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

Record of Official Tractor Brake Horsepower Test

Load (rated or other) Maximum Date April 6th 1928 Test No. 148 b
Name, model and rating of tractor Lausan 20-35
Serial No. Engine 901-19 Serial No. Chassis 3800
Tractor equipment Am Bosch "ZR4" Mag. Tillotson "R2" Carb
Manufacturer John Lauson Mfg Co. New Holstein, Wis.
Tractor submitted for test by " " " " "
Tractor operated by Laub Brake operated by Wallace
Brake used, Sprague. Brake arm 21 inches. Brake const. $(\frac{2nA}{33000}) = \frac{1}{3000}$
Description of belt used 8" Klingatite Rubber ¼" Avg. thickness
Size of engine pulley (circumference at crown) 4.30 ft.
Size of brake pulley (circumference at crown) 2.60 ft.
Kind of fuel used Gasoline Fuel test No. Wt. per gal., lbs. 6.20
Kind and grade of oil used in engine Mobiloil RB
Kind and grade of oil used in transmission " C
Humidity 43 per cent. Barometric pressure inches mercury
Temperature of atmosphere 59 ° F.
Fuel consumption:
Total for test, gals. 10.66 13 Gals. per hour 5.331
Lbs. per H. P. hour 0.795 H. P. hours per gal. 7.79
Carburetor adjustments (degrees open) 1/4 1/4 4.0° Low 10.0°

Water consumption:
Total in radiator during test, gals. 0.00
Total in fuel mixture during test, gals. 0.20
Total used during test, gals. 0.70

We, the undersigned, certify that this sheet and the log sheet attached hereto give a true and correct record of official tractor test No. 148 b

F. M. Laub Operator Lew Wallace Observer
Operator Observer
Lew Wallace
Engineer-in-charge

Log of Official Tractor Brake Horse Power Test No. 1486 April 6th 1928

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	9 45						6316											
1	55				697	3049	7423	1107	29602	2.92	113.2	41.77	151.20				190	60 52-65
2	10 05				701		8530	1107			113.2		145.60	5.60			194	58 51-64
3	15				696		9636	1106			113.5		139.90	5.70			193	58 52-6
4	25				697		0740	1104			"		134.40	5.50			192	58 52-6
5	35				691		1839	1099			"		128.90	5.50			193	57 51-6
6	45				691		2935	1096			113.0		123.40	5.50			194	59 52-65
7	55				700		4040	1105			"		117.90	5.50			194	61 52-65
8	11 05				698		5150	1110			"		112.40	5.50			194	60 52-65
9	15				704		6250	1100			"		106.90	5.50			193	59 51-64
10	25				692		7348	1098			"		101.40	5.50			192	59 52-6
11	35				688		8441	1093			"		95.90	5.50			193	59 52-65
12	11 45				693		9538	1097			"		90.50	5.40			192	58 52-65
13					699		0642	1104			"		85.10	5.40			193	58 52-65
Total														66.10	0.00	5.80		
Average			1099		696	3044		1102	2747	3.19	113.1	41.55					193	59 52-65

* 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

Water to Cleaner.
9.34 - 3.54 = 5.80

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

Record of Official Tractor Brake Horsepower Test

Load (rated or other) Maximum Date April 6th 1928 Test No. 148 C
Name, model and rating of tractor Lawson 20-35
Serial No. Engine 901-19 Serial No. Chassis 3800
Tractor equipment Am. Bosch "ZR4" Mag., Tillotson "R2" Carb.
Manufacturer John Lawson Mfg. Co., New Holstein, Wis.
Tractor submitted for test by " " " " " "
Tractor operated by Lawe Brake operated by Wallace
Brake used, Sprague. Brake arm 21 inches. Brake const. $(\frac{2\pi A}{33000}) = \frac{1}{3000}$
Description of belt used 8" Klingtite Rubber 4/ex Avg. Thickness
Size of engine pulley (circumference at crown) 4.30 ft.
Size of brake pulley (circumference at crown) 2.609 ft.
Kind of fuel used Gasoline Fuel test No. Wt. per gal., lbs. 6.20
Kind and grade of oil used in engine Mob. B.B.
Kind and grade of oil used in transmission Mob C
Humidity 40 per cent. Barometric pressure 28.48 inches mercury
Temperature of atmosphere 60 ° F.
Fuel consumption:
Total for test, gals. 4.629 Gals. per hour 4.629
Lbs. per H. P. hour .2022 H. P. hours per gal. 8.83
Carburetor adjustments (degrees open) 330° High 1020° Low

Water consumption:
Total in radiator during test, gals. 0.00
Total in fuel mixture during test, gals. 0.24
Total used during test, gals. 0.24

We, the undersigned, certify that this sheet and the log sheet attached hereto give a true and correct record of official tractor test No. 148 C

F. H. Lamb Operator Lew Wallace Observer
Operator Observer
Lew Wallace
Engineer-in-charge

Log of Official Tractor Brake Horse Power Test No. 14 B.C. April 6th 1928

Reading No.	Time	Engine Crank Shaft Speed: Counter Reading	Engine Crank Shaft Speed: R. P. M.	Engine Belt Pulley Speed: Counter Reading	Engine Belt Pulley Speed: R. P. M.	Engine Belt Pulley Speed: Surface Speed Ft. per Min.	Brake Speed: Counter Reading	Brake Speed: R. P. M.	Brake Speed: Surface Speed Pulley Ft. per Min.	Belt Slippage % of Column (7)	Net Brake Load Pounds	B. H. P.	Fuel: Scale Reading Pounds	Fuel: Amount Used Pounds	Water Used: In Radiator Pounds	Water Used: In Fuel Mixture Pounds	Temperatures: *Cooling Fluid Deg. F.	Temperatures: Atmosphere Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
**Observer				4778			3046											
1	1 55"			5472	694		4146	1100			109.7		113.70				190	60 52-65
2	2 05"			6176	704		5264	1118			"		113.90	4.80			184	54 52-65
3	15"			6815	699		6373	1109			"		109.10	4.80			146	62 52-65
4	25"			7582	707		7495	1122			"		104.40	4.70			191	60 52-65
5	35"			8289	707		8617	1122			"		99.60	4.80			192	60 52-65
6	45"			8998	709		9744	1127			"		94.80	4.80			192	60 52-65
7	2 55"			9711	713		0874	1130			"		90.00	4.80			190	62 52-65
8																		
9																		
10																		
11																		
12																		
13																		
Total														28.70	0.00	2.04		
Average			1113		705 3084			1118	3000 2172		109.7	40.84					191	60 52-65

* 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: Water to Rad 6.04 - 400

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

Record of Official Tractor Brake Horsepower Test

Load (rated or other) Rated Date April 6th 1928 Test No. 148 d
Name, model and rating of tractor Lawson 20-35
Serial No. Engine 201-1.2 Serial No. Chassis 3800
Tractor equipment Am Bosch "ZR4" Mag; Tillotson "R2" Carb
Manufacturer John Lawson Mfg Co. New Holstein, Wis
Tractor submitted for test by " " " "
Tractor operated by Laub Brake operated by Wallace
Brake used, Sprague. Brake arm 21 inches. Brake const. $(\frac{2nA}{33000}) = \frac{1}{3000}$
Description of belt used 8" Klingtite Rubber 3/16" Avg Thickness
Size of engine pulley (circumference at crown) 4.30 ft.
Size of brake pulley (circumference at crown) 2.609 ft.
Kind of fuel used Gasoline Fuel test No. Wt. per gal., lbs. 6.20
Kind and grade of oil used in engine Mob BB
Kind and grade of oil used in transmission Mob C
Humidity 40 per cent. Barometric pressure 28.48 inches mercury
Temperature of atmosphere 61 ° F.
Fuel consumption:
Total for test, gals. 4.419 v Gals. per hour 4.419 v
Lbs. per H. P. hour 0.778 v H. P. hours per gal. 7.97 v
Carburetor adjustments (degrees open) High 330° Low 1080°

Water consumption:
Total in radiator during test, gals. 0.00
Total in fuel mixture during test, gals. 0.22 v
Total used during test, gals. 0.22 v

We, the undersigned, certify that this sheet and the log sheet attached hereto give a true and correct record of official tractor test No. 148 d

F. N. Laub Operator Lew Wallace Observer
Operator Observer
Lew Wallace
Engineer-in-charge

Log of Official Tractor Brake Horse Power Test No. 148 d April 6th

Reading No.	Time	Engine Crank Shaft Speed: Counter Reading	Engine Crank Shaft Speed: R. P. M.	Engine Belt Pulley Speed: Counter Reading	Engine Belt Pulley Speed: R. P. M.	Engine Belt Pulley Speed: Surface Speed Ft. per Min.	Brake Speed: Counter Reading	Brake Speed: R. P. M.	Brake Speed: Surface Speed Pulley Ft. per Min.	Belt Slippage % of Column (7)	Net Brake Load Pounds	B. H. P.	Fuel: Scale Reading Pounds	Fuel: Amount Used Pounds	Water Used: In Radiator Pounds	Water Used: In Fuel Mixture Pounds	Temperatures: *Cooling Fluid Deg. F.	Temperatures: Atmosphere Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
**Observer				9711			0824											
1	3 10			0412	701		1487	1113			95.5		113.84				182	41 52 65
2	20			1112	700		3101	1114			"		109.24	4.60			194	60 52 66
3	30			1806	694		4704	1103			"		104.66	4.58			189	59 52 65
4	40			2500	694		5306	1102			"		100.06	4.60			192	61 52 65
5	50			3192	692		6406	1100			"		95.54	4.52			193	61 52 66
6	4 00			3884	692		7507	1101			"		91.00	4.54			192	61 52 65
7	4 10			4586	702		8622	1115			"		86.44	4.56			193	62 52 65
8																		
9																		
10																		
11																		
12																		
13																		
Total													27.40	0.00		1.84		
Average		1099		696	3044		1107	2760	2.43	95.5	35.24						191	61

* 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 H_2O to Cleaner
900 - 7.16 = 1.84

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

Record of Official Tractor Brake Horsepower Test

Load (rated or other) Varying Date April 9 1929 Test No. 1482

Name, model and rating of tractor Lawson 20-35

Serial No. Engine 901-19 Serial No. Chassis 3800

Tractor equipment Am. Bosch "ZR4" Mag. Tillotson "R" Carb.

Manufacturer John Lawson Mfg. Co. New Holstein, Wis.

Tractor submitted for test by "

Tractor operated by Laub Brake operated by Wallace

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

Description of belt used 8" Klingtite Rubber Belt Avg. thickness .33

Size of engine pulley (circumference at crown) 4.30 ft.

Size of brake pulley (circumference at crown) 2.609 ft.

Kind of fuel used Gasoline Fuel test No. Wt. per gal., lbs. 6.20

Kind and grade of oil used in engine Mob. B.B.

Kind and grade of oil used in transmission "

Humidity 27 per cent. Barometric pressure 28.46 inches mercury

Temperature of atmosphere 74 ° F.

Fuel consumption:

Total for test, gals. 6.945 ✓ Gals. per hour 3.473 ✓

Lbs. per H. P. hour 1.006 H. P. hours per gal. 6.16 ✓

Carburetor adjustments (degrees open) High 330° Low 1040°

Water consumption:

Total in radiator during test, gals. 0.00

Total in fuel mixture during test, gals. 0.79 ✓

Total used during test, gals. 0.79

We, the undersigned, certify that this sheet and the log sheet attached hereto give a true and correct record of official tractor test No. 1482

F. N. Laub Operator Lew Wallace Observer

" Operator " Observer

Lew Wallace
Engineer-in-charge

Log of Official Tractor Brake Horse Power Test No. 148 e — April 9, 1928

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				X165			4317								lbs per HP hr.	HP hrs per Gal.		
1	9:20			8861	696		5424	1107			95.5		127.76				195	76
2	30			9556	695		6525	1103					123.00	4.76			196	74
3	40			0249	693		7625	1100					118.18	4.82			196	74
Avg 4		4×9	1097		695	3040		1103	3159	2.66	95.5	35.11		9.58	0.814	7.57	196	75
5	9 40			0983	734		8798	1173	~~3449~~		23		118.18				176	74
6	50			1718	735		9973	1175					115.70	2.48			162	69
7	10 00			2451	733		1144	1171				~~00.90~~	113.42	2.28			160	72
Avg 8			1159		734	3211		1173	3147	7.99	2.3	0.090		4.76	15.867	0.39	168	72
9	10 10			3164	713		2279	1135			47.75		113.42					
10	20			3881	717		3420	1141					110.30	3.12			180	72
11		1		4597	716		4561	1141					107.20	3.10			188	74
Avg 12			1129		715	3127		1139	3045	2.27	47.75	18.13		6.22	1029	6.02	184	73
13																		
Total																		
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. 148 e (continued) April 2, 1928

	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					4597			4560								Lbs per H.P. hr.	Gals per H.P. hr.		
	1	10 20			5278	681		5641	1080			100.1		107.20				196	76 (73 54)
	2	30			5957	679		6726	1085					102.56	4.64			184	77 (73 54)
	3	40			6632	675		7805	1079					98.00	4.56				(74 54)
Avg	4			1021		678	2966		1081	2900	2.23	100.7	36.29		9.20	0.761	8.15	190	76.5
	5	10 40		~~H~~	7352	720		8453	1148			23.9		98.00				174	76 (74 54)
	6	50			8073	721		0104	1151					95.22	2.78			162	72
	7	11 00			8798	725		1261	1157					92.62	2.60				
Avg	8			1140		723	3158		1152	3091	2.12	23.99	18		5.38	1.758	3.53		
	9	11 00			9497	699		2372	1111			71.6		92.62				178	76 (73 54)
	10	10			0199	702		3418	1116					88.70	3.92			186	75 (74 54)
	11	20			0897	698		4604	1116					84.70	4.00			190	76 (74 55)
Avg	12			1105		700	3062		1114	2989	2.38	71.6	26.59		7.92	0.894	6.94		
	13																		
Total															43.06				
Average				1116		707	3092		1127	3024	2.20	56.46	21.40					182	74 (71 52)

* 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

Water 10 Air Cleaner
6.20 - 1.30 = 4.40
9.40 - 7.70 = 1.70
15.60 - 9.00 = 6.60

11

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

Record of Official Tractor Drawbar Horsepower Test

Rated or maximum load Rated Date April 12-16, 1928 Test No 148 F

Name, model and rating of tractor Lauson 20-35

Serial No. Engine 901-19 Serial No. Chassis 3800

Manufacturer John Lauson Mfg Co, New Holstein, Wis.

Tractor submitted for test by " " " " "

Tractor equipment Am Bosch "ZR4" Mag. Tillotson "R2" Carb.

Style and dimension of lugs Spade 32 per Wheel 5" H x 3" W x 6" Base

Circumference of drive wheels, at face 12.57" Point of lugs 15.18"

Tractor operated by Laub Dynamometer car operated by Wallace

Dynamometer used Gulley Load used Dyn. Car

Kind of fuel Gasoline Test No W.t per gal 6.20 lbs.

Kind and grade of oil used in engine Mob. BB

Kind and grade of oil used in transmission Mob C

Humidity —— per cent. Barometric pressure 28.61 inches.

Temperature of atmosphere 63 Temperature of engine 183

Weather conditions Fair

Condition of track A little soft morning of April 12th

Fuel Consumption:

Total for test, gal 39.394 Gals. per hour 3.939

Pounds per H. P. hour 1.219 H. P. hours per gal 5.09

Water Consumption:

Total used in test, gal 2.48 Gal. per hour 0.25

We, the undersigned, certify that this and attached sheets hereto give a true and correct record of the official tractor test No. 148 F

F. N. Laub Operator. Lew Wallace Observer.

Operator. Observer.

Lew Wallace
Engineer-in-charge

THE UNIVERSITY OF NEBRASKA
DEPARTMENT OF AGRICULTURAL ENGINEERING
Log of Official Tractor Drawbar Horse Power Test No. 1487

Date April 12, 1928

Chart and Reading No. (1)	Time (2)	Stop Watch in 400 ft. minutes (3)	*** Engine Crankshaft R. P. M. (4)	Drive Wheel Slippage: Left Wheel Counter Reading (5)	Left Wheel Rev. in 400 ft. (6)	Right Wheel Counter Reading (7)	Right Wheel Rev. in 400 ft. (8)	Av. Rev. Columns 6 and 8 (9)	** Distance Traveled (Feet) (10)	Distance Measured on Ground (Feet) (11)	** Slippage % Columns 10 and 11 (12)	Speed: Feet per Minute (13)	Speed: Miles per Hour (14)	Average Draft Pounds (15)	Drawbar Horsepower (16)	Temperature Degrees F. * Cooling Fluid (17)	Temperature Degrees F. Atmosphere (18)	Fuel Used Pounds (19)	Water Used Pounds (20)
****Observer																			
	6 37	Start motor																	
	6 54	Start test																	
Stop	7 17	Test car Generator trouble																	
	9 44	Start motor																	
Start	9 46	2 24																	
1S	10 35	1.335		8174 8463	28.9	3640 3939	28.9	28.9				299.8	3.41	2216	20.13	192	66		
1N	10 40	1.33		8751	28.8	4218	28.9	28.85								192	66		
2S	11 32	1.355		4055	30.4	4510	29.2	29.8				300.6	3.42	2165	19.72	190	69		
2N	11 37	1.33		4343	28.8	4799	28.9	28.85								190	69		
	12 30	1.32		9633	29.0	5084	28.5	28.75								190	71		
	12 36	1.32		9927	29.4	5367	28.3	28.85								190	71		
	1 37	1.32		0215	28.8	5649	28.2	28.5								200	74		
	1 42	1.31		0500	28.5	5931	28.2	28.35								200	74		
Stop	2 19	Fuel.																	
Start	2 27	8 min																	

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.
** The first figure in this column is calculated at the rim of the wheel, and the second figure at point of the lugs.
*** Engine R. P. M. = $\frac{\text{Gear Ratio x Column (3)}}{\text{Column (9)}}$
**** 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. 1457

Date 4-12-38

Chart and Reading No. (1)	Time (2)	Stop Watch in 400 ft. minutes (3)	*** Engine Crankshaft R. P. M. (4)	Drive Wheel Slippage: Left Wheel Counter Reading (5)	Left Wheel Rev. in 400 ft. (6)	Right Wheel Counter Reading (7)	Right Wheel Rev. in 400 ft. (8)	Av. Rev. Columns 6 and 8 (9)	** Distance Traveled (Feet) (10)	Distance Measured on Ground (Feet) (11)	** Slippage % Columns 10 and 11 (12)	Speed: Feet per Minute (13)	Speed: Miles per Hour (14)	Average Draft Pounds (15)	Drawbar Horsepower (16)	Temperature Degrees F.: * Cooling Fluid (17)	Temperature Degrees F.: Atmosphere (18)	Fuel Used Pounds (19)	Water Used Pounds (20)
****Observer																			
Stop	2 28	Fuel																	
Start	2 42	14	Run																
	2 43	1.32		0580		5931													
				0740	240	6208	27.7	28.35											
3S	2 53	1.25		1080	240	6478	240	24.0				296.6	3.37	2181	19.60	204	74		
3N	3 00	1.36		1376	24.6	6785	28.7	24.65								208	74		
Stop	3 34	Power	drive	to	Dyn.	out	working												
Start	3 43	Run																	
4S	3 45	1.33		1662	28.6	7068	29.3	28.95				296.4	3.37	2270	20.39	160	69		
4N	3 51	1.37		1967	30.5	7364	29.6	30.05								160	69		
5S	4 27	1.32		2248	28.1	7654	29.0	28.55								140	65		
5N	4 32	1.33		2541	29.3	7938	28.4	28.85				295.7	3.36	2204	19.76	140	65		
6S	5 04	1.32		2831	29.0	8219	28.1	28.55				300.5	3.41	2174	19.80	140	64		
6N	5 09	1.32		3125	29.4	8502	28.3	28.85								140	64		
STOP	5 34																		
	5 35	Stop	1800	101															

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.
** The first figure in this column is calculated at the rim of the wheel, and the second figure at point of the lugs.
*** Engine R. P. M. = $\frac{\text{Gear Ratio} \times \text{Column (3)}}{\text{Column (9)}}$
**** 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. 1487

Date 4-16-28

Chart and Reading No. (1)	Time (2)	Stop Watch in 400 ft. minutes (3)	*** Engine Crankshaft R. P. M. (4)	Drive Wheel Slippage: Left Wheel Counter Reading (5)	Left Wheel Rev. in 400 ft. (6)	Right Wheel Counter Reading (7)	Right Wheel Rev. in 400 ft. (8)	Av. Rev. Columns 6 and 8 (9)	** Distance Traveled (Feet) (10)	Distance Measured on Ground (Feet) (11)	** Slippage % Columns 10 and 11 (12)	Speed: Feet per Minute (13)	Speed: Miles per Hour (14)	Average Draft Pounds (15)	Drawbar Horsepower (16)	Temperature Degrees F. * Cooling Fluid (17)	Temperature Degrees F. Atmosphere (18)	Fuel Used Pounds (19)	Water Used Pounds (20)
****Observer	4-16-28																		
	8.21	Start	Motor																
	8.31	"	Test.																
				3125		8502													
7S	8.54	1.31		3407	28.2	8783	28.1	28.15				301.0	3.42	2197	20.04	164	44		
7N	8.59	1.315		3690	28.3	9063	28.0	28.15								164	44		
8S	9.15	1.3175		3972	28.2	9344	28.1	28.15				303	3.42	2226	21.32	168	50		
8N	9.20	1.31		4254	28.2	9624	28.0	28.10								168	50		
9S	10.00	1.30		4535	28.1	9906	28.2	28.15				306.2	3.48	2217	20.57	168	50		
9N	10.05	1.3075		4817	28.2	0186	28.0	28.10								166	50		
10S	10.42	1.305		5098	28.1	0466	28.0	28.05				305.5	3.47	2160	20.00	170	54		
10N	10.47	1.30		5380	28.2	0747	28.1	28.15								170	54		
	10.51	End of Test																	
	10.52	Stop engine																	
Total	10.44																	~~244.37~~ 244.24	20.66
Avg.		1.324	1100					28.~~15~~ 62	4229	400	5.39	300.4	3.41	2201	20.04	183	63		

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* Taken in discharge line from engine.
** The first figure in this column is calculated at the rim of the wheel, and the second figure at point of the lugs.
*** Engine R. P. M. = $\frac{\text{Gear Ratio x Column (3)}}{\text{Column (9)}}$
**** 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 Maximum Date April 16, 1928 Test No 1489

Name, model and rating of tractor Lauson 20-35

Serial No. Engine 201-19 Serial No. Chassis 3800

Manufacturer John Lauson Mfg Co. New Holstein, Wis.

Tractor submitted for test by " " " " " "

Tractor equipment Am Bosch "ZR4" Mag., Tillotson "RJ" Carb.

Style and dimension of lugs Spade 32 per Wheel 5"H x 3"W x 6"L 6" Ext. Rims

Circumference of drive wheels, at face 12.52' Point of lugs 15.12'

Tractor operated by Laub Dynamometer car operated by Wallace

Dynamometer used Gulley Load used Dyn. Car & Old Avery

Kind of fuel Gasoline Test No — W.t per gal 6.20 lbs.

Kind and grade of oil used in engine Mobiloil BB

Kind and grade of oil used in transmission "C"

Humidity — per cent. Barometric pressure High 28.35 Low 28.19 inches.

Temperature of atmosphere High 55 Low 60 Temperature of engine High 176 Low 175

Weather conditions Fair

Condition of track Fair, a little loose for low gear maximum

Fuel Consumption:

Total for test, gal — Gals. per hour —

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

Water Consumption:

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. 1489

F. H. Kant. Operator. Lew Wallace Observer.

Operator. Observer.

Lew Wallace
Engineer-in-charge

THE UNIVERSITY OF NEBRASKA
DEPARTMENT OF AGRICULTURAL ENGINEERING
Log of Official Tractor Drawbar Horse Power Test No. 489

Date April 16, 1928

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				High Gear				Max.											
36	11 42	1.345		6813 7102	28.9	2166 2451	28.5	28.7				2912	3.38	3813	3214	176	65		
4N	11 57	1.325		7389	28.7	2736	28.5	28.6				3019	3.49	3805	3059	176	55		
Avg.		1.335	1093					28.65	473.2	400	5.48	300.05	3.41	3259	2771	176	55		
							Low	Gear	Maximum										
2S	3 10	2.45		8362 9494	33.2	3683 4000	31.7	32.45				1876	2.13	5145	2908	170	60		
3N	3 20	2.26		10138	34.4	4343	34.3	34.35				1787	2.03	5145	2727	180	60		
Avg.		2.2025	1133					33.4	473.3	400	1891	183.2	2.08	5140	2853	175	60		

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*** Engine R. P. M. = $\frac{\text{Gear Ratio} \times \text{Column (3)}}{\text{Column (9)}}$

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