# ssric - 678751252 - EasterEgg-How Long To Catch Up To Schedule

## The GENMOD Procedure

| Model Information | |
|---|---|
| **Data Set** | HW3.EASTEREGG |
| **Distribution** | Poisson |
| **Link Function** | Log |
| **Dependent Variable** | EndSeq |
| **Offset Variable** | EndSeq |

| | |
|---|---|
| **Number of Observations Read** | 51147 |
| **Number of Observations Used** | 51147 |

| Class Level Information | | |
|---|---|---|
| **Class** | **Levels** | **Values** |
| **FirstDelayCause** | 5 | CarrierDelay LateAircraft NASDelay SecurityDela WeatherDelay |
| **FirstOrigin** | 291 | ABE ABI ABQ ABR ABY ACK ACT ACV ACY ADQ AEX AGS ALB ALO AMA ANC APN ASE ATL ATW AUS AVL AVP AZO BDL BET BFL BGR BHM BIL BIS BJI BLI BMI BNA BOI BOS BPT BQK BQN BRD BRO BTM BTR BTV BUF BUR BWI BZN CAE CAK CDC CDV CHA CHO CHS CID CIU CLE CLL CLT CMH CMI ... |

| Criteria For Assessing Goodness Of Fit | | | |
|---|---|---|---|
| **Criterion** | **DF** | **Value** | **Value/DF** |
| **Deviance** | 51E3 | 128570.2730 | 2.5284 |
| **Scaled Deviance** | 51E3 | 128570.2730 | 2.5284 |
| **Pearson Chi-Square** | 51E3 | 206489.0568 | 4.0607 |
| **Scaled Pearson X2** | 51E3 | 206489.0568 | 4.0607 |
| **Log Likelihood** | | -52224.4342 | |
| **Full Log Likelihood** | | -137282.3450 | |
| **AIC (smaller is better)** | | 275156.6901 | |
| **AICC (smaller is better)** | | 275160.1478 | |
| **BIC (smaller is better)** | | 277774.0580 | |

Algorithm converged.

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## The GENMOD Procedure

| Analysis Of Maximum Likelihood Parameter Estimates | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Parameter | | DF | Estimate | Standard Error | Wald 95% Confidence Limits | | Wald Chi-Square | Pr > ChiSq |
| Intercept | | 1 | -2.8563 | 0.1800 | -3.2091 | -2.5035 | 251.78 | <.0001 |
| SequenceDist | | 1 | -0.0007 | 0.0000 | -0.0007 | -0.0007 | 74697.9 | <.0001 |
| FirstDelayCause | CarrierDelay | 1 | 0.0035 | 0.0119 | -0.0198 | 0.0268 | 0.09 | 0.7694 |
| FirstDelayCause | LateAircraft | 1 | 0.2925 | 0.0120 | 0.2689 | 0.3160 | 593.12 | <.0001 |
| FirstDelayCause | NASDelay | 1 | 0.0447 | 0.0133 | 0.0186 | 0.0709 | 11.26 | 0.0008 |
| FirstDelayCause | SecurityDela | 1 | -0.0847 | 0.0560 | -0.1944 | 0.0251 | 2.29 | 0.1305 |
| FirstDelayCause | WeatherDelay | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | . | . |
| FirstOrigin | ABE | 1 | 1.7480 | 0.2540 | 1.2502 | 2.2458 | 47.36 | <.0001 |
| FirstOrigin | ABI | 1 | 1.1202 | 0.2206 | 0.6878 | 1.5525 | 25.79 | <.0001 |
| FirstOrigin | ABQ | 1 | 0.7296 | 0.1851 | 0.3668 | 1.0923 | 15.54 | <.0001 |
| FirstOrigin | ABR | 1 | 0.5398 | 0.3078 | -0.0636 | 1.1431 | 3.07 | 0.0795 |
| FirstOrigin | ABY | 1 | 1.1625 | 0.3400 | 0.4961 | 1.8288 | 11.69 | 0.0006 |
| FirstOrigin | ACK | 1 | 0.8411 | 0.3221 | 0.2098 | 1.4724 | 6.82 | 0.0090 |
| FirstOrigin | ACT | 1 | -1.0413 | 0.2314 | -1.4948 | -0.5878 | 20.25 | <.0001 |
| FirstOrigin | ACV | 1 | 1.4190 | 0.4185 | 0.5987 | 2.2392 | 11.50 | 0.0007 |
| FirstOrigin | ACY | 1 | 1.9812 | 0.2083 | 1.5730 | 2.3894 | 90.48 | <.0001 |
| FirstOrigin | ADQ | 1 | 1.7206 | 0.7296 | 0.2907 | 3.1505 | 5.56 | 0.0184 |
| FirstOrigin | AEX | 1 | 1.3209 | 0.2102 | 0.9090 | 1.7329 | 39.50 | <.0001 |
| FirstOrigin | AGS | 1 | 0.6442 | 0.2277 | 0.1978 | 1.0906 | 8.00 | 0.0047 |
| FirstOrigin | ALB | 1 | 1.2885 | 0.2013 | 0.8939 | 1.6831 | 40.96 | <.0001 |
| FirstOrigin | ALO | 1 | -0.1199 | 0.3145 | -0.7364 | 0.4966 | 0.15 | 0.7030 |
| FirstOrigin | AMA | 1 | 0.2441 | 0.2058 | -0.1593 | 0.6475 | 1.41 | 0.2356 |
| FirstOrigin | ANC | 1 | 1.3937 | 0.1930 | 1.0154 | 1.7719 | 52.16 | <.0001 |
| FirstOrigin | APN | 1 | 1.2730 | 0.4820 | 0.3283 | 2.2177 | 6.98 | 0.0083 |
| FirstOrigin | ASE | 1 | 1.7657 | 0.7296 | 0.3358 | 3.1957 | 5.86 | 0.0155 |
| FirstOrigin | ATL | 1 | 1.4244 | 0.1799 | 1.0717 | 1.7770 | 62.67 | <.0001 |
| FirstOrigin | ATW | 1 | 1.5634 | 0.2262 | 1.1202 | 2.0067 | 47.79 | <.0001 |
| FirstOrigin | AUS | 1 | 1.0260 | 0.1816 | 0.6701 | 1.3818 | 31.92 | <.0001 |
| FirstOrigin | AVL | 1 | 0.9830 | 0.2719 | 0.4501 | 1.5160 | 13.07 | 0.0003 |
| FirstOrigin | AVP | 1 | 1.4788 | 0.2719 | 0.9459 | 2.0118 | 29.57 | <.0001 |
| FirstOrigin | AZO | 1 | 1.4472 | 0.3637 | 0.7343 | 2.1601 | 15.83 | <.0001 |
| FirstOrigin | BDL | 1 | 1.5541 | 0.1881 | 1.1855 | 1.9228 | 68.29 | <.0001 |
| FirstOrigin | BET | 1 | 1.2755 | 0.3400 | 0.6091 | 1.9419 | 14.07 | 0.0002 |
| FirstOrigin | BFL | 1 | 0.0355 | 0.2072 | -0.3706 | 0.4416 | 0.03 | 0.8640 |

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## The GENMOD Procedure

| Analysis Of Maximum Likelihood Parameter Estimates | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Parameter | | DF | Estimate | Standard Error | Wald 95% Confidence Limits | | Wald Chi-Square | Pr > ChiSq |
| FirstOrigin | BGR | 1 | 1.9491 | 0.3637 | 1.2363 | 2.6619 | 28.72 | <.0001 |
| FirstOrigin | BHM | 1 | 1.4233 | 0.1905 | 1.0500 | 1.7967 | 55.83 | <.0001 |
| FirstOrigin | BIL | 1 | 1.7791 | 0.2826 | 1.2252 | 2.3331 | 39.62 | <.0001 |
| FirstOrigin | BIS | 1 | 1.0195 | 0.2420 | 0.5451 | 1.4939 | 17.74 | <.0001 |
| FirstOrigin | BJI | 1 | 1.5299 | 0.5313 | 0.4885 | 2.5713 | 8.29 | 0.0040 |
| FirstOrigin | BLI | 1 | 2.0090 | 0.2752 | 1.4696 | 2.5484 | 53.29 | <.0001 |
| FirstOrigin | BMI | 1 | 1.2315 | 0.2752 | 0.6920 | 1.7709 | 20.02 | <.0001 |
| FirstOrigin | BNA | 1 | 1.3445 | 0.1820 | 0.9877 | 1.7012 | 54.55 | <.0001 |
| FirstOrigin | BOI | 1 | 0.7205 | 0.1922 | 0.3438 | 1.0972 | 14.05 | 0.0002 |
| FirstOrigin | BOS | 1 | 1.1246 | 0.1808 | 0.7702 | 1.4791 | 38.67 | <.0001 |
| FirstOrigin | BPT | 1 | 1.5872 | 0.2561 | 1.0852 | 2.0891 | 38.40 | <.0001 |
| FirstOrigin | BQK | 1 | 1.0768 | 0.3510 | 0.3890 | 1.7647 | 9.41 | 0.0022 |
| FirstOrigin | BQN | 1 | 2.2210 | 0.2255 | 1.7791 | 2.6629 | 97.04 | <.0001 |
| FirstOrigin | BRD | 1 | -0.0352 | 0.4819 | -0.9798 | 0.9093 | 0.01 | 0.9417 |
| FirstOrigin | BRO | 1 | 0.9147 | 0.2131 | 0.4970 | 1.3324 | 18.42 | <.0001 |
| FirstOrigin | BTM | 1 | 1.6382 | 0.5313 | 0.5969 | 2.6795 | 9.51 | 0.0020 |
| FirstOrigin | BTR | 1 | 0.5891 | 0.1909 | 0.2149 | 0.9633 | 9.52 | 0.0020 |
| FirstOrigin | BTV | 1 | -0.0587 | 0.2159 | -0.4818 | 0.3645 | 0.07 | 0.7858 |
| FirstOrigin | BUF | 1 | 1.3052 | 0.1906 | 0.9316 | 1.6788 | 46.89 | <.0001 |
| FirstOrigin | BUR | 1 | 0.5567 | 0.1886 | 0.1871 | 0.9263 | 8.72 | 0.0032 |
| FirstOrigin | BWI | 1 | 1.2183 | 0.1806 | 0.8644 | 1.5723 | 45.51 | <.0001 |
| FirstOrigin | BZN | 1 | 1.2795 | 0.3966 | 0.5022 | 2.0567 | 10.41 | 0.0013 |
| FirstOrigin | CAE | 1 | 1.3459 | 0.2024 | 0.9492 | 1.7426 | 44.22 | <.0001 |
| FirstOrigin | CAK | 1 | 1.5016 | 0.2058 | 1.0982 | 1.9050 | 53.22 | <.0001 |
| FirstOrigin | CDC | 1 | 1.5443 | 0.3966 | 0.7671 | 2.3216 | 15.16 | <.0001 |
| FirstOrigin | CDV | 1 | 1.6564 | 0.7296 | 0.2265 | 3.0863 | 5.15 | 0.0232 |
| FirstOrigin | CHA | 1 | 0.9314 | 0.2127 | 0.5144 | 1.3483 | 19.17 | <.0001 |
| FirstOrigin | CHO | 1 | 1.7009 | 0.3078 | 1.0975 | 2.3042 | 30.53 | <.0001 |
| FirstOrigin | CHS | 1 | 1.5989 | 0.1901 | 1.2263 | 1.9715 | 70.73 | <.0001 |
| FirstOrigin | CID | 1 | 1.3622 | 0.2030 | 0.9644 | 1.7600 | 45.05 | <.0001 |
| FirstOrigin | CIU | 1 | 1.1809 | 0.3220 | 0.5498 | 1.8121 | 13.45 | 0.0002 |
| FirstOrigin | CLE | 1 | 1.4528 | 0.1830 | 1.0941 | 1.8115 | 63.03 | <.0001 |
| FirstOrigin | CLL | 1 | 0.7299 | 0.2541 | 0.2318 | 1.2279 | 8.25 | 0.0041 |
| FirstOrigin | CLT | 1 | 1.6453 | 0.1808 | 1.2908 | 1.9997 | 82.77 | <.0001 |

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### The GENMOD Procedure

| | | | | | Wald 95% Confidence Limits | | | |
|---|---|---|---|---|---|---|---|---|
| **Analysis Of Maximum Likelihood Parameter Estimates** | | | | | | | | |
| **Parameter** | | **DF** | **Estimate** | **Standard Error** | | | **Wald Chi-Square** | **Pr > ChiSq** |
| **FirstOrigin** | CMH | 1 | 1.3125 | 0.1850 | 0.9498 | 1.6752 | 50.31 | <.0001 |
| **FirstOrigin** | CMI | 1 | 0.5473 | 0.2467 | 0.0639 | 1.0307 | 4.92 | 0.0265 |
| **FirstOrigin** | CMX | 1 | 1.6210 | 0.5313 | 0.5796 | 2.6623 | 9.31 | 0.0023 |
| **FirstOrigin** | COD | 1 | 1.4360 | 0.2659 | 0.9148 | 1.9572 | 29.16 | <.0001 |
| **FirstOrigin** | COS | 1 | 1.5276 | 0.1933 | 1.1487 | 1.9065 | 62.45 | <.0001 |
| **FirstOrigin** | COU | 1 | 1.3607 | 0.2421 | 0.8862 | 1.8352 | 31.59 | <.0001 |
| **FirstOrigin** | CPR | 1 | 1.5090 | 0.3966 | 0.7318 | 2.2863 | 14.48 | 0.0001 |
| **FirstOrigin** | CRP | 1 | -0.1089 | 0.1948 | -0.4907 | 0.2729 | 0.31 | 0.5762 |
| **FirstOrigin** | CRW | 1 | 1.2696 | 0.2225 | 0.8336 | 1.7057 | 32.56 | <.0001 |
| **FirstOrigin** | CSG | 1 | 0.6856 | 0.3018 | 0.0941 | 1.2772 | 5.16 | 0.0231 |
| **FirstOrigin** | CVG | 1 | 1.3342 | 0.1849 | 0.9718 | 1.6966 | 52.06 | <.0001 |
| **FirstOrigin** | CWA | 1 | 0.6957 | 0.2869 | 0.1334 | 1.2580 | 5.88 | 0.0153 |
| **FirstOrigin** | DAB | 1 | 0.7195 | 0.2964 | 0.1385 | 1.3004 | 5.89 | 0.0152 |
| **FirstOrigin** | DAL | 1 | 0.3777 | 0.1805 | 0.0240 | 0.7314 | 4.38 | 0.0363 |
| **FirstOrigin** | DAY | 1 | 1.2296 | 0.1956 | 0.8461 | 1.6130 | 39.50 | <.0001 |
| **FirstOrigin** | DBQ | 1 | 0.7246 | 0.4461 | -0.1497 | 1.5989 | 2.64 | 0.1043 |
| **FirstOrigin** | DCA | 1 | 1.3350 | 0.1813 | 0.9796 | 1.6903 | 54.21 | <.0001 |
| **FirstOrigin** | DEN | 1 | 1.5316 | 0.1801 | 1.1785 | 1.8846 | 72.30 | <.0001 |
| **FirstOrigin** | DFW | 1 | 1.3121 | 0.1799 | 0.9595 | 1.6647 | 53.20 | <.0001 |
| **FirstOrigin** | DHN | 1 | 1.1256 | 0.2868 | 0.5634 | 1.6877 | 15.40 | <.0001 |
| **FirstOrigin** | DIK | 1 | 1.0460 | 0.3637 | 0.3332 | 1.7588 | 8.27 | 0.0040 |
| **FirstOrigin** | DLH | 1 | 1.4955 | 0.3400 | 0.8291 | 2.1619 | 19.35 | <.0001 |
| **FirstOrigin** | DRO | 1 | 1.2598 | 0.2239 | 0.8210 | 1.6986 | 31.67 | <.0001 |
| **FirstOrigin** | DSM | 1 | 1.5587 | 0.1969 | 1.1729 | 1.9446 | 62.69 | <.0001 |
| **FirstOrigin** | DTW | 1 | 1.2687 | 0.1807 | 0.9146 | 1.6229 | 49.30 | <.0001 |
| **FirstOrigin** | EAU | 1 | 1.5319 | 0.3510 | 0.8440 | 2.2199 | 19.05 | <.0001 |
| **FirstOrigin** | ECP | 1 | 0.8173 | 0.2019 | 0.4216 | 1.2129 | 16.39 | <.0001 |
| **FirstOrigin** | EKO | 1 | 1.5291 | 0.5313 | 0.4878 | 2.5704 | 8.28 | 0.0040 |
| **FirstOrigin** | ELM | 1 | 1.4860 | 0.2583 | 0.9797 | 1.9924 | 33.09 | <.0001 |
| **FirstOrigin** | ELP | 1 | 0.9964 | 0.1882 | 0.6274 | 1.3653 | 28.02 | <.0001 |
| **FirstOrigin** | ERI | 1 | 1.6398 | 0.3637 | 0.9269 | 2.3526 | 20.32 | <.0001 |
| **FirstOrigin** | ESC | 1 | 0.4617 | 0.3787 | -0.2805 | 1.2040 | 1.49 | 0.2228 |
| **FirstOrigin** | EUG | 1 | 0.9506 | 0.2031 | 0.5526 | 1.3486 | 21.92 | <.0001 |
| **FirstOrigin** | EVV | 1 | 1.4850 | 0.2246 | 1.0448 | 1.9252 | 43.71 | <.0001 |

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## The GENMOD Procedure

| Parameter | | DF | Estimate | Standard Error | Wald 95% Confidence Limits | | Wald Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|---|---|
| **Analysis Of Maximum Likelihood Parameter Estimates** | | | | | | | | |
| FirstOrigin | EWN | 1 | 1.3372 | 0.3787 | 0.5951 | 2.0794 | 12.47 | 0.0004 |
| FirstOrigin | EWR | 1 | 1.7539 | 0.1806 | 1.4000 | 2.1078 | 94.34 | <.0001 |
| FirstOrigin | EYW | 1 | 0.4971 | 0.2520 | 0.0031 | 0.9910 | 3.89 | 0.0486 |
| FirstOrigin | FAI | 1 | 2.5651 | 0.3220 | 1.9339 | 3.1962 | 63.45 | <.0001 |
| FirstOrigin | FAR | 1 | 1.5399 | 0.2261 | 1.0967 | 1.9831 | 46.38 | <.0001 |
| FirstOrigin | FAT | 1 | 1.0387 | 0.1955 | 0.6555 | 1.4219 | 28.22 | <.0001 |
| FirstOrigin | FAY | 1 | 0.1634 | 0.2688 | -0.3635 | 0.6903 | 0.37 | 0.5432 |
| FirstOrigin | FCA | 1 | 1.8788 | 0.3786 | 1.1367 | 2.6209 | 24.62 | <.0001 |
| FirstOrigin | FLG | 1 | 1.1773 | 0.3510 | 0.4894 | 1.8652 | 11.25 | 0.0008 |
| FirstOrigin | FLL | 1 | 1.9263 | 0.1813 | 1.5710 | 2.2815 | 112.95 | <.0001 |
| FirstOrigin | FNT | 1 | 1.4693 | 0.2261 | 1.0261 | 1.9125 | 42.22 | <.0001 |
| FirstOrigin | FSD | 1 | 1.4412 | 0.2123 | 1.0250 | 1.8573 | 46.07 | <.0001 |
| FirstOrigin | FSM | 1 | 1.3683 | 0.2380 | 0.9018 | 1.8348 | 33.05 | <.0001 |
| FirstOrigin | FWA | 1 | 0.6319 | 0.2102 | 0.2199 | 1.0438 | 9.04 | 0.0026 |
| FirstOrigin | GCC | 1 | 0.9271 | 0.4185 | 0.1068 | 1.7474 | 4.91 | 0.0267 |
| FirstOrigin | GCK | 1 | 1.6371 | 0.2963 | 1.0563 | 2.2180 | 30.52 | <.0001 |
| FirstOrigin | GEG | 1 | 1.1318 | 0.2047 | 0.7307 | 1.5329 | 30.58 | <.0001 |
| FirstOrigin | GFK | 1 | 1.3435 | 0.6046 | 0.1584 | 2.5286 | 4.94 | 0.0263 |
| FirstOrigin | GGG | 1 | 0.9833 | 0.3787 | 0.2411 | 1.7254 | 6.74 | 0.0094 |
| FirstOrigin | GJT | 1 | 1.2041 | 0.2393 | 0.7350 | 1.6731 | 25.31 | <.0001 |
| FirstOrigin | GNV | 1 | 0.6596 | 0.2788 | 0.1131 | 1.2060 | 5.60 | 0.0180 |
| FirstOrigin | GPT | 1 | 1.2429 | 0.2116 | 0.8281 | 1.6576 | 34.49 | <.0001 |
| FirstOrigin | GRB | 1 | 0.9790 | 0.2304 | 0.5273 | 1.4306 | 18.05 | <.0001 |
| FirstOrigin | GRI | 1 | 1.2088 | 0.3146 | 0.5921 | 1.8255 | 14.76 | 0.0001 |
| FirstOrigin | GRK | 1 | 1.0818 | 0.2225 | 0.6457 | 1.5179 | 23.64 | <.0001 |
| FirstOrigin | GRR | 1 | 1.0919 | 0.1957 | 0.7084 | 1.4754 | 31.14 | <.0001 |
| FirstOrigin | GSO | 1 | 0.9980 | 0.1990 | 0.6079 | 1.3881 | 25.14 | <.0001 |
| FirstOrigin | GSP | 1 | 1.4001 | 0.1971 | 1.0137 | 1.7864 | 50.45 | <.0001 |
| FirstOrigin | GTF | 1 | 1.9354 | 0.7296 | 0.5054 | 3.3654 | 7.04 | 0.0080 |
| FirstOrigin | GTR | 1 | 1.4652 | 0.4185 | 0.6450 | 2.2854 | 12.26 | 0.0005 |
| FirstOrigin | GUM | 1 | 4.4237 | 0.2720 | 3.8905 | 4.9568 | 264.46 | <.0001 |
| FirstOrigin | HIB | 1 | 0.6231 | 0.3966 | -0.1542 | 1.4003 | 2.47 | 0.1161 |
| FirstOrigin | HLN | 1 | -0.0709 | 0.2964 | -0.6518 | 0.5100 | 0.06 | 0.8109 |
| FirstOrigin | HNL | 1 | 0.3581 | 0.1869 | -0.0082 | 0.7243 | 3.67 | 0.0553 |

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## The GENMOD Procedure

| Analysis Of Maximum Likelihood Parameter Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Parameter | | DF | Estimate | Standard Error | Wald 95% Confidence Limits | | Wald Chi-Square | Pr > ChiSq |
| FirstOrigin | HOB | 1 | 0.9743 | 0.3306 | 0.3265 | 1.6222 | 8.69 | 0.0032 |
| FirstOrigin | HOU | 1 | 0.6464 | 0.1807 | 0.2921 | 1.0006 | 12.79 | 0.0003 |
| FirstOrigin | HPN | 1 | 1.9131 | 0.2030 | 1.5153 | 2.3109 | 88.84 | <.0001 |
| FirstOrigin | HRL | 1 | 0.6165 | 0.2324 | 0.1610 | 1.0720 | 7.04 | 0.0080 |
| FirstOrigin | HSV | 1 | 1.4097 | 0.2095 | 0.9991 | 1.8203 | 45.28 | <.0001 |
| FirstOrigin | IAD | 1 | 2.1328 | 0.1822 | 1.7758 | 2.4898 | 137.09 | <.0001 |
| FirstOrigin | IAH | 1 | 1.6500 | 0.1800 | 1.2972 | 2.0028 | 84.01 | <.0001 |
| FirstOrigin | ICT | 1 | 0.7809 | 0.1919 | 0.4049 | 1.1570 | 16.56 | <.0001 |
| FirstOrigin | IDA | 1 | 1.5529 | 0.2788 | 1.0065 | 2.0993 | 31.03 | <.0001 |
| FirstOrigin | ILM | 1 | 0.5398 | 0.2914 | -0.0313 | 1.1108 | 3.43 | 0.0639 |
| FirstOrigin | IMT | 1 | 1.4344 | 0.7296 | 0.0044 | 2.8643 | 3.87 | 0.0493 |
| FirstOrigin | IND | 1 | 1.5027 | 0.1857 | 1.1387 | 1.8667 | 65.47 | <.0001 |
| FirstOrigin | INL | 1 | 0.9412 | 0.3787 | 0.1990 | 1.6834 | 6.18 | 0.0129 |
| FirstOrigin | ISN | 1 | 1.4771 | 0.2483 | 0.9904 | 1.9638 | 35.38 | <.0001 |
| FirstOrigin | ISP | 1 | 1.0087 | 0.2089 | 0.5993 | 1.4181 | 23.32 | <.0001 |
| FirstOrigin | ITO | 1 | 1.8424 | 0.3078 | 1.2391 | 2.4458 | 35.82 | <.0001 |
| FirstOrigin | JAC | 1 | 1.5966 | 0.4185 | 0.7763 | 2.4168 | 14.55 | 0.0001 |
| FirstOrigin | JAN | 1 | 0.4615 | 0.1933 | 0.0826 | 0.8405 | 5.70 | 0.0170 |
| FirstOrigin | JAX | 1 | 1.5203 | 0.1867 | 1.1543 | 1.8863 | 66.30 | <.0001 |
| FirstOrigin | JFK | 1 | 1.9008 | 0.1808 | 1.5464 | 2.2552 | 110.51 | <.0001 |
| FirstOrigin | JLN | 1 | 1.3504 | 0.2608 | 0.8393 | 1.8615 | 26.82 | <.0001 |
| FirstOrigin | JMS | 1 | 1.5602 | 0.4185 | 0.7400 | 2.3804 | 13.90 | 0.0002 |
| FirstOrigin | JNU | 1 | 1.0148 | 0.2239 | 0.5760 | 1.4536 | 20.55 | <.0001 |
| FirstOrigin | KOA | 1 | 2.1887 | 0.2212 | 1.7552 | 2.6223 | 97.91 | <.0001 |
| FirstOrigin | KTN | 1 | -0.4239 | 0.2789 | -0.9705 | 0.1228 | 2.31 | 0.1286 |
| FirstOrigin | LAN | 1 | 1.1909 | 0.2914 | 0.6197 | 1.7620 | 16.70 | <.0001 |
| FirstOrigin | LAS | 1 | 1.2701 | 0.1803 | 0.9168 | 1.6234 | 49.65 | <.0001 |
| FirstOrigin | LAW | 1 | 0.8989 | 0.2437 | 0.4214 | 1.3765 | 13.61 | 0.0002 |
| FirstOrigin | LAX | 1 | 1.2655 | 0.1801 | 0.9124 | 1.6185 | 49.36 | <.0001 |
| FirstOrigin | LBB | 1 | 0.8803 | 0.1998 | 0.4887 | 1.2718 | 19.41 | <.0001 |
| FirstOrigin | LBE | 1 | 2.8076 | 0.2315 | 2.3538 | 3.2613 | 147.08 | <.0001 |
| FirstOrigin | LCH | 1 | 0.9015 | 0.2278 | 0.4550 | 1.3480 | 15.66 | <.0001 |
| FirstOrigin | LEX | 1 | 0.5918 | 0.2014 | 0.1971 | 0.9864 | 8.64 | 0.0033 |
| FirstOrigin | LFT | 1 | 1.1396 | 0.1977 | 0.7522 | 1.5270 | 33.24 | <.0001 |

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## The GENMOD Procedure

| Analysis Of Maximum Likelihood Parameter Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Parameter | | DF | Estimate | Standard Error | Wald 95% Confidence Limits | | Wald Chi-Square | Pr > ChiSq |
| FirstOrigin | LGA | 1 | 1.0616 | 0.1809 | 0.7070 | 1.4161 | 34.44 | <.0001 |
| FirstOrigin | LGB | 1 | 1.7740 | 0.1905 | 1.4005 | 2.1474 | 86.68 | <.0001 |
| FirstOrigin | LIH | 1 | -0.7200 | 0.2189 | -1.1490 | -0.2910 | 10.82 | 0.0010 |
| FirstOrigin | LIT | 1 | 1.0436 | 0.1899 | 0.6714 | 1.4158 | 30.20 | <.0001 |
| FirstOrigin | LNK | 1 | 1.4143 | 0.2278 | 0.9678 | 1.8607 | 38.55 | <.0001 |
| FirstOrigin | LRD | 1 | 1.5491 | 0.2467 | 1.0656 | 2.0325 | 39.44 | <.0001 |
| FirstOrigin | LSE | 1 | 0.6779 | 0.3401 | 0.0113 | 1.3444 | 3.97 | 0.0462 |
| FirstOrigin | MAF | 1 | 0.9816 | 0.1959 | 0.5977 | 1.3656 | 25.11 | <.0001 |
| FirstOrigin | MBS | 1 | 1.2415 | 0.3220 | 0.6104 | 1.8726 | 14.86 | 0.0001 |
| FirstOrigin | MCI | 1 | 1.2238 | 0.1824 | 0.8662 | 1.5814 | 45.00 | <.0001 |
| FirstOrigin | MCO | 1 | 1.7867 | 0.1807 | 1.4326 | 2.1407 | 97.81 | <.0001 |
| FirstOrigin | MDT | 1 | 1.6454 | 0.2194 | 1.2154 | 2.0754 | 56.24 | <.0001 |
| FirstOrigin | MDW | 1 | 1.4011 | 0.1805 | 1.0473 | 1.7550 | 60.23 | <.0001 |
| FirstOrigin | MEI | 1 | 1.3723 | 0.2752 | 0.8329 | 1.9117 | 24.86 | <.0001 |
| FirstOrigin | MEM | 1 | 1.2952 | 0.1876 | 0.9275 | 1.6630 | 47.65 | <.0001 |
| FirstOrigin | MFE | 1 | 0.9848 | 0.2106 | 0.5722 | 1.3975 | 21.88 | <.0001 |
| FirstOrigin | MFR | 1 | -0.0099 | 0.2168 | -0.4349 | 0.4151 | 0.00 | 0.9634 |
| FirstOrigin | MGM | 1 | 0.9888 | 0.2212 | 0.5553 | 1.4223 | 19.98 | <.0001 |
| FirstOrigin | MHK | 1 | 1.1955 | 0.2357 | 0.7336 | 1.6574 | 25.73 | <.0001 |
| FirstOrigin | MHT | 1 | 1.5437 | 0.2061 | 1.1398 | 1.9476 | 56.11 | <.0001 |
| FirstOrigin | MIA | 1 | 1.9660 | 0.1808 | 1.6117 | 2.3204 | 118.27 | <.0001 |
| FirstOrigin | MKE | 1 | 1.2274 | 0.1856 | 0.8636 | 1.5911 | 43.74 | <.0001 |
| FirstOrigin | MKG | 1 | 0.6548 | 0.3305 | 0.0070 | 1.3026 | 3.92 | 0.0476 |
| FirstOrigin | MLB | 1 | 0.8707 | 0.2752 | 0.3313 | 1.4102 | 10.01 | 0.0016 |
| FirstOrigin | MLI | 1 | 1.4192 | 0.2200 | 0.9880 | 1.8503 | 41.62 | <.0001 |
| FirstOrigin | MLU | 1 | 0.3772 | 0.2183 | -0.0507 | 0.8050 | 2.99 | 0.0840 |
| FirstOrigin | MOB | 1 | 1.0794 | 0.2051 | 0.6774 | 1.4815 | 27.69 | <.0001 |
| FirstOrigin | MOT | 1 | 1.7548 | 0.2869 | 1.1926 | 2.3170 | 37.42 | <.0001 |
| FirstOrigin | MRY | 1 | 1.0020 | 0.2295 | 0.5522 | 1.4518 | 19.06 | <.0001 |
| FirstOrigin | MSN | 1 | 0.9957 | 0.2077 | 0.5887 | 1.4027 | 22.99 | <.0001 |
| FirstOrigin | MSO | 1 | 1.8469 | 0.7296 | 0.4170 | 3.2768 | 6.41 | 0.0114 |
| FirstOrigin | MSP | 1 | 1.4812 | 0.1809 | 1.1266 | 1.8358 | 67.03 | <.0001 |
| FirstOrigin | MSY | 1 | 1.4643 | 0.1819 | 1.1078 | 1.8209 | 64.79 | <.0001 |
| FirstOrigin | MVY | 1 | 1.4926 | 0.5313 | 0.4512 | 2.5339 | 7.89 | 0.0050 |

**ssric - 678751252 - EasterEgg-How Long To Catch Up To Schedule**

## The GENMOD Procedure

| Analysis Of Maximum Likelihood Parameter Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Parameter | | DF | Estimate | Standard Error | Wald 95% Confidence Limits | | Wald Chi-Square | Pr > ChiSq |
| FirstOrigin | MYR | 1 | 1.5219 | 0.2019 | 1.1262 | 1.9176 | 56.83 | <.0001 |
| FirstOrigin | OAJ | 1 | 1.3795 | 0.3966 | 0.6023 | 2.1568 | 12.10 | 0.0005 |
| FirstOrigin | OAK | 1 | 1.0613 | 0.1823 | 0.7040 | 1.4186 | 33.90 | <.0001 |
| FirstOrigin | OGG | 1 | -0.9171 | 0.1912 | -1.2919 | -0.5423 | 23.00 | <.0001 |
| FirstOrigin | OKC | 1 | 0.5821 | 0.1851 | 0.2192 | 0.9450 | 9.89 | 0.0017 |
| FirstOrigin | OMA | 1 | 1.4477 | 0.1886 | 1.0781 | 1.8174 | 58.93 | <.0001 |
| FirstOrigin | OME | 1 | 1.7130 | 0.4186 | 0.8925 | 2.5335 | 16.74 | <.0001 |
| FirstOrigin | ONT | 1 | 0.2439 | 0.1855 | -0.1197 | 0.6075 | 1.73 | 0.1886 |
| FirstOrigin | ORD | 1 | 1.3699 | 0.1799 | 1.0173 | 1.7225 | 57.98 | <.0001 |
| FirstOrigin | ORF | 1 | 1.4045 | 0.1999 | 1.0127 | 1.7963 | 49.36 | <.0001 |
| FirstOrigin | ORH | 1 | 2.0076 | 0.6046 | 0.8225 | 3.1927 | 11.02 | 0.0009 |
| FirstOrigin | OTH | 1 | 0.7288 | 0.3638 | 0.0159 | 1.4418 | 4.01 | 0.0451 |
| FirstOrigin | OTZ | 1 | 1.3984 | 0.4820 | 0.4537 | 2.3430 | 8.42 | 0.0037 |
| FirstOrigin | PAH | 1 | 1.2471 | 0.3637 | 0.5343 | 1.9599 | 11.76 | 0.0006 |
| FirstOrigin | PBG | 1 | 2.0755 | 0.5313 | 1.0342 | 3.1169 | 15.26 | <.0001 |
| FirstOrigin | PBI | 1 | 1.9073 | 0.1850 | 1.5447 | 2.2699 | 106.28 | <.0001 |
| FirstOrigin | PDX | 1 | 1.2368 | 0.1835 | 0.8772 | 1.5964 | 45.44 | <.0001 |
| FirstOrigin | PHF | 1 | 1.3782 | 0.6047 | 0.1930 | 2.5633 | 5.19 | 0.0227 |
| FirstOrigin | PHL | 1 | 1.8910 | 0.1813 | 1.5358 | 2.2462 | 108.85 | <.0001 |
| FirstOrigin | PHX | 1 | 1.5611 | 0.1804 | 1.2076 | 1.9146 | 74.91 | <.0001 |
| FirstOrigin | PIA | 1 | 0.6552 | 0.2074 | 0.2487 | 1.0617 | 9.98 | 0.0016 |
| FirstOrigin | PIB | 1 | -0.8690 | 0.3018 | -1.4605 | -0.2775 | 8.29 | 0.0040 |
| FirstOrigin | PIT | 1 | 1.7943 | 0.1872 | 1.4275 | 2.1611 | 91.91 | <.0001 |
| FirstOrigin | PNS | 1 | 1.1909 | 0.2015 | 0.7960 | 1.5859 | 34.93 | <.0001 |
| FirstOrigin | PSC | 1 | 1.8629 | 0.4460 | 0.9887 | 2.7371 | 17.45 | <.0001 |
| FirstOrigin | PSE | 1 | 2.6252 | 0.3079 | 2.0218 | 3.2285 | 72.72 | <.0001 |
| FirstOrigin | PSG | 1 | 1.0394 | 0.3251 | 0.4024 | 1.6765 | 10.23 | 0.0014 |
| FirstOrigin | PSP | 1 | 0.0420 | 0.1906 | -0.3317 | 0.4156 | 0.05 | 0.8256 |
| FirstOrigin | PUB | 1 | 1.4384 | 0.4185 | 0.6181 | 2.2586 | 11.81 | 0.0006 |
| FirstOrigin | PVD | 1 | 1.5070 | 0.1944 | 1.1260 | 1.8881 | 60.08 | <.0001 |
| FirstOrigin | PWM | 1 | 1.5152 | 0.2058 | 1.1118 | 1.9186 | 54.19 | <.0001 |
| FirstOrigin | RAP | 1 | 0.5167 | 0.2286 | 0.0686 | 0.9648 | 5.11 | 0.0238 |
| FirstOrigin | RDD | 1 | 1.5932 | 0.3966 | 0.8159 | 2.3704 | 16.14 | <.0001 |
| FirstOrigin | RDM | 1 | 1.2988 | 0.2335 | 0.8412 | 1.7565 | 30.94 | <.0001 |

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## The GENMOD Procedure

| Analysis Of Maximum Likelihood Parameter Estimates | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Parameter | | DF | Estimate | Standard Error | Wald 95% Confidence Limits | | Wald Chi-Square | Pr > ChiSq |
| FirstOrigin | RDU | 1 | 1.3157 | 0.1835 | 0.9559 | 1.6754 | 51.39 | <.0001 |
| FirstOrigin | RHI | 1 | 1.4154 | 0.4819 | 0.4709 | 2.3600 | 8.63 | 0.0033 |
| FirstOrigin | RIC | 1 | 0.9658 | 0.1879 | 0.5975 | 1.3340 | 26.42 | <.0001 |
| FirstOrigin | RKS | 1 | 1.1793 | 0.3637 | 0.4664 | 1.8922 | 10.51 | 0.0012 |
| FirstOrigin | RNO | 1 | 0.7899 | 0.1908 | 0.4160 | 1.1638 | 17.14 | <.0001 |
| FirstOrigin | ROA | 1 | 1.2438 | 0.2380 | 0.7773 | 1.7103 | 27.31 | <.0001 |
| FirstOrigin | ROC | 1 | 1.2167 | 0.1931 | 0.8382 | 1.5952 | 39.69 | <.0001 |
| FirstOrigin | ROW | 1 | 1.6351 | 0.2633 | 1.1191 | 2.1511 | 38.57 | <.0001 |
| FirstOrigin | RST | 1 | 0.8639 | 0.2520 | 0.3700 | 1.3578 | 11.75 | 0.0006 |
| FirstOrigin | RSW | 1 | 1.9634 | 0.1869 | 1.5971 | 2.3297 | 110.38 | <.0001 |
| FirstOrigin | SAF | 1 | 0.4038 | 0.2451 | -0.0765 | 0.8841 | 2.71 | 0.0994 |
| FirstOrigin | SAN | 1 | 1.1972 | 0.1813 | 0.8417 | 1.5526 | 43.59 | <.0001 |
| FirstOrigin | SAT | 1 | 0.9844 | 0.1826 | 0.6265 | 1.3424 | 29.06 | <.0001 |
| FirstOrigin | SAV | 1 | 1.0375 | 0.1903 | 0.6645 | 1.4106 | 29.71 | <.0001 |
| FirstOrigin | SBA | 1 | 0.6071 | 0.1973 | 0.2204 | 0.9938 | 9.47 | 0.0021 |
| FirstOrigin | SBN | 1 | -0.3101 | 0.2058 | -0.7135 | 0.0933 | 2.27 | 0.1319 |
| FirstOrigin | SBP | 1 | 0.5682 | 0.2367 | 0.1043 | 1.0322 | 5.76 | 0.0164 |
| FirstOrigin | SCE | 1 | 1.7298 | 0.3304 | 1.0822 | 2.3774 | 27.40 | <.0001 |
| FirstOrigin | SDF | 1 | 1.3479 | 0.1937 | 0.9683 | 1.7275 | 48.44 | <.0001 |
| FirstOrigin | SEA | 1 | 1.8031 | 0.1809 | 1.4485 | 2.1577 | 99.33 | <.0001 |
| FirstOrigin | SFO | 1 | 1.4562 | 0.1805 | 1.1025 | 1.8099 | 65.11 | <.0001 |
| FirstOrigin | SGF | 1 | 1.1117 | 0.1969 | 0.7259 | 1.4976 | 31.89 | <.0001 |
| FirstOrigin | SGU | 1 | 1.2081 | 0.2583 | 0.7018 | 1.7145 | 21.87 | <.0001 |
| FirstOrigin | SHV | 1 | -0.0329 | 0.1914 | -0.4080 | 0.3422 | 0.03 | 0.8636 |
| FirstOrigin | SIT | 1 | 1.4728 | 0.3400 | 0.8064 | 2.1391 | 18.76 | <.0001 |
| FirstOrigin | SJC | 1 | 0.9089 | 0.1836 | 0.5490 | 1.2688 | 24.50 | <.0001 |
| FirstOrigin | SJT | 1 | -0.0755 | 0.2220 | -0.5106 | 0.3596 | 0.12 | 0.7338 |
| FirstOrigin | SJU | 1 | 1.3336 | 0.1867 | 0.9677 | 1.6995 | 51.02 | <.0001 |
| FirstOrigin | SLC | 1 | 1.3520 | 0.1814 | 0.9964 | 1.7075 | 55.53 | <.0001 |
| FirstOrigin | SMF | 1 | 0.8102 | 0.1836 | 0.4503 | 1.1701 | 19.47 | <.0001 |
| FirstOrigin | SMX | 1 | 1.0950 | 0.4461 | 0.2208 | 1.9693 | 6.03 | 0.0141 |
| FirstOrigin | SNA | 1 | 1.3567 | 0.1828 | 0.9983 | 1.7151 | 55.05 | <.0001 |
| FirstOrigin | SPI | 1 | 1.0981 | 0.2607 | 0.5871 | 1.6091 | 17.74 | <.0001 |
| FirstOrigin | SPS | 1 | 0.3472 | 0.2561 | -0.1548 | 0.8492 | 1.84 | 0.1752 |

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## The GENMOD Procedure

| Analysis Of Maximum Likelihood Parameter Estimates | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Parameter** | | **DF** | **Estimate** | **Standard Error** | **Wald 95% Confidence Limits** | | **Wald Chi-Square** | **Pr > ChiSq** |
| **FirstOrigin** | SRQ | 1 | 1.9440 | 0.2393 | 1.4749 | 2.4131 | 65.98 | <.0001 |
| **FirstOrigin** | STL | 1 | 1.3403 | 0.1822 | 0.9833 | 1.6973 | 54.14 | <.0001 |
| **FirstOrigin** | STT | 1 | 2.2286 | 0.2109 | 1.8153 | 2.6419 | 111.71 | <.0001 |
| **FirstOrigin** | STX | 1 | 1.9410 | 0.3304 | 1.2933 | 2.5886 | 34.50 | <.0001 |
| **FirstOrigin** | SUX | 1 | 1.6014 | 0.3786 | 0.8593 | 2.3436 | 17.89 | <.0001 |
| **FirstOrigin** | SWF | 1 | 2.2207 | 0.3018 | 1.6292 | 2.8122 | 54.14 | <.0001 |
| **FirstOrigin** | SYR | 1 | 0.3888 | 0.2194 | -0.0413 | 0.8189 | 3.14 | 0.0764 |
| **FirstOrigin** | TLH | 1 | 1.4474 | 0.2304 | 0.9957 | 1.8990 | 39.45 | <.0001 |
| **FirstOrigin** | TOL | 1 | 1.3646 | 0.3304 | 0.7169 | 2.0123 | 17.05 | <.0001 |
| **FirstOrigin** | TPA | 1 | 1.6307 | 0.1814 | 1.2753 | 1.9862 | 80.84 | <.0001 |
| **FirstOrigin** | TRI | 1 | 0.0208 | 0.2450 | -0.4595 | 0.5010 | 0.01 | 0.9324 |
| **FirstOrigin** | TTN | 1 | 1.6631 | 0.2153 | 1.2411 | 2.0851 | 59.66 | <.0001 |
| **FirstOrigin** | TUL | 1 | 1.3122 | 0.1895 | 0.9408 | 1.6837 | 47.94 | <.0001 |
| **FirstOrigin** | TUS | 1 | 1.5028 | 0.1880 | 1.1343 | 1.8713 | 63.88 | <.0001 |
| **FirstOrigin** | TVC | 1 | 1.1105 | 0.2869 | 0.5482 | 1.6728 | 14.98 | 0.0001 |
| **FirstOrigin** | TWF | 1 | 1.4312 | 0.4819 | 0.4866 | 2.3757 | 8.82 | 0.0030 |
| **FirstOrigin** | TXK | 1 | 0.6563 | 0.2562 | 0.1541 | 1.1585 | 6.56 | 0.0104 |
| **FirstOrigin** | TYR | 1 | 1.2211 | 0.2262 | 0.7778 | 1.6643 | 29.15 | <.0001 |
| **FirstOrigin** | TYS | 1 | 1.3346 | 0.1922 | 0.9578 | 1.7114 | 48.20 | <.0001 |
| **FirstOrigin** | UST | 1 | 2.0576 | 0.7296 | 0.6276 | 3.4876 | 7.95 | 0.0048 |
| **FirstOrigin** | VLD | 1 | 1.2190 | 0.4185 | 0.3988 | 2.0393 | 8.49 | 0.0036 |
| **FirstOrigin** | VPS | 1 | 0.8425 | 0.2010 | 0.4486 | 1.2365 | 17.57 | <.0001 |
| **FirstOrigin** | WRG | 1 | 1.2784 | 0.7296 | -0.1516 | 2.7083 | 3.07 | 0.0797 |
| **FirstOrigin** | XNA | 1 | 0.7841 | 0.1954 | 0.4011 | 1.1671 | 16.10 | <.0001 |
| **FirstOrigin** | YAK | 1 | 0.9199 | 0.6047 | -0.2652 | 2.1050 | 2.31 | 0.1282 |
| **FirstOrigin** | YUM | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | . | . |
| **Scale** | | 0 | 1.0000 | 0.0000 | 1.0000 | 1.0000 | | |

**Note:** The scale parameter was held fixed.

**ssric - 678751252 - EasterEgg-How Long To Catch Up To Schedule**

### The UNIVARIATE Procedure
### Variable:  EndSeq

| Moments | | | |
|---|---|---|---|
| N | 51147 | Sum Weights | 51147 |
| Mean | 2.75603652 | Sum Observations | 140963 |
| Std Deviation | 1.13117161 | Variance | 1.27954921 |
| Skewness | 1.86820418 | Kurtosis | 3.92575095 |
| Uncorrected SS | 453943 | Corrected SS | 65443.8237 |
| Coeff Variation | 41.0434187 | Std Error Mean | 0.00500171 |

| Basic Statistical Measures | | | |
|---|---|---|---|
| Location | | Variability | |
| Mean | 2.756037 | Std Deviation | 1.13117 |
| Median | 2.000000 | Variance | 1.27955 |
| Mode | 2.000000 | Range | 9.00000 |
| | | Interquartile Range | 1.00000 |

| Tests for Location: Mu0=0 | | | | |
|---|---|---|---|---|
| Test | Statistic | | p Value | |
| Student's t | t | 551.019 | Pr > \|t\| | <.0001 |
| Sign | M | 25573.5 | Pr >= \|M\| | <.0001 |
| Signed Rank | S | 6.5402E8 | Pr >= \|S\| | <.0001 |

| Quantiles (Definition 5) | |
|---|---|
| Level | Quantile |
| 100% Max | 11 |
| 99% | 7 |
| 95% | 5 |
| 90% | 4 |
| 75% Q3 | 3 |
| 50% Median | 2 |
| 25% Q1 | 2 |
| 10% | 2 |
| 5% | 2 |
| 1% | 2 |
| 0% Min | 2 |

**ssric - 678751252 - EasterEgg-How Long To Catch Up To Schedule**

**The UNIVARIATE Procedure**
**Variable:  EndSeq**

| Extreme Observations | | | |
|---|---|---|---|
| Lowest | | Highest | |
| Value | Obs | Value | Obs |
| 2 | 51142 | 10 | 41750 |
| 2 | 51140 | 10 | 41908 |
| 2 | 51139 | 10 | 43343 |
| 2 | 51136 | 10 | 44172 |
| 2 | 51135 | 11 | 41931 |

**ssric - 678751252 - EasterEgg-How Long To Catch Up To Schedule**
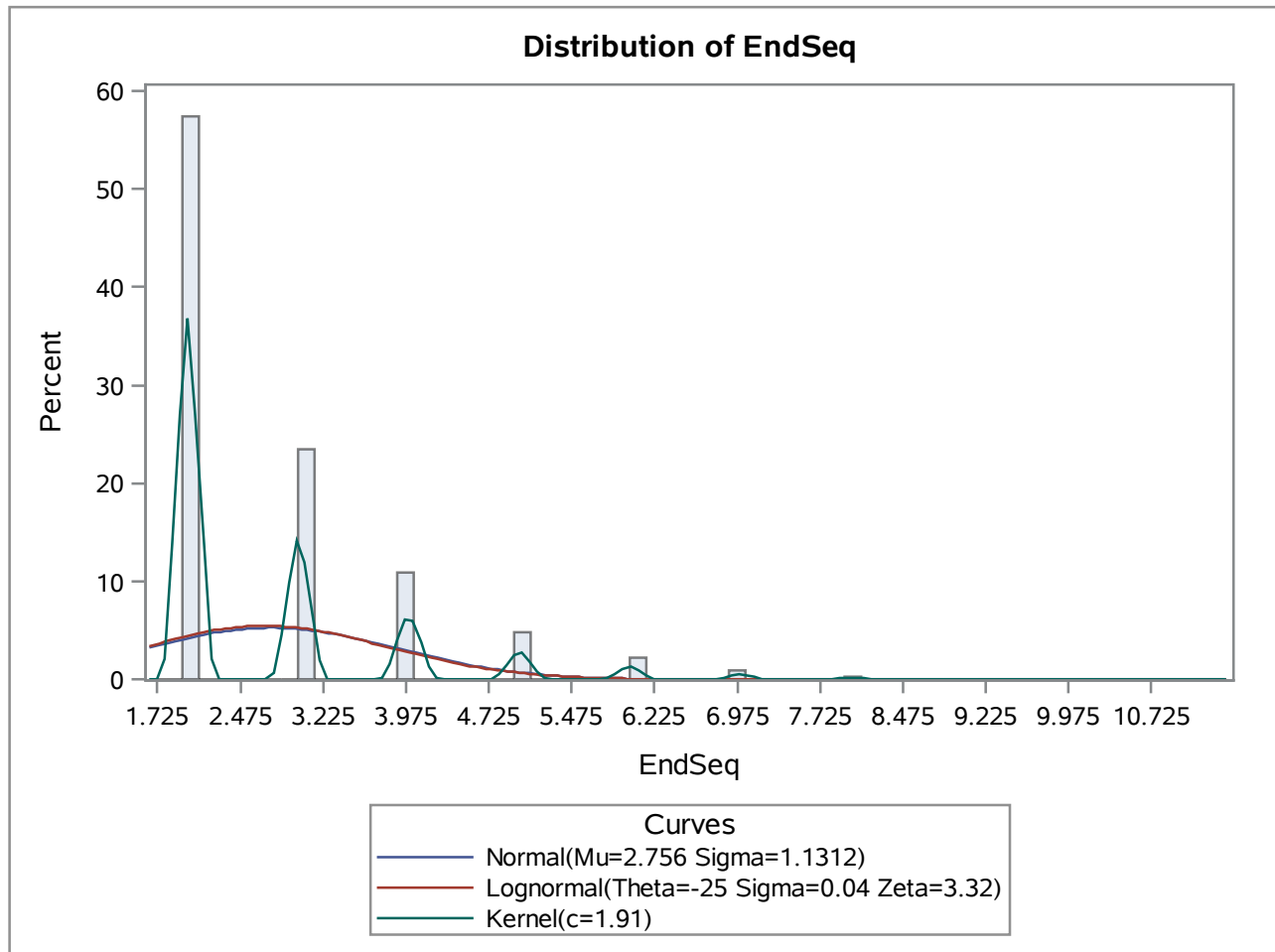
**The UNIVARIATE Procedure**



Distribution of EndSeq

Curves
Normal(Mu=2.756 Sigma=1.1312)
Lognormal(Theta=-25 Sigma=0.04 Zeta=3.32)
Kernel(c=1.91)

**ssric - 678751252 - EasterEgg-How Long To Catch Up To Schedule**

## The UNIVARIATE Procedure
## Fitted Normal Distribution for EndSeq

| Parameters for Normal Distribution | | |
|---|---|---|
| Parameter | Symbol | Estimate |
| **Mean** | Mu | 2.756037 |
| **Std Dev** | Sigma | 1.131172 |

| Goodness-of-Fit Tests for Normal Distribution | | | | |
|---|---|---|---|---|
| Test | Statistic | | p Value | |
| **Kolmogorov-Smirnov** | D | 0.32163 | **Pr > D** | <0.010 |
| **Cramer-von Mises** | W-Sq | 1037.46471 | **Pr > W-Sq** | <0.005 |
| **Anderson-Darling** | A-Sq | 5681.86763 | **Pr > A-Sq** | <0.005 |

| Quantiles for Normal Distribution | | |
|---|---|---|
| | Quantile | |
| Percent | Observed | Estimated |
| **1.0** | 2.00000 | 0.12454 |
| **5.0** | 2.00000 | 0.89542 |
| **10.0** | 2.00000 | 1.30638 |
| **25.0** | 2.00000 | 1.99307 |
| **50.0** | 2.00000 | 2.75604 |
| **75.0** | 3.00000 | 3.51900 |
| **90.0** | 4.00000 | 4.20569 |
| **95.0** | 5.00000 | 4.61665 |
| **99.0** | 7.00000 | 5.38754 |

**ssric - 678751252 - EasterEgg-How Long To Catch Up To Schedule**

**The UNIVARIATE Procedure**
**Fitted Lognormal Distribution for EndSeq**

| Parameters for Lognormal Distribution | | |
|---|---|---|
| **Parameter** | **Symbol** | **Estimate** |
| **Threshold** | Theta | -25 |
| **Scale** | Zeta | 3.322661 |
| **Shape** | Sigma | 0.03936 |
| **Mean** | | 2.755539 |
| **Std Dev** | | 1.092886 |

| Goodness-of-Fit Tests for Lognormal Distribution | | | | |
|---|---|---|---|---|
| **Test** | | **Statistic** | **p Value** | |
| **Kolmogorov-Smirnov** | D | 0.32580 | Pr > D | <0.010 |
| **Cramer-von Mises** | W-Sq | 1022.06391 | Pr > W-Sq | <0.005 |
| **Anderson-Darling** | A-Sq | 5624.62550 | Pr > A-Sq | <0.005 |

| Quantiles for Lognormal Distribution | | |
|---|---|---|
| | **Quantile** | |
| **Percent** | **Observed** | **Estimated** |
| **1.0** | 2.00000 | 0.30736 |
| **5.0** | 2.00000 | 0.99539 |
| **10.0** | 2.00000 | 1.36978 |
| **25.0** | 2.00000 | 2.00745 |
| **50.0** | 2.00000 | 2.73405 |
| **75.0** | 3.00000 | 3.48019 |
| **90.0** | 4.00000 | 4.16889 |
| **95.0** | 5.00000 | 4.58900 |
| **99.0** | 7.00000 | 5.39342 |

**ssric - 678751252 - EasterEgg-How Long To Catch Up To Schedule**

**The FREQ Procedure**

| EndSeq | Frequency | Percent | Cumulative Frequency | Cumulative Percent |
|---|---|---|---|---|
| 2 | 29337 | 57.36 | 29337 | 57.36 |
| 3 | 11983 | 23.43 | 41320 | 80.79 |
| 4 | 5578 | 10.91 | 46898 | 91.69 |
| 5 | 2443 | 4.78 | 49341 | 96.47 |
| 6 | 1115 | 2.18 | 50456 | 98.65 |
| 7 | 465 | 0.91 | 50921 | 99.56 |
| 8 | 173 | 0.34 | 51094 | 99.90 |
| 9 | 47 | 0.09 | 51141 | 99.99 |
| 10 | 5 | 0.01 | 51146 | 100.00 |
| 11 | 1 | 0.00 | 51147 | 100.00 |



Distribution of EndSeq
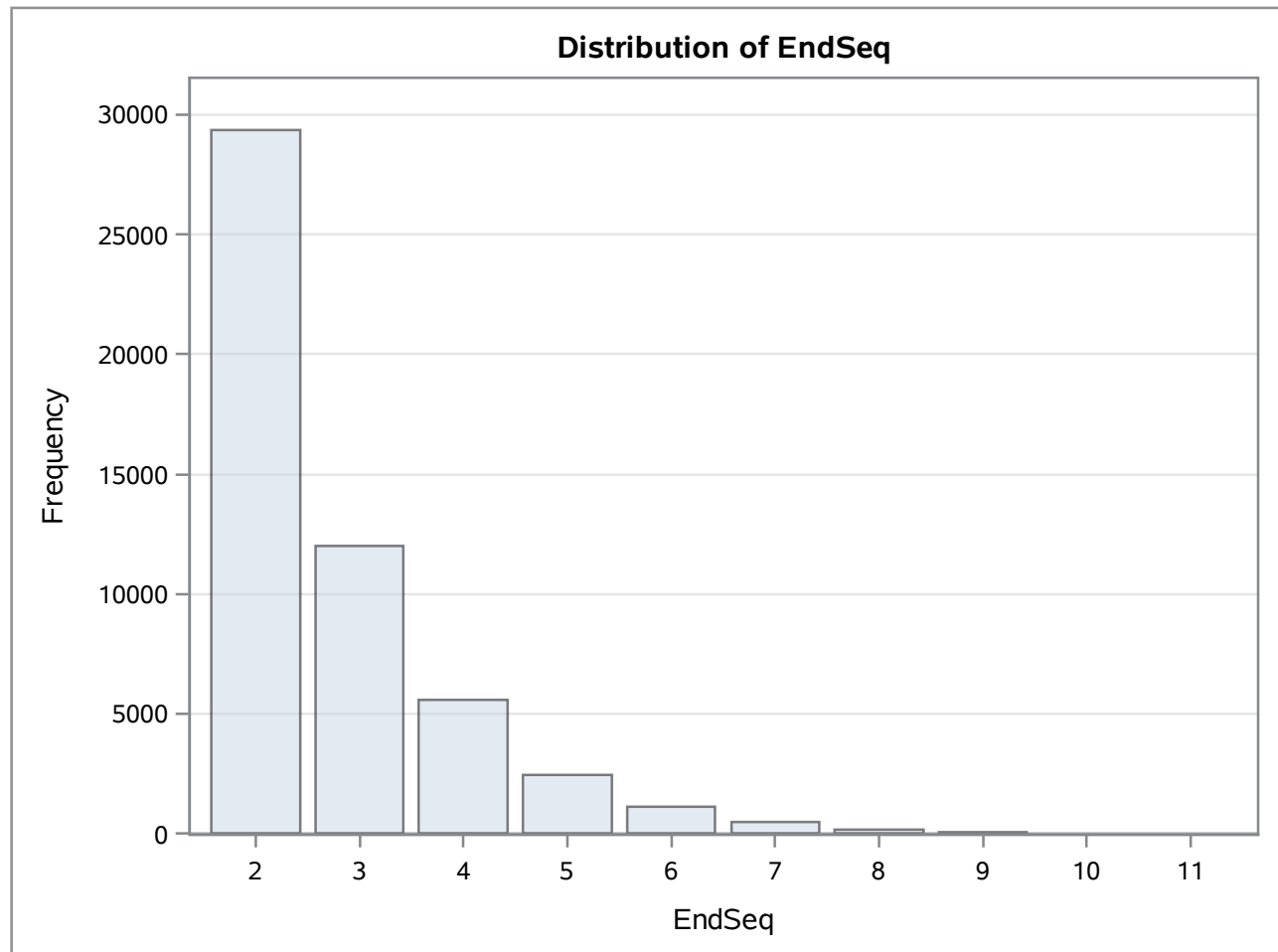
**ssric - 678751252 - EasterEgg-How Long To Catch Up To Schedule**

**The MEANS Procedure**

| Analysis Variable : EndSeq | | | | | |
|---|---|---|---|---|---|
| Minimum | Maximum | Mean | Std Dev | Skewness | Kurtosis |
| 2.0000000 | 11.0000000 | 2.7560365 | 1.1311716 | 1.8682042 | 3.9257509 |

# Explanation of The Results

From the Poisson regression we can infer that the following variables have an impact on EndSeq based on their statistical significance

**1. SequenceDistance:** This has a negative impact on EndSeq. Hence if the cumulative distance travelled by a plane in a sequence is longer, it will take fewer flights to get back on schedule. One way to interpret this is that over a long distance, the pilot is able to catch up on the delay by speeding up. I have experienced this on my 18-hour international flights from India to Chicago!

**2. LateAircraftDelay :** This has a positive correlation with EndSeq. This means that if the first flight in a sequence is delayed due to LateAircraft delay, the plane(tailNum) takes longer to catch up. Based on the BTS website, LateAircraft Delay is defined as 'A previous flight with same aircraft arrived late, causing the present flight to depart late'. It follows that if the previous flight for the first flight in the sequence is delayed, the delay is likely to cascade through the sequence making it difficult for the Tailnum to return to on-time status

**3. Origin of first flight :** The regression model analysed 291 origin airports for the first flight in a sequence. The ones that are statistically significant, all have positive intercepts and correspond to busy airports. Intuitively, it would seem that a busy origin airport would result in a cascading delay through the sequence. However, strangely enough, there are two exceptions. Two aiports - OGG and ACT - have negative intercepts, meaning if the first flight in a sequence flew out of OGG in Maui or ACT in Waco,TX it would take lesser flights for the TailNum to get back to on-time status

Based on the summary statistics of EndSeq we observe that it varies from 2 to 11 with 57.36% of the TailNums taking 2 flights to return to on-time status.  The mean is 2.7560365. Five tailnums take 10 flights to return to on-time status, and there is one sequence which took 11 flights. Another factor to consider is the change of day. Since we start a new sequence for each new day, it could be possibe that a TailNum that flies overnight actually takes more than 2 flights to recover from delay but we forcefully ended it at 2