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6-12-1950

Test 442: Cockshutt 40

Nebraska Tractor Test Lab
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Department of Agricultural Engineering
Dates of test: June 12 to June 17, 1950.
Manufacturer: COCKSHUTT PLOW CO. LTD., BRANTFORD, ONTARIO, CANADA
Manufacturer's rating: Not rated.

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

NEBRASKA TRACTOR TEST NO. 442

BELT HORSEPOWER TESTS

Hp	Crank shaft speed rpm	Fuel Consumption: Gal per hour	Fuel Consumption: Hp-hr per gal	Fuel Consumption: Lb per hp-hour	Water used gal per hour	Temp Deg F: Cooling med	Temp Deg F: Air	Barometer in Hg
TEST B—100% MAXIMUM LOAD—TWO HOURS								
43.30	1650	4.537	9.544	0.637	0.00	182	74	28.793
TEST C—OPERATING MAXIMUM LOAD—ONE HOUR								
41.44	1650	3.658	11.33	0.537	0.00	196	80	28.830
TEST D—RATED LOAD—ONE HOUR								
38.68	1650	3.545	10.91	0.557	0.00	196	85	28.830
TEST E—VARYING LOAD—TWO HOURS (20 minute runs; last line average)								
38.72	1651	3.548	10.91	0.557	...	198	87	.....
1.84	1744	1.540	1.19	5.087	...	156	85	.....
20.41	1734	2.492	8.19	0.742	...	178	87	.....
39.14	1576	3.484	11.23	0.541	...	203	89	.....
10.19	1728	1.890	5.39	1.128	...	174	89	.....
29.62	1682	3.020	9.81	0.620	...	190	90	.....
23.32	1686	2.662	8.76	0.694	0.00	183	88	28.830

DRAWBAR HORSEPOWER TESTS

Hp	Draw bar pull lb	Speed miles per hr	Crank shaft speed rpm	Slip of drive wheels %	Fuel Consumption: Gal per hour	Fuel Consumption: Hp-hr per gal	Fuel Consumption: Lb per hp-hr	Water used gal per hour	Temp Deg F: Cooling med	Temp Deg F: Air	Barometer in Hg
TEST F—100% MAXIMUM LOAD—4th GEAR											
37.85	2748	5.16	1655	4.55	Not Recorded				176	78	28.755
TEST G—OPERATING MAXIMUM LOAD											
20.42	5538	1.38	1651	16.96	Not Recorded				162	74	28.940
31.14	4494	2.60	1649	7.82	"	"			164	70	28.935
34.58	3632	3.57	1654	6.55	"	"			189	91	28.770
34.58	2514	5.16	1652	4.48	"	"			189	91	28.770
29.40	1762	6.26	1650	3.12	"	"			164	75	28.940
24.68	759	12.19	1653	1.49	"	"			161	74	28.940
TEST H—RATED LOAD—TEN HOURS—4th GEAR											
30.36	2187	5.21	1651	3.53	3.124	9.72	0.625	0.00	185	89	28.782
TEST J—OPERATING MAXIMUM LOAD—4th GEAR											
32.92	2422	5.10	1649	3.79	Not Recorded				171	77	28.975
TEST K—OPERATING MAXIMUM LOAD—4th GEAR											
31.71	2451	4.86	1650	9.96	Not Recorded				174	79	28.975

FUEL, OIL and TIME **Gasoline** octane No ASTM 76 Research 82 (rating taken from oil company's typical inspection data); weight per gallon 6.079 lb **Oil** SAE 30; to motor 2.209 gal; drained from motor 0.954 gal **Total time motor was operated** 49 hours.

CHASSIS **Type** standard **Serial No** 40-1042 **Tread width** rear 61¾" and 78¾" front 53⅜" and 59" **Wheel Base** 86 9/16" **Hydraulic control system** direct engine drive **Advertised speeds mph** first 1.6 second 2.7 third 3.7 fourth 5.25 fifth 6.25 sixth 12.00 reverse 2.2 and 5 **Belt pulley** diam 12" face 8½" rpm 997 **Belt speed** 3131 fpm **Clutch** dry disk clutch for transmission and wet multiple disk clutch for power take-off **Seat** spring cushion with padded backrest **Brakes** combination external and internal shoe operated by two foot pedals **Equalized** by locking brakes together **Power take-off** "LIVE" power take-off with independent clutch.

ENGINE **Make** Buda **Type** 6 cylinder vertical **Serial No** 332620 **Crankshaft mounted** lengthwise **Head I Lubrication** pressure **Bore and Stroke** 3 7/16" x 4⅛" **Rated rpm** 1650 **Compression ratio** 6.18-1 **Displacement** 230 cu in **Port Diameter Valves** inlet 1⅜" exhaust 1⅛" **Governor** variable speed centrifugal **Carburetor Size** 1⅛" **Ignition System** 6 volt battery **Air Cleaner** oil washed wire mesh **Muffler** used **Oil Filter** replaceable paper element **Cooling medium temperature control** thermostat.

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 carburetor set for 100% maximum 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, H, J and K were made with an operating setting of the carburetor (selected by the manufacturer) of 96.1% of maximum belt horsepower.

TIRES, WHEELS and WEIGHT

	Tests F, G & H	Test J	Test K
Rear wheels Type	Pressed steel	Pressed steel	Pressed steel
Liquid ballast	333 lb each	None	None
Added cast iron	1200 lb each	None	None
Rear tires No. and size	Two 13-38	Two 13-38	Two 12-38
Ply	6	6	4
Air pressure	14 lb	12 lb	12 lb
Front wheels Type	Cast iron	Cast iron	Cast iron
Liquid ballast	None	None	None
Added cast iron	None	None	None
Front tires No. and size	Two 7.50-16	Two 7.50-16	Two 6.00-16
Ply	4	4	4
Air pressure	28 lb	28 lb	28 lb
Height of drawbar	16½ inches	18 inches	17½ inches
Static weight Rear end	6428 lb	3362 lb	3312 lb
Front end	1758 lb	1758 lb	1712 lb
Total weight as tested with operator	8371 lb	5305 lb	5209 lb

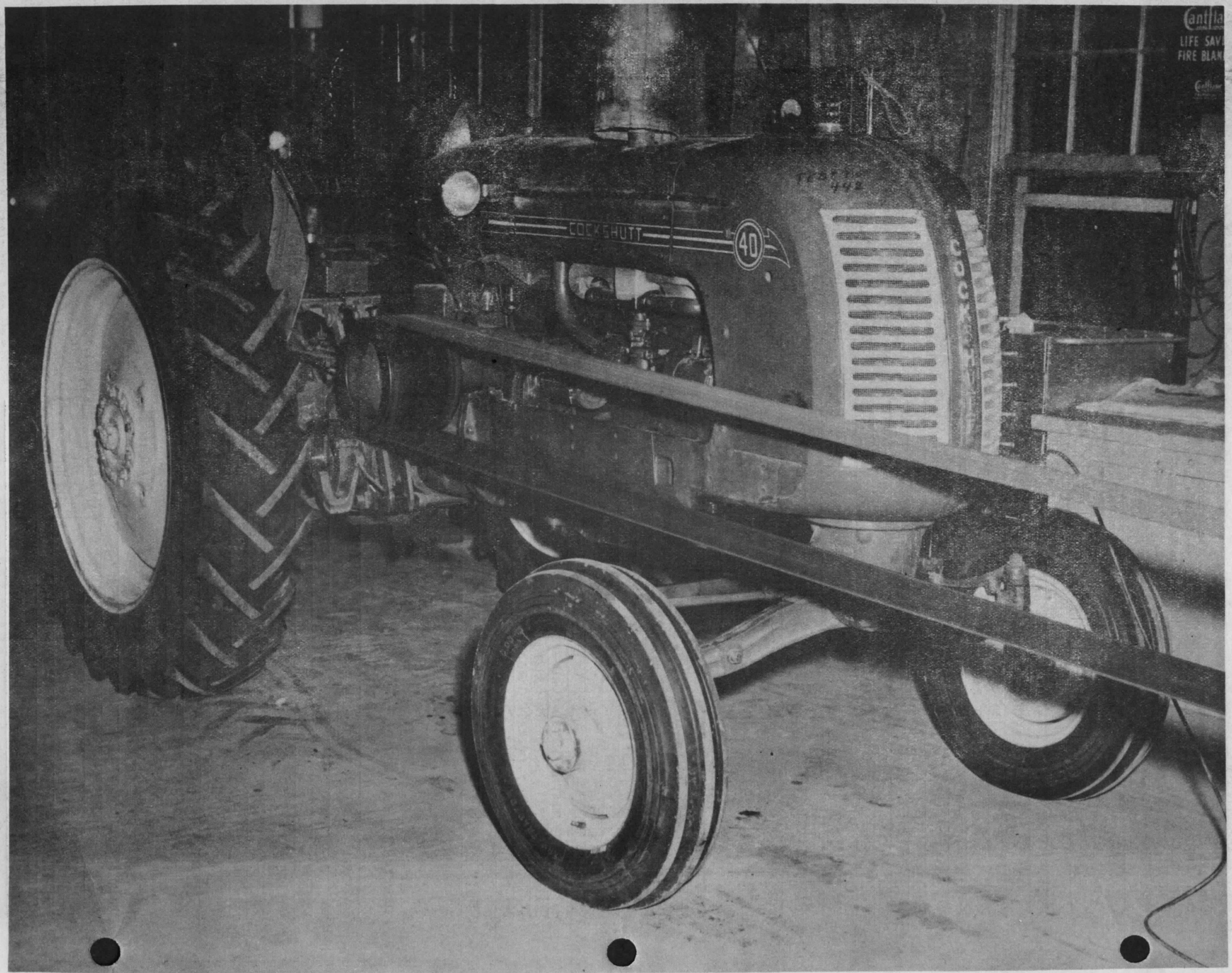
HORSEPOWER SUMMARY

	Draw-bar	Belt
1. Sea level (calculated) maximum horsepower (based on 60° F and 29.92" Hg)	40.06	45.59
2. Observed maximum horsepower (tests F and B)	37.85	43.30
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)	30.05	38.75

We, the undersigned, certify that this is a true and correct report of official tractor test No. 442.

L. F. Larsen
Engineer in Charge

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


COCKSHUTT
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