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Test 955: Farmall 706 (Diesel)

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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NEBRASKA TRACTOR TEST 955 - FARMALL 706 DIESEL

(ALSO INTERNATIONAL FARMALL 756 DIESEL)

POWER TAKE-OFF PERFORMANCE

Hp	Crank-shaft speed rpm	Fuel Consumption		Hp-hr per gal	Temperature Degrees F			Barometer inches of Mercury
		Gal per hr	Lb per hp-hr		Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours								
76.09	2300	5.047	0.459	15.08	177	57	75	28.797
Standard Power Take-off Speed (1000 rpm)—One Hour								
71.84	2072	4.675	0.450	15.37	178	57	75	28.795
VARYING POWER AND FUEL CONSUMPTION—TWO HOURS								
66.70	2369	4.482	0.465	14.88	167	58	76	.....
0.00	2510	1.749	.....	.....	132	57	73	.....
34.38	2451	3.020	0.607	11.38	147	58	74	.....
76.41	2300	5.038	0.456	15.17	173	58	75	.....
17.43	2485	2.360	0.936	7.39	139	57	73	.....
50.99	2410	3.745	0.508	13.62	154	57	74	.....
Av 40.99	2421	3.399	0.573	12.06	152	57	74	28.790

DRAWBAR PERFORMANCE

Hp	Draw-bar pull lbs	Speed miles per hr	Crank- shaft speed rpm	Slip of drivers %	Fuel Consumption		Temp Degrees F					Barom- eter inches of Mercury
					Gal per hr	Lb per hp-hr	Hp-hr per gal	Cool- ing med	Air wet bulb	Air dry bulb		
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST												
Maximum Available Power—Two Hours—10th Gear (1st HI-DD)												
67.46	4392	5.76	2297	4.86	5.033	0.516	13.40	142	33	36	29.320	
75% of Pull at Maximum Power—Ten Hours—10th Gear (1st HI-DD)												
53.27	3314	6.03	2377	3.86	4.272	0.555	12.47	131	30	33	29.388	
50% of Pull at Maximum Power—Two Hours—10th Gear (1st HI-DD)												
36.95	2248	6.16	2401	2.69	3.580	0.670	10.32	120	30	31	29.340	
MAXIMUM POWER WITH BALLAST												
60.24	8416	2.68	2321	14.90	5th Gear (3rd LO-TA)		145	41	49	28.980		
66.08	6714	3.69	2295	7.78	6th Gear (3rd LO-DD)		151	42	50	29.180		
67.18	6513	3.87	2298	7.13	7th Gear (4th LO-TA)		148	42	50	29.180		
69.03	5832	4.44	2303	6.27	8th Gear (1st HI-TA)		147	42	50	29.180		
68.49	5072	5.06	2303	5.40	9th Gear (4th LO-DD)		149	42	50	29.180		
68.64	4467	5.76	2297	4.99	10th Gear (1st HI-DD)		157	42	50	29.200		
68.71	4297	6.00	2300	4.72	11th Gear (2nd HI-TA)		153	42	50	29.200		
67.68	3256	7.79	2303	3.54	12th Gear (2nd HI-DD)		150	42	50	29.200		
66.14	2331	10.64	2301	2.47	13th Gear (3rd HI-TA)		146	42	50	29.200		
63.87	1741	13.76	2308	1.96	14th Gear (3rd HI-DD)		145	42	50	29.200		
63.11	1664	14.22	2298	2.04	15th Gear (4th HI-TA)		140	42	50	29.200		
MAXIMUM POWER WITHOUT BALLAST												
65.70	4403	5.60	2297	6.77	10th Gear (1st HI-DD)		151	47	56	28.770		
VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST												
10th Gear (1st HI-DD)												
Pounds				4467	4722	4935	5078	5178	5211	4793		
Horsepower				68.64	65.03	59.97	54.07	47.15	39.52	29.14		
Crankshaft speed, rpm				2297	2065	1828	1604	1372	1143	913		
Miles per hour				5.76	5.16	4.56	3.99	3.41	2.84	2.28		
Slip of drivers, %				4.99	5.13	5.54	5.67	5.81	5.54	5.54		

TIRES, BALLAST and WEIGHT

		With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 15.5-38; 8; 22	Two 15.5-38; 8; 16
Ballast	—Liquid	755 lb each	None
	—Cast iron	None	None
Front tires	—No, size, ply & psi	Two 6.50-16; 6; 40	Two 6.50-16; 6; 40
Ballast	—Liquid	None	None
	—Cast iron	None	None
Height of drawbar		17 inches	17½ inches
Static weight with operator—Rear		8180 lb	6670 lb
Front		2530 lb	2490 lb
Total		10710 lb	9160 lb

Department of Agricultural Engineering

Dates of Test: NOVEMBER 14 TO NOVEMBER 28, 1966

Manufacturer: INTERNATIONAL HARVESTER COMPANY, CHICAGO, ILLINOIS

FUEL, OIL and TIME Fuel No 2 Diesel Cetane No 54.7 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8304 Weight per gallon 6.914 lb Oil SAE 30 API service classification MS, DG, DM, DS To motor 3.336 gal Drained from motor 2.284 gal Transmission and final-drive lubricant IH Hy-Tran fluid Total time engine was operated 48 hours.

ENGINE Make International Diesel Type 6 cylinder vertical Serial No 52M85 Crankshaft mounted lengthwise Rated rpm 2300 Bore and stroke 3.875" x 4.375" Compression ratio 15.9 to 1 Displacement 309.6 cu in Cranking system 12 volt electric (two 6-volt batteries) Lubrication pressure Air cleaner two stage dry type with automatic dust unloader Oil filter full flow replaceable pleated paper element Fuel filter one primary and one final fuel filter using replaceable treated paper elements Muffler was used Cooling medium temperature control thermostat.

CHASSIS Type standard Serial No 36316S-Y Tread width rear 56" to 94" front 50" to 74" Wheel base 104.8" Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance, forward from centerline of rear wheels 30.36" Vertical distance above roadway 34.7" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial range operator controlled power shifting Advertised speeds mph first 1¼ second 1¾ third 1¾ fourth 2¼ fifth 3 sixth 4 seventh 4 eighth 4½ ninth 5¼ tenth 6 eleventh 6¼ twelfth 8 thirteenth 10¾ fourteenth 13¾ fifteenth 14¾ sixteenth 18½ REVERSE first 2¼ second 3 third 3 fourth 4 fifth 5¼ sixth 6¾ seventh 7 eighth 9 Clutch single plate dry disc operated by foot pedal Brakes dry disc hydraulically power actuated and operated by two foot pedals Steering hydraulic with power assist Turning radius (on concrete surface with brake applied) right 128" left 128" (on concrete surface without brake) right 162" left 162" Turning space diameter (on concrete surface with brake applied) right 264" left 264" (on concrete surface without brake) right 330" left 330" Belt pulley 1055 rpm at 2300 engine rpm diam 11" face 7½" Belt speed 3038 fpm Power take-off 539 or 1014 rpm at 2100 engine rpm.

REPAIRS and ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data obtained in accordance with the SAE and ASAE test code.

First, second, third, and fourth gears were not run as it was necessary to limit the pull in fifth gear to avoid excessive wheel slippage. Sixteenth gear was not run as it exceeded 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 955.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

J. J. SULEK

D. E. LANE

Board of Tractor Test Engineers

The University of Nebraska Agricultural Experiment Station
E. F. Frolik, Dean; H. H. Kramer, Director, Lincoln, Nebraska