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January 1972

Test 1115: International 354 Gasoline 8-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1115 – INTERNATIONAL 354 GASOLINE 8 SPEED

POWER TAKE-OFF PERFORMANCE

Hp	Crank- shaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temperature Cooling medium	Degrees F Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—555 rpm)								
32.58	1873	3.154	0.591	10.33	176	55	75	28.997
Standard Power Take-Off Speed (540 rpm)—One Hour								
32.22	1823	3.110	0.589	10.36	176	55	75	28.980
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
28.97	1960	2.839	0.599	10.20	173	55	74	.....
0.00	2095	1.204	.....	.....	166	55	75	.....
15.07	2036	2.034	0.824	7.41	170	56	75	.....
32.47	1875	3.168	0.596	10.25	176	56	75	.....
7.65	2071	1.631	1.302	4.69	168	56	75	.....
22.16	1999	2.427	0.669	9.13	171	56	75	.....
Av 17.72	2006	2.217	0.764	7.99	170	56	75	28.973

DRAWBAR PERFORMANCE

Hp	Draw- bar pull lbs	Speed miles per hr	Crank- shaft speed rpm	Slip of drivers %	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temp Degrees F Cool- ing med	Air wet bulb	Air dry bulb	Barometer inches of Mercury
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VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST

Maximum Available Power—Two Hours—5th Gear (4L)											
27.73	2071	5.02	1873	4.87	3.070	0.675	9.03	170	65	69	28.900
75% of Pull at Maximum Power—Ten Hours—5th Gear (4L)											
22.75	1584	5.39	1988	3.79	2.660	0.714	8.55	170	45	52	29.084
50% of Pull at Maximum Power—Two Hours—5th Gear (4L)											
16.57	1119	5.55	2026	2.74	2.292	0.844	7.23	165	55	56	28.810
50% of Pull at Reduced Engine Speed—Two Hours—6th Gear (2H)											
16.27	1105	5.52	1605	3.05	2.149	0.807	7.57	166	45	45	28.945

MAXIMUM POWER WITH BALLAST

18.17	4674	1.46	2015	13.26	1st Gear (1L)	.....	170	51	52	28.800
27.99	3233	3.25	1873	8.15	3rd Gear (3L)	.....	166	49	57	28.990
28.19	2695	3.92	1875	6.55	4th Gear (1H)	.....	166	50	60	28.980
28.37	2122	5.01	1873	4.90	5th Gear (4L)	.....	167	53	63	28.950
28.07	1645	6.40	1873	3.86	6th Gear (2H)	.....	167	53	64	28.930
27.63	1120	9.25	1876	2.45	7th Gear (3H)	.....	167	54	64	28.930

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALAST 5th Gear (4L)

Pounds Pull	2122	2214	2261	2276	2176	2105
Horsepower	28.37	26.65	24.28	21.20	17.70	14.03
Crankshaft Speed rpm	1873	1691	1510	1310	1141	934
Miles Per Hour	5.01	4.51	4.03	3.49	3.05	2.50
Slip of Drivers %	4.90	5.27	5.39	5.49	5.17	5.06

TRACTOR SOUND LEVEL (without cab) dB (A)

Maximum Available Power 2 Hours	90.5
75% of Pull at Max. Power 10 Hours	91.0
50% of Pull at Max. Power 2 Hours	89.5
50% of Pull at Reduced Engine Speed 2 Hours	87.0
Bystander in 8th Gear (4H)	82.5

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear tires	—No., size, ply & psi	Two 12.4-28; 6; 16	Two 12.4-28; 6; 16
Ballast	—Liquid	440 lb each	None
	—Cast Iron	415 lb each	None
Front tires	—No., size, ply & psi	Two 5.50-16; 6; 32	Two 5.50-16; 6; 32
Ballast	—Liquid	None	None
	—Cast Iron	90 lb each	None
Height of drawbar		21½ inches	22½ inches
Static weight with operator—rear		4280 lb	2570 lb
front		1645 lb	1465 lb
total		5925 lb	4035 lb

Department of Agricultural Engineering

Dates of Test: November 1 to November 22, 1972

Manufacturer: INTERNATIONAL HARVESTER COMPANY, Chicago, Illinois

FUEL, OIL AND TIME Fuel lead free gasoline Octane No Motor 83 Research 91 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.7336 Weight per gallon 6.107 lb Oil SAE 20-20W API service classification SB/SE-CA/CD To motor 1.645 gal Drained from motor 1.485 gal Transmission and final drive lubricant SAE 80 Total time engine was operated 49½ hours

ENGINE Make International gasoline Type 4 cylinder vertical Serial No BC-144 A-4384 compression ratio 6.3 to 1 Crankshaft mounted lengthwise Rated rpm 1875 Bore and Stroke 3.375 x 4.00 Displacement 143.1 cu in Carburetor size 1" Ignition system battery Cranking system 12 volt electric Lubrication pressure Air cleaner dual stage dry type with automatic dust unloader Oil filter full flow treated paper replaceable element Fuel filter gauze strainer in fuel pump Muffler was used Cooling medium temperature control thermostat

CHASSIS Type standard Serial No. A470001B001999* Tread width rear 48" to 76" front 48" to 76" Wheel base 76½" Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 29.2" Vertical distance above roadway 27.7" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system direct engine drive Transmission selective gear fixed ratio Advertised speeds mph first 1½ second 2½ third 3½ fourth 4¼ fifth 5¼ sixth 6½ seventh 9½ eighth 14 reverse 2½ and 6½ Clutch dual stage dry disc for transmission and PTO Brakes single dry disc operated by two foot pedals can be locked together Steering power assist Turning radius (on concrete surface with brake applied) right 117" left 117" (on concrete surface without brake) right 137" left 137" Turning space diameter (on concrete surface with brake applied) right 246" left 246" (on concrete surface without brake) right 285" left 285" Belt pulley 1305 rpm at 1875 engine rpm diam 9½" face 6¾" Belt speed 3245 fpm Power take-off 540 rpm at 1823 engine rpm.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. Six gears were chosen between stability limit and 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1115.

L. F. LARSEN

Engineer-in-charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers

The University of Nebraska Agricultural Experiment Station
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