

APPENDIX H VESSEL LENGTH AND ANCHORAGE STATISTICAL ANALYSIS

Port of Oakland Ship Calls to/from Anchorage 2023

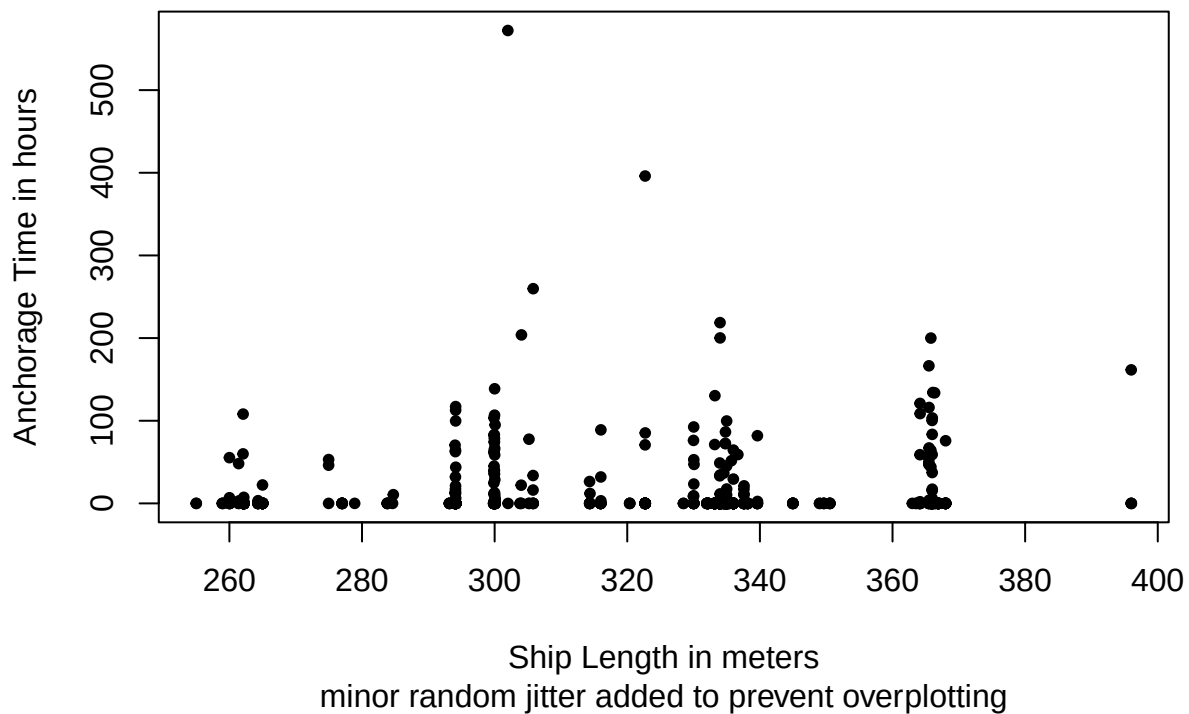
2025-01-24

```
library(readxl)
Anchor_LOA <- read_excel("Anchor_LOA.xlsx")
View(Anchor_LOA)

anchorF <- Anchor_LOA[Anchor_LOA$LOA > 250, ]

plot(jitter(anchorF$LOA), jitter(anchorF$AncTime), pch=20,
     main="Duration at Anchorage by Ship Length --2023", xlab="Ship Length in meters", ylab="Anchorage Time in hours")
```

Duration at Anchorage by Ship Length --2023



```
atAnchorF <- anchorF[anchorF$AncTime > 0, ]
modelF <- lm(AncTime ~ LOA, data = anchorF)

anchorF.time.model <- lm(anchorF$AncTime ~ anchorF$LOA)

usageF.model <- glm(anchorF$AncTime > 0 ~ anchorF$LOA, family=binomial())
summary(usageF.model)
```

##

```
## Call:
## glm(formula = anchorF$AncTime > 0 ~ anchorF$LOA, family = binomial())
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept) -2.13565    0.99978  -2.136  0.0327 *
## anchorF$LOA  0.00153    0.00311   0.492  0.6228
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##    Null deviance: 717.24  on 810  degrees of freedom
## Residual deviance: 717.00  on 809  degrees of freedom
## AIC: 721
##
## Number of Fisher Scoring iterations: 3
```

```
summary(anchorF.time.model)
```

```
##
## Call:
## lm(formula = anchorF$AncTime ~ anchorF$LOA)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -14.94 -11.29 -10.15  -7.10  562.79
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) -8.75698    13.71149  -0.639   0.523
## anchorF$LOA  0.05984     0.04278   1.399   0.162
##
## Residual standard error: 37.56 on 809 degrees of freedom
## Multiple R-squared:  0.002413,    Adjusted R-squared:  0.00118
## F-statistic: 1.957 on 1 and 809 DF,  p-value: 0.1622
```

TEU	LOA	AncTime
6724	302	572.1
10055	322.7	396.0667
6589	305.8	259.7667
8084	333.99	218.6833
6661	304.06	203.8333
8084	333.99	200.1667
14036	365.8	200.0167
13830	365.5	166.4333
16022	396	161.5167
8827	300	138.6833
13798	366.07	134.1667
13102	366.36	133.7667
8241	333.2	130.3333
14052	364.15	120.95
5095	294.1	117.1167
13830	365.5	116.0667
5095	294.12	112.7667
14052	364.15	108.6333
4255	262.06	108.0667
8827	299.98	106.7167
9034	299.92	103.4833
15128	366	103.35
14414	365.96	100.3667
5095	294.12	99.73333
13248	335	99.71667
8827	300.07	95.03333
11010	330	92.46667
8560	316	88.91667
8508	334.8	86.43333
10055	322.7	85.26667
15128	365.98	83.5
8827	299.96	83.01667
9411	299.89	82.63333
8566	339.62	81.88333
8819	299.99	78.58333
8560	305.19	77.66667
11010	330	76.2
14080	368	75.8
8827	299.97	74.85
8827	299.95	73.81667
8508	334.8	72.48333
8508	334.8	72.35
8241	333.2	71.2

10055	322.7	70.83333
5085	294.03	70.38333
13830	365.5	67.08333
8819	300	66.75
6588	299.95	64.93333
8212	336	64.51667
5095	294.1	64.28333
12400	365.8	64.16667
5095	294.1	62.63333
9408	299.9	61.78333
4255	262.06	59.86667
14414	366	59.1
9178	336.67	59.08333
14052	364.15	58.9
8827	300	58.63333
13830	365.5	57.15
4253	260	55.3
13830	365.5	54.35
4870	274.98	53.03333
11010	330.03	52.83333
8208	335.7	51.63333
13830	365.5	49.73333
12118	333.96	48.91667
4275	261.4	48.11667
11010	330.06	47.15
13830	365.5	47.05
4870	274.98	46.2
8452	334.98	45.21667
9411	299.9	45.06667
14036	365.8	44.1
5095	294.12	43.8
8827	299.96	40.13333
8827	299.96	39.78333
6492	299.9	39.08333
15128	366	37.31667
8930	334.55	36.68333
6588	299.95	35.96667
8827	299.97	35.35
12118	334	34.38333
6589	305.8	33.7
11888	333.95	33.31667
5095	294.1	32.1
8560	316	31.96667
2556	210.07	30.38333

8212	336	29.45
7471	300.04	28.7
11142	314.33	26.48333
6552	299.89	24.75
11010	330.03	23.43333
3884	228	22.81667
3500	265	22.28333
6763	304	22.03333
11294	337.6	21.23333
4888	294.12	21.15
1730	169.96	18.11667
9466	334.98	17.4
5095	294.1	17.26667
15128	365.98	17.2
11294	337.6	17.18333
6589	305.8	16.16667
15000	366	15.51667
5059	294.1	14.05
1092	155	13.3
8827	299.97	12.9
5085	294.03	12.48333
5095	294.1	12.08333
11142	314.36	12.03333
9411	299.89	11.55
11714	334	11.5
11294	337.6	11.2
11294	337.6	10.6
5610	284.71	10.53333
8452	334.98	10.33333
3013	203.5	10.18333
7024	300	10.16667
2831	217	9.633333
11923	330	9.166667
11010	330	8.533333
8930	334.55	8.45
1994	262.18	7.3
4253	260	6.85
4882	294.12	6.2
15128	365.98	5.733333
7471	300.07	5.616667
3884	228	3.8
13830	365.5	3.8
4616	264.32	3.266667
8560	316	3.116667

4275	261.4	3
9162	299.99	3
8566	339.62	2.366667
3027	262.18	2.333333
6552	299.89	2.116667
14052	364.15	2
8974	334.55	1.866667
2019	217	1.516667
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1092	155	0
1092	155	0
1092	155	0
1092	155	0
1092	155	0
1092	155	0
1092	155	0
1092	155	0
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1092	155	0
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1740	175.49	0
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1994	262.18	0

[illegible]

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[illegible]

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4616	264.32	0
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4882	294.12	0
4882	294	0
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4882	294.12	0
4882	294	0
4882	294.12	0
4882	294.12	0
4882	294	0
4882	294.12	0
4888	294.12	0

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[illegible]

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