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January 1936

Test 276: McCormick-Deering Farmall Model F-20

Tractor Museum

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT
 AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 276

Dates of test: November 5 to 12, 1936.

Name and model of tractor: McCORMICK-DEERING FARMALL F-20

Manufacturer: International Harvester Company, Chicago, Illinois.

Manufacturer's rating: NOT RATED.

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

H. P.	:Crank : :shaft :	Fuel Consumption	: Water consumption :	Temp. :	: Barometer
:speed :	Gals. : H. P. :	Lbs. per :	per hour gallons :	Deg. F. :	:Inches of
:R.P.M. :	per :hrs. per:	H. P. :	Cool- : In :	Cool-: :	Air:Mercury
:	hour : gal. :	hour :	ing : fuel : Total :	ing : Air:	Mercury
:	:	:	:	med. :	:

TEST B 100% MAXIMUM LOAD. TWO HOURS

27.84 : 1201 : 2.780 : 10.01 : 0.689 : 0.000 : 0.000 : 0.000 : 198 : 41 : 29.220

TEST C OPERATING MAXIMUM LOAD. ONE HOUR

26.67 : 1201 : 2.539 : 10.50 : 0.657 : 0.000 : 0.000 : 0.000 : 193 : 39 : 29.230

TEST D RATED LOAD. ONE HOUR

24.13 : 1200 : 2.297 : 10.51 : 0.657 : 0.000 : 0.000 : 0.000 : 198 : 40 : 29.205

TEST E *VARYING LOAD. TWO HOURS

24.18	: 1196	: 2.296	: 10.53	: 0.655	: --	: --	: --	: 199	: 41	: --
0.77	: 1305	: 1.074	: 0.72	: 9.623	: --	: --	: --	: 188	: 39	: --
12.53	: 1258	: 1.696	: 7.39	: 0.934	: --	: --	: --	: 195	: 42	: --
26.77	: 1184	: 2.570	: 10.42	: 0.662	: --	: --	: --	: 199	: 42	: --
6.46	: 1282	: 1.335	: 4.84	: 1.426	: --	: --	: --	: 195	: 40	: --
18.23	: 1219	: 1.913	: 9.53	: 0.724	: --	: --	: --	: 197	: 43	: --
14.82	: 1241	: 1.814	: 8.17	: 0.845	: 0.000	: 0.000	: 0.000	: 195	: 41	: 29.180

*20 minute runs. Last line is average for two hours.

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

H. P.	: Draw :	Speed :	Crank :	Slip :	Fuel Consumption :	Water:	Temp. :	: Barometer
: bar :	miles :	shaft :	on :	: H. P. :	Lbs. :	used :	: :	:Inches of
: pull :	per :	speed :	drive:	Gal.:	hour :	per :	Gal. :	Cool-: :
:pounds:	hour :	R.P.M.:	wheels:	per :	per :	H.P. :	per :	ing :Air:Mercury
:	:	:	% :	hour:	gal. :	hour :	hour :	med. :

TEST F 100% MAXIMUM LOAD. Third GEAR

20.66 : 2089 : 3.71 : 1203 : 6.89:-----Not Recorded-----: 201 : 57: 28.940

TEST G OPERATING MAXIMUM LOAD

19.60	: 2927	: 2.51	: 1202	: 12.53:-----Not Recorded-----	: 200	: 61:	28.905
20.64	: 2500	: 3.10	: 1204	: 8.84:-----" "	: 199	: 43:	28.950
20.31	: 2064	: 3.69	: 1205	: 7.51:-----" "	: 200	: 53:	28.945
19.09	: 1645	: 4.35	: 1198	: 6.14:-----" "	: 202	: 63:	28.925

TEST H RATED LOAD. TEN HOURS. Third GEAR.

16.12 : 1619 : 3.73 : 1200 : 6.02:2.258: 7.14 : 0.966 : 0.177: 192 : 52: 29.050

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. FA46451 Type 4 cylinder, vertical
 Head I Mounting Crankshaft lengthwise
 Bore and stroke: 3 3/4" x 5" Rated R.P.M. 1200
 Port Diam. Valves: Inlet 1.4375" Exhaust 1.4375"
 Belt pulley: Diam. 14" Face 6 1/2" R.P.M. 654
 Magneto Own Model F-4
 Carburetor Zenith Model K-5 Size 1 1/4"
 Governor Own Type Centrifugal
 Air Cleaner Own Type Oil-Washed wire-filter
 Lubrication Circulating splash

CHASSIS: Type 4 wheels, 2 drivers Serial No. FA46451 Drive Enclosed gear
 Clutch Own Type Single-plate, dry Operated by Foot pedal
 Advertised speeds, miles per hour: First 2.25 Second 2.75
 Third 3.25 Fourth 3.75 Reverse 2.75
 Drive wheels: Diam. 42" Face 12"
 Lugs: Type Spade No. per wheel 24 Size 4" high x 3 1/2" face
 Seat Pressed steel
 Total weight as tested (with operator) 4310 pounds.

FUEL AND OIL:

Fuel Distillate Weight per gallon 6.90 pounds.
 Oil S.A.E. Viscosity No. 30
 Total oil to motor 3.198 gallons
 Total drained from motor 4.240 gallons
 Total time motor was operated 45 hours

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

All results shown on page 1 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 horsepower. These figures were used in determining the ratings as recommended by the A.S.A.E. and S.A.E. tractor rating codes. Tests C, D, E, G, and H were made with an operating setting of the carburetor (selected by the manufacturer) of 95.8% of maximum horsepower.

Observed maximum horsepower (tests F & B) Drawbar 20.66 Belt 27.84

Sea level (calculated) maximum horsepower Drawbar 21.30 Belt 28.00
 (based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings Drawbar 15.98 Belt 23.80
 (as recommended by A.S.A.E. and S.A.E.
 codes)

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 276.

Carlton L. Zink
 Engineer-in-charge

E. E. Brackett

C. W. Smith

L. W. Hurlbut
 Board of Tractor Test Engineers