

ENGINEERING DEPARTMENT

Calculated

Date: 1-15-1940

Reading No.	Time of day	Crank- shaft R. P. M. Ratio to pulley —	Engine Belt Pulley Speed		Surface speeds, ft. per min.	Brake Belt Pulley Speed		Belt slippage, %	Net brake load, pounds	Brake Horsepower	Fuel		Water used, pounds	Temperature		
			Eff. circum. =			Eff. circum. =					Scale reading, pounds	Amount used, pounds		Radiator, Deg. F.	Atmosphere, Deg. F.	
			Counter reading	R. P. M.		Counter reading	R. P. M.									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
46	7:30		1735 3098	1363		1043 1909	866			80.4		147.19	—		178	53
2	:40		4455	1357		2772	863			80.6	23.19	144.83	2.36	0.611	179	53
3	:50		5815	1360		3637	865			80.3		142.50	2.33		180	55
4	8:00		7177	1362		4504	867			80.0		140.14	2.36		181	56
5	:10		8559	1382		5383	879			80.0		137.76	2.38		177	52
47	:20		9928	1369		6255	872			79.9		135.39	—		180	50
7	:30		1297	1369		7125	870			79.8		133.00	2.39		181	50
8	:40		2660	1363		7989	864			80.0		130.63	2.37		181	50
9	:50		4023	1363		8857	868			80.0	23.09	128.25	2.38		179	48
10																
44	9:20		5376	1353		9717	860			79.4		121.46	—		181	55
12	:30		6740	1364		0583	866			79.5	22.86	119.14	2.32	0.609	180	51
13	:40		8100	1360		1451	868			79.5		116.83	2.31		181	51
Total	48 10:10		9463	1363		2319	868			80.3		197.28	—		179	51
Average	:20		0816	1353		3179	860			80.5		194.89	2.39		180	50

FUEL	
Lbs. per gal.....	
Lbs. per hr.....	
Gals. per test.....	
Gals. per hr.....	
H. p. hrs. per gal.....	
Lbs. per h. p. hr.....	

CARB. ADJ., Turns Open	
H. s.	l. s.

WATER	
Gals. per test.....	
Gals. per hr.....	

BAROMETER	
29.420" Hg at 9:00p.m.	
"Hg at	
"Hg at	
Use	

Remarks: _____

2.362 Eng. pulley circum.

Ford 9N

$$3.722$$

$$\text{Belt thickness } \frac{3.5}{128} = 0.195$$

$$0.195 = 0.0163 \times 1.4 = 0.0228$$

$$\frac{12}{2.362 \div \pi} = 0.7518$$

$$0.0228$$

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers *D.*Calculated *C.L.Z., H.M.*Log of Official Tractor Brake Horsepower Test No. **339**Date *April 11, 1940*

(1)	(2)	(3)	Engine Belt Pulley Speed		(6)	Brake Belt Pulley Speed		(9)	(10)	(11)	(12)	Fuel		(15)	Temperature	
			Eff. circum. = 2.433	Ratio to pulley		Eff. circum. = 3.793	Ratio to pulley					Scale readings, pounds	Amount used, pounds		Radiator, Deg. F.	Atmosphere, Deg. F.
	Time of day		Counter reading	R. P. M.	Surface speeds, ft. per min.	Counter reading	R. P. M.	Surface speeds, ft. per min.	Belt slippage, %	Net brake load, pounds	Brake Horsepower			Water used, pounds		
57 matches	10:15		7328	1353		1885	860			81.5	23.36	169.80	-		183	52
2	10:25		8687	1359		2751	866			81.8	23.61	167.37	2.43	0.618	183	51
3	:35		0051	1364		3619	868			81.8	23.67	164.93	2.44	0.619	181	49
4	:45		1411	1360		4485	866			82.0	23.67	162.48	2.45		183	52
60 matches	10:55		2778	1367		5356	871					160.01				
6	11:05		4132	1354		6217	861			83.2	23.88	157.47	2.54	0.638	184	53
7	:15			1335		7065	848			83.3	-	155.00	2.47		184	52
8	:25		6827	1360		7931	866			82.4	23.79	152.58	2.42		183	51
9	:35		8182	1355		8794	863			82.7	23.79	150.09	2.49		183	51
10	12:20		9539	1357		9658	864			82.0	23.62	139.12	-		182	50
11	12:30		0894	1345		0519	861			82.0	23.53	136.67	2.45		184	52
12	12:40		2248	1354		1380	861			82.0	23.53	134.20	2.47		185	52
13	12:50		3600	1352		2240	860			82.2	23.56	131.76	2.44		184	52
Total																
Average																

FUEL

Lbs. per gal.
Lbs. per hr.
Gals. per test.
Gals. per hr.
H. p. hrs. per gal.
Lbs. per h. p. hr.

WATER

Gals. per test.
Gals. per hr.

BAROMETER

29.295 "Hg at 8:30 A.M. B.

"Hg at

"Hg at

Use

CARB. ADJ., Turns Open

H. s. l. s.

Remarks:

Pulley to engine reduction
 $\frac{20}{55} \times 28 = 5600$ or 1.4732 engine to 1 pulley.
 $\frac{55}{15} = 8250$
 $2000 \div 1.4732 = 1357.6$ r.p.m. B.

ord 97

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers *W. J. Jack*
Calculated

Log of Official Tractor Brake Horsepower Test No. *339*

Date *April 11, 1940*

Reading No.	Time of day	Crank-shaft R. P. M. Ratio to pulley	Engine Belt Pulley Speed			Brake Belt Pulley Speed			Belt slippage, %	Net brake load, pounds	Brake Horsepower	Fuel		Water used, pounds	Temperature	
			Eff. circum. =	Counter reading	R. P. M.	Surface speeds, ft. per min.	Eff. circum. =	Counter reading	R. P. M.	Surface speeds, ft. per min.		Scale reading, pounds	Amount used, pounds		Radiator, Deg. F.	Atmosphere, Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
<i>51 notches</i> 1	<i>1:00</i>		<i>3600</i> <i>5064</i>	<i>1164</i>		<i>2240</i> <i>3172</i>	<i>932</i>			<i>82.0</i>	<i>25.47</i>	<i>131.76</i> <i>124.34</i>	<i>2.42</i>		<i>185</i>	<i>54</i>
2	<i>:10</i>		<i>6418</i>	<i>1354</i>		<i>4034</i>	<i>862</i>			<i>82.1</i>		<i>126.91</i>	—		<i>183</i>	<i>51</i>
3	<i>:20</i>		<i>7763</i>	<i>1345</i>		<i>4888</i>	<i>854</i>			<i>82.1</i>	<i>23.37</i>	<i>124.51</i>	<i>2.40</i>		<i>185</i>	<i>54</i>
4	<i>:30</i>		<i>9121</i>	<i>1358</i>		<i>5751</i>	<i>863</i>			<i>81.8</i>	<i>23.53</i>	<i>122.09</i>	<i>2.42</i>		<i>183</i>	<i>52</i>
5	<i>:40</i>		<i>0459</i>	—		<i>6618</i>	<i>867</i>			<i>81.6</i>		<i>119.69</i>	—		<i>184</i>	<i>53</i>
<i>47 notches</i> 6	<i>:50</i>		<i>1808</i>	<i>1349</i>		<i>7468</i>	<i>850</i>			<i>81.6</i>	<i>23.12</i>	<i>117.34</i>	<i>2.35</i>		<i>184</i>	<i>53</i>
7	<i>2:00</i>		<i>3165</i>	<i>1357</i>		<i>8331</i>	<i>863</i>			<i>81.5</i>	<i>23.44</i>	<i>114.97</i>	<i>2.37</i>	<i>0.607</i>	<i>183</i>	<i>52</i>
8	<i>:10</i>		<i>4525</i>	<i>1360</i>		<i>9194</i>	<i>863</i>			<i>81.4</i>		<i>112.60</i>	<i>2.37</i>		<i>183</i>	<i>53</i>
<i>Advanced spark</i> 9	<i>:20</i>		<i>5875</i>	<i>1350</i>		<i>0054</i>	<i>860</i>			<i>81.0</i>	<i>23.22</i>	<i>110.25</i>	<i>2.35</i>		<i>185</i>	<i>54</i>
<i>Retarded *</i> 10	<i>:30</i>		<i>7232</i>	<i>1357</i>		<i>0917</i>	<i>863</i>			<i>81.7</i>	<i>23.50</i>	<i>107.86</i>	<i>2.39</i>		<i>183</i>	<i>54</i>
11	<i>:40</i>		<i>8592</i>	<i>1360</i>		<i>1783</i>	<i>866</i>			<i>81.7</i>		<i>105.48</i>	<i>2.38</i>		<i>182</i>	<i>52</i>
<i>52 notches</i> 12	<i>50</i>		<i>9944</i>	<i>1352</i>		<i>2643</i>	<i>860</i>			<i>82.1</i>	<i>23.54</i>	<i>103.07</i>	—		<i>183</i>	<i>54</i>
13	<i>3:00</i>		<i>1302</i>	<i>1358</i>		<i>3506</i>	<i>863</i>			<i>82.2</i>	<i>23.65</i>	<i>100.66</i>	<i>2.41</i>		<i>183</i>	<i>52</i>
Total																
Average																

FUEL	
Lbs. per gal.....	
Lbs. per hr.....	
Gals. per test.....	
Gals. per hr.....	
H. p. hrs. per gal.....	
Lbs. per h. p. hr.....	

WATER	
Gals. per test.....	
Gals. per hr.....	

BAROMETER	
<i>29.375</i> "Hg at <i>1:15 P.M.</i>	
"Hg at	
"Hg at	
Use	

Remarks: *Back to just a hair more retard than original setting.*

CARB. ADJ., Turns Open	
H. s.	I. s.

Hunting for H.P.
UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers *D. Hm. James 1940*

Calculated

Ford 9N

Log of Official Tractor Brake Horsepower Test No. *339*

Date *April 11, 1940*

Reading No.	Time of day	Crank-shaft R. P. M. Ratio to pulley —	Engine Belt Pulley Speed			Brake Belt Pulley Speed			Belt slippage, %	Net brake load, pounds	Brake Horsepower	Fuel		Water used, pounds	Temperature	
			Eff. circum. = <i>2.433</i>		Surface speeds, ft. per min.	Eff. circum. = <i>3.793</i>		Surface speeds, ft. per min.				Scale reading, pounds	Amount used, pounds		Radiator, Deg. F.	Atmosphere, Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
<i>56 matches</i>	<i>3:10</i>		<i>2670</i>	<i>1368</i>		<i>4376</i>	<i>870</i>			<i>82.3</i>	<i>23.86</i>	<i>98.19</i>	—		<i>183</i>	<i>52</i>
<i>2</i>	<i>3:20</i>		<i>4029</i>	<i>1350</i>		<i>5240</i>	<i>864</i>			<i>82.2</i>	<i>23.67</i>	<i>95.71</i>	<i>2.48</i>		<i>184</i>	<i>54</i>
<i>3</i>	<i>3:30</i>		<i>5383</i>	<i>1354</i>	<i>3294</i>	<i>6108</i>	<i>868</i>	<i>3292</i>	<i>0.06</i>	<i>82.0</i>	<i>23.73</i>	<i>93.25</i>	<i>2.46</i>	<i>0.622</i>	<i>185</i>	<i>54</i>
<i>4</i>	<i>:40</i>		<i>6728</i>	—		<i>6976</i>	<i>868</i>			<i>82.0</i>	<i>23.73</i>	<i>90.78</i>	<i>2.47</i>		<i>184</i>	<i>54</i>
<i>* 5</i>						<i>7829</i>						<i>191.21</i>			<i>184</i>	<i>54</i>
<i>62 matches</i>	<i>4:10</i>			<i>1360</i>		<i>8087</i>	<i>867</i>	<i>#</i>		<i>82.4</i>	<i>23.81</i>	<i>196.21</i>			<i>184</i>	<i>54</i>
<i>7</i>	<i>:20</i>			<i>1365</i>		<i>8954</i>	<i>867</i>			<i>82.1</i>		<i>193.71</i>			<i>186</i>	<i>57</i>
<i>8</i>	<i>:30</i>		<i>4085</i>	<i>1359</i>		<i>9817</i>	<i>863</i>			<i>82.1</i>	<i>23.62</i>	<i>191.14</i>	<i>2.57</i>		<i>185</i>	<i>56</i>
<i>9</i>	<i>:40</i>		<i>5446</i>	<i>1361</i>		<i>0683</i>	<i>866</i>			<i>82.1</i>		<i>188.71</i>	—		<i>183</i>	<i>54</i>
<i>56 matches</i>	<i>:50</i>		<i>6799</i>	<i>1353</i>		<i>1543</i>	<i>860</i>			<i>82.2</i>		<i>186.24</i>	<i>2.47</i>		<i>184</i>	<i>54</i>
<i>11</i>	<i>5:00</i>															
<i>12</i>																
<i>13</i>																
Total																
Average																

FUEL	
Lbs. per gal.	
Lbs. per hr.	
Gals. per test.	
Gals. per hr.	
H. p. hrs. per gal.	
Lbs. per h. p. hr.	

WATER	
Gals. per test.	
Gals. per hr.	

BAROMETER	
"Hg at	
"Hg at	
"Hg at	
Use	

CARB. ADJ., Turns Open	
H. s.	I. s.

Remarks: ** Installed new counter.*
tachometer.

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers *Jack, R.*

Calculated *GLZ, HM.*

Log of Official Tractor Brake Horsepower Test No.

Date *April 11, 1940*

Reading No.	Time of day	Crank-shaft R. P. M. Ratio to pulley — ✓	Engine Belt Pulley Speed			Brake Belt Pulley Speed			Belt slippage, %	Net brake load, pounds	Brake Horsepower	Fuel		Water used, pounds	Temperature	
			Eff. circum. = <i>2.433</i> ✓	Counter reading	R. P. M.	Eff. circum. = <i>3.793</i> ✓	Counter reading	R. P. M.				Scale reading, pounds	Amount used, pounds		Radiator, Deg. F.	Atmosphere, Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	<i>4:40</i>	<i>14732</i>	<i>4085</i>	<i>1361</i>		<i>9817</i>				<i>82.1</i>		<i>188.71</i>	—		<i>183</i>	<i>54</i>
2	<i>:50</i>			<i>6799</i>	<i>1353</i>		<i>1543</i>	<i>860</i>		<i>82.2</i>		<i>186.24</i>	<i>2.47</i>		<i>184</i>	<i>54</i>
3	<i>5:00</i>			<i>8159</i>	<i>1360</i>		<i>2410</i>	<i>867</i>		<i>81.9</i>		<i>183.82</i>	<i>2.42</i>		<i>186</i>	<i>56</i>
4	<i>:10</i>			<i>9513</i>	<i>1354</i>		<i>3272</i>	<i>862</i>		<i>82.1</i>		<i>181.36</i>	<i>2.46</i>		<i>185</i>	<i>55</i>
5	<i>13:20</i>			<i>0857</i>	<i>1344</i>		<i>4127</i>	<i>855</i>		<i>82.6</i>		<i>178.93</i>	<i>2.43</i>		<i>185</i>	<i>55</i>
6	<i>:30</i>			<i>2212</i>	<i>1355</i>		<i>4988</i>	<i>861</i>		<i>81.9</i>		<i>176.52</i>	<i>2.41</i>		<i>185</i>	<i>54</i>
7	<i>13:40</i>			<i>3571</i>	<i>1359</i>		<i>5853</i>	<i>865</i>		<i>81.7</i>		<i>174.07</i>	<i>2.45</i>		<i>188</i>	<i>58</i>
8	<i>13:50</i>			<i>4954</i>	<i>1383</i>		<i>6731</i>	<i>878</i>		<i>81.0</i>		<i>171.66</i>	<i>2.41</i>		<i>183</i>	<i>56</i>
9	<i>6:00</i>			<i>6312</i>	<i>1358</i>		<i>7594</i>	<i>863</i>		<i>82.0</i>		<i>169.21</i>	<i>2.45</i>		<i>180</i>	<i>55</i>
10	<i>13:10</i>			<i>7667</i>	<i>1355</i>		<i>8455</i>	<i>861</i>		<i>81.6</i>		<i>166.76</i>	<i>2.45</i>		<i>180</i>	<i>56</i>
11	<i>6:10</i>			<i>9018</i>	<i>1351</i>		<i>9316</i>	<i>861</i>		<i>81.7</i>		<i>164.28</i>	<i>2.48</i>		<i>181</i>	<i>54</i>
12	<i>8:10</i>			<i>0377</i>	<i>1359</i>		<i>0180</i>	<i>864</i>		<i>81.5</i>		<i>161.82</i>	<i>2.46</i>		<i>180</i>	<i>52</i>
13	<i>:40</i>			<i>1735</i>	<i>1358</i>		<i>1043</i>	<i>863</i>		<i>81.6</i>		<i>159.36</i>	<i>2.46</i>		<i>178</i>	<i>52</i>
Total				<i>17650</i> ✓			<i>11226</i> ✓			<i>1063.9</i> ✓			<i>29.35</i>	<i>0.00</i>	<i>2398</i>	<i>711</i> ✓
Average		<i>2000</i> ✓		<i>1357.7</i>	<i>3303</i> ✓		<i>863.5</i>	<i>3275</i>	<i>0.85</i>	<i>81.84</i>	<i>23.56</i> ✓				<i>183</i>	<i>55</i> ✓

FUEL	
Lbs. per gal.....	<i>6.03</i>
Lbs. per hr.....	<i>14.675</i>
Gals. per test.....	<i>4.867</i>
Gals. per hr.....	<i>2.434</i>
H. p. hrs. per gal.....	<i>9.68</i>
Lbs. per h. p. hr.....	<i>0.623</i> ✓

WATER	
Gals. per test.....	<i>0.000</i>
Gals. per hr.....	<i>0.000</i>

BAROMETER	
<i>29.370</i> "Hg at <i>5:10 P.M.</i>	<i>29.390</i> "Hg at <i>6:00 P.M.</i>
<i>29.390</i> "Hg at <i>6:00 P.M.</i>	<i>29.405</i> "Hg at <i>6:40 P.M.</i>
Use <i>29.390</i>	

Remarks: *29.920 = 1.0180* ✓

29.390

515 = 0.99038 ✓

520

1.99038 = 0.99518 ✓

0.99518 × 1.0180 = 1.013 ✓

23.56 × 1.013 =

23.87 ✓

23.87 × 0.85 =

= 20.29 ✓

Rated.

CARB. ADJ., Turns Open	
H. s. <i>56</i>	L. s. <i>15/8</i>

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers *Jack, D.*

Calculated *C.L.Z., H.M.*

Log of Official Tractor Brake Horsepower Test No. *339C*

Date *April 11, 1940*

Reading No.	Time of day	Crank-shaft R. P. M. Ratio to pulley —	Engine Belt Pulley Speed			Brake Belt Pulley Speed			Belt slippage, %	Net brake load, pounds	Brake Horsepower	Fuel		Water used, pounds	Temperature	
			Eff. circum. = <i>2.433</i>	Counter reading	R. P. M.	Eff. circum. = <i>3.793</i>	Counter reading	R. P. M.				Scale reading, pounds	Amount used, pounds		Radiator, Deg. F.	Atmosphere, Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	<i>10:10</i>	<i>14732</i>	<i>8100</i>	<i>9463</i>	<i>1363</i>	<i>1451</i>	<i>868</i>			<i>80.3</i>		<i>197.28</i>	—		<i>179</i>	<i>51</i>
2	<i>11:20</i>			<i>0816</i>	<i>1353</i>		<i>3179</i>	<i>860</i>		<i>80.5</i>		<i>194.89</i>	<i>2.39</i>		<i>180</i>	<i>50</i>
3	<i>11:30</i>			<i>2167</i>	<i>1351</i>		<i>4040</i>	<i>861</i>		<i>80.4</i>		<i>192.52</i>	<i>2.37</i>		<i>179</i>	<i>51</i>
4	<i>11:40</i>			<i>3519</i>	<i>1352</i>		<i>4899</i>	<i>859</i>		<i>80.2</i>		<i>190.14</i>	<i>2.38</i>		<i>180</i>	<i>52</i>
5	<i>11:50</i>			<i>4871</i>	<i>1352</i>		<i>5759</i>	<i>860</i>		<i>80.3</i>		<i>187.75</i>	<i>2.39</i>		<i>179</i>	<i>51</i>
6	<i>11:00</i>			<i>6239</i>	<i>1368</i>		<i>6630</i>	<i>871</i>		<i>79.4</i>		<i>185.39</i>	<i>2.36</i>		<i>179</i>	<i>50</i>
7	<i>11:10</i>			<i>7609</i>	<i>1370</i>		<i>7500</i>	<i>870</i>		<i>79.7</i>		<i>183.00</i>	<i>2.39</i>		<i>179</i>	<i>51</i>
8																
9																
10																
11																
12																
13																
Total				<i>9509</i>	<i>1353</i>		<i>6049</i>	<i>868</i>		<i>80.3</i>		<i>14.28</i>	<i>0.00</i>		<i>1255</i>	<i>356</i>
Average		<i>2001</i>		<i>1358.4</i>	<i>3305</i>		<i>864.1</i>	<i>3278</i>	<i>0.82</i>	<i>80.11</i>	<i>23.07</i>				<i>179</i>	<i>51</i>

FUEL	
Lbs. per gal.....	<i>6.03</i>
Lbs. per hr.....	<i>14.28</i>
Gals. per test.....	<i>2.368</i>
Gals. per hr.....	<i>2.368</i>
H. p. hrs. per gal.....	<i>9.74</i>
Lbs. per h. p. hr.....	<i>0.619</i>

WATER	
Gals. per test.....	<i>0.000</i>
Gals. per hr.....	<i>0.000</i>

BAROMETER	
"Hg at	
"Hg at	
"Hg at	
Use <i>29.410</i>	<i>D</i>

CARB. ADJ., Turns Open	
H. s. <i>48</i>	<i>1 7/8</i>

Remarks:

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers *Jack, B.*
Calculated *C.L.Z., H.M.*

Ford 9N

Log of Official Tractor Brake Horsepower Test No. *3396*

Date *April 12, 1940*

Reading No.	Time of day	Crank-shaft R. P. M. Ratio to pulley	Engine Belt Pulley Speed		Surface speeds, ft. per min.	Brake Belt Pulley Speed		Surface speeds, ft. per min.	Belt slippage, %	Net brake load, pounds	Brake Horsepower	Fuel		Temperature		
			Eff. circum. = 2.433	R. P. M.		Eff. circum. = 3.793	R. P. M.					Scale reading, pounds	Amount used, pounds	Barometer, in. Hg.	Atmosphere, Deg. F.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	12:50			1346		2680	855			70.7		159.40	2.30	13.89	171	50
2	1:00		7092	1349		3539	859			70.3		157.07	2.33	2.301	170	50
3													4.63	8.75		
4		1985		1347.5	3278		857	3251	0.83	70.5	20.14			0.690	171	50
5	1:10		8573	1481		4486	947			6.7		155.89	1.19	7.23	140	50
6	:20		0041	1468		5425	939			6.7		154.66	1.23	1.199	130	50
7													2.41	1.76		
8		2172		1474.5	2025		943	3577	0.00	6.7	2.11			3.427	135	50
9	:30		1470	1429		6334	909			35.0		152.98	1.68	10.14	143	48
10	:40		2899	1429		7245	911			35.0		151.28	1.70	1.682	149	48
11													3.38	6.31		
12		2105		1429	3477		910	3452	0.72	35.0	10.62		1.69	0.955	146	48
13																
Total																
Average																

FUEL

Lbs. per gal. *6.08*

Lbs. per hr.

Gals. per test.

Gals. per hr.

H. p. hrs. per gal.

Lbs. per h. p. hr.

WATER

Gals. per test.

Gals. per hr.

BAROMETER

"Hg at

"Hg at

"Hg at

Use

CARB. ADJ., Turns Open

H. s. I. s.

Remarks:

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Log of Official Tractor Brake Horsepower Test No.

Observers *Tock, D.*

Calculated *C. L. R. H. M.*

Date *April 12, 1940*

3390

Ford 9N

Reading No.	Time of day	Crank-shaft R. P. M. Ratio to pulley	Engine Belt Pulley Speed			Brake Belt Pulley Speed			Belt slippage, %	Net brake load, pounds	Brake Horsepower	Fuel		Temperature		
			Eff. circum. = 2.433	Surface speeds, ft. per min.	Eff. circum. = 3.793	Surface speeds, ft. per min.	Scale readings, pounds	Amount used, pounds				Boiler water used pounds	Radiators Deg. F.	Atmosphere, Deg. F.		
			Counter reading		R. P. M.										Counter reading	R. P. M.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	1:50	14732	4172	1273		8053	808			82.2		149.00	2.28	13.65	177	51
2	2:00		5440	1268		8861	808			82.2		146.73	2.27	13.64	179	50
3													4.55	9.78		
4		1872		1270.5	3091		808	3065	0.85	82.2	22.14			0.617	178	51
5	1:10		6893	1453		9787	926			17.6		145.36	1.37	8.22	135	48
6	1:20		8339	1446		0709	922			17.8		143.99	1.37	1.368	138	48
7													2.74	4.00		
8		2135		1449.5	3526		924	3505	0.60	17.7	5.45		1.37	1.508	137	48
9	1:30		7735	1396		1600	891			52.6		141.99	2.00	13.00	156	43
10	1:40		1140	1405		2494	894			52.0		139.99	2.00	1.990	158	48
11													4.00	7.82		
12		2063		1400.5	3407		892.5	3385	0.65	52.3	15.56			0.771	157	48
13																
Total				1674.30			10669.0				76.02		21.71		1848	590
Average		2056		1395.3	3395		889.1	3372	0.68		12.67				154	49

FUEL	
Lbs. per gal.....	6.03
Lbs. per hr.....	10.855
Gals. per test.....	3.600
Gals. per hr.....	1.800
H. p. hrs. per gal.....	7.04
Lbs. per h. p. hr.....	0.857

WATER	
Gals. per test.....	0.000
Gals. per hr.....	0.000

BAROMETER	
29.400" Hg at 12 midnight	
29.375" Hg at 2:30 H. M.	
"Hg at	
Use 29.385	

Remarks:

Friction - 320# at 868 r.p.m = 7.26 h.p.

CARB. ADJ., Turns Open	
H. s. 48	170

UNIVERSITY OF NEBRASKA—AGRICULTURAL ENGINEERING DEPARTMENT
AGRICULTURAL COLLEGE, LINCOLN

Observers *Jack, D.*
Calculated *C.L.R., H.M.*

Log of Official Tractor Brake Horsepower Test No.

Date *April 12, 1940*

Ford 9N.

339 d

Reading No.	Time of day	Crankshaft R. P. M. Ratio to pulley — <i>1.4732</i>	Engine Belt Pulley Speed		Surface speeds, ft. per min.	Brake Belt Pulley Speed		Surface speeds, ft. per min.	Belt slippage, %	Net brake load, pounds	Brake Horsepower	Fuel		Water used, pounds	Temperature	
			Eff. circum. = <i>2.433</i>	R. P. M.		Eff. circum. = <i>3.793</i>	R. P. M.					Scale reading, pounds	Amount used, pounds		Radiator, Deg. F.	Atmosphere, Deg. F.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	<i>12:00</i>		<i>8972</i>	<i>1363</i>		<i>8369</i>	<i>869</i>			<i>70.6</i>		<i>171.00</i>			<i>171</i>	<i>50</i>
2	<i>:10</i>		<i>0330</i>	<i>1358</i>		<i>9236</i>	<i>867</i>			<i>70.4</i>		<i>168.65</i>	<i>2.35</i>		<i>173</i>	<i>54</i>
3	<i>:20</i>		<i>1691</i>	<i>1361</i>		<i>0101</i>	<i>865</i>			<i>69.5</i>		<i>166.35</i>	<i>2.30</i>		<i>171</i>	<i>51</i>
4	<i>9:30</i>		<i>3045</i>	<i>1354</i>		<i>0964</i>	<i>853</i>			<i>70.4</i>		<i>164.02</i>	<i>2.33</i>		<i>171</i>	<i>52</i>
5	<i>:40</i>		<i>4397</i>	<i>1362</i>		<i>1825</i>	<i>861</i>			<i>70.8</i>		<i>161.70</i>	<i>2.32</i>		<i>170</i>	<i>49</i>
6	<i>:50</i>		<i>5743</i>	<i>1346</i>		<i>2680</i>	<i>855</i>			<i>70.7</i>		<i>159.40</i>	<i>2.30</i>		<i>171</i>	<i>50</i>
7	<i>1:00</i>		<i>7092</i>	<i>1349</i>		<i>3539</i>	<i>859</i>			<i>70.3</i>		<i>157.07</i>	<i>2.33</i>		<i>170</i>	<i>50</i>
8																
9																
10																
11																
12																
13																
Total		<i>8</i>	<i>7483</i>			<i>6039</i>	<i>2</i>			<i>67.93</i>	<i>49.27</i>		<i>13.93</i>	<i>0.00</i>	<i>1199</i>	<i>356</i>
Average		<i>1998</i>	<i>13547</i>	<i>3298</i>	<i>6.1</i>	<i>8627</i>	<i>1.3</i>	<i>32.72</i>	<i>0.73</i>	<i>70.39</i>	<i>20.24</i>				<i>171</i>	<i>51</i>

FUEL	
Lbs. per gal.	<i>6.03</i>
Lbs. per hr.	<i>13.93</i>
Gals. per test.	<i>2.310</i>
Gals. per hr.	<i>2.310</i>
H. p. hrs. per gal.	<i>8.75</i>
Lbs. per h. p. hr.	<i>0.6829</i>
CARB. ADJ., Turns Open <i>5/10</i>	
H. s. <i>48 neck</i> 3 l. s.	

WATER	
Gals. per test.	<i>0.000</i>
Gals. per hr.	<i>0.000</i>
BAROMETER	
<i>29.400</i> "Hg at <i>12 midnight</i>	
"Hg at	
"Hg at	
Use	

Remarks:
