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January 1948

## Test 392: Ferguson Model TE-20

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT  
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 392

Dates of test: April 26, 1948 to May 10, 1948  
 Name and model of tractor: FERGUSON TE-20\*\*  
 Manufacturer: HARRY FERGUSON, ltd., Coventry, England  
 Manufacturer's rating: None

HORSEPOWER SUMMARY

	Drawbar	Belt
1. Sea level (calculated maximum horsepower) (based on 60° F. and 29.92" Hg.)	21.77	26.50
2. Observed maximum horsepower (tests F & B)	20.70	25.41
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)	16.33	22.53

REMARKS

During test "B" a decrease in horsepower occurred. The head was removed and combustion chamber cleaned; improved performance resulted.

Fan belt was replaced with a new one during preliminary belt run.

FUEL, OIL, and TIME

Fuel Gasoline Octane 74\* Weight per gallon 6.082  
Oil SAE No. 20 To motor 2.225 gal. Drained from motor 1.594 gal.  
Total time motor was operated 67 1/2 hours

\*Octane rating taken from oil company's typical inspection data.

\*\*Also designated as TO-20

We, the undersigned, certify that this is a true and correct report of official tractor test No. 392.

L. F. Larsen  
 Engineer in Charge

C. W. Smith

F. D. Yung

L. W. Hurlbut  
 BOARD OF TRACTOR TEST ENGINEERS

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All results shown on pages 2 and 3 of this report 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, and J were made with an operating setting of the carburetor (selected by the manufacturer) of 94.2% of maximum belt horsepower.

B E L T H O R S E P O W E R T E S T S

Horse- power	Crank shaft speed rpm	Fuel Consumption			Water used gal. per hr.	Temperature		Barometer Inches of Mercury
		Gal per hr.	hp-hr per gal.	lb per hp-hr		cool- ing med <sup>o</sup> F.	Air <sup>o</sup> F	

TEST B - 100% MAXIMUM LOAD - TWO HOURS

25.41	1998	2.525	10.06	0.604	0.00	172	62	28.750
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TEST C - OPERATING MAXIMUM LOAD - ONE HOUR

24.02	2005	2.272	10.57	0.575	0.00	170	58	28.750
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\*TEST D - ONE HOUR

22.59	2000	2.184	10.34	0.588	0.00	170	56	28.775
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TEST E - VARYING LOAD - TWO HOURS (20 minute runs; last line average)

22.57	1999	2.180	10.35	0.588	----	171	58	-----
1.90	2239	1.159	1.64	3.711	----	164	57	-----
12.23	2160	1.638	7.47	0.814	----	166	57	-----
23.07	1884	2.161	10.68	0.570	----	171	58	-----
6.40	2201	1.332	4.80	1.266	----	165	59	-----
17.95	2100	1.939	9.26	0.657	----	169	59	-----
14.02	2097	1.735	8.08	0.752	0.00	168	58	28.790

\*Formerly called RATED LOAD: see HORSEPOWER SUMMARY 3, page 1.

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D R A W B A R H O R S E P O W E R T E S T S

Horse Power	Draw bar pull lb.	Speed mph	Crank shaft speed rpm	Slip on drive wheels %	Fuel Consumption			Water used gal per hr.	Temperature		Barometer Inches of Mercury
					gal. per hr	hp-hr per gal	lb per hp-hr		Cool- ing med °F.	Air °F.	

Rear wheels, tires, and added weight used in Tests F, G, and H; Steel Disc Wheels; 10-28, 4 ply tires and 754 lb. added weight per wheel.

TEST F - 100% MAXIMUM LOAD - 2nd GEAR

20.70	2146	3.62	1751	6.35	-----Not Recorded-----			174	71	28.750
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TEST G - OPERATING MAXIMUM LOAD

18.34	2650	2.60	1751	7.46	----- Not Recorded -----			165	56	29.045
19.69	2028	3.64	1753	5.82	"	"		174	73	28.769
19.70	1445	5.11	1746	3.47	"	"		171	67	28.750
18.24	623	10.98	1758	1.40	"	"		171	70	28.700

\*TEST H - TEN HOURS - 2nd GEAR

16.35	1666	3.68	1746	4.42	1.819	8.99	0.676	0.00	164	54	28.778
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TEST J - OPERATING MAXIMUM LOAD - 2nd GEAR

Same wheels and tires as used in Tests F, G, and H. All added weight removed from tractor (liquid, cast iron, or any other added forms).

16.90	1808	3.50	1750	10.91	----- Not Recorded -----			167	58	29.030
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\*Formerly called RATED LOAD; see HORSEPOWER SUMMARY 3, page 1.

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TIRES, WHEELS, and WEIGHT

	Tests F, G, & H	Test J
Rear Wheel: Type (each)	Steel Disc	Steel Disc
Liquid Ballast	226 lb.	None
Added Cast Iron	528 lb	None
Rear Tires: No. Size & Ply	2 10-28 4 ply	2 10-28 4 ply
Type of Tread	All traction	All traction
Make	Goodyear	Goodyear
Air Pressure	12 lb	12 lb
Front Wheel: Type (each)	Pressed Steel	Pressed Steel
Liquid Ballast	26 lb	None
Added Cast Iron	97 lb	None
Front Tires: No. Size & ply	2 4.00-19 4 ply	2 4.00-19 4 ply
Type of tread	Guide Grip	Guide Grip
Make	Firestone	Firestone
Air Pressure	28 lb	28 lb
Height of Drawbar	12 inches	15 inches
Static Weight: Rear End	3098 lb	1590 lb
Front End	1212 lb	970 lb
Total Weight as Tested (with Operator)	4510 lb	2760 lb

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SPECIFICATIONS

Type Standard                      Serial No. TE-20817                      Drive Enclosed gear

Tread width: Rear 48 in to 76 in                      Front 48 in to 80 in

Advertised speeds, miles per hour: First 2.90                      Second 3.99    Third 5.50

Fourth 11.49                      Reverse 3.35

Belt pulley: Diam. 9 in    Face 6½ in.    RPM 1358    Belt speed 3200 fpm

Clutch: Make Borg & Beck    Type Dry Plate                      Operated by Foot pedal

Seat Pressed steel

Brakes: Make Girling                      Type Internal Expanding, double shoe

Location On wheel hub

Gear reduction (brake drum to rear wheel) 1 to 1

Operated by Foot pedal

Locked by Latch

Equalization None

Engine: Make Continental    Serial No. Z 120 16627    Type 4 cylinder vertical

Head I                      Mounting Lengthwise                      Lubrication Pressure

Bore and stroke 3 3/16 in x 3 3/4 in                      Rated rpm 1750 and 2000

Port diameter valves: Inlet .875 in                      Exhaust .875 in

Coil Lucas                      Starter Lucas

Distributor Delco-Romy                      Battery Autolite

Carburetor: Make Marvel-Schebler    Model TXC-312    Size 7/8 in

Governor: Make Continental                      Type Variable speed centrifugal

Air Cleaner: Make Donaldson                      Type Oil washed wire screen

Oil Filter: Make Fram                      Type Replaceable element

Cooling medium temperature control: Thermostat