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January 1952

## Test 479: Harris Power Horse 53

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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: July 27 to August 9, 1952  
Manufacturer: HARRIS MANUFACTURING COMPANY, STOCKTON, CALIFORNIA  
Manufacturer's rating: 45 maximum drawbar hp.

NEBRASKA TRACTOR TEST NO. 479

HARRIS POWER HORSE 53

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	
<b>TESTS F and G—100% MAXIMUM LOAD</b>											
33.00	6160	2.01	1998	16.32	.....	Not Recorded	.....	171	76	29.070	
49.01	5512	3.33	1997	11.74	.....	Not Recorded	.....	175	70	29.070	
50.11	3816	4.92	2003	7.63	.....	Not Recorded	.....	165	70	29.070	
39.04	974	15.03	2005	2.43	.....	Not Recorded	.....	168	71	29.080	
<b>TEST H—RATED LOAD—TEN HOURS—3rd Gear</b>											
39.41	2930	5.04	1998	5.13	5.668	6.95	0.873	0.00	180	86	29.038
<b>TEST J—OPERATING MAXIMUM LOAD—3rd Gear</b>											
44.51	3670	4.55	1993	14.43	.....	Not Recorded	.....	198	95	28.910	
<b>TEST K—OPERATING MAXIMUM LOAD—3rd Gear</b>											
37.93	3525	4.04	2002	15.74	.....	Not Recorded	.....	174	82	28.900	

**FUEL, OIL and TIME** Gasoline octane No ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.071 lb Oil SAE 20 to motor 1.246 gal; drained from motor 1.049 gal Total time motor was operated 30½ hours.

**CHASSIS** Type 4 wheel drive Serial No PH43461 Tread width rear 48" to 76" front 48" to 76" Wheel Base 54" Hydraulic control system not available Advertised speeds mph first 2.4 second 3.79 third 5.33 fourth 15.4 reverse 1.97 Belt pulley not available Seat upholstered Brakes external contracting band operated by one foot pedal Power take-off not available.

**ENGINE** Make Chrysler Ind. 8A Type 6 cylinder vertical Serial No 60625 Crankshaft mounted lengthwise Head L Lubrication pressure Bore and Stroke 3 7/16" x 4 1/2" Rated rpm 2000 Compression ratio 6.6 to 1 Displacement 250.6 cu in Port Diameter Valves inlet 1 3/8" exhaust 1 5/16" Governor variable speed centrifugal Carburetor Size 1½" Ignition System battery Starting System 6 volt battery Air Cleaner oil washed wire gauze Muffler none used Oil Filter with replaceable element Cooling medium temperature control thermostat.

**REPAIRS AND ADJUSTMENTS** No repairs or adjustments.

**REMARKS** All test results were determined from observed data and without allowances, additions or deductions. Test F was made with carburetor set for 100% maximum drawbar horsepower and data from this test were used in determining the horsepower to be developed in test H. Tests G, H, J and K were made with the same setting of the carburetor.

No belt tests were made on this tractor as belt pulley was not available.



TIRES, WHEELS and WEIGHT

	Tests F, G, & H	Test J	Test K
<b>Rear wheels</b>			
Type	Pressed steel	Pressed steel	Pressed steel
Liquid ballast	319 lb each	None	None
Added cast iron	520 lb each	None	None
<b>Rear tires</b>			
No. and size	Two 13-24	Two 13-24	Two 11-24
Ply	4	4	4
Air pressure	12 lb	12 lb	12 lb
<b>Front wheels</b>			
Type	Pressed steel	Pressed steel	Pressed steel
Liquid ballast	346 lb each	None	None
Added cast iron	920 lb each	None	None
<b>Front tires</b>			
No. and size	Two 13-24	Two 13-24	Two 11-24
Ply	4	4	4
Air pressure	12 lb	12 lb	12 lb
<b>Height of drawbar</b>	12 inches	13 inches	11 inches
<b>Static weight</b>			
Rear end	4148 lb	2470 lb	2394 lb
Front end	5262 lb	2730 lb	2626 lb
<b>Total weight as tested with operator</b>	9585 lb	5375 lb	5195 lb

HORSEPOWER SUMMARY

- |  |         |
|--|---------|
|  | Drawbar |
| 1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)  | 52.07   |
| 2. Observed maximum horsepower (test F)  | 50.11   |
| 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) | 39.05   |

We, the undersigned, certify that this is a true and correct report of official tractor test No. 479.

L. F. LARSEN  
Engineer in Charge

C. W. SMITH  
F. D. YUNG  
L. W. HURLBUT  
Board of Tractor  
Test Engineers