January 1920

Test 035: Coleman Model B 16-30

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
UNIVERSITY FARM, LINCOLN

Report of Official Tractor Test No. 35

Dates of test July 16 to July 21, 1920

Name, model and rating of tractor Coleman Model B 16-30

Serial No. Engine 2586 Serial No. Chassis 1182

Manufacturer Coleman Tractor Corporation, Kansas City, Mo.

Tractor equipment used Stromberg Carb; Splitdorf Model 448 Aero Mag.

Style and dimensions of wheel lugs Spade 3" high, cleats 2¼", 6" ext. rims.

Brake Horse Power Tests

Horse Power Developed	Crank Shaft Speed R. P. M.	Length of Test Min.	Fuel Consumption: Kind of Fuel	Fuel Consumption: Amount Used per Hour Gallons	Fuel Consumption: Horse Power Hours per Gallon	Water Consumption Gallons per Hour: In Radiator	Water Consumption Gallons per Hour: In Fuel Mixture	Water Consumption Gallons per Hour: Total	Temperature *Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Humidity %	Barometric Pressure Inches Mercury
RATED LOAD TEST												
30.27	914	120	Kero	5.67	5.34	3.50	0.00	3.50	211	100	60	28.9
	Belt Slippage 1.81%											
VARYING LOAD TEST												
30.19	913	10	Kero									
30.80	907	10	"									
2.31	1125	10	"									
8.96	1092.5	10	"									
17.97	1068	10	"									
25.90	1037.5	10	"									
Aver. 20.36	1024	60	Kero	4.71	4.33	1.00	0.00	1.00	199	100	76	28.8
MAXIMUM LOAD TEST												
30.41	907	60	Kero	5.72	5.32	7.00	0.00	7.00	212	103	68	28.8
	Belt Slippage 1.95%											
HALF LOAD TEST												
18.07	1070	60	Kero	3.33	5.43	0.25	0.00	0.25	204	102	44	28.8
	Belt Slippage 1.57%											

*Taken in discharge line from engine.

Remarks Kerosene used for fuel in this test weighed 6.75 lbs per gallon.

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Drawbar Horse Power Tests

Horse Power Developed	Draw Bar Pull Pounds	Speed Miles per Hour	Crank Shaft Speed R. P. M.	** Slippage of Drive Wheels %	Fuel Consumption			Water Used per Hour Gallons	*Temperature of Cooling Fluid Deg. F.	Temperature of Atmosphere Deg. F.	Average Humidity %	Barometric Pressure Inches Mercury
					Ind of Fuel Used	Amount Used per Hour Gallons	Horse Power Hours per Gallon					
RATED LOAD TEST. TEN HOURS												
15.30	1961	2.925	898	8.7	Kero	5.60	2.73	3.08	210	92	49	28.7
MAXIMUM LOAD TEST (1st 180.2 ft; 2nd 170.9ft.)												
15.87	1802	3.30	980	5.4	Kero	---Not	Recorded	-------	186	87	39	28.9
15.47	2690	2.16	950	10.3	"	"	"		208	89	39	28.9

*Taken in discharge line from engine.

Remarks ** For computing slippage, circumference of drive wheels was taken at points of lugs. The rated load test and the first maximum test were made with the tractor in high gear, the second maximum test with the tractor in low gear.

Oil Consumption:

During the complete test consisting of about 32 hours running the following oil was used:

For the engine, 6 gallons of Polarine Extra Heavy.

For the transmission, 1/4 gallons of " " "

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Repairs and Adjustments. Endurance:

The fan belt was tightened once.

The circuit breaker points on the magneto were adjusted once to prevent engine missing.

The governor spring was shortened because rated engine speed at rated load could not be obtained otherwise.

The clutch was adjusted twice.

At the end of the test the spark plug in cylinder number 1 was fouled badly and spark plug in cylinder number 2 was slightly fouled. The other spark plugs were clean. The oil gage on the crankcase did not indicate correctly. Otherwise the tractor was in good condition and there was no indication of undue wear in any part nor of any weakness which might require early repairs.

It is our opinion that the repairs and adjustments necessary during this test do not indicate any defect of more than minor importance.

Brief Specifications Coleman Model B 16-30 H.P. Tractor.

Engine Four cylinder, vertical, L-head. Bore 5", stroke 6½", rated speed 800 to 900 r.p.m.

Chassis: Four wheel. Rated speeds: low gear 2 mi. per hr; high gear 3 mi. per hr.

Total weight, 5100 lbs.

General Remarks:

In the advertising literature submitted with the application for test of this tractor we find the following statement regarding horse power capacity: "An excess of engine power." We do not approve this statement for the reason that it is indefinite and therefore likely to be misleading.

We also find in this advertising literature some statements and and claims which cannot be directly compared with the results of this test as reported above. It is our opinion that none of these statements or claims are unreasonable or excessive except the following:

"Motor-- All bearings flooded with oil under pressure. No piping to clog."

"Carburetor-- Bennett special tractor". (This should be changed to Stromberg to conform to specifications certified to us.)

"In transmitting engine motion into steady, useful pulling leverage against the ground thru the rear axle and drive wheels no tractor excells the Coleman Worm Drive. The jack screw power principle as adapted for tractor use in the Coleman worm and worm gear makes possible a greater actual utilization of power than in any other tractor."

"---operation with less friction than any other tractor built."

We, the undersigned, certify that above is a true and correct report of official tractor test No. 35.

Claude K. Shedd
Engineer-in-Charge

Oscar W. Jogren
C. E. Brackett
Fred R. Mohaver.
Board of Tractor Test Engineers.