THE UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
COLLEGE OF AGRICULTURE, LINCOLN

Record of Official Tractor Brake Horsepower Test

Load (rated or other) A.S.A.E. Maximum Date Oct. 10, 1934 Test No. 227b
Name, model and rating of tractor Caterpillar "R2"
Serial No. Engine 5E2527 Serial No. Chassis 5E2527
Tractor equipment Eisemann "CT-4" Magneto, Ensign "Ke" Carburetor
Manufacturer Caterpillar Tractor Co., Peoria, Illinois
Tractor submitted for test by Caterpillar Tractor Co., Peoria, Illinois
Tractor operated by Webster Brake operated by Zink
Brake used, Sprague. Brake arm 21 inches. Brake const. $(\frac{2nA}{33000}) = \frac{1}{3000}$
Description of belt used 6" 4 ply rubber
Size of engine pulley (circumference at crown) 5.125 ft.
Size of brake pulley (circumference at crown) 2.633 ft.
Kind of fuel used Gasoline Fuel test No. Wt. per gal., lbs. 6.14
Kind and grade of oil used in engine Mobiloil "A" S.A.E. No. 30
Kind and grade of oil used in transmission Transmission oil Summer grade
Humidity per cent. Barometric pressure 29.130 inches mercury
Temperature of atmosphere 66 ° F.
Fuel consumption:
Total for test, gals. 10.596 Gals. per hour 5.298
Lbs. per H. P. hour 0.765 H. P. hours per gal. 8.03
Carburetor adjustments (degrees open) High speed needle 1 3/4 turns
Slow speed needle 1 3/8 turns

Water consumption:
Total in radiator during test, gals. 0.000
Total in fuel mixture during test, gals. 0.000
Total used during test, gals. 0.000

We, the undersigned, certify that this sheet and the log sheet attached hereto give a true and correct record of official tractor test No. 227b

Orvin Webster Operator Carlton Zink Observer
Operator Observer
Carlton Zink
Engineer-in-charge

Log of Official Tractor Brake Horse Power Test No. 227h ..... Oct. 10, 1934

Reading No. (1)	Time (2)	Engine Crank Shaft Speed: Counter Reading (3)	Engine Crank Shaft Speed: R. P. M. (4)	Engine Belt Pulley Speed: Counter Reading (5)	Engine Belt Pulley Speed: R. P. M. (6)	Engine Belt Pulley Speed: Surface Speed Ft. per Min. (7)	Brake Speed: Counter Reading (8)	Brake Speed: R. P. M. (9)	Brake Speed: Surface Speed Pulley Ft. per Min. (10)	Belt Slippage % of Column (7) (11)	Net Brake Load Pounds (12)	B. H. P. (13)	Fuel: Scale Reading Pounds (14)	Fuel: Amount Used Pounds (15)	Water Used: In Radiator Pounds (16)	Water Used: In Fuel Mixture Pounds (17)	Temperatures: *Cooling Fluid Deg. F. (18)	Temperatures: Atmosphere Deg. F. (19)
**Observer				2581			9319											
1	9:00			1740	841		0299	890			130.9		115.23				183	62
2	10			0900	840		1278	979			131.2		107.84	5.39			187	62
3	20			0069	831		2247	969			131.3		102.45	5.39			188	64
4	30			9231	838		3223	976			131.1		97.00	5.45			188	65
5	40			8398	833		4194	971			131.0		9158	5.42			188	65
6	50			7563	835		5168	974			131.0		86.15	5.43			188	65
7	10:00			6726	837		6143	975			131.0		80.66	5.49			188	67
8	10			5887	839		7122	979			130.9		75.24	5.42			189	67
9	20			5052	835		8093	971			131.0		69.76	5.48			189	68
10	30			4217	835		9068	975			131.3		64.32	5.44			187	68
11	40			3381	836		0041	973			131.5		58.92	5.40			187	66
12	50			2552	829		1007	966			131.3		53.48	5.44			189	67
13	11:00			1724	828		1972	965			131.2		48.17	5.31			190	68
Total					10857			12653		1704.7				65.06	0.00	0.00	2441	854
Average			1099		835	2677		973	2641	1.34	131.1	42.52					188	66

* Taken in discharge line from engine.
** Each observer will place his initials at the head of each column in which he records his observations.

Remarks

Temperature 66 degrees F.

Barometer 29.130 inches of mercury

Correction Factor 1.033

42.52 X 1.033 = 43.92 Corrected H.P.

43.92 X 0.85 = 37.33 Rated H.P.

THE UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
COLLEGE OF AGRICULTURE, LINCOLN

Record of Official Tractor Brake Horsepower Test

Load (rated or other) Operating Maximum Date Oct. 10, 1934 Test No. 227c
Name, model and rating of tractor Caterpillar "R3"
Serial No. Engine 5E2527 Serial No. Chassis 5E2527
Tractor equipment Eisemann "CT-4" Magneto, Ensign "Ke" Carburetor
Manufacturer Caterpillar Tractor Co., Peoria, Illnois
Tractor submitted for test by Caterpillar Tractor Co., Peoria, Illnois
Tractor operated by Webster Brake operated by Zink
Brake used, Sprague. Brake arm 21 inches. Brake const. $(\frac{2nA}{33000}) = \frac{1}{3000}$
Description of belt used 6 inch 4 ply rubber
Size of engine pulley (circumference at crown) 3.125 ft.
Size of brake pulley (circumference at crown) 2.633 ft.
Kind of fuel used Gasoline Fuel test No. Wt. per gal., lbs. 6.14
Kind and grade of oil used in engine Mobiloil "A" S.A.E. No. 30
Kind and grade of oil used in transmission Transmission oil Summer Grade
Humidity per cent. Barometric pressure 29.110 inches mercury
Temperature of atmosphere 78 ° F.
Fuel consumption: 4.933
Total for test, gals. ~~4.833~~ Gals. per hour 4.933
Lbs. per H. P. hour 0.721 H. P. hours per gal. 8.51
Carburetor adjustments (degrees open) High speed needle 1 3/8 turns
Slow speed needle 1 3/8 turns

Water consumption:
Total in radiator during test, gals. 0.000
Total in fuel mixture during test, gals. 0.000
Total used during test, gals. 0.000

We, the undersigned, certify that this sheet and the log sheet attached hereto give a true and correct record of official tractor test No. 227c

Orrin Webster Operator — Clifford Zink Observer
Operator — Observer
Engineer-in-charge

Log of Official Tractor Brake Horse Power Test No. 227c

Oct. 10, 1934

Reading No. (1)	Time (2)	Engine Crank Shaft Speed: Counter Reading (3)	Engine Crank Shaft Speed: R. P. M. (4)	Engine Belt Pulley Speed: Counter Reading (5)	Engine Belt Pulley Speed: R. P. M. (6)	Engine Belt Pulley Speed: Surface Speed Ft. per Min. (7)	Brake Speed: Counter Reading (8)	Brake Speed: R. P. M. (9)	Brake Speed: Surface Speed Pulley Ft. per Min. (10)	Belt Slippage % of Column (7) (11)	Net Brake Load Pounds (12)	B. H. P. (13)	Fuel: Scale Reading Pounds (14)	Fuel: Amount Used Pounds (15)	Water Used: In Radiator Pounds (16)	Water Used: In Fuel Mixtur Pounds (17)	Temperatures: *Cooling Fluid Deg. F. (18)	Temperatures: Atmosphere Deg. F. (19)
**Observer				3338			1745											
1	1:20			2497	841		2725	980			129.2		76.19				189	75
2	30			1660	837		3700	975			129.1		71.11	5.08			190	76
3	40			0825	835		4673	973			129.2		66.07	5.04			190	78
4	50			9990	835		5645	972			129.2		61.03	5.04			190	67
5	2:00			9154	836		6619	974			129.1		56.05	4.98			192	81
6	10			8313	841		7599	980			129.2		50.96	5.09			190	78
7	20			7479	834		8572	973			129.3		45.90	5.06			191	79
8																		
9																		
10																		
11																		
12																		
13																		
Total					5859			6827			904.3			30.29	0.00	0.00	1332	543
Average			1101		837	2663		975	2643	1.36	129.2	41.99					190	78

* Taken in discharge line from engine.
** Each observer will place his initials at the head of each column in which he records his observations.

Remarks

THE UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
COLLEGE OF AGRICULTURE, LINCOLN

Record of Official Tractor Brake Horsepower Test

Load (rated or other) Rated Date Oct. 10, 1934 Test No 2276

Name, model and rating of tractor Caterpillar "R3"

Serial No. Engine 5E2527 Serial No. Chassis 5E2527

Tractor equipment Eisemann "CT-4" Magneto, Ensign "Ke" Carburetor

Manufacturer Caterpillar Tractor Co., Peoria, Illinois

Tractor submitted for test by Caterpillar Tractor Co., Peoria, Illinois

Tractor operated by Webster Brake operated by Zink

Brake used, Sprague. Brake arm 21 inches. Brake const. $(\frac{2nA}{33000}) = \frac{1}{3000}$

Description of belt used 6 inch 4 ply rubber

Size of engine pulley (circumference at crown) 3.125 ft.

Size of brake pulley (circumference at crown) 2.633 ft.

Kind of fuel used Gasoline Fuel test No. Wt. per gal., lbs. 6.14

Kind and grade of oil used in engine Mobiloil "A" S.A.E. No. 30

Kind and grade of oil used in transmission Transmission oil Summer grade

Humidity per cent. Barometric pressure 29.100 inches mercury

Temperature of atmosphere 78 ° F.

Fuel consumption:

Total for test, gals. 4.147 Gals. per hour 4.147

Lbs. per H. P. hour 0.679 H. P. hours per gal 9.05

Carburetor adjustments (degrees open) High speed needle 1 5/8 turns
Slow speed needle 1 5/8 turns

Water consumption:

Total in radiator during test, gals. 0.000

Total in fuel mixture during test, gals. 0.000

Total used during test, gals. 0.000

We, the undersigned, certify that this sheet and the log sheet attached hereto give a true and correct record of official tractor test No. 2276

Orvin Webster Operator Carlton Zink Observer

Operator Observer

Carlton Zink
Engineer-in-charge

Log of Official Tractor Brake Horse Power Test No. Test 227d ..... Oct. 10, 1934

Reading No.	Time	Engine Crank Shaft Speed		Engine Belt Pulley Speed			Brake Speed			Belt Slippage % of Column (7)	Net Brake Load Pounds	B. H. P.	Fuel		Water Used		Temperatures	
		Counter Reading	R. P. M.	Counter Reading	R. P. M.	Surface Speed Ft. per Min.	Counter Reading	R. P. M.	Surface Speed Pulley Ft. per Min.				Scale Reading Pounds	Amount Used Pounds	In Radiator Pounds	In Fuel Mixture Pounds	*Cooling Fluid Deg. F.	Atmosphere Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
**Observer				4970			1498											
1	3:15			4134	836		2472	974			115.0		152.11				187	77
2	25			3295	339		3451	979			115.3		147.95	4.16			189	78
3	35			2459	836		4427	976			115.1		143.68	4.27			188	79
4	45			1624	835		5400	973			114.8		139.47	4.21			188	77
5	55			0763	836		6376	976			115.7		135.19	4.28			187	78
6	4:05			9953	835		7350	974			115.7		130.92	4227			187	77
7	15			9113	838		8327	977			115.5		126.65	4.27			187	77
8																		
9																		
10																		
11																		
12																		
13																		
Total					5855			6839			807.1			25.46	0.00	0.00	1313	543
Average			1101		836	2690		976	2649	1.16	115.3	37.51					188	78

*Taken in discharge line from engine.
** Each observer will place his initials at the head of each column in which he records his observations.

Remarks

THE UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
COLLEGE OF AGRICULTURE, LINCOLN

Record of Official Tractor Brake Horsepower Test

Load (rated or other) Varying Date Oct. 10, 1934 Test No. 227e
Name, model and rating of tractor Caterpillar "R3"
Serial No. Engine 5E2527 Serial No. Chassis 5E2527
Tractor equipment Eisemann "CT-4" Magneto, Ensign "Ke" Carburetor
Manufacturer Caterpillar Tractor Co., Peoria, Illnois
Tractor submitted for test by Caterpillar Tractor Co., Peoria, Illnois
Tractor operated by Webster Brake operated by Zink
Brake used, Sprague. Brake arm 21 inches. Brake const. $(\frac{2nA}{33000}) = \frac{1}{3000}$
Description of belt used 6 inch 4 ply rubber
Size of engine pulley (circumference at crown) 3.125 ft.
Size of brake pulley (circumference at crown) 2.633 ft.
Kind of fuel used Gasoline Fuel test No. Wt. per gal., lbs. 6.14
Kind and grade of oil used in engine Mobiloil "A" S.A.E. No. 30
Kind and grade of oil used in transmission Transmission oil Summer grade
Humidity per cent. Barometric pressure 29.090 inches mercury
Temperature of atmosphere 76 ° F.
Fuel consumption:
Total for test, gals. ~~3.327~~ 6.653 Gals. per hour 3.327 ~~3.327~~
Lbs. per H. P. hour 0.894 H. P. hours per gal. 6.87
Carburetor adjustments (degrees open) High speed needle 1 3/8 turns
Slow speed needle 1 3/8 turns

Water consumption:
Total in radiator during test, gals. 0.000
Total in fuel mixture during test, gals. 0.000
Total used during test, gals. 0.000

We, the undersigned, certify that this sheet and the log sheet attached hereto give a true and correct record of official tractor test No. 227e

Orrin Webster Operator Walter Zink Observer
Operator Observer
Walter Zink
Engineer-in-charge

Log of Official Tractor Brake Horse Power Test No. 227e Oct. 10, 1934

Reading No.	Time	Engine Crank Shaft Speed		Engine Belt Pulley Speed			Brake Speed			Belt Slippage % of Column (7)	Net Brake Load Pounds	B. H. P.	Fuel		Water Used		Temperatures	
		Counter Reading	R. P. M.	Counter Reading	R. P. M.	Surface Speed Ft. per Min.	Counter Reading	R. P. M.	Surface Speed Pulley Ft. per Min.				Scale Reading Pounds	Amount Used Pounds	Fuel lbs/hr In Pounds lbs/B.H.P. hour	used gals/hr. In Pounds H.P. hrs/ gallon	*Cooling Fluid Deg. F.	Atmosphere Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
**Observer				0788	/8##/		6376						135.19					
1	4:05			9953	835		7350	974			115.7		130.92	4.27	25.62	4.173	187	77
2	15			9115	838		8327	977			115.5		126.65	4.27			187	77
3					1673			1951			231.2			8.54			374	154
4			1101		837	2682		976	2648	1.27	115.6	37.61			0.681	9.01	187	77
5																		
6	4:25			8202	915		9404	1077			1.6		124.59	2.06	12.48	2.033	175	76
7	35			7290	912		0480	1076			1.8		12249	2.10			175	76
8					1825			2155			3.4			4.16		0.30	350	152
9			1201		913	2925		1077	2922	0.10	1.7	0.61		2.08	20.459	~~20.459~~	175	~~76~~
10																		
11	4:45			6417	873		1505	1025			57.3		119.41	3.08	18.60	3.029	180	76
12	55			5542	875		2532	1027			56.9		116.29	3.12			180	76
13					1748			2052			114.2			6.20		6.45	360	152
Total			1150		874	2802		1026	2785	0.61	57.1	19.53			0.952	~~6.46~~	180	76
Average																		

* Taken in discharge line from engine.
** Each observer will place his initials at the head of each column in which he records his observations.

Remarks

Log of Official Tractor Brake Horse Power Test No. 2279

Oct. 10, 1934

Reading No.	Time	Engine Crank Shaft Speed		Engine Belt Pulley Speed			Brake Speed			Belt Slippage % of Column (7)	Net Brake Load Pounds	B. H. P.	Fuel		Water Used		Temperatures	
		Counter Reading	R. P. M.	Counter Reading	R. P. M.	Surface Speed Ft. per Min.	Counter Reading	R. P. M.	Surface Speed Pulley Ft. per Min.				Scale Reading Pounds	Amount Used Pounds	In Radiator Pounds	In Fuel Mixture Pounds	*Cooling Fluid Deg. F.	Atmosphere Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
**Observer				5542			2532						116.29					
1	5:05			4750	792		3454	922			129.3		111.51	4.78	28.71	4.676	193	79
2	15			3933	817		4406	952			128.7		106.73	4.79			190	76
3					1609			1874			258.0			9.57			383	155
4			1059		805	2579		937	2543	1.40	129.0	40.29			0.713	8.62	192	~~78~~ 78
5	5:25			3033	900		5465	1054			28.6		104.16	2.56	15.30	2.492	178	76
6	35			2136	897		6521	1056			29.0		101.62	2.54			178	74
7					1797			2115			57.6			5.10			356	150
8			1182		899	2881		1056	2870	0.51	28.8	10.16			1.506	4.08	178	75
9	5:45			1270	866		7533	1012			85.6		97.96	3.66	21.94	3.557	180	75
10	55			0409	861		8541	1008			85.8		94.34	3.62			182	76
11					1727			2020			171.4			7.28			362	151
12			1136		864	2768		1010	2741	0.98	85.7	28.85			0.757	8.11	181	76
13																		
Total					10379			12165				137.05		40.85	0.00	0.00	2185	914
Average	2 hours		1138		865	2773		1014	2751	0.79		22.84					182	76

* Taken in discharge line from engine.
** Each observer will place his initials at the head of each column in which he records his observations.

Remarks

THE UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
COLLEGE OF AGRICULTURE, LINCOLN

Record of Official Tractor Drawbar Horsepower Test

Rated or maximum load A.S.A.E. Maximum Date Oct. 12, 1934 Test No. 227f

Name, model and rating of tractor Caterpillar "R3"

Serial No. Engine 5E2527 Serial No. Chassis 5E2527

Manufacturer Caterpillar Tractor Co., Peoria, Illnois

Tractor submitted for test by Caterpillar Tractor Co., Peoria, Illnois

Tractor equipment Eisemann "CT-4" Magneto, Ensign "Ke" Carburetor

Style and dimension of lugs Cleats integral with shoes 16" long X 2" high

Circumference of drive wheels, at face Measured length of track 16.448 feet Point of lugs

Tractor operated by Anderson Dynamometer car operated by Zink

Dynamometer used Gulley Load used Loading machine and old tractor

Kind of fuel Gasoline Test No. W.t per gal 6.14 lbs.

Kind and grade of oil used in engine Mobiloil "A" S.A.E. No. 30

Kind and grade of oil used in transmission Transmission oil Summer grade

Humidity per cent. Barometric pressure 28.775 inches.

Temperature of atmosphere 83 Temperature of engine 187

Weather conditions Fair

Condition of track Fair

Fuel Consumption: Not recorded

Total for test, gal. Gals. per hour

Pounds per H. P. hour H. P. hours per gal.

Water Consumption: Not recorded

Total used in test, gal. Gal. per hour

We, the undersigned, certify that this and attached sheets hereto give a true and correct record of the official tractor test No. 227f

Edmund Anderson Operator. Observer.

Operator. Observer.

Engineer-in-charge

THE UNIVERSITY OF NEBRASKA
DEPARTMENT OF AGRICULTURAL ENGINEERING
Log of Official Tractor Drawbar Horse Power Test No. 227f

Date Oct. 12, 1934

Chart and Reading No.	Time	Stop Watch in 400 ft. minutes	•• Engine Crankshaft R. P. M.	Drive Wheel Slippage: Left Wheel Counter Reading	Left Wheel Rev. in 400 ft.	Right Wheel Counter Reading	Right Wheel Rev. in 400 ft.	Av. Rev. Columns 6 and 8	Distance Tarveled (Feet)	Distance Measured on Ground (Feet)	Slippage % Columns 10 and 11	Speed: Feet per Minute	Speed: Miles per Hour	Average Draft Pounds	Drawbar Horsepower	Temperature Degrees F.: • Cooling Fluid	Temperature Degrees F.: Atmosphere	Fuel Used Pounds	Water Used Pounds
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
••• Observer				Counter driven off motor. Ratio 2.917			A.S.A.E. Maximum run in Second Gear												
2S	4:51	2.2500		5147 6003	856							222.2	2.53	5110	34.41	186	83	Not recorded	
3S	5:00	2.2950		6860 7716	856							217.9	2.48	5224	34.49	188	83		
		4.5450			1712									10334		374	166		
		2.2725	1099		856				517.2	500	3.33	220.0	2.50	5167	34.45	187	83		
							Temperature 83 degrees F.												
							Barometer 28.775 inches of mercury												
							Correction factor 1.063												
							34.45 X 1.063 = 36.62 Corrected H.P.												
							36.62 X 0.75 = 27.47 Rated H.P.												

NOTE: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

• Taken in discharge line from engine.

•• Engine R. P. M. = $\frac{\text{Gear Ratio x Column (a)}}{\text{Column (3)}}$

••• Each Observer will write his initials at the head of each column in which he records his observations.

THE UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
COLLEGE OF AGRICULTURE, LINCOLN

Record of Official Tractor Drawbar Horsepower Test

Rated or maximum load Operating Maximum Date Oct. 10 & 11, 1934 Test No. 227g

Name, model and rating of tractor Caterpillar "R3"

Serial No. Engine 5E2527 Serial No. Chassis 5E2527

Manufacturer Caterpillar Tractor Co., Peoria, Illnois

Tractor submitted for test by Caterpillar Tractor Co., Peoria, Illnois

Tractor equipment Eisemann "CT-4" Magneto, Ensign "K6" Carburetor

Style and dimension of lugs Cleats integral with Shoes 16" long X 2" high

Circumference of drive wheels, at face Measured length of track 16,448 feet Point of lugs

Tractor operated by Anderson Dynamometer car operated by Zink

Dynamometer used Gulley Load used Loading machine and old tractors

Kind of fuel Gasoline Test No. W.t per gal. 6.14 lbs.

Kind and grade of oil used in engine Mobiloil "A" S.A.E. No. 30

Kind and grade of oil used in transmission Transmission oil Summer grade

Humidity per cent. Barometric pressure 1st 29.000 2nd 28.780 3rd 28.765 inches

Temperature of atmosphere 1st 79 2nd 84 3rd 77 Temperature of engine 1st 187 2nd 190 3rd 186

Weather conditions Fair

Condition of track Fair

Fuel Consumption: Not recorded

Total for test, gal. Gals. per hour

Pounds per H. P. hour H. P. hours per gal.

Water Consumption: Not recorded

Total used in test, gal. Gal. per hour

We, the undersigned, certify that this and attached sheets hereto give a true and correct record of the official tractor test No. 227g

Edmund Anderson Operator. Observer.

Operator. Observer.

Engineer-in-charge

THE UNIVERSITY OF NEBRASKA
DEPARTMENT OF AGRICULTURAL ENGINEERING
Log of Official Tractor Drawbar Horse Power Test No. 227g

Date Oct. 11 & 12, 1934

Chart and Reading No.	Time	Stop Watch in 400 ft. minutes	** Engine Crankshaft R. P. M.	Drive Wheel Slippage: Left Wheel Counter Reading	Left Wheel Rev. in 400 ft.	Right Wheel Counter Reading	Right Wheel Rev. in 400 ft.	Av. Rev. Columns 6 and 8	Distance Tarveled (Feet)	Distance Measured on Ground (Feet)	Slippage % Columns 10 and 11	Speed: Feet per Minute	Speed: Miles per Hour	Average Draft Pounds	Drawbar Horsepower	Temperature Degrees F.: * Cooling Fluid	Temperature Degrees F.: Atmosphere	Fuel Used Pounds	Water Used Pounds
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
***Observer				Counter driven off motor. Ratio 2.917															
5N	5:19	5.4100		8455 9735	1280			FIRST GEAR Oct. 11				146.6	1.67	7640	33.94	188	80	Not recorded	
5S	5:25	5.3975		1024	1289							147.2	1.67	7610	33.91	186	80		
6N	5:33	5.4200		2319	1295							146.2	1.66 7625	7625	33.78	188	78		
		10.2275			3864									22866		562	236		
		5.4092	1102		1288				540.0	500	7.41	146.7	1.67	7622	33.88	187	79		
5N	3:55	2.2500		9161 0016	855			SECOND GEAR Oct. 12				222.2	2.53	5096	34.31	190	84		
6N	4:08	2.2650		0872 1727	855							220.8	2.51	5166	34.57	190	84		
		4.5150			1710									10262		380	168		
		2.2575	1105		855				516.6	500	3.21	221.5	2.52	5131	34.44	190	84		
3S	6:05	1.5850		3662 4267	605			THIRD GEAR Oct. 12				315.5	3.59	3501	33.47	185	77		
4N	6:09	1.5950		4869	602							313.5	3.56	3517	33.41	186	77		
5N	6:16	1.6100		5474 6078	604							310.6	3.53	3517	33.10	186	77		
		4.7900			1811									10535		557	231		
		1.5967	1103		604				~~516.7~~ 2512.5	500	~~3.85~~ 2.44	313.1	3.56	3512	33.32	186	77		

NOTE: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Taken in discharge line from engine.

** Engine R. P. M. = $\frac{\text{Gear Ratio x Column (a)}}{\text{Column (3)}}$

*** Each Observer will write his initials at the head of each column in which he records his observations.

THE UNIVERSITY OF NEBRASKA
AGRICULTURAL ENGINEERING DEPARTMENT
COLLEGE OF AGRICULTURE, LINCOLN

Record of Official Tractor Drawbar Horsepower Test

Rated or maximum load Rated Date Oct.15, 1934 Test No. 227h

Name, model and rating of tractor Caterpillar "R3"

Serial No. Engine 5E2527 Serial No. Chassis 5E2527

Manufacturer Caterpillar Tractor Co., Peoria, Illnois

Tractor submitted for test by Caterpillar Tractor Co., Peoria, Illnois

Tractor equipment Eisemann "CT-4" Magneto, Ensign "Ke" Carburetor

Style and dimension of lugs Cleats integral with shoes 16" long X 2" high

Measured length of track 16.448ft

Circumference of drive wheels, at face ..... Point of lugs .....

Tractor operated by Anderson Dynamometer car operated by Zink

Dynamometer used Gulley Load used Loading machine and old Avery

Kind of fuel Gasoline Test No. ..... W.t per gal. 6.14 lbs.

Kind and grade of oil used in engine Mobiloil "A" S.A.E. NO. 30

Kind and grade of oil used in transmission Transmission oil Summer grade

Humidity ..... per cent. Barometric pressure 28.525 inches.

Temperature of atmosphere 75 Temperature of engine 182

Weather conditions Fair

Condition of track Fair

Fuel Consumption:

Total for test, gal. 40.344 Gals. per hour 4.034

Pounds per H. P. hour 0.891 H. P. hours per gal. 6.89

Water Consumption:

Total used in test, gal. 0.000 Gal. per hour 0.000

We, the undersigned, certify that this and attached sheets hereto give a true and correct record of the official tractor test No. 227h

Edmund Anderson Operator. Carlton Zink Observer.

..... Operator. Carlton Zink Observer.

Carlton Zink
Engineer-in-charge

THE UNIVERSITY OF NEBRASKA
DEPARTMENT OF AGRICULTURAL ENGINEERING
Log of Official Tractor Drawbar Horse Power Test No. 227h

Date Oct. 15, 1934

Chart and Reading No.	Time	Stop Watch in 400 ft. minutes	** Engine Crankshaft R. P. M.	Drive Wheel Slippage: Left Wheel Counter Reading	Left Wheel Rev. in 400 ft.	Right Wheel Counter Reading	Right Wheel Rev. in 400 ft.	Av. Rev. Columns 6 and 8	Distance Traveled (Feet)	Distance Measured on Ground (Feet)	Slippage % Columns 10 and 11	Speed: Feet per Minute	Speed: Miles per Hour	Average Draft Pounds	Drawbar Horsepower	Temperature Degrees F.: * Cooling Fluid	Temperature Degrees F.: Atmosphere	Fuel Used Pounds	Water Used Pounds
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
***Observer	6:45	Start	Test	(Turned on to fuel in main tank)															
				Counter driven off motor. Ratio 2.917															
1S	8:08	2.2825		1266 2124	853											180	63		
1N	14	2.2900		2984	860							218.7	2.49	4095	27.14	178	63		
2S	9:08	2.3025		3841	857											178	68		
2N	14	2.2650		4699	858							218.9	2.49	4105	27.23	180	68		
3S	9:50	2.2800		5557	858											180	72		
3N	56	2.2525		6415	858							220.6	2.51	4175	27.91	182	72		
4S	11:08	2.2875		7275	860											180	75		
4N	14	2.2675		8134	859							219.5	2.49	4337	28.85	181	75		
5S	12:00	2.2700		8994	860											180	76		
5N	06	2.2800		9856	862							219.8	2.50	4257	28.36	181	76		
6S	12:59	2.2775		0717	861											183	80		
6N	1:05	2.2625		1578	861							220.3	2.50	4227	28.22	183	80		
7S	2:09	2.2625		2439	861											181	80		
7N	15	2.2700		3300	861							220.6	2.51	4119	27.53	184	80		

NOTE: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Taken in discharge line from engine.

** Engine R. P. M. = $\frac{\text{Gear Ratio x Column (a)}}{\text{Column (3)}}$

*** Each Observer will write his initials at the head of each column in which he records his observations.

THE UNIVERSITY OF NEBRASKA
DEPARTMENT OF AGRICULTURAL ENGINEERING
Log of Official Tractor Drawbar Horse Power Test No. 227h

Date. Oct. 15, 1934

Chart and Reading No.	Time	Stop Watch in 400 ft. minutes	** Engine Crankshaft R. P. M.	Drive Wheel Slippage								Speed		Average Draft Pounds	Drawbar Horsepower	Temperature Degrees F.		Fuel Used Pounds	Water Used Pounds
				Left Wheel		Right Wheel		Av. Rev. Columns 6 and 8	Distance Tarveled (Feet)	Distance Measured on Ground (Feet)	Slippage % Columns 10 and 11	Feet per Minute	Miles per Hour			* Cooling Fluid	Atmosphere		
				Counter Reading	Rev. in 400 ft.	Counter Reading	Rev. in 400 ft.												
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
***Observer				3300															
8S	2:50	2.2900		4161	861											185	79		
8N	56	2.2750		5022	861							219.1	2.49	4085	27.11	185	79		
9S	3:50	2.2900		5883	861											184	81		
9N	56	2.2850		6742	859							218.6	2.48	4225	27.99	184	81		
10S	4:31	2.2975		7603	361											184	80		
10N	37	2.2650		8463	860							219.2	2.49	4173	27.72	184	80		
	4:45	End of Test		(Turned off fuel from main tank)															
		455525			17197									41796		3657	1508	247.70	0.00
		2.2776	1101		860				519.7	500	3.79	219.5	2.49	4180	27.80	182	75		

NOTE: Record all stops by the word "Stop" and "Start" in column 1, record time and give full data.

* Taken in discharge line from engine.

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