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Test 1165: Case 2670 Diesel

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1165 – CASE 2670 DIESEL

POWER TAKE-OFF PERFORMANCE

Hp	Crank- shaft speed rpm	Fuel Consumption Gal per hr	Lb per hp-hr	Hp-hr per gal	Cooling medium	Temperature Degrees F Air wet bulb	Air dry bulb	Barometer inches of Mercury
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1008 rpm)								
219.44	2200	14.350	0.452	15.29	188	66	75	29.070
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
194.99	2300	13.266	0.470	14.70	186	66	73	.....
0.00	2427	3.902	.....	.....	171	65	72	.....
100.37	2371	8.304	0.572	12.09	180	63	70	.....
221.63	2200	14.329	0.447	15.47	188	65	74	.....
50.65	2393	6.255	0.854	8.10	175	66	75	.....
148.60	2335	10.831	0.504	13.72	182	66	75	.....
119.37	2337	9.481	0.549	12.59	180	65	73	29.097

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—8th Gear (3 Int)											
189.35	11885	5.97	2200	4.14	14.107	0.514	13.42	187	49	62	29.240
75% of Pull at Maximum Power—Ten Hours—8th Gear (3 Int)											
154.88	9095	6.39	2322	3.01	12.291	0.548	12.60	184	53	61	29.168
50% of Pull at Maximum Power—Two Hours—8th Gear (3 Int)											
107.43	6154	6.55	2359	2.05	9.875	0.635	10.88	182	58	61	28.715
50% of Pull at Reduced Engine Speed—Two Hours—10th Gear (4-Lo)											
108.03	6181	6.55	1710	1.93	8.084	0.517	13.36	180	59	65	28.685

MAXIMUM POWER WITH BALLAST

162.95	23618	2.59	2302	14.81	2nd Gear (1 Int)	180	50	62	29.250
192.42	17450	4.14	2200	6.66	5th Gear (2 Int)	186	50	60	29.260
193.01	16465	4.40	2199	6.07	6th Gear (3 Lo)	186	51	61	29.250
194.60	13833	5.28	2199	4.71	7th Gear (2 Hi)	185	51	62	29.250
193.65	12123	5.99	2200	4.02	8th Gear (3 Int)	187	51	61	29.250
191.03	8561	8.37	2200	2.53	10th Gear (4 Lo)	186	50	61	29.260

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 8th Gear (3 Int)

Pounds Pull	12123	13203	13894	14312	14305	11905
Horsepower	193.65	188.73	176.75	159.09	135.98	92.69
Crankshaft Speed rpm	2200	1978	1765	1547	1319	1072
Miles Per Hour	5.99	5.36	4.77	4.17	3.56	2.92
Slip of Drivers %	4.02	4.33	4.79	4.95	4.64	4.02

TRACTOR SOUND LEVEL (with cab)

	db (A)
Maximum Available Power 2 Hours	84.5
75% of Pull at Max. Power 10 Hours	83.5
50% of Pull at Max. Power 2 Hours	83.0
50% of Pull at Reduced Engine Speed 2 Hours	82.5
Bystander (12th Gear 4th Hi)	90.0

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires	Four 20.8-34;8;12	Four 20.8-34;8;12
Ballast	None	None
	110 lb each	None
Front Tires	Four 20.8-34;8;12	Four 20.8-34;8;12
Ballast	1002 lb each	None
	None	None
Height of drawbar	20½ inches	20½ inches
Static weight with operator—rear	9840 lb	9400 lb
front	15420 lb	11410 lb
total	25260 lb	20810 lb

Department of Agricultural Engineering

Dates of Test: October 23 to October 28, 1974

Manufacturer: J. I. CASE COMPANY, RACINE, WISCONSIN

FUEL, OIL AND TIME Fuel No 2 Diesel Cetane No 51.9 (rating taken from oil company's typical inspection data) **Specific gravity** converted to 60°/60° 0.8300 **Weight per gallon** 6.911 lb **Oil SAE 30 API service classification** CC, CD, SC, SD, SE **To motor** 5.912 gal **Drained from motor** 4.414 gal **Transmission and final drive lubricant** CASE TFD fluid **Total time engine was operated** 42½ hours.

ENGINE Make Case Diesel **Type** 6 cylinder vertical with turbo-charger and intercooler **Serial No** 2550214 **Crankshaft Mounted** lengthwise **Rated rpm** 2200 **Bore and stroke** 4½" x 5" **Compression ratio** 15.8 to 1 **Displacement** 504 cu in **Cranking system** 12 volt electric (two 12 volt batteries) **Lubrication pressure** Air cleaner two stage with replaceable paper elements and pre-cleaner with aspirator **Oil filter** two parallel full flow replaceable cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil and radiator for transmission and hydraulic oil **Fuel filter** sediment bowl with screen and replaceable primary and secondary filter cartridges **Muffler** vertical **Cooling medium temperature control** two thermostats.

CHASSIS **Type** 4-wheel drive **Serial No** 8763323 **Tread width** rear 72" to 92" front 72" to 92" **Wheel base** 102" **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 56.6" vertical distance above roadway 40.9" 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 2.0 second 2.7 third 3.0 fourth 3.3 fifth 4.1 sixth 4.3 seventh 5.1 eighth 5.7 ninth 7.1 tenth 7.9 eleventh 10.5 twelfth 14.5 reverse 3.3 and 5.1 **Clutch** multiple plate wet disc hydraulically actuated by foot pedal **Brakes** hydraulically operated internal wet disc **Steering** hydrostatic for front wheels and independent hydraulic for rear wheels **Turning radius** on concrete with front wheel steering) right 290" left 290" (on concrete with four wheel steering) right 184" left 184" **Turning space diameter** (on concrete surface with front wheel steering) right 595" left 595" (on concrete surface with four wheel steering) right 383" left 383" **Power take-off** 1008 rpm at 2200 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.

First gear was not run as it was necessary to limit the pull in second gear because of excessive wheel slippage. Third, fourth, ninth, eleventh, and twelfth gears were not run as test procedure requires only six travel speeds.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1165.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

KENNETH VON BARGEN

Board of Tractor Test Engineers