January 1963

Test 859: Farmall 806 (Gasoline)

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

NEBRASKA TRACTOR TEST 859 - FARMALL 806 GASOLINE

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

POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft speed rpm	Fuel Consumption Gal per hr	Fuel Consumption Lb per hp-hr	Hp-hr per gal	Temperature Degrees F Cooling medium	Temperature Degrees F Air wet bulb	Temperature Degrees F Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours								
93.27	2400	7.414	0.488	12.58	192	55	75	29.100
Standard Power Take-off Speed (1000 rpm)—One Hour								
83.99	2071	6.557	0.479	12.81	200	55	74	29.130
VARYING POWER AND FUEL CONSUMPTION—TWO HOURS								
82.84	2508	7.017	0.520	11.81	191	56	75	.....
0.00	2655	2.562	.....	.....	170	55	74	.....
42.77	2589	4.513	0.647	9.48	178	54	73	.....
94.13	2401	7.438	0.485	12.66	199	56	75	.....
21.75	2635	3.399	0.959	6.40	173	56	75	.....
63.40	2560	5.751	0.556	11.02	186	56	75	.....
Av 50.82	**2558**	**5.113**	**0.617**	**9.94**	**183**	**55**	**74**	**29.153**

DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Fuel Consumption Lb per hp-hr	Fuel Consumption Hp-hr per gal	Temp Degrees F Cooling med	Temp Degrees F Air wet bulb	Temp Degrees F Air dry bulb	Barometer inches of Mercury
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—10th Gear (2nd Hi-TA)											
80.70	5412	5.59	2395	6.71	7.452	0.566	10.83	190	45	55	29.175
75% of Pull at Maximum Power—Ten Hours—10th Gear (2nd Hi-TA)											
66.02	4123	6.00	2523	4.97	6.517	0.606	10.13	181	48	63	28.683
50% of Pull at Maximum Power—Two Hours—10th Gear (2nd Hi-TA)											
46.15	2771	6.25	2584	3.43	5.341	0.710	8.64	181	37	44	28.750
MAXIMUM POWER WITH BALLAST											
63.78	9003	2.66	2505	14.83	5th Gear (3rd Lo-TA)			182	39	43	28.820
76.85	8342	3.45	2400	13.25	6th Gear (4th Lo-TA)			182	39	43	28.840
77.92	7514	3.89	2407	11.30	7th Gear (3rd Lo-DD)			181	40	45	28.840
80.48	7536	4.00	2404	11.55	8th Gear (1st Hi-TA)			183	41	47	28.850
80.28	5582	5.39	2407	7.94	9th Gear (4th Lo-DD)			180	46	54	28.860
81.04	5496	5.53	2400	7.94	10th Gear (2nd Hi-TA)			181	46	54	28.880
79.98	4859	6.17	2401	6.85	11th Gear (1st Hi-DD)			182	47	58	28.880
79.79	3555	8.42	2412	4.89	12th Gear (2nd Hi-DD)			183	47	58	28.880
80.06	2996	10.02	2404	4.02	13th Gear (3rd Hi-TA)			185	47	60	28.880
76.84	2125	13.56	2411	2.99	14th Gear (4th Hi-TA)			185	48	61	28.880
75.28	1893	14.91	2402	2.39	15th Gear (3rd Hi-DD)			185	49	62	28.880
MAXIMUM POWER WITHOUT BALLAST											
82.74	5619	5.52	2403	9.03	10th Gear (2nd Hi-TA)			184	33	37	29.210

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST
10th Gear (2nd Hi-TA)

Pounds pull	5496	5673	5880	5933	5955	5948	5963	5862
Horsepower	81.04	74.94	68.53	60.66	51.88	43.08	34.62	25.35
Crankshaft speed rpm	2400	2154	1910	1678	1431	1190	954	710
Miles per hour	5.53	4.95	4.37	3.83	3.27	2.72	2.18	1.62
Slip of drivers %	7.94	8.20	8.60	8.87	8.87	9.00	9.00	8.87

TIRES, BALLAST and WEIGHT		With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 18.4-34; 8; 16	Two 18.4-34; 8; 16
Ballast	—Liquid	1038 lb each	None
	Cast iron	142 lb each	None
Front tires	—No, size, ply & psi	Two 7.50L-15; 8; 32	Two 7.50L-15; 8; 32
Ballast	—Liquid	None	None
	Cast iron	None	None
Height of drawbar		20½ inches	21½ inches
Static weight	—Rear	8580 lb	6220 lb
	Front	2290 lb	2255 lb
Total weight with operator		11045 lb	8650 lb

Department of Agricultural Engineering

Dates of Test: October 28 to November 22, 1963

Manufacturer: INTERNATIONAL HARVESTER COMPANY, CHICAGO, ILLINOIS

Manufacturer's Power Rating: Not rated

FUEL OIL and TIME Fuel regular gasoline **Octane No** Motor 84 Research 92.8 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60°** 0.7370 **Weight per gallon** 6.135 lb **Oil** SAE 10W-20W-30 **API service classification** MS **To motor** 2.280 gal **Drained from motor** 1.560 gal **Transmission and final-drive lubricant** IH Hy-Tran fluid **Total time engine was operated** 43½ hours.

ENGINE Make International Gasoline **Type** 6 cylinder vertical **Serial No** 1041C301 **Crankshaft mounted** lengthwise **Rated rpm** 2400 **Bore and stroke** $3^{13}/_{16}$" x $4^{25}/_{64}$" **Compression ratio** 7.7 to 1 **Displacement** 301 cu in **Carburetor size** 1⅜" **Ignition system** battery **Cranking system** 12 volt electric **Lubrication** pressure **Air cleaner** two stage dry type with automatic dust unloader using replaceable pleated paper element **Oil filter** full flow replaceable paper element **Oil cooler** radiator for transmission and hydraulic oil **Muffler** was used **Cooling medium temperature control** thermostat.

CHASSIS Type Tricycle **Serial No** 630 SY **Tread width** rear 56" to 94" front 8" or 16" **Wheel base** 101.2" **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 27.4" Vertical distance above roadway 37.4" 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 1.26 second 1.67 third 1.84 fourth 2.45 fifth 2.90 sixth 3.87 seventh 4.26 eighth 4.39 ninth 5.68 tenth 5.84 eleventh 6.44 twelfth 8.56 thirteenth 10.14 fourteenth 13.53 fifteenth 14.87 sixteenth 19.84 **Reverse** first 2.16 second 2.87 third 3.17 fourth 4.21 fifth 4.98 sixth 6.65 seventh 7.31 eighth 9.75 **Clutch** single plate dry disc operated by foot pedal **Brakes** dry disc hydraulically power actuated operated by two foot pedals **Steering** hydraulic with power assist **Turning radius** (on concrete surface with brake applied) right 113" left 113" (on concrete surface without brake) right 123" left 119" **Turning space diameter** (on concrete surface with brake applied) right 241" left 241" (on concrete surface without brake right 260" left 254" **Belt pulley** 1067 rpm at 2100 engine rpm diam 11" face 7.5" Belt speed 3073 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 859.

L. F. LARSEN
Engineer-in-Charge

L. W. HURLBUT, Chairman
G. W. STEINBRUEGGE
J. J. SULEK
Board of Tractor Test Engineers