Tank Wagon Ethyl - 1929

54 - 59	1	5
60 - 65	3	6
66 -	1	7
	50	

$$Nu_1 = \frac{97}{50} = 1.940000$$

$$Nu_2 = \frac{365}{50} = 7.300000$$

$$(Nu_1)^2 = 3.763600$$

$$Pi_2 = 7.300000 - 3.76360$$

$$Sigma = 1.880532 \times 6 = 11.$$

$$P.E._{sig.} = \frac{.67449 \times 11.283192}{10}$$

$$= \pm .761040$$

$$mean = 1.94 \times 6 + 27 = 38$$

$$P.E._m = \frac{.67449 \times 11.283192}{\sqrt{50}}$$

$$= \frac{7.610400}{7.071067}$$

$$= \pm 1.076273$$

mean = 38.640 ± 1.08 year

S.D. = 11.283 ± .761 year

220 - $\frac{1}{49}$ 6

No information 1

$$Nu_1 = \frac{109}{49} = 2.224490$$

$$Nu_2 = \frac{349}{49} = 7.122449$$

$$(Nu_1)^2 = 4.948356$$

$$Pi_2 = 2.174093$$

Sigma = 1.474481 x 15 = 22

$$P.E._{sig.} = \frac{.67449 \times 22.117215}{\sqrt{98}}$$

$$= \frac{14.917840}{9.899495}$$

$$= \pm 1.506929$$

mean = 2.224490 x 15 + 13

= 170.867350

$$P.E._m = \frac{14.917840}{7}$$

$$= \pm 2.131120$$

mean = 170.867 ± 2.131 po

S.D. = 22.117 ± 1.507 pou

74 - 74.9	0	9
75 -	1	10
	49	

No information 1

$$Nu_1 = \frac{205}{49} = 4.183673$$

$$Nu_2 = \frac{1105}{49} = 22.551020$$

$$(Nu_1)^2 = 17.503120$$

$$Pi_2 = 5.047900$$

Sigma = 2.246753 inches

$$P.E._{sig.} = \frac{.67449 \times 2.246753}{\sqrt{98}}$$

$$= \frac{1.515412}{9.899495}$$

$$= \pm .153080$$

mean = 4.183673 x 1 + 65.5

= 69.683673 inches

$$P.E._m = \frac{1.515412}{7}$$

$$= \pm .216487$$

mean = 69.684 ± .216 inche

S.D. = 2.247 ± .153 inches

.20 - .239	0	5
.24 - .279	1	6
.28 - .319	1	7
.32 - .359	1	8
.36 - .399	0	9
.40 - .439	0	10
.44 - .479	0	11
.48 - .519	1	12
.52 -	1	13
	40	

No information 10

$$Nu_1 = \frac{80}{40} = 2.000000$$

$$Nu_2 = \frac{524}{40} = 13.100000$$

$$(Nu_1)^2 = 4.000000$$

$$Pi_2 = 13.100000 - 4 =$$

$$Sigma = \sqrt{9.1} = 3.01620 =$$

$$P.E._{sig.} = \frac{.67449 \times .01}{\sqrt{80}} =$$

$$= \pm .0007$$

$$mean = 2.0 \times .04 + .02$$

$$P.E._m = \frac{.67449 \times .01}{6.324555}$$

$$= \frac{.007}{6.324555}$$

$$= \pm .001$$

mean = .10 ± .001 mgs.

S.D. = .01 ± .0007 mgs.

.20 - .239	2	5
.24 - .279	1	6
.28 - .319	1	7
.32 - .359	1	8
.36 - .399	0	9
.40 - .439	0	10
.44 - .479	0	11
.48 -	1	12
	40	

No information 10

$$Nu_{1x} = \frac{108}{40} = 2.700000$$

$$Nu_{2x} = \frac{504}{40} = 12.600000$$

$$(Nu_{1x})^2 = 7.290000$$

$$Pi_2 = 5.310000$$

$$\text{Sigma} = 2.304344 \times .04$$

$$= .092174 \text{ mgs.}$$

$$P.E._{sig.} = \frac{.67449 \times .09217}{\sqrt{80}}$$

$$= \frac{.062184}{8.944272}$$

$$= \pm .006953$$

$$\text{mean} = 2.700000 \times .04$$

$$= .128000 \text{ mgs. Pb}$$

$$P.E._{m} = \frac{.67449 \times .09217}{\sqrt{40}}$$

$$= \frac{.062184}{6.324555}$$

$$= \pm .009832$$

$$\text{mean} = .128 \pm .009 \text{ mgs}$$

$$\text{S.D.} = .092 \pm .007 \text{ mgs}$$

.20 - .239	1	5
.24 - .279	1	6
.28 - .319	0	7
.32 - .359	0	8
.36 - .399	0	9
.40 - .439	1	10
.44 - .479	0	11
.48 - .519	9	12
.52 -	2	13
	33	

No information 17

$$Nu_1 = \frac{92}{33} = 3.787878$$

$$Nu_2 = \frac{606}{33} = 18.363636$$

$$(Nu_1)^2 = 14.348020$$

$$Pi_2 = 18.363636 - 14.3$$

$$Sigma = 2.003900 \times .04 =$$

$$P.E._{sig.} = \frac{.67449 \times .08}{\sqrt{66}}$$

$$= \frac{.054}{8.124}$$

$$= \pm .006$$

$$mean = 3.787878 \times .04 +$$

$$= .17$$

$$P.E._{m} = \frac{.67449 \times .08}{\sqrt{33}}$$

$$= \frac{.054}{5.745} = \pm .009$$

$$mean = .17 \pm .009 \text{ mgs.}$$

$$S.D. = .08 \pm .006 \text{ mgs.}$$

.20 - .239	1	5
.24 - .279	1	6
.28 - .319	0	7
.32 - .359	0	8
.36 - .399	0	9
.40 - .439	1	10
.44 - .479	0	11
.48 - .519	0	12
.52 -	1	13
	32	

Excluding case No. 150

$$Nu_1 = \frac{79}{32} = 2.468750$$

$$Nu_2 = \frac{437}{32} = 13.656250$$

$$(Nu_1)^2 = 6.094727$$

$$Pi_2 = 13.656250 - 6.09$$

$$Sigma = 2.749822 \times .04 =$$

$$P.E._{sig.} = \frac{.67449 \times .11}{\sqrt{64}}$$

$$= \frac{.074}{8.000}$$

$$= \pm .009$$

$$mean = 2.468750 \times .04 +$$

$$= .118750$$

$$= .119$$

$$P.E._m = \frac{.67449 \times .11}{\sqrt{32}}$$

$$= \frac{.074}{5.657} = \pm .013$$

$$mean = .119 \pm .013 \text{ mgs.}$$

$$S.D. = .11 \pm .009 \text{ mgs.}$$

.24 - .319	6	3
.32 - .399	6	4
.40 - .479	2	5
.48 - .559	5	6
.56 - .639	2	7
.64 - .719	1	8
.72 - .799	0	9
.80 - .879	0	10
.88 - .959	0	11
.96 -1.039	0	12
1.04 -	1	13
	32	

No information 17

$$Nu_{1x} = \frac{129}{32} = 4.031250$$

$$Nu_{2x} = \frac{731}{32} = 22.843750$$

$$(Nu_{1x})^2 = 16.250977$$

$$Pi_2 = 6.592773$$

$$Sigma = 2.567340 \times .08$$

$$P.E._{sig.} = \frac{.67449 \times .20538}{\sqrt{64}}$$

$$= \pm .017441$$

$$mean = 4.031250 \times .08$$

$$= .362500 \text{ mgs. Pb}$$

$$P.E._{m} = \frac{.67449 \times .20538}{\sqrt{32}}$$

$$= \pm .024489$$

$$mean = .363 \pm .024 \text{ mgs}$$

$$S.D. = .205 \pm .017 \text{ mgs}$$

78 - 79.9	4	6
80 - 81.9	4	7
82 - 83.9	3	8
84 - 85.9	8	9
86 - 87.9	2	10
88 - 89.9	13	11
90 - 91.9	4	12
92 -	5	13
	49	

No information 1

$$Nu_1 = \frac{442}{49} = 9.020408$$

$$Nu_2 = \frac{4444}{49} = 90.693877$$

$$(Nu_1)^2 = 81.367760$$

$$Pi_2 = 9.326117$$

$$\text{Sigma} = 3.053869 \times 2 = 6.107$$

$$\text{P.E.}_{\text{sig.}} = \frac{.67449 \times 6.107738}{\sqrt{98}}$$

$$= \frac{4.119608}{9.899495}$$

$$= \pm .416143$$

$$\text{mean} = 9.020408 \times 2 + 67$$

$$= 85.040816\% \text{ DARE}$$

$$\text{P.E.}_{m} = \frac{4.119608}{7}$$

$$= \pm .588515$$

$$\text{mean} = 85.041 \pm .588\% \text{ DARE}$$

$$\text{S.D.} = 6.108 \pm .416\% \text{ DARE}$$

110 - 119	2	6
120 - 129	7	7
130 - 139	0	8
140 - 149	2	9
150 -	1	10
	40	

No information 10

$$Nu_1 = \frac{186}{40} = 4.650000$$

$$Nu_2 = \frac{1072}{40} = 26.800000$$

$$(Nu_1)^2 = 21.622500$$

$$Pi_2 = 5.177500$$

$$\text{Sigma} = 2.275412 \times 10 = 2$$

$$\text{P.E.}_{\text{sig.}} = \frac{.67449 \times 22.7541}{\sqrt{80}}$$

$$= \frac{15.347426}{8.944271}$$

$$= \pm 1.715895$$

$$\text{mean} = 4.65 \times 10 + 55$$

$$= 101.500 \text{ dynam. de}$$

$$\text{P.E.}_{\text{m}} = \frac{15.347426}{6.324555}$$

$$= \pm 2.426641$$

$$\text{mean} = 101.500 \pm 2.427 \text{ d}$$

$$\text{S.D.} = 22.754 \pm 1.716 \text{ dy}$$

130 - 139	5	6
140 - 149	2	7
150 - 159	2	8
160 -	1	9
	40	

No information 10

$$Nu_1 = \frac{156}{40} = 3.900000$$

$$Nu_2 = \frac{808}{40} = 20.200000$$

$$(Nu_1)^2 = 15.210000$$

$$Pi_2 = 4.990000$$

$$Sigma = 2.233831 \times 10 = 2$$

$$P.E._{sig.} = \frac{.67449 \times 22.3383}{\sqrt{80}}$$

$$= \frac{15.066967}{8.944271}$$

$$= \pm 1.684538$$

$$mean = 3.9 \times 10 + 75$$

$$= 114.000 \text{ dynam. de}$$

$$P.E._m = \frac{15.066967}{\sqrt{40}} = \frac{15.06}{6.32}$$

$$= \pm 2.382297$$

$$mean = 114.000 \pm 2.382 d$$

$$S.D. = 22.338 \pm 1.684 dy$$

55 - 59	0	5
60 - 64	5	6
65 - 69	0	7
70 - 74	2	8
75 - 79	0	9
80 -	4	10
	46	

No information 4

$$Nu_1 = \frac{171}{46} = 3.717391$$

$$Nu_2 = \frac{985}{46} = 21.413043$$

$$(Nu_1)^2 = 13.818996$$

$$Pi_2 = 7.594047$$

$$Sigma = 2.755730 \times 5 = 13.7$$

$$P.E._{sig.} = \frac{.67449 \times 13.778650}{\sqrt{92}}$$

$$= \frac{9.293562}{9.591663}$$

$$= \pm .968921$$

$$mean = 3.717391 \times 5 + 32.5$$

$$= 51.086955 \text{ mm. Hg}$$

$$P.E._m = \frac{9.293562}{\sqrt{46}}$$

$$= \frac{9.293562}{6.782329}$$

$$= \pm 1.370261$$

$$mean = 51.087 \pm 1.370 \text{ mm.}$$

$$S.D. = 13.779 \pm .969 \text{ mm.}$$

150 - 159	2	5
160 - 169	3	6
170 - 179	0	7
180 -	2	8
	46	

No information 4

$$Nu_1 = \frac{117}{46} = 2.543478$$

$$Nu_2 = \frac{469}{46} = 10.195652$$

$$(Nu_1)^2 = 6.469280$$

$$Pi_2 = 3.726372$$

$$Sigma = 1.930381 \times 10 = 1$$

$$P.E._{sig.} = \frac{.67449 \times 19.30381}{\sqrt{92}}$$

$$= \frac{13.020227}{9.591663}$$

$$= \pm 1.357453$$

$$mean = 2.543478 \times 10 + 1$$

$$= 130.43478 \text{ mm. Hg}$$

$$P.E._m = \frac{13.020227}{\sqrt{46}}$$

$$= \frac{13.020227}{6.782329}$$

$$= \pm 1.919728$$

$$mean = 130.435 \pm 1.920 \text{ m}$$

$$S.D. = 19.304 \pm 1.357 \text{ mm}$$

90 - 99	11	5
100 - 109	6	6
110 -	1	7
	50	

No information - 0

$$Nu_1 = \frac{198}{50} = 3.960000$$

$$Nu_2 = \frac{880}{50} = 17.600000$$

$$(Nu_1)^2 = 15.681600$$

$$Pi_2 = 1.918400$$

$$Sigma = 1.385063 \times 10 = 1$$

$$P.E._{sig.} = \frac{.67449 \times 13.85063}{\sqrt{100}}$$

$$= \frac{9.342111}{10}$$

$$= \pm .9342111$$

$$mean = 3.96 \times 10 + 45$$

$$= 84.6$$

$$P.E._{m} = \frac{.67449 \times 13.85063}{\sqrt{50}}$$

$$= \frac{9.342111}{7.071067}$$

$$= \pm 1.321174$$

mean = 84.600 ± 1.321 be

S.D. = 13.851 ± .934 beat

99 - 99.4	11	5
99.5 - 99.9	3	6
100 -	1	7
	48	

No information 2

$$Nu_1 = \frac{189}{48} = 3.937500$$

$$Nu_2 = 16.937500$$

$$(Nu_1)^2 = 15.503906$$

$$Pi_2 = 1.433594$$

$$Sigma = 1.197328 \times .5 = .5$$

$$P.E._{sig.} = \frac{.67449 \times .598664}{\sqrt{96}}$$

$$= \frac{.403793}{9.797958}$$

$$= \pm .041212$$

$$mean = 3.937500 \times .5 + 9$$

$$= 99.468750^{\circ} F.$$

$$P.E._m = \frac{.403793}{\sqrt{48}}$$

$$= \frac{.403793}{6.928203}$$

$$= \pm .058283$$

$$mean = 99.468 \pm .058$$

$$S.D. = .599 \pm .041$$