 56" - 84" Front: Top 14 1/2" Bottom 8"

Rear tires: No. 2 Size 9.00" x 36" - 6 ply Air pressure 14 pounds

Front tires: No. 2 Size 5.50" x 16" - 4 ply Air pressure 20 pounds

Added weight per rear wheel: Iron 450 pounds Water 143 pounds

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REPAIRS AND ADJUSTMENTS

During the rated load drawbar test, the carburetor high-speed screw was momentarily opened approximately one turn and then closed the same amount to clear an apparent obstruction.

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 93.1% of maximum belt horsepower.

2. Observed maximum horsepower (tests F & B) — Drawbar 25.20 Belt 30.38

3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.) — Drawbar 26.49 Belt 31.75

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) — Drawbar 19.87 Belt 26.99

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 296.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

Ivan D. Wood

L. W. Hurlbut
Board of Tractor Test Engineers