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January 1946

Test 379: Bear Cat Model 3000-1

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. 379

Dates of test: July 22 to August 8, 1946
 Name and model of tractor: BEAR CAT 3000-1
 Manufacturer: Ellinwood Industries, 160 West Slauson, Los Angeles, California.
 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

Hp.	Crank- shaft Speed R.P.M.	Fuel Consumption			Water Used Gal. per Hr.	Temperature Deg. F.		Barometer Inches of Mercury
		Gal. per Hr.	Hp.-hr. per Gal.	Lb. per Hp.-hr.		Cool- ing Medium	Air	

TEST B - 100% MAXIMUM LOAD - TWO HOURS

2.185	3299	0.317	6.893	0.890	Air Cooled	81	28.997
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

2.128	3300	0.282	7.546	0.813	Air Cooled	88	28.925
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*TEST D - ONE HOUR

1.942	3299	0.266	7.297	0.840	Air Cooled	88	28.915
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

1.951	3308	0.269	7.253	0.846	Air Cooled	86	--
0.108	3526	0.225	0.480	12.780	Air Cooled	86	--
0.931	3116	0.279	3.337	1.837	Air Cooled	86	--
2.065	2974	0.274	7.536	0.814	Air Cooled	86	--
0.522	3464	0.235	2.221	2.759	Air Cooled	88	--
1.525	3413	0.274	5.566	1.102	Air Cooled	89	--
1.184	3300	0.259	4.399	3.356	Air Cooled	87	--

*Formerly called RATED LOAD; see REMARKS 4, page 5.

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

Hp.	Draw- bar Pull Lbs.	Speed Miles per Hr.	Crank- shaft Speed R.P.M.	Slip of Drive Wheels %	Fuel Consumption			Water Used Gal. per Hr.	Temp. Deg. F.		Barometer Inches of Mercury
					Gal. per Hr.	Hp.-hr per Gal.	Lb. per Hp.-hr.		Cool- ing Med.	Air	

Drive wheels, tires and added weight used in Tests F, G, and H; Steel Disk wheels;
5.50 x 16 2-ply tires and 157 lbs. added weight per wheel.

TEST F - 100% MAXIMUM LOAD - 1 st GEAR
 (RUBBER)

1.772	350	1.90	3278	6.31	-----Not Recorded-----			--	Air	95	28.950
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(STEEL)

1.200	244	1.84	3301	15.81	-----Not Recorded-----			--	Air	91	28.745
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TEST G - OPERATING MAXIMUM LOAD

1.748	340	1.93	3315	5.59	-----Not Recorded-----			--	Air	95	28.930
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TEST H - TEN HOURS - 1 st GEAR

1.33	267	1.87	3313	3.77	0.235	5.66	1.083	--	Air	92	28.822
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TEST J - OPERATING MAXIMUM LOAD

Same wheels and tires as used in Tests F (Rubber), G, and H. All added weight removed from tractor (liquid, cast iron or any other added forms). 1 st gear.

1.075	225	1.79	3328	14.5	-----Not Recorded-----			--	Air	84	28.771
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FUEL, OIL, and TIME

Fuel Gasoline Octane 72 Weight per gallon 6.138 pounds
 Oil: S.A.E. No. 20 To motor 0.171 gal. Drained from motor 0.128 gal.
 Oil: S.A.E. No. 30 To motor 0.391 gal. Drained from motor 0.257 gal.

Total time motor was operated 69 hours.

TIRES, WHEELS, and WEIGHT

		Tests F, G, & H	Test J
Drive Wheel: (each)	Type and Weight	Disk Wheel & Tire-45 lbs.	Disk Wheel & Tire-45 lbs.
	Liquid Ballast	55 lbs.	None
	Added Cast Iron	102 lbs.	None
Tires:	No., Size, & Ply	2-5.50 x 16 2 ply	2-5.50 x 16 2 ply
	Type of Tread	Sure Grip	Sure Grip
	Make	Goodyear	Goodyear
	Air Pressure	6 lbs.	6 lbs.
Height of Drawbar:		14.5 inches	14.5 inches
Static Weight:	Rear End	630 lbs.	316 lbs.
	Front End	-----	-----
Total Weight as Tested without operator:		630 lbs.	316 lbs.

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CHASSIS

Type Garden Tractor Serial No. 46-3-5814 Drive V-Belt and Chain
 Tread width: Rear 22" (Adjustable 19" to 26") (Two wheel tractor)
 Advertised speeds, miles per hour: First $\frac{1}{2}$ to 3 (Only one forward speed)
 Reverse (No Reverse)
 Belt Pulley: Diam. 4" O. D. Face "V" R.P.M. 3300
 Clutch: Make Ellinwood Type Rocking Engine Slip V-Belt Clutch
 Operated by Hand Seat None Brakes None

MOTOR

Make Lauson Serial No. 533097 Type Single Cylinder Vertical
 Head L Mounting Crankshaft Crosswise
 Lubrication Splash & Circulating Pump Bore and stroke $2\frac{1}{4} \times 2\frac{1}{4}$
 Rated R.P.M. 3300 Port diameter valves: Inlet $7/8$ inches
 Exhaust $31/32$ inches
 Magneto: Make Eisemann Model 71-R
 Carburetor: Make Tillotson Model Ms-74J Size $\frac{1}{2}$ inch
 Governor: Make Lauson Type Centrifugal
 Air Cleaner: Make United Type Oil Bath
 Oil Filter: Make None Type -----
 Cooling medium temperature control: Air Cooled

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REPAIRS AND ADJUSTMENTS

Governor hunted during the no load and one-fourth load part of Varying load test (Test "E"). During the ten hour test (Test "H") it was necessary to replace the Vee drive belt twice and it needed to be replaced again at the end of the test.

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 98.2% of maximum belt horsepower.

	<u>DRAWBAR</u>	<u>BELT</u>
2. Observed maximum horsepower (tests F & B)	1.772	2.185
3. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg.)	1.892	2.300
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)	1.419	1.955

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 379.

L. F. Larsen
 Engineer-in-charge

E. E. Brackett

C. W. Smith

F. D. Yung
 Board of Tractor Test Engineers