

January 1951

## Test .456: David Bradley Garden Tractor

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The Experiment Station  
University of Nebraska College of Agriculture  
W. V. Lambert, Director, Lincoln, Nebraska

Department of Agricultural Engineering  
Dates of test: May 7 to May 18, 1951.  
Manufacturer: DAVID BRADLEY MANUFACTURING WORKS, BRADLEY, ILLINOIS  
Manufacturer's rating: Not rated on drawbar,  
1 1/2 hp on belt.

NEBRASKA TRACTOR TEST NO. 456.

DAVID BRADLEY GARDEN TRACTOR

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury
		Gal per hour	Hp-hr per gal	Lb per hp-hr		Cooling med	Air	
TESTS B AND C—100% MAXIMUM LOAD—TWO HOURS								
1.56	3201	0.233	6.70	0.897	—Air Cooled—	75	28.770	
TEST D—RATED LOAD—ONE HOUR								
1.41	3206	0.223	6.32	0.950	—Air Cooled—	77	28.760	
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
1.42	3208	0.244	6.34	0.951	.....	78	.....	
0.04	3393	0.135	0.30	2.025	.....	75	.....	
0.74	3315	0.170	4.35	1.378	.....	72	.....	
1.35	2700	0.219	6.16	0.978	.....	70	.....	
0.37	3329	0.140	2.64	2.270	.....	68	.....	
1.09	3285	0.209	5.22	1.156	.....	68	.....	
0.84	3205	0.183	4.59	1.310	—Air Cooled—	72	28.750	

DRAWBAR HORSEPOWER TESTS

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer inches of mercury
					Gal per hour	Hp-hr per gal	Lb per hp-hr		Cooling med	Air	
TESTS F AND G—100% MAXIMUM LOAD											
1.18	217	2.03	3190	4.16	Not Recorded			Air Cooled	65	28.850	
1.29	207	2.33	3209	2.63	" "			Air Cooled	67	28.940	
TEST H—RATED LOAD—TEN HOURS—2nd GEAR											
1.01	160	2.36	3206	1.84	0.194	5.21	1.153	Air Cooled	81	28.835	
TEST J—OPERATING MAXIMUM LOAD—2nd GEAR											
1.25	206	2.27	3212	6.67	Not Recorded			Air Cooled	76	28.930	

FUEL, OIL and TIME Gasoline octane No ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.015 lb Oil SAE 30; to motor 0.134 gal; drained from motor 0.097 gal Total time motor was operated 33 hours.

CHASSIS Type two-wheel garden tractor Serial No 276 Tread width 16 1/2" to 24" Hydraulic control system none used Advertised speeds mph first 2.1 second 2.4 Belt pulley diam 2 1/2" V-belt pulley rpm 3200 Clutch spring loaded double disc clutch operated by hand lever Seat none Brakes none Power take-off none.

ENGINE Make Briggs and Stratton Type single cylinder vertical Serial No. 1255927 Crankshaft mounted crosswise Head L Lubrication splash Bore and Stroke 2" x 2" Rated rpm 3200 Compression ratio 5.86 to 1 Displacement 6.28 cu in Port diameter valves inlet 3/4" exhaust 3/4" Governor variable speed centrifugal Carburetor size 1/2" Ignition system magneto Starting system rope starting Air cleaner oil bath moss type Muffler was used Oil Filter none Cooling medium temperature control air cooled.

REPAIRS AND ADJUSTMENTS No repairs or adjustments.

REMARKS All test results 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 100% of maximum belt horsepower.

HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)	1.34	1.65
2. Observed maximum horsepower (tests F and B)	1.29	1.56
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)	1.01	1.40

We, the undersigned, certify that this is a true and correct report of official tractor test No. 456.

L. F. Larsen  
Engineer in Charge

C. W. Smith  
F. D. Yung  
L. W. Hurlbut  
Board of Tractor  
Test Engineers

TIRES, WHEELS AND WEIGHT

	Tests F, G, & H	Test J	Test K
Two wheels			
Type	Pressed Steel	Pressed Steel	No smaller tires suggested by manufacturer.
Liquid ballast	None	None	
Added cast iron	85 lb	None	
Tires			
No. and size	Two 6.00-16	Two 6.00-16	
Ply	2	2	
Air Pressure	6 lb	6 lb	
Height of drawbar	9 inches	9 inches	
Static weight	480 lb	311 lb	
Total weight as tested	480 lb	311 lb	