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6-27-1950

Test 446: International TD-18A

Nebraska Tractor Test Lab

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Department of Agricultural Engineering
 Dates of test: June 27 to July 18, 1950.
 Manufacturer: INTERNATIONAL
 HARVESTER CO., CHICAGO,
 ILLINOIS

The Experiment Station
 University of Nebraska College of Agriculture
 W. V. Lambert, Director, Lincoln, Nebraska

NEBRASKA TRACTOR TEST NO. 446
 INTERNATIONAL TD-18A

Manufacturer's rating: Belt 101 hp, drawbar 87
 hp (corrected).

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer in Hg
		Gal per hour	Hp-hr per gal	Lb per hp-hour		Cooling med	Air	
TESTS B AND C—100% MAXIMUM LOAD—TWO HOURS								
97.83	1350	6.654	14.70	0.475	0.00	187	72	29.035
TEST D—RATED LOAD—ONE HOUR								
86.74	1350	5.914	14.67	0.476	0.00	188	67	29.040
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
86.99	1353	5.920	14.69	0.476	...	189	67
1.84	1426	2.022	0.91	7.679	...	186	65
45.04	1397	3.804	11.84	0.590	...	186	67
94.84	1313	6.319	15.01	0.466	...	190	68
23.39	1423	2.936	7.97	0.877	...	185	67
66.07	1368	4.770	13.85	0.504	...	189	67
53.03	1380	4.295	12.35	0.566	0.00	188	67	29.025

DRAWBAR HORSEPOWER TESTS

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption			Water used gal per hour	Temp Deg F		Barometer in Hg
					Gal per hour	Hp-hr per gal	Lb per hp-hr		Cool- ing med	Air	
TESTS F AND G—100% MAXIMUM LOAD											
83.88	20234	1.55	1352	6.66	Not Recorded				192	86	28.920
85.61	15279	2.10	1350	3.95	" "				191	74	29.070
83.06	11754	2.65	1352	2.12	" "				181	83	29.020
82.76	8890	3.49	1351	1.07	" "				187	80	29.040
79.99	6502	4.61	1350	0.56	" "				195	82	29.040
74.38	4870	5.73	1351	0.21	" "				187	83	29.030
TEST H—RATED LOAD—TEN HOURS—2nd GEAR											
67.04	11825	2.13	1350	2.77	5.475	12.24	0.571	0.00	186	76	28.993

FUEL, OIL and TIME Diesel Fuel cetane No. 41.5 (rating taken from oil company's typical inspection data); weight per gallon 6.988 lb Oil SAE 20; to motor 6.435 gal; drained from motor 6.072 gal Total time motor was operated 46 hours.

CHASSIS Type tracklayer Serial No TDR23165-T7BL Tread width 74" Measured length of track 277.5" Cleats integral with shoes Cleats per track 37 Size of cleats 22" x 2 1/4" Advertised speeds mph first 1.7 second 2.2 third 2.7 fourth 3.5 fifth 4.6 sixth 5.7 reverse 1.6 and 3.5 Belt pulley diam 13 1/2" face 12" rpm 844 Belt speed 2927 fpm Clutch single plate over center operated by hand lever Seat upholstered Brakes contracting band operated by two foot pedals Steering hand levers controlling multiple disc clutches (with mechanical boosters).

ENGINE Make International Diesel Type 6 cylinder vertical Serial No TDRM23796 Crankshaft mounted lengthwise Head I Lubrication pressure Bore and Stroke 4 3/4" x 6 1/2" Rated rpm 1350 Compression ratio 15.5 to 1 Displacement 691.1 cu in Port Diameter Valves inlet 1 25/32" exhaust 1 17/32" Governor fly ball variable speed Carburetor Size 3/4" (for starting only) Starter 12 volt Air Cleaner oil washed crimped wire screen Muffler two used Oil Filter two by-pass replaceable radial fin paper elements Fuel Filter auxiliary and final replaceable paper elements Cooling medium temperature control thermostat and shutter.

TOTAL WEIGHT AS TESTED (with operator) 25,995 lbs.

REPAIRS AND ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data and without allowances, additions or deductions. Tests B and F were made with fuel pumps set by manufacturer to develop approximately 97.5 observed belt horsepower and data from these tests were used in determining the horsepower to be developed in tests D and H, respectively. Tests C, D, E, G and H were made with the same setting.

HORSEPOWER SUMMARY

	Draw- bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F. and 29.92" Hg)	89.29	101.98
2. Observed maximum horsepower (tests F and B)	85.61	97.83
3. Seventy-five per cent of calculated maximum drawbar horsepower and eighty-five per cent of calculated maximum belt horsepower (formerly ASAE and SAE ratings)	66.97	86.68

We, the undersigned, certify that this is a true and correct report of official tractor test No. 446.

L. F. Larsen
 Engineer in Charge

C. W. Smith
 F. D. Yung
 L. W. Hurlbut
 Board of Tractor
 Test Engineers

