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6-26-1950

Test 445: International TD-14a

Nebraska Tractor Test Lab

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Department of Agricultural Engineering
 Dates of test: June 26 to July 1, 1950.
 Manufacturer: INTERNATIONAL
 HARVESTER CO., CHICAGO,
 ILLINOIS

Manufacturer's rating: Belt 72 hp, drawbar 60.5
 hp (corrected).

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

NEBRASKA TRACTOR TEST NO. 445
 INTERNATIONAL TD-14A

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								
71.79	1400	4.662	15.40	0.454	0.00	186	75	28.933
TEST D—RATED LOAD—ONE HOUR								
64.02	1400	4.179	15.32	0.456	0.00	186	72	28.930
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
63.98	1399	4.164	15.37	0.455	...	188	71
1.55	1493	1.395	1.11	6.290	...	183	70
33.57	1459	2.683	12.51	0.559	...	184	71
69.16	1369	4.430	15.61	0.448	...	186	68
17.08	1484	2.005	8.52	0.820	...	187	67
49.02	1424	3.357	14.60	0.479	...	187	66
39.06	1438	3.006	12.99	0.538	0.00	186	69	28.965

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		Cooling med	Air	
TESTS F AND G—100% MAXIMUM LOAD											
58.34	14652	1.49	1403	5.52	Not Recorded				178	90	28.955
62.68	11772	2.00	1401	2.98	" "				170	78	28.950
60.22	8667	2.61	1398	1.75	" "				185	90	28.950
59.47	6691	3.33	1402	1.13	" "				185	90	28.950
58.19	5005	4.36	1400	0.67	" "				175	89	28.950
54.51	3612	5.66	1401	0.27	" "				180	90	28.955
TEST H—RATED LOAD—TEN HOURS—2nd GEAR											
49.50	9244	2.01	1400	2.41	3.80	13.03	0.536	0.00	188	79	28.860

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 3.958 gal; drained from motor 3.488 gal Total time motor was operated 44 hours.

CHASSIS Type tracklayer Serial No TDF27443-T7BL Tread width 74" Measured length of track 252" Cleats integral with shoes Cleats per track 36 Size of cleats 20" x 2 1/4" Advertised speeds mph first 1.6 second 2.0 third 2.6 fourth 3.4 fifth 4.4 sixth 5.7 reverse 1.6 and 3.4 Belt pulley diam 11 3/4" face 11" rpm 875 Belt speed 2692 fpm Clutch single-plate over center operated by hand lever Seat upholstered Brakes contracting bands operated by two foot pedals Steering hand levers controlling multiple disc clutches (with mechanical booster).

ENGINE Make International Diesel Type 4 cylinder vertical Serial No TDFM27244 Crankshaft mounted lengthwise Head I Lubrication pressure Bore and Stroke 4 1/4" x 6 1/2" Rated rpm 1400 Compression ratio 15.5 to 1 Displacement 460.7 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) Ignition System magneto (for starting only) Starter 12 volt Air Cleaner oil washed crimped wire screen Muffler was used Oil Filter two by-pass replaceable radial fin paper elements Fuel Filter auxiliary and final replaceable elements Cooling medium temperature control thermostat and shutter.

TOTAL WEIGHT AS TESTED (with operator) 18,445 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 72 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)	65.90	75.30
2. Observed maximum horsepower (tests F and B)	62.68	71.79
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)	49.43	64.01

We, the undersigned, certify that this is a true and correct report of official tractor test No. 445.

L. F. Larsen
 Engineer in Charge

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

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