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January 1938

## Test 296: Graham-Bradley Model 503.103

Tractor Museum

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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			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								
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	2.135	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			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											
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      Drawbar 26.49    Belt 31.75  
 (based on 60° F. and 29.92" Hg.)
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