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January 1973

Test 1123: International 966 Diesel 16-Speed (Chassis S/N 2510161U017000 and up)

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1123 — INTERNATIONAL 966 DIESEL 16 SPEED

CHASSIS SN 2510161U017000* and up

POWER TAKE-OFF PERFORMANCE

Hp	Crank- shaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Temperature Degrees F Cooling medium	Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1146 rpm)								
100.80	2600	6.932	0.480	14.54	193	63	75	29.070
Standard Power Take-off Speed (1000 rpm)—One Hour								
101.52	2269	6.475	0.445	15.68	196	62	75	29.085
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
89.79	2724	6.501	0.506	13.81	187	62	76	.....
0.00	2842	2.819	.....	.....	175	62	76	.....
46.09	2798	4.593	0.696	10.03	179	62	75	.....
101.00	2602	6.913	0.478	14.61	192	63	76	.....
23.08	2819	3.704	1.120	6.23	177	62	75	.....
68.33	2760	5.496	0.562	12.43	182	62	77	.....
Av. 54.72	2757	5.004	0.639	10.94	182	62	76	29.063

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
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours—8th Gear (1 Hi TA)											
85.21	6606	4.84	2607	8.70	6.893	0.565	12.36	180	48	58	29.020
75% of Pull at Maximum Power—Ten Hours—8th Gear (1 Hi TA)											
70.99	5086	5.23	2747	6.34	6.076	0.598	11.68	176	54	55	28.555
50% of Pull at Maximum Power—Two Hours—8th Gear (1 Hi TA)											
49.50	3387	5.48	2800	3.80	5.031	0.710	9.84	171	44	47	28.560
50% of Pull at Reduced Engine Speed—Two Hours—12th Gear (2 Hi DD)											
49.70	3390	5.50	1645	3.65	3.724	0.523	13.35	173	45	46	28.665

MAXIMUM POWER WITH BALLAST

82.75	10036	3.09	2697	14.66	5th Gear (3 Lo TA)	175	46	47	28.640
82.50	7746	3.99	2600	10.78	6th Gear (3 Lo DD)	184	44	52	29.080
86.09	6705	4.82	2598	8.87	8th Gear (1 Hi TA)	184	43	52	29.020
85.35	5797	5.52	2598	7.58	9th Gear (4 Lo DD)	184	43	59	29.020
87.80	5195	6.34	2601	6.60	10th Gear (1 Hi DD)	185	49	57	28.960
88.94	5071	6.58	2597	6.39	11th Gear (2 Hi TA)	185	48	57	28.960

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST— 8th Gear (1 Hi TA)

Pounds Pull	6705	7493	8064	8411	9087	9167	8918
Horsepower	86.09	86.86	82.14	74.10	68.12	56.88	44.56
Crankshaft Speed rpm	2598	2335	2070	1805	1561	1296	1037
Miles Per Hour	4.82	4.35	3.82	3.30	2.81	2.33	1.87
Slip of Drivers %	8.87	8.47	9.27	9.93	11.48	11.86	11.09

TRACTOR SOUND LEVEL WITH CAB

	dB (A)
Maximum Available Power 2 Hours	88.5
75% of Pull at Max. Power 10 Hours	89.0
50% of Pull at Max. Power 2 Hours	88.5
50% of Pull at Reduced Engine Speed 2 Hours	87.5
Bystander 16th Gear (4 Hi DD)	92.0

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear tires	—No, size, ply & psi	Two 16.9-38; 8; 24
Ballast	—Liquid	985 lb each
	—Cast iron	None
Front tires	—No, size, ply & psi	Two 9.5L-15; 8; 32
Ballast	—Liquid	None
	—Cast iron	None
Height of drawbar	20 inches	20½ inches
Static weight with operator—Rear	10300 lb	8330 lb
—Front	3370 lb	3370 lb
—Total	13670 lb	11700 lb

Department of Agricultural Engineering

Dates of Test: April 20 to May 17, 1973

Manufacturer: INTERNATIONAL HARVESTER COMPANY, Chicago, Illinois

FUEL, OIL AND TIME: Fuel No 2 Diesel Cetane No. 50.1 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° 0.8386** **Weight per gallon 6.982 lb** **Oil SAE 30** **API service classification CA/CD-SC/SE** **To motor 2.647 gal** **Drained from motor 2.247 gal** **Transmission and final drive lubricant I.H. Hy-Tran fluid** **Total time engine was operated 47 hours.**

ENGINE: Make International Diesel Type 6 cylinder vertical Serial No 414DT2U030082* **Crankshaft mounted lengthwise** **Rated rpm 2600** **Bore and stroke 4.30" × 4.75"** **Compression ratio 16 to 1** **Displacement 414 cu in** **Cranking system 12 volt electric** **Lubrication pressure** **Air cleaner two paper elements** **Oil filter two full flow pleated paper screw-on cartridges** **Oil cooler engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil** **Fuel filter one primary and one final using replaceable pleated paper screw-on cartridges** **Muffler was used** **Cooling medium temperature control thermostat.**

CHASSIS: Type standard Serial No. 2510161U018012* **Tread width rear 60" to 104" front 62" to 86"** **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 30.5"** **Vertical distance above roadway 40.5"** **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 (2) range operator controlled power shifting **Advertised speeds mph** first 1½ second 2 third 2 fourth 2½ fifth 3½ sixth 4½ seventh 4½ eighth 5½ ninth 5½ tenth 6¼ eleventh 7 twelfth 8¾ thirteenth 12 fourteenth 15½ fifteenth 16 sixteenth 20½ reverse 2½, 3¼, 3½, 4¼, 6, 7½, 7¾, and 10 **Clutch** single plate dry disc operated by foot pedal with hydraulic power assist **Brakes** dry double disc hydraulically power actuated by two foot pedals that can be locked together with automatic equalizing **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 142" left 142" (on concrete surface without brake) right 165.5" left 165.5" **Turning space diameter** (on concrete surface with brake applied) right 296.5" left 296.5" (on concrete surface without brake) right 343.5" left 343.5" **Power take-off** 1000 rpm at 2269 engine rpm or 540 rpm at 2306 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 15% slip and 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1123.
L. F. LARSEN

Engineer-In-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers