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January 1935

Test 234: Planet Junior Garden Tractor

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. 234

Dates of test: June 5 to June 19, 1935.

Name and model of tractor: PLANET JR. GARDEN TRACTOR

Manufacturer: S. L. Allen and Co., Inc., Philadelphia, Pa.

Manufacturer's rating: NOT RATED.

B R A K E H O R S E P O W E R T E S T S

H. P.	:Crank : :shaft :	Fuel Consumption	: Water Consumption :	Temp. :	: Barometer
	:speed :	Gals. : H. P. : Lbs. per :	: per hour gallons :	: Deg. F. :	
	:R.P.M. : per	: hrs. per : H. P. : ing	: In : fuel : Total : ing	: Cool- : Air	: Inches of
	: : hour : Gal. : hour :		: : : med. :		: Mercury

TESTS B AND C 100% MAXIMUM LOAD. TWO HOURS

2.31	: 1799	: 0.373	: 6.19	: 0.991	: 0.000	: 0.000	: 79	: 28.820
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TEST D RATED LOAD. ONE HOUR

2.07	: 1799	: 0.352	: 5.88	: 1.043	: 0.000	: 0.000	: 78	: 28.780
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TEST E *VARIING LOAD. TWO HOURS

2.09	: 1802	: 0.352	: 5.94	: 1.013	:	:	:	: 78 :
0.00	: 1797	: 0.186	:	:	:	:	:	: 78 :
1.07	: 1804	: 0.264	: 4.05	: 1.514	:	:	:	: 79 :
2.25	: 1814	: 0.371	: 6.06	: 1.013	:	:	:	: 80 :
0.53	: 1807	: 0.225	: 2.36	: 2.603	:	:	:	: 80 :
1.58	: 1807	: 0.303	: 5.21	: 1.177	:	:	:	: 80 :
1.25	: 1805	: 0.417	: 3.00	: 2.048	:	:	:	: 79 : 28.780

*20 minute runs. Last line is average for two hours. Hand governed.

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 : Speed : Crank : Slip :	Fuel Consumption	: Water :	Temp. :	: Barometer
	: bar : miles : Shaft : on :	: H. P. : Lbs. : used :			
	: pull : per : speed : drive :	: Gal. : hour : per : Gal. :	: Cool- : Air	: Inches of	
	: pounds : hour : R.P.M. : wheels :	: per : per : H. P. : per : ing	: Mercury		
	: : : % : hour : gal. : hour : hour :		: med. :		

TESTS F AND G MAXIMUM LOAD.**

1.36	: 292	: 1.74	: 1816	: 15.09	: Not Recorded	: 87	: 28.560
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**Drawbar load could not regulate engine speed at full throttle. The engine was throttled to reduce slippage.

TEST H RATED LOAD. TEN HOURS. First GEAR.

1.26	: 227	: 2.08	: 1772	: 11.16	: 0.361	: 3.49	: 1.760	: 0.000	: --	: 75	: 28.730
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Copy of Report of Official Tractor Test No. 234

BRIEF SPECIFICATIONS

MOTOR: Make Toro Serial No. 0694 Type 1 cylinder vertical
 Head L Mounting Crank-shaft crosswise
 Bore and stroke: 2 3/4 x 3 1/4 in. Rated R.P.M. 1800
 Port Diam. Valves: Inlet 1 1/4" Exhaust 1 1/4"
 Belt pulley: Diam. 3 3/4 in. Face 3 1/2 in. R. P. M. 1800
 Magneto: Eisemann Model 71-F (Flywheel Type)
 Carburetor: Tillotson Model M-20-A Size 5/8"
 Governor: None (hand throttle only)
 Air Cleaner: Air Maze Type Oilod Screen
 Lubrication: Splash with circulating pump
 CHASSIS: Type 4 wheels, 2 drivers Serial No. 1633 Drive (Enclosed Gear and open Roller Chains)
 Clutch: Twin Disc Type Dry plate disc Operated by Hand Lever
 Advertised speeds, miles per hour: One gear only. Speed varied by
changing speed of motor with hand throttle.
 Drive wheels: Diameter 20" Face 3"
 Lugs: Type (Spade cast with wheel) No. per wheel 20 Size 1 3/4" high x 1 1/2"
face
 Extension rims: Width: 3" Lugs Spade No. Per rim 10
 Size 2" high x 1 15/16" face
 Seat None
 Total weight as tested 500 pounds.

FUEL AND OIL:

Fuel: Gasoline Weight per gallon 6.14
 Oil: S.A.E. Viscosity No. 20
 Total oil to motor 1.664 gallon
 Total drained from motor 0.664 gallon
 Total time motor was operated 42 hours
 The oil was drained after approximately every 10 hours of operation, as per operating instructions, and again at the end of the test.

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REPAIRS AND ADJUSTMENTS

After the belt tests and before the drawbar tests were run, the cylinderhead cap screws were tightened.

During the maximum drawbar tests, the fuel line became clogged and was cleaned.

REMARKS

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 horsepower and these figures were used in determining the ratings recommended by the A.S.A.E. and S.A.E. tractor rating codes. Tests C, D, E, G and H were made with an operating setting of the carburetor (selected by the manufacturer) of 100% of maximum horsepower.

Observed maximum horsepower (tests B & F) Drawbar 1.36 Belt 2.31

Sea level (calculated) maximum horsepower Drawbar 1.46 Belt 2.44
(Based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings Drawbar 1.10 Belt 2.07
(As recommended by A.S.A.E. and S.A.E. codes)

The 100% maximum belt and drawbar tests were not included in reports issued from 1928 to 1934 inclusive, except in those cases where the 100% maximum setting was used throughout the complete test.

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 234.

Carlton L. Zink
Engineer-in-charge

E. E. Brackett

C. W. Smith

E. B. Lewis

Board of Tractor Test Engineers