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Test 407: Gibson Model H

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
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Copy of Report of Official Tractor Test No. 407

Dates of test: May 2, 1949 to May 7, 1949
 Name and model of tractor: GIBSON MODEL "H"
 Manufacturer: THE GIBSON MANUFACTURING CORP., LONGMONT, COLORADO
 Manufacturer's rating: 25 HP

HORSEPOWER SUMMARY

	DRAWBAR	BELT
1. Sea level (calculated maximum horsepower based on 60° F. and 29.92" Hg.)	24.20	25.99
2. Observed maximum horsepower (tests F & B)	22.77	24.54
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)	18.15	22.09

REMARKS

Routing inspection at end of test revealed small areas of bearing metal flaked from Number 2 and Number 3 connecting rod bearings.

FUEL, OIL, and TIME

Fuel Gasoline Octane 74 * Weight per gallon 6.116
Oil SAE 30 To motor 1.770 gal. Drained from motor 0.900 gal.
Total time motor was operated 37 hours

* Octane rating taken from oil company's typical inspection data.

Wo, the undersigned, certify that this is a true and correct report of official tractor test No. 407.

L. F. Larson
 Engineer in Charge

C. W. Smith

L. W. Hurlbut

F. D. Yung
 BOARD OF TRACTOR TEST ENGINEERS

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All results shown on pages 2 and 3 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 J were made with an operating setting of the carburetor (selected by the manufacturer) of 94.9% of maximum belt horsepower.

B E L T H O R S E P O W E R T E S T S

Horse- power	Crank shaft speed rpm	Fuel Consumption			Water used gal per hr	Temperature		Barometer Inches of Mercury
		gal per hr	hp-hr per gal	lb per hp-hr		Cool- ing med °F.	Air °F.	

TEST B - 100% MAXIMUM LOAD - TWO HOURS

24.54	1801	2.552	9.62	0.636	0.00	173	82	28.845
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

23.32	1803	2.292	10.17	0.601	0.00	170	80	28.835
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*TEST D - ONE HOUR

22.12	1800	2.175	10.17	0.601	0.00	164	78	28.825
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

22.14	1798	2.183	10.14	0.603	- - -	165	78	- - - -
1.76	1901	1.089	1.62	3.784	- - -	150	78	- - - -
11.43	1859	1.530	7.47	0.819	- - -	155	77	- - - -
22.02	1592	2.168	10.16	0.602	- - -	172	78	- - - -
5.85	1898	1.280	4.57	1.338	- - -	152	77	- - - -
17.39	1854	1.933	9.00	0.680	- - -	160	77	- - - -
13.43	1817	1.697	7.91	0.773	0.00	159	78	28.810

* Formerly called RATED LOAD, see HORSEPOWER SUMMARY 3, page 1.

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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

Horse- power	Draw bar pull lb	Speed mph	Crank shaft speed rpm	Slip on drive wheels %	Fuel Consumption			Water used gal per hr	Temperature		Barometer Inches of Mercury
					gal per hr	hp-hr per gal	lb per hp-hr		Cool- ing mod °F.	Air °F.	

TEST F - 100% MAXIMUM LOAD - 3rd GEAR

22.77	2029	4.21	1800	5.72	-----Not Recorded-----				169	85	28.825
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TEST G - OPERATING MAXIMUM LOAD

16.16	3583	1.69	1799	16.14	-----Not Recorded-----				157	83	28.825
21.35	2738	2.92	1804	7.99	-----Not Recorded-----				165	83	28.825
21.50	1902	4.24	1805	5.33	-----Not Recorded-----				166	84	28.825
18.35	545	12.62	1801	2.19	-----Not Recorded-----				160	83	28.815

*TEST H - TEN HOURS - 3rd GEAR

18.44	1632	4.24	1801	5.16	2.022	9.12	0.671	0.00	164	80	28.867
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TEST J - OPERATING MAXIMUM LOAD - 3rd GEAR

21.59	1905	4.15	1804	8.31	-----Not Recorded-----				165	82	28.815
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* Formerly called RATED LOAD: see POWER SUMMARY 3, page 1.

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TIRES, WHEELS, and WEIGHT

		Tests F, G, and H	Test J
Rear Wheel:	Type	Pressed Steel	Pressed Steel
(each)	Liquid Ballast	None	None
	Added Cast Iron	867 lb.	None
Rear Tires:	No. Size & Ply	2 11-38 4 ply	2 11-38 4 ply
	Type of Tread	Sure Grip	Sure Grip
	Make	Goodyear	Goodyear
	Air Pressure	12 lb.	12 lb.
Front Wheel:	Type	Pressed Steel	Pressed Steel
(each)	Liquid Ballast	None	None
	Added Cast Iron	None	None
Front Tires:	No. Size & Ply	2 5.50-15 4 ply	2 5.50-15 4 ply
	Type of Tread	Triple Rib	Triple Rib
	Make	Goodyear	Goodyear
	Air Pressure	28 lb.	28 lb.
Height of Drawbar		16 inches	16 1/2 inches
Static Weight: Rear End		4280 lb.	2546 lb.
Front End		1361 lb.	1358 lb.
Total Weight as Tested (with Operator)		5816 lb.	4079 lb.

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SPECIFICATIONS

Type Tricyclo Serial No. 2423987 Drive Enclosed Gear

Tread width: Rear 47 in. to 85 in. Front 7 3/4 in. Wheel Base 86 in.

Advertised speeds, miles per hour: First 2.0 Second 3.5 Third 5.1

Fourth 14.7 Reverse 2.3

Bolt pulley: Diam. 9 3/16 in. Face 7 1/2 in. RPM 1487 Bolt speed 3539 fpm

Clutch: Make Rockford Type Single Disc Operated by Foot pedal

Seat Pressed Stool Hydraulic Control: Yes

Brakes: Make Own Type Contracting Band

Location Bull Pinion Shaft

Gear reduction (brake drum to rear wheel) 3.46 to 1

Operated by Foot Pedals

Locked by Latches

Equalization None Brakes can be locked together

Engine: Make Hercules Serial No. 1XB3 Type 4 cylinder vortical

Head L Mounting Crankshaft Lengthwise Lubrication Pressure

Bore & Stroke 3 1/4 in. x 4 in. Rated rpm 1800 Compression ratio 6.24:1

Port Diameter valves: Inlet 1 1/4 in. Exhaust 1 1/8 in.

Distributor & Coil: Make Delco-Remy Battery National 6-Volt

Starter: Make Delco-Remy

Carburetor: Make Marvel-Schebler Model TSX388 Size 7/8 in.

Governor: Make Handy Type Flyweight, variable speed

Air Cleaner: Make Vortex Type Wire mesh

Oil Filter: Make Fram Type Waste packed element

Cooling medium temperature control: Thermostat