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Tractor Test and Power Museum, The Lester F. Larsen

January 1925

Test 113: Monarch Model C 25-35

Nebraska Tractor Test Lab

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UNIVERSITY OF NEBRASKA AGRICULTURAL ENGINEERING DEPARTMENT

AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 113.

Dates of test: April 16th to 24th, 1925

Name, model and rating of tractor: Monarch C 25-35

Serial No. Engine: 3833 Serial No. Chassis 30 20

Manufacturer: Monarch Tractors Incorporated, Watertown, Wisconsin

Tractor equipment used: Robert Bosch DU4 magneto. Stromberg M4 carburetor

Style and dimensions of wheel lugs: Straight cleat 1-3/4" high

BRAKE HORSE POWER TESTS

| H. P. ; | : | : | Fuel Consumption | : | Water Consumption | : | Temp. | : | : |
|--------------|---|------------|------------------|----------------|-------------------|---------|------------|-----------|------------|
| Dev. : Crank | : | Time: | : | Gals. Per Hour | : | Deg. F. | : | : | : |
| : shaft | : | of : Kind: | Gals : | H.P.: | Cool-: In : | : | * | : | : |
| : speed | : | Test: of : | per : | Hrs. At: | ing : Fuel: | Total: | Cool-:Air: | : | : |
| : R.P.M. | : | Min.:Fuel: | Hour : | Gal.: | : | : | ing : | : | : |
| : | : | : | : | : | : | : | : | Average | Humidity % |
| : | : | : | : | : | : | : | : | Height of | Barometer |
| : | : | : | : | : | : | : | : | Inches | In Inches |

RATED LOAD TEST

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|--------|---|-----|---|-------|---|-------|---|------|---|-------|---|------|---|-------|---|-----|---|----|---|----|---|-------|
| 35.68 | : | 1203.0 | : | 120 | : | Gasol | : | 4.039 | : | 8.83 | : | 0.193 | : | 0.00 | : | 0.193 | : | 208 | : | 71 | : | 48 | : | 28.52 |
| Belt Slippage 1.27% | | | | | | | | | | | | | | | | | | | | | | | | |

** VARYING LOAD TEST

| | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|---|--------|---|----|---|-------|---|-------|-----------------------------|------|---|------|---|------|---|------|---|-----|---|----|---|----|---|-------|
| 36.16 | : | 1211.0 | : | 10 | : | Gasol | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| 35.81 | : | 1186.0 | : | 10 | : | " | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| 1.24 | : | 1282.0 | : | 10 | : | " | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| 9.10 | : | 1212.5 | : | 10 | : | " | : | : | Average Belt Slippage 1.05% | | | | | | | | | | : | : | : | : | : | : |
| 17.87 | : | 1194.0 | : | 10 | : | " | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| 27.57 | : | 1229.0 | : | 10 | : | " | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
| 21.54 | : | 1219.5 | : | 60 | : | Gasol | : | 3.255 | : | 6.62 | : | 0.00 | : | 0.00 | : | 0.00 | : | 168 | : | 76 | : | 51 | : | 28.48 |

MAXIMUM LOAD TEST

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|--------|---|----|---|-------|---|-------|---|------|---|------|---|------|---|------|---|-----|---|----|---|----|---|-------|
| 43.67 | : | 1200.0 | : | 60 | : | Gasol | : | 5.731 | : | 7.62 | : | 0.00 | : | 0.00 | : | 0.00 | : | 194 | : | 81 | : | 60 | : | 28.50 |
| Belt Slippage 1.36% | | | | | | | | | | | | | | | | | | | | | | | | |

HALF LOAD TEST

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|--------|---|----|---|-------|---|-------|---|------|---|------|---|------|---|------|---|-----|---|----|---|----|---|-------|
| 18.17 | : | 1214.0 | : | 60 | : | Gasol | : | 2.911 | : | 6.24 | : | 0.00 | : | 0.00 | : | 0.00 | : | 157 | : | 75 | : | 51 | : | 28.46 |
| Belt Slippage 0.93% | | | | | | | | | | | | | | | | | | | | | | | | |

*Taken in discharge line from engine

**The last line is an average for the hour

REMARKS: The gasoline used as fuel in this test weighed 6.17 pounds per gallon.

Report of Official Tractor Test No. 113

DRAWBAR HORSE POWER TESTS

| H. P. | Draw | Speed | Crank | Slip | Fuel Consumption | Water | Temp. Deg. F. | | | | | | |
|-------|--------|-------|--------|--------|------------------|-------|---------------|---------|-------|----------|-----------|--|--|
| Dev. | bar | Miles | Shaft | on | Kind : Amt. | H.P. | Used | Cooling | Air | Average | Height of | | |
| | Pull | Per | Speed | Drive | Used | Per | Hrs. | Per | Fluid | Humidity | Barometer | | |
| | Pounds | Hour | R.P.M. | Wheels | Hour | Per | Hour | Hour | * | % | In Inches | | |
| | | | | % | Gals. | Gal | Gals. | | | | | | |

RATED LOAD TEST. TEN HOURS.

26.07 : 3553 : 2.75 : 1214 : 3.29 : Gaso : 4.769 : 5.47 : 0.00 : 177 : 67 : 60 : 28.48

MAXIMUM LOAD TEST

37.59 : 6680 : 2.11 : 1216 : 5.15 : Gaso : -- NOT RECORDED -- : 180 : 88 : 50 : 28.44

37.58 : 5182 : 2.72 : 1209 : 4.26 : " : " : " : 182 : 88 : 50 : 28.44

31.77 : 2593 : 4.59 : 1221 : 2.42 : " : " : " : 176 : 88 : 50 : 28.44

*Taken in discharge line from engine.

REMARKS: The distance advanced by the tractor without load on level ground for one complete revolution of the tracks, was taken as a basis for calculating track slippage. The rated and second maximum tests were run in second gear. The first maximum test was run in low gear. The third maximum test was run in high gear.

OIL CONSUMPTION: During the complete test consisting of about 34 hours running the following oil was used:
For the engine, 3-1/2 gallons of Mobiloil "BB", 3 gallons to fill crankcase and 1/2 gallon was added.
For the transmission, none.
Other lubrication - 2 gallons 600 W, 2 lbs. cup grease.

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REPAIRS AND ADJUSTMENTS

Just after the rated load belt test, the fan belt was shortened.

No other adjustment or repairs were necessary during this test.

At the end of the test the tractor was in good running order and there were no indications of undue wear nor of any weakness which might require early repair.

BRIEF SPECIFICATIONS

Monarch C 25-35

Motor: Beaver, 4 cylinder, vertical, valve-in-head, mounted crank shaft lengthwise. Bore, 4-3/4"; stroke, 6". Rated speed 1200 r.p.m. Duralumin connecting rods. Dow metal pistons.

Governor: Phare (oil)

Air Cleaner: Bennett (Oiled fiber and centrifugal type)

Chassis: Track-layer (two tracks), open chain drive, disc clutch. Advertised speeds; Low, 1.75 miles per hour; 2nd, 2.50 miles per hour; high 3.25 miles per hour.

Total weight as tested (with operator) 10,630 pounds.

REMARKS

In the advertising literature submitted with the specifications and application for test of this tractor, we find some claims and statements which cannot be directly compared with the results of this test as reported above. It is our opinion that none of these are excessive or unreasonable.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 113.

E. E. Brackett
Engineer-in-Charge

Oscar W. Sjogren

C. W. Smith

Fred R. Nohavec
Board of Tractor Test Engineers