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January 1971

Test 1065: Allis-Chalmers Landhandler 210 Diesel

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NEBRASKA TRACTOR TEST – 1065 ALLIS-CHALMERS LANDHANDLER TWO-TEN DIESEL

POWER TAKE-OFF PERFORMANCE

Hp	Crankshaft 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 (PTO Speed—1000 rpm)								
122.40	2200	8.045	0.452	15.21	191	63	75	28.707
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
108.68	2298	7.537	0.477	14.42	185	63	74	.....
0.00	2431	2.778	.....	.....	182	62	73	.....
55.82	2365	5.125	0.631	10.89	187	63	75	.....
122.74	2200	8.052	0.451	15.24	186	63	74	.....
28.29	2399	3.956	0.962	7.15	182	62	74	.....
82.66	2330	6.338	0.527	13.04	186	62	74	.....
Av 66.37	2337	5.631	0.584	11.79	184	62	74	28.743

DRAWBAR PERFORMANCE

Hp	Drawbar pull lbs	Speed miles per hr	Crankshaft speed rpm	Slip of drivers %	Fuel Consumption		Hp-hr per gal	Temp Degrees F			Barometer inches of Mercury
					Gal per hr	Lb per hp-hr		Cooling med	Air wet bulb	Air dry bulb	
VARYING DRAWBAR POWER AND FUEL CONSUMPTION WITH BALLAST											
Maximum Available Power—Two Hours 4th Gear (4 Lo)											
104.95	8854	4.44	2196	7.66	7.984	0.523	13.14	173	57	59	29.040
75% of Pull at Maximum Power—Ten Hours 4th Gear (4 Lo)											
83.35	6560	4.76	2306	5.62	7.034	0.580	11.85	178	61	70	28.762
50% of Pull at Maximum Power—Two Hours 4th Gear (4 Lo)											
57.35	4355	4.94	2344	3.79	5.91	0.708	9.70	176	61	75	28.885
50% of Pull at Reduced Engine Speed—Two Hours 5th Gear (1 Hi)											
57.70	4386	4.93	1875	3.46	4.524	0.539	12.75	178	61	63	28.790
MAXIMUM POWER WITH BALLAST											
87.58	14023	2.34	2299	13.59	2nd Gear (2 Lo).....		178	53	53	28.910	
99.88	11269	3.32	2203	11.16	3rd Gear (3 Lo)...		177	55	62	28.990	
106.35	8970	4.45	2197	7.69	4th Gear (4 Lo).....		172	59	61	29.040	
105.06	6989	5.64	2205	6.25	5th Gear (1 Hi).....		178	60	71	29.000	
105.47	4298	9.20	2202	3.79	6th Gear (2 Hi).....		178	60	71	29.000	
MAXIMUM PULL WITHOUT BALLAST											
88.98	10042	3.32	2309	14.96	3rd Gear (3 Lo)...		172	52	59	29.080	

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST 4th Gear (4 Lo)

Pounds Pull	8970	9818	10316	10253	10302	10488	10097
Horsepower	106.35	102.67	95.53	83.02	71.90	60.83	46.97
Crankshaft Speed rpm	2197	1974	1760	1539	1329	1106	883
Miles Per Hour	4.45	3.92	3.17	3.04	2.62	2.18	1.74
Slip of Drivers %	7.69	9.24	9.96	9.96	10.10	10.10	9.82

TRACTOR SOUND LEVEL

	dB(A)
Maximum Available Power 2 Hours	97.0
75% of Pull at Max. Power 10 Hours	97.5
50% of Pull at Max. Power 2 Hours	97.5
50% of Pull at Reduced Engine Speed 2 Hours	92.5
Bystander (8th gear)	90.5

TIRES, BALLAST and WEIGHT

	With Ballast	Without Ballast
Rear Tires	Two 20.8-38; 10; 22	Two 20.8-38; 10; 16
Ballast	—Liquid 1149 lb each —Cast iron 1626 lb each	None None
Front tires	Two 10.00-16; 6; 28	Two 10.00-16; 6; 28
Ballast	—Liquid None —Cast iron 35 lb each	None None
Height of drawbar	20 inches	20 inches
Static weight with operator	Rear 14625 lb Front 3420 lb Total 18045 lb	9075 lb 3350 lb 12425 lb

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

Department of Agricultural Engineering

Dates of Test: May 3 to May 13, 1971

Manufacturer: ALLIS CHALMERS MANUFACTURING COMPANY, MILWAUKEE, WISCONSIN

FUEL, OIL and TIME : Fuel No. 2 Diesel Cetane No 53.5 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8261 Weight per gallon 6.878 lb Oil SAE 30 API service classification DS, MS To motor 5.049 gal Drained from motor 4.460 gal Transmission and final drive lubricant Allis-Chalmers Power Fluid 821 Total time engine was operated 46 hours.

ENGINE: Make Allis-Chalmers Diesel Type 6 cylinder vertical with turbocharger Serial No 3D-13776 Crankshaft Mounted lengthwise Rated rpm 2200 Bore and Stroke 4.25" x 5.00" Compression ratio 16 to 1 Displacement 426 cu in Cranking system 12 volt electric (two 12 volt batteries) Lubrication pressure Air cleaner dry type with replaceable pleated paper element Oil filter two full flow replaceable pleated paper cartridges Oil Cooler engine coolant heat exchanger for engine oil and radiator for transmission and hydraulic system Fuel filter sediment bowl and screen and one dual media replaceable paper cartridge Muffler was used Cooling medium temperature control thermostat.

CHASSIS : Type standard Serial No 210-1182D Tread width rear 61" to 99" front 62" to 82" Wheel base 99.96" Center of gravity (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance from centerline of rear wheels 25.9" Vertical distance above roadway 35.1" 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 1.48 second 2.36 third 3.41 fourth 4.40 fifth 5.47 sixth 8.73 seventh 12.59 eighth 16.25 reverse 1.85 and 6.82 Clutch single plate dry disc operated by foot pedal Brakes dry triple disc actuated by two foot pedals which can be locked together Steering hydrostatic power Turning radius (on concrete surface with brake applied) right 136" left 136" (on concrete surface without brake) right 157" left 157" Turning space diameter (on concrete surface with brake applied) right 286" left 286" (on concrete surface without brake) right 328" left 328" Power take-off 1000 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 because of the stability formula. Seventh and eighth gears were not run as only one gear is required over eight mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 1065.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman

W. E. SPLINTER

D. E. LANE

Board of Tractor Test Engineers