The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
Carrier	14	AA AS B6 DL EV F9 HA MQ NK OO UA US VX WN

Number of Observations Read	395896
Number of Observations Used	395896

The GLM Procedure

Dependent Variable: DepDelay

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	67963516.1	3089250.7	2509.83	<.0001
Error	395873	487264494.5	1230.9		
Corrected Total	395895	555228010.6			

R-Square	Coeff Var	Root MSE	DepDelay Mean
0.122406	376.9491	35.08362	9.307257

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Carrier	13	6189822.53	476140.19	386.84	<.0001
CRSDepTime	1	8535436.17	8535436.17	6934.53	<.0001
SeqNum	1	156037.26	156037.26	126.77	<.0001
ArrDelayLagInd	1	12674403.56	12674403.56	10297.2	<.0001
ArrDelayLag	1	28050452.29	28050452.29	22789.3	<.0001
ArrDelayLagCum	1	11846454.64	11846454.64	9624.53	<.0001
ArrDelayLag2	1	162560.82	162560.82	132.07	<.0001
ArrDelayLag2Ind	1	15075.01	15075.01	12.25	0.0005
CancelledLag	1	308986.60	308986.60	251.03	<.0001
DistanceLag	1	24287.20	24287.20	19.73	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Carrier	13	3341883.316	257067.947	208.85	<.0001
CRSDepTime	1	9595397.642	9595397.642	7795.68	<.0001
SeqNum	1	734838.144	734838.144	597.01	<.0001
ArrDelayLagInd	1	4469.238	4469.238	3.63	0.0567
ArrDelayLag	1	4129091.136	4129091.136	3354.64	<.0001
ArrDelayLagCum	1	4669358.815	4669358.815	3793.57	<.0001
ArrDelayLag2	1	170221.944	170221.944	138.30	<.0001
ArrDelayLag2Ind	1	10009.063	10009.063	8.13	0.0043
CancelledLag	1	310534.835	310534.835	252.29	<.0001
DistanceLag	1	24287.199	24287.199	19.73	<.0001

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Number of Observations Read	395896
Number of Observations Used	395896

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	64621633	7180181	5793.92	<.0001
Error	395886	490606378	1239.26175		
Corrected Total	395895	555228011			

Root MSE	35.20315	R-Square	0.1164
Dependent Mean	9.30726	Adj R-Sq	0.1164
Coeff Var	378.23333		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-2.88108	0.19004	-15.16	<.0001
CRSDepTime	1	0.00028220	0.00000320	88.19	<.0001
SeqNum	1	-1.00914	0.03331	-30.29	<.0001
ArrDelayLagInd	1	0.30854	0.16052	1.92	0.0546
ArrDelayLag	1	0.16133	0.00278	58.12	<.0001
ArrDelayLagCum	1	0.09931	0.00157	63.22	<.0001
ArrDelayLag2	1	0.03775	0.00331	11.42	<.0001
ArrDelayLag2Ind	1	-0.33260	0.18504	-1.80	0.0723
CancelledLag	1	10.21352	0.60808	16.80	<.0001
DistanceLag	1	0.00007956	0.00009598	0.83	0.4072

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Number of Observations Read	21063
Number of Observations Used	14978
Number of Observations with Missing Values	6085

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	12	2869217	239101	213.46	<.0001
Error	14965	16762589	1120.11952		
Corrected Total	14977	19631806			

Root MSE	33.46819	R-Square	0.1462
Dependent Mean	10.78428	Adj R-Sq	0.1455
Coeff Var	310.34223		

Note: Model is not full rank. Least-squares solutions for the parameters are not unique. Some statistics will be misleading. A reported DF of 0 or B means that the estimate is biased.

Note: The following parameters have been set to 0, since the variables are a linear combination of other variables as shown.

SNWD =	0
SNOW =	0

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.34077	2.09921	0.16	0.8710
CRSDepTime	1	0.00026190	0.00001617	16.20	<.0001
SeqNum	1	-0.82020	0.16892	-4.86	<.0001
ArrDelayLagInd	1	-3.96963	0.80251	-4.95	<.0001
ArrDelayLag	1	0.23395	0.01404	16.67	<.0001
ArrDelayLagCum	1	0.09177	0.00855	10.73	<.0001
ArrDelayLag2Ind	1	-0.28118	0.95288	-0.30	0.7679
ArrDelayLag2	1	0.05137	0.01801	2.85	0.0043
CancelledLag	1	4.02511	3.91865	1.03	0.3044
DistanceLag	1	0.00188	0.00051296	3.66	0.0002
PRCP	1	8.98855	1.16498	7.72	<.0001
SNWD	0	0	.	.	.
SNOW	0	0	.	.	.

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
TempMAX	1	0.00626	0.04365	0.14	0.8861
TempMin	1	-0.06117	0.05659	-1.08	0.2798

The MEANS Procedure

Variable	N	N Miss
SNWD	21287	0
SNOW	20043	1244
TempMin	19497	1790
PRCP	19045	2242
TempMAX	18550	2737

The MI Procedure

Model Information	
Data Set	HW3.BTS201505WTHR
Method	FCS
Number of Imputations	12
Number of Burn-in Iterations	20
Seed for random number generator	54321

FCS Model Specification	
Method	Imputed Variables
Regression	PRCP TempMAX TempMin

Missing Data Patterns						Group Means		
Group	PRCP	TempMAX	TempMin	Freq	Percent	PRCP	TempMAX	TempMin
1	X	X	X	15814	74.29	0.148570	67.570570	49.386999
2	X	X	.	1237	5.81	0.176330	77.269200	.
3	X	.	X	1441	6.77	0.258154	.	61.581541
4	X	.	.	553	2.60	0.290000	.	.
5	.	X	X	1499	7.04	.	82.495664	53.008672
6	.	.	X	743	3.49	.	.	46.000000

Variance Information (12 Imputations)							
	Variance						
Variable	Between	Within	Total	DF	Relative Increase in Variance	Fraction Missing Information	Relative Efficiency
PRCP	0.000000222	0.000002847	0.000003088	1653.6	0.084655	0.079067	0.993454
TempMAX	0.000523	0.005763	0.006329	1283.8	0.098232	0.090767	0.992493
TempMin	0.000127	0.003131	0.003268	4782.3	0.043798	0.042267	0.996490

Parameter Estimates (12 Imputations)										
Variable	Mean	Std Error	95% Confidence Limits		DF	Minimum	Maximum	Mu0	t for H0: Mean=Mu0	Pr > |t|
PRCP	0.155775	0.001757	0.15233	0.15922	1653.6	0.155032	0.156765	0	88.65	<.0001
TempMAX	70.111065	0.079556	69.95499	70.26714	1283.8	70.085704	70.167705	0	881.28	<.0001
TempMin	50.741509	0.057169	50.62943	50.85359	4782.3	50.725888	50.768109	0	887.57	<.0001

The MEANS Procedure

Variable	Label	N	N Miss
Imputation	Imputation Number	255444	0
ArrDelayLag		255444	0
ArrDelayLagCum		255444	0
CancelledLag		255444	0
ArrDelayLag2		255444	0
DistanceLag		255444	0
flightdate		255444	0
SeqNum		255444	0
ArrDelayLagInd		255444	0
ArrDelayLag2Ind		255444	0
Year		255444	0
Quarter		255444	0
Month		255444	0
DayofMonth		255444	0
DayOfWeek		255444	0
FlightNum		255444	0
CRSDepTime		255444	0
DepTime		253008	2436
DepDelay		255444	0
DepDelayMinutes		253008	2436
DepDel15		253008	2436
DepartureDelayGroups		253008	2436
TaxiOut		252816	2628
WheelsOff		252816	2628
WheelsOn		252624	2820
TaxiIn		252624	2820
CRSArrTime		255444	0
ArrTime		252624	2820
ArrDelay		255444	0
ArrDelayMinutes		251820	3624
ArrDel15		251820	3624
ArrivalDelayGroups		251820	3624
Cancelled		255444	0
CRSElapsedTime		255432	12
ActualElapsedTime		251820	3624
AirTime		251820	3624
Flights		255444	0
Distance		255444	0
DistanceGroup		255444	0
CarrierDelay		49608	205836
WeatherDelay		49608	205836
NASDelay		49608	205836
SecurityDelay		49608	205836
LateAircraftDelay		49608	205836
FirstDepTime		1956	253488
TotalAddGTime		1956	253488
LongestAddGTime		1956	253488
PRCP		255444	0
SNWD		255444	0
SNOW		240516	14928
TempMAX		255444	0
TempMin		255444	0
MonthNum		255444	0

The GLM Procedure

Number of Observations Read	252756
Number of Observations Used	252756

The GLM Procedure

Dependent Variable: DepDelay

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	48455318.3	4405028.9	4079.91	<.0001
Error	252744	272884936.8	1079.7		
Corrected Total	252755	321340255.0			

R-Square	Coeff Var	Root MSE	DepDelay Mean
0.150791	305.0799	32.85862	10.77050

Source	DF	Type I SS	Mean Square	F Value	Pr > F
CRSDepTime	1	4514580.36	4514580.36	4181.37	<.0001
SeqNum	1	379417.18	379417.18	351.41	<.0001
ArrDelayLagInd	1	10195487.48	10195487.48	9442.98	<.0001
ArrDelayLag	1	24612918.34	24612918.34	22796.3	<.0001
ArrDelayLagCum	1	7433547.02	7433547.02	6884.90	<.0001
ArrDelayLag2	1	389015.53	389015.53	360.30	<.0001
DistanceLag	1	236814.71	236814.71	219.34	<.0001
CancelledLag	1	356.19	356.19	0.33	0.5657
PRCP	1	658415.08	658415.08	609.82	<.0001
TempMAX	1	24426.01	24426.01	22.62	<.0001
TempMin	1	10340.40	10340.40	9.58	0.0020

Source	DF	Type III SS	Mean Square	F Value	Pr > F
CRSDepTime	1	4754616.081	4754616.081	4403.69	<.0001
SeqNum	1	533369.024	533369.024	494.00	<.0001
ArrDelayLagInd	1	223892.415	223892.415	207.37	<.0001
ArrDelayLag	1	4767875.973	4767875.973	4415.97	<.0001
ArrDelayLagCum	1	2119563.742	2119563.742	1963.12	<.0001
ArrDelayLag2	1	384882.439	384882.439	356.48	<.0001
DistanceLag	1	247785.079	247785.079	229.50	<.0001
CancelledLag	1	7.328	7.328	0.01	0.9343
PRCP	1	524178.144	524178.144	485.49	<.0001
TempMAX	1	31144.634	31144.634	28.85	<.0001
TempMin	1	10340.402	10340.402	9.58	0.0020

The GLM Procedure

Dependent Variable: DepDelay

Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	-0.678451208	0.50439577	-1.35	0.1786
CRSDepTime	0.000256530	0.00000387	66.36	<.0001
SeqNum	-0.844569717	0.03799889	-22.23	<.0001
ArrDelayLagInd	-2.712633161	0.18837390	-14.40	<.0001
ArrDelayLag	0.215596551	0.00324436	66.45	<.0001
ArrDelayLagCum	0.087999666	0.00198613	44.31	<.0001
ArrDelayLag2	0.070255905	0.00372107	18.88	<.0001
DistanceLag	0.001853969	0.00012238	15.15	<.0001
CancelledLag	-0.067175697	0.81539410	-0.08	0.9343
PRCP	6.380811123	0.28959149	22.03	<.0001
TempMAX	-0.051526550	0.00959376	-5.37	<.0001
TempMin	0.042025255	0.01357973	3.09	0.0020

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=1

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4037853	367078	339.81	<.0001
Error	21051	22740501	1080.25752		
Corrected Total	21062	26778355			

Root MSE	32.86727	R-Square	0.1508
Dependent Mean	10.77050	Adj R-Sq	0.1503
Coeff Var	305.16018		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.89385	1.74371	-0.51	0.6082
CRSDepTime	1	0.00025634	0.00001339	19.14	<.0001
SeqNum	1	-0.84746	0.13166	-6.44	<.0001
ArrDelayLagInd	1	-2.70130	0.65281	-4.14	<.0001
ArrDelayLag	1	0.21551	0.01124	19.17	<.0001
ArrDelayLagCum	1	0.08813	0.00688	12.81	<.0001
ArrDelayLag2	1	0.06997	0.01289	5.43	<.0001
DistanceLag	1	0.00186	0.00042408	4.40	<.0001
CancelledLag	1	0.00894	2.82557	0.00	0.9975
PRCP	1	6.67818	1.00712	6.63	<.0001
TempMAX	1	-0.02980	0.03329	-0.90	0.3707
TempMin	1	0.01554	0.04725	0.33	0.7423

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=2

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4035285	366844	339.55	<.0001
Error	21051	22743070	1080.37956		
Corrected Total	21062	26778355			

Root MSE	32.86913	R-Square	0.1507
Dependent Mean	10.77050	Adj R-Sq	0.1502
Coeff Var	305.17742		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.86580	1.74440	-0.50	0.6197
CRSDepTime	1	0.00025676	0.00001339	19.17	<.0001
SeqNum	1	-0.84496	0.13167	-6.42	<.0001
ArrDelayLagInd	1	-2.68777	0.65288	-4.12	<.0001
ArrDelayLag	1	0.21536	0.01124	19.15	<.0001
ArrDelayLagCum	1	0.08822	0.00688	12.82	<.0001
ArrDelayLag2	1	0.07013	0.01289	5.44	<.0001
DistanceLag	1	0.00184	0.00042409	4.35	<.0001
CancelledLag	1	-0.01952	2.82528	-0.01	0.9945
PRCP	1	6.48856	1.00220	6.47	<.0001
TempMAX	1	-0.03077	0.03327	-0.92	0.3550
TempMin	1	0.01651	0.04710	0.35	0.7260

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=3

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4036421	366947	339.66	<.0001
Error	21051	22741934	1080.32559		
Corrected Total	21062	26778355			

Root MSE	32.86831	R-Square	0.1507
Dependent Mean	10.77050	Adj R-Sq	0.1503
Coeff Var	305.16980		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.76022	1.75079	-0.43	0.6641
CRSDepTime	1	0.00025667	0.00001340	19.16	<.0001
SeqNum	1	-0.84289	0.13169	-6.40	<.0001
ArrDelayLagInd	1	-2.73636	0.65290	-4.19	<.0001
ArrDelayLag	1	0.21573	0.01124	19.19	<.0001
ArrDelayLagCum	1	0.08803	0.00688	12.79	<.0001
ArrDelayLag2	1	0.07018	0.01289	5.44	<.0001
DistanceLag	1	0.00186	0.00042408	4.38	<.0001
CancelledLag	1	-0.11566	2.82513	-0.04	0.9673
PRCP	1	5.89169	1.00025	5.89	<.0001
TempMAX	1	-0.07250	0.03326	-2.18	0.0293
TempMin	1	0.07394	0.04692	1.58	0.1151

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=4

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4033370	366670	339.36	<.0001
Error	21051	22744985	1080.47050		
Corrected Total	21062	26778355			

Root MSE	32.87051	**R-Square**	0.1506
Dependent Mean	10.77050	**Adj R-Sq**	0.1502
Coeff Var	305.19026		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.82671	1.74784	-0.47	0.6362
CRSDepTime	1	0.00025648	0.00001340	19.15	<.0001
SeqNum	1	-0.84682	0.13168	-6.43	<.0001
ArrDelayLagInd	1	-2.68528	0.65265	-4.11	<.0001
ArrDelayLag	1	0.21530	0.01124	19.15	<.0001
ArrDelayLagCum	1	0.08817	0.00688	12.81	<.0001
ArrDelayLag2	1	0.07031	0.01289	5.45	<.0001
DistanceLag	1	0.00185	0.00042410	4.37	<.0001
CancelledLag	1	-0.04398	2.82537	-0.02	0.9876
PRCP	1	6.13863	1.00118	6.13	<.0001
TempMAX	1	-0.04612	0.03333	-1.38	0.1665
TempMin	1	0.03824	0.04718	0.81	0.4176

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=5

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4039575	367234	339.98	<.0001
Error	21051	22738780	1080.17576		
Corrected Total	21062	26778355			

Root MSE	32.86603	R-Square	0.1509
Dependent Mean	10.77050	Adj R-Sq	0.1504
Coeff Var	305.14863		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.46454	1.75031	-0.27	0.7907
CRSDepTime	1	0.00025619	0.00001339	19.13	<.0001
SeqNum	1	-0.84522	0.13165	-6.42	<.0001
ArrDelayLagInd	1	-2.72846	0.65277	-4.18	<.0001
ArrDelayLag	1	0.21578	0.01124	19.20	<.0001
ArrDelayLagCum	1	0.08782	0.00688	12.76	<.0001
ArrDelayLag2	1	0.07051	0.01289	5.47	<.0001
DistanceLag	1	0.00185	0.00042404	4.37	<.0001
CancelledLag	1	-0.09596	2.82500	-0.03	0.9729
PRCP	1	6.25498	1.00451	6.23	<.0001
TempMAX	1	-0.06630	0.03318	-2.00	0.0457
TempMin	1	0.05908	0.04697	1.26	0.2085

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=6

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4044057	367642	340.42	<.0001
Error	21051	22734298	1079.96285		
Corrected Total	21062	26778355			

Root MSE	32.86279	R-Square	0.1510
Dependent Mean	10.77050	Adj R-Sq	0.1506
Coeff Var	305.11856		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.59221	1.74838	-0.34	0.7348
CRSDepTime	1	0.00025707	0.00001339	19.19	<.0001
SeqNum	1	-0.84311	0.13165	-6.40	<.0001
ArrDelayLagInd	1	-2.72068	0.65269	-4.17	<.0001
ArrDelayLag	1	0.21570	0.01124	19.19	<.0001
ArrDelayLagCum	1	0.08793	0.00688	12.78	<.0001
ArrDelayLag2	1	0.07006	0.01289	5.43	<.0001
DistanceLag	1	0.00186	0.00042398	4.38	<.0001
CancelledLag	1	0.00493	2.82468	0.00	0.9986
PRCP	1	6.70378	1.00109	6.70	<.0001
TempMAX	1	-0.05460	0.03315	-1.65	0.0995
TempMin	1	0.04307	0.04697	0.92	0.3592

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=7

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4036500	366955	339.67	<.0001
Error	21051	22741855	1080.32182		
Corrected Total	21062	26778355			

Root MSE	32.86825	R-Square	0.1507
Dependent Mean	10.77050	Adj R-Sq	0.1503
Coeff Var	305.16926		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.72225	1.74920	-0.41	0.6797
CRSDepTime	1	0.00025670	0.00001340	19.16	<.0001
SeqNum	1	-0.84578	0.13168	-6.42	<.0001
ArrDelayLagInd	1	-2.69251	0.65260	-4.13	<.0001
ArrDelayLag	1	0.21545	0.01124	19.17	<.0001
ArrDelayLagCum	1	0.08813	0.00688	12.80	<.0001
ArrDelayLag2	1	0.07024	0.01289	5.45	<.0001
DistanceLag	1	0.00185	0.00042407	4.37	<.0001
CancelledLag	1	0.02552	2.82594	0.01	0.9928
PRCP	1	6.54051	1.00695	6.50	<.0001
TempMAX	1	-0.03471	0.03322	-1.04	0.2962
TempMin	1	0.01887	0.04699	0.40	0.6880

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=8

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance					
Source	**DF**	**Sum of Squares**	**Mean Square**	**F Value**	**Pr > F**
Model	11	4041495	367409	340.17	<.0001
Error	21051	22736860	1080.08454		
Corrected Total	21062	26778355			

Root MSE	32.86464	**R-Square**	0.1509
Dependent Mean	10.77050	**Adj R-Sq**	0.1505
Coeff Var	305.13575		

Parameter Estimates					
Variable	**DF**	**Parameter Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
Intercept	1	-0.33408	1.74880	-0.19	0.8485
CRSDepTime	1	0.00025639	0.00001339	19.14	<.0001
SeqNum	1	-0.84321	0.13166	-6.40	<.0001
ArrDelayLagInd	1	-2.73671	0.65280	-4.19	<.0001
ArrDelayLag	1	0.21582	0.01124	19.20	<.0001
ArrDelayLagCum	1	0.08787	0.00688	12.77	<.0001
ArrDelayLag2	1	0.07039	0.01289	5.46	<.0001
DistanceLag	1	0.00186	0.00042401	4.37	<.0001
CancelledLag	1	-0.09024	2.82499	-0.03	0.9745
PRCP	1	6.54984	1.00408	6.52	<.0001
TempMAX	1	-0.05900	0.03327	-1.77	0.0762
TempMin	1	0.04522	0.04710	0.96	0.3370

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=9

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4035839	366894	339.61	<.0001
Error	21051	22742515	1080.35321		
Corrected Total	21062	26778355			

Root MSE	32.86873	R-Square	0.1507
Dependent Mean	10.77050	Adj R-Sq	0.1503
Coeff Var	305.17370		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.62211	1.74905	-0.36	0.7221
CRSDepTime	1	0.00025631	0.00001340	19.13	<.0001
SeqNum	1	-0.84501	0.13166	-6.42	<.0001
ArrDelayLagInd	1	-2.72305	0.65268	-4.17	<.0001
ArrDelayLag	1	0.21574	0.01124	19.19	<.0001
ArrDelayLagCum	1	0.08788	0.00688	12.77	<.0001
ArrDelayLag2	1	0.07042	0.01289	5.46	<.0001
DistanceLag	1	0.00185	0.00042406	4.37	<.0001
CancelledLag	1	-0.17868	2.82582	-0.06	0.9496
PRCP	1	5.83605	1.00349	5.82	<.0001
TempMAX	1	-0.07408	0.03320	-2.23	0.0257
TempMin	1	0.07407	0.04685	1.58	0.1139

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The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=10

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4037003	367000	339.72	<.0001
Error	21051	22741352	1080.29792		
Corrected Total	21062	26778355			

Root MSE	32.86789	R-Square	0.1508
Dependent Mean	10.77050	Adj R-Sq	0.1503
Coeff Var	305.16589		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.76212	1.74433	-0.44	0.6622
CRSDepTime	1	0.00025638	0.00001340	19.14	<.0001
SeqNum	1	-0.84496	0.13167	-6.42	<.0001
ArrDelayLagInd	1	-2.71275	0.65286	-4.16	<.0001
ArrDelayLag	1	0.21566	0.01124	19.18	<.0001
ArrDelayLagCum	1	0.08800	0.00688	12.79	<.0001
ArrDelayLag2	1	0.07028	0.01289	5.45	<.0001
DistanceLag	1	0.00186	0.00042407	4.38	<.0001
CancelledLag	1	-0.08540	2.82560	-0.03	0.9759
PRCP	1	6.49330	1.00151	6.48	<.0001
TempMAX	1	-0.04039	0.03310	-1.22	0.2225
TempMin	1	0.02800	0.04705	0.60	0.5518

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=11

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4041273	367388	340.14	<.0001
Error	21051	22737081	1080.09506		
Corrected Total	21062	26778355			

Root MSE	32.86480	R-Square	0.1509
Dependent Mean	10.77050	Adj R-Sq	0.1505
Coeff Var	305.13723		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.55084	1.74727	-0.32	0.7526
CRSDepTime	1	0.00025640	0.00001339	19.14	<.0001
SeqNum	1	-0.84160	0.13167	-6.39	<.0001
ArrDelayLagInd	1	-2.72754	0.65256	-4.18	<.0001
ArrDelayLag	1	0.21571	0.01124	19.19	<.0001
ArrDelayLagCum	1	0.08786	0.00688	12.77	<.0001
ArrDelayLag2	1	0.07029	0.01289	5.45	<.0001
DistanceLag	1	0.00185	0.00042400	4.36	<.0001
CancelledLag	1	-0.12391	2.82562	-0.04	0.9650
PRCP	1	6.46083	1.00433	6.43	<.0001
TempMAX	1	-0.06180	0.03319	-1.86	0.0627
TempMin	1	0.05349	0.04690	1.14	0.2541

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Imputation Number=12

Number of Observations Read	21063
Number of Observations Used	21063

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	4040067	367279	340.02	<.0001
Error	21051	22738288	1080.15239		
Corrected Total	21062	26778355			

Root MSE	32.86567	R-Square	0.1509
Dependent Mean	10.77050	Adj R-Sq	0.1504
Coeff Var	305.14533		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.71718	1.74899	-0.41	0.6818
CRSDepTime	1	0.00025653	0.00001340	19.15	<.0001
SeqNum	1	-0.84398	0.13166	-6.41	<.0001
ArrDelayLagInd	1	-2.69841	0.65241	-4.14	<.0001
ArrDelayLag	1	0.21540	0.01124	19.16	<.0001
ArrDelayLagCum	1	0.08800	0.00688	12.79	<.0001
ArrDelayLag2	1	0.07019	0.01289	5.44	<.0001
DistanceLag	1	0.00185	0.00042404	4.37	<.0001
CancelledLag	1	-0.07165	2.82521	-0.03	0.9798
PRCP	1	6.54886	1.00499	6.52	<.0001
TempMAX	1	-0.04803	0.03348	-1.43	0.1513
TempMin	1	0.03749	0.04738	0.79	0.4289

The MIANALYZE Procedure

Model Information	
Data Set	HW3.BTS201505WTHRIMP_MIMP
Number of Imputations	12

Variance Information (12 Imputations)							
	Variance						
Parameter	Between	Within	Total	DF	Relative Increase in Variance	Fraction Missing Information	Relative Efficiency
PRCP	0.083290	1.006964	1.097196	1626.5	0.089607	0.083364	0.993101
TempMAX	0.000244	0.001105	0.001370	294.44	0.239595	0.198709	0.983711
TempMin	0.000418	0.002214	0.002667	381.5	0.204535	0.174122	0.985697

Parameter Estimates (12 Imputations)										
Parameter	Estimate	Std Error	95% Confidence Limits		DF	Minimum	Maximum	Theta0	t for H0: Parameter=Theta0	Pr > |t|
PRCP	6.382101	1.047471	4.32757	8.436635	1626.5	5.836046	6.703782	0	6.09	<.0001
TempMAX	-0.051508	0.037014	-0.12435	0.021337	294.44	-0.074079	-0.029801	0	-1.39	0.1651
TempMin	0.041959	0.051645	-0.05959	0.143504	381.5	0.015537	0.074067	0	0.81	0.4170

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
Carrier	14	AA AS B6 DL EV F9 HA MQ NK OO UA US VX WN

Number of Observations Read	395896
Number of Observations Used	395896

The GLM Procedure

Dependent Variable: DepDelay

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	68007803.7	3091263.8	2511.69	<.0001
Error	395873	487220206.8	1230.7		
Corrected Total	395895	555228010.6			

R-Square	Coeff Var	Root MSE	DepDelay Mean
0.122486	376.9320	35.08203	9.307257

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Carrier	13	6189822.53	476140.19	386.87	<.0001
CRSDepTime	1	8535436.17	8535436.17	6935.16	<.0001
SeqNum	1	169761.03	169761.03	137.93	<.0001
ArrDelayLagInd	1	13055463.09	13055463.09	10607.7	<.0001
ArrDelayLag	1	27728133.21	27728133.21	22529.5	<.0001
ArrDelayLagCum	1	11829594.17	11829594.17	9611.71	<.0001
ArrDelayLag2	1	166317.88	166317.88	135.14	<.0001
ArrDelayLag2Ind	1	12115.67	12115.67	9.84	0.0017
CancelledLag	1	317159.18	317159.18	257.70	<.0001
DistanceLag	1	4000.81	4000.81	3.25	0.0714

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Carrier	13	3309219.901	254555.377	206.83	<.0001
CRSDepTime	1	9598885.401	9598885.401	7799.22	<.0001
SeqNum	1	779125.792	779125.792	633.05	<.0001
ArrDelayLagInd	1	9436.609	9436.609	7.67	0.0056
ArrDelayLag	1	315446.348	315446.348	256.30	<.0001
ArrDelayLagCum	1	4654209.085	4654209.085	3781.61	<.0001
ArrDelayLag2	1	169553.599	169553.599	137.76	<.0001
ArrDelayLag2Ind	1	8094.970	8094.970	6.58	0.0103
CancelledLag	1	317084.692	317084.692	257.64	<.0001
DistanceLag	1	4000.814	4000.814	3.25	0.0714

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=AA

Number of Observations Read	35627
Number of Observations Used	35627

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	4382510	486946	225.41	<.0001
Error	35617	76942725	2160.28092		
Corrected Total	35626	81325235			

Root MSE	46.47882	R-Square	0.0539
Dependent Mean	10.93937	Adj R-Sq	0.0536
Coeff Var	424.87652		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	1.37547	0.81275	1.69	0.0906
CRSDepTime	1	0.00024453	0.00001387	17.63	<.0001
SeqNum	1	-1.25470	0.19046	-6.59	<.0001
ArrDelayLagInd	1	3.12939	0.73291	4.27	<.0001
ArrDelayLag	1	-0.05838	0.02143	-2.72	0.0064
ArrDelayLagCum	1	0.13163	0.00980	13.43	<.0001
ArrDelayLag2	1	-0.05647	0.01494	-3.78	0.0002
ArrDelayLag2Ind	1	1.10513	0.91200	1.21	0.2256
CancelledLag	1	16.57796	2.20438	7.52	<.0001
DistanceLag	1	-0.00036415	0.00041327	-0.88	0.3782

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=AS

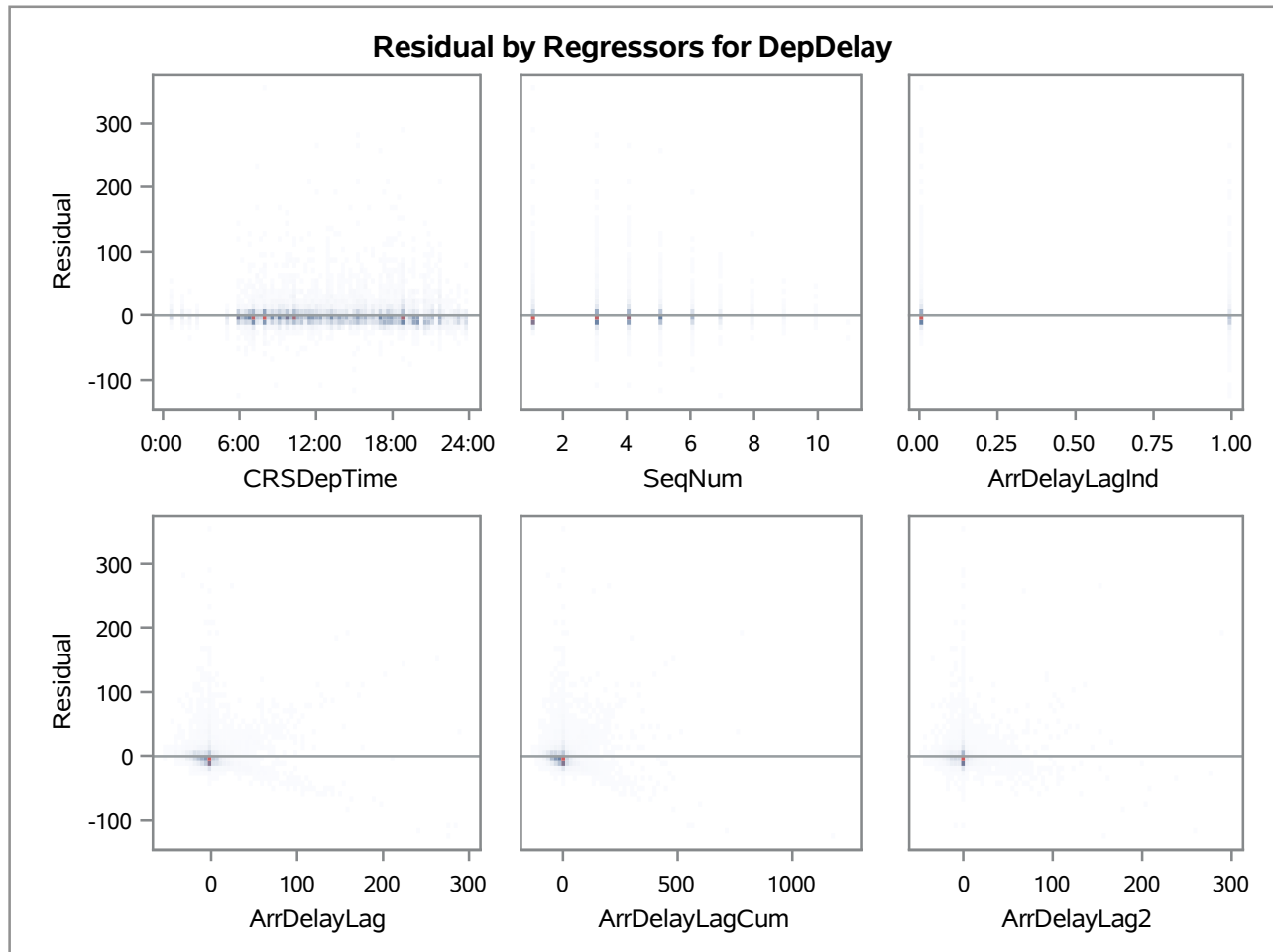| Number of Observations Read	11744
Number of Observations Used	11744

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	585969	65108	183.21	<.0001
Error	11734	4169901	355.36906		
Corrected Total	11743	4755870			

Root MSE	18.85123	R-Square	0.1232
Dependent Mean	-0.02963	Adj R-Sq	0.1225
Coeff Var	-63618		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-3.38949	0.56838	-5.96	<.0001
CRSDepTime	1	0.00008623	0.00000932	9.26	<.0001
SeqNum	1	-0.31286	0.11445	-2.73	0.0063
ArrDelayLagInd	1	-2.49868	0.54996	-4.54	<.0001
ArrDelayLag	1	0.30558	0.02464	12.40	<.0001
ArrDelayLagCum	1	0.03062	0.01019	3.00	0.0027
ArrDelayLag2	1	0.07297	0.02022	3.61	0.0003
ArrDelayLag2Ind	1	-1.08677	0.64894	-1.67	0.0940
CancelledLag	1	1.76149	3.94120	0.45	0.6549
DistanceLag	1	0.00170	0.00024901	6.84	<.0001

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=AS

Residual by Regressors for DepDelay

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=AS

Residual by Regressors for DepDelay
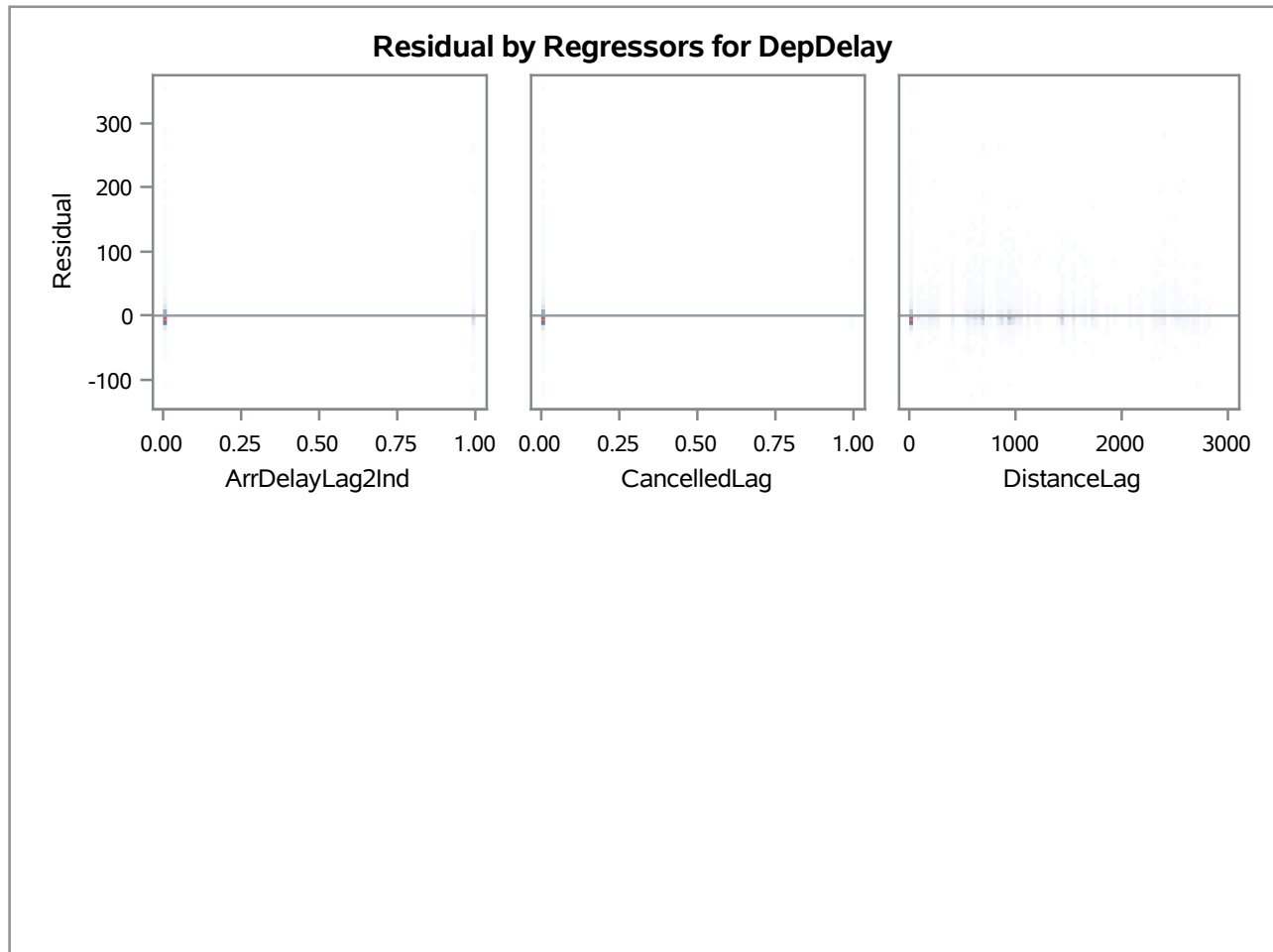
The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=B6

Number of Observations Read	17924
Number of Observations Used	17924

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	2981750	331306	337.10	<.0001
Error	17914	17605996	982.80649		
Corrected Total	17923	20587746			

Root MSE	31.34974	R-Square	0.1448
Dependent Mean	6.92669	Adj R-Sq	0.1444
Coeff Var	452.59341		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-9.50276	0.79004	-12.03	<.0001
CRSDepTime	1	0.00035038	0.00001276	27.45	<.0001
SeqNum	1	-0.17457	0.13440	-1.30	0.1940
ArrDelayLagInd	1	0.85900	0.78525	1.09	0.2740
ArrDelayLag	1	0.07118	0.01737	4.10	<.0001
ArrDelayLagCum	1	0.10650	0.00673	15.82	<.0001
ArrDelayLag2	1	-0.01893	0.01478	-1.28	0.2004
ArrDelayLag2Ind	1	0.11924	0.90299	0.13	0.8949
CancelledLag	1	3.26455	3.21756	1.01	0.3103
DistanceLag	1	-0.00039694	0.00034317	-1.16	0.2474

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=DL

Number of Observations Read	59461
Number of Observations Used	59461

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	6599636	733293	551.45	<.0001
Error	59451	79055126	1329.75267		
Corrected Total	59460	85654762			

Root MSE	36.46577	R-Square	0.0770
Dependent Mean	7.46435	Adj R-Sq	0.0769
Coeff Var	488.53216		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-5.84516	0.51615	-11.32	<.0001
CRSDepTime	1	0.00028355	0.00000853	33.25	<.0001
SeqNum	1	-0.18767	0.08893	-2.11	0.0348
ArrDelayLagInd	1	4.96603	0.46768	10.62	<.0001
ArrDelayLag	1	0.01191	0.01177	1.01	0.3117
ArrDelayLagCum	1	0.08809	0.00500	17.62	<.0001
ArrDelayLag2	1	0.03519	0.00928	3.79	0.0001
ArrDelayLag2Ind	1	-0.18140	0.55417	-0.33	0.7434
CancelledLag	1	14.03508	4.10032	3.42	0.0006
DistanceLag	1	-0.00107	0.00026394	-4.05	<.0001

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=EV

Number of Observations Read	38915
Number of Observations Used	38915

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	7770244	863360	558.35	<.0001
Error	38905	60157712	1546.27198		
Corrected Total	38914	67927955			

Root MSE	39.32267	R-Square	0.1144
Dependent Mean	9.90477	Adj R-Sq	0.1142
Coeff Var	397.00748		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.52686	0.74976	-0.70	0.4822
CRSDepTime	1	0.00025151	0.00001234	20.38	<.0001
SeqNum	1	-1.03918	0.10901	-9.53	<.0001
ArrDelayLagInd	1	0.41451	0.55590	0.75	0.4559
ArrDelayLag	1	0.14433	0.01084	13.31	<.0001
ArrDelayLagCum	1	0.06467	0.00405	15.97	<.0001
ArrDelayLag2	1	0.02914	0.00927	3.14	0.0017
ArrDelayLag2Ind	1	1.08366	0.61514	1.76	0.0781
CancelledLag	1	19.71016	1.59322	12.37	<.0001
DistanceLag	1	-0.00137	0.00074168	-1.84	0.0653

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=F9

Number of Observations Read	6498
Number of Observations Used	6498

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	5258666	584296	538.63	<.0001
Error	6488	7038106	1084.78822		
Corrected Total	6497	12296772			

Root MSE	32.93612	R-Square	0.4276
Dependent Mean	10.12727	Adj R-Sq	0.4269
Coeff Var	325.22213		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	4.90235	1.18739	4.13	<.0001
CRSDepTime	1	-0.00000759	0.00003846	-0.20	0.8436
SeqNum	1	0.31325	0.39440	0.79	0.4271
ArrDelayLagInd	1	-4.62638	1.10652	-4.18	<.0001
ArrDelayLag	1	0.70634	0.03403	20.76	<.0001
ArrDelayLagCum	1	0.00596	0.01472	0.40	0.6856
ArrDelayLag2	1	0.14264	0.02886	4.94	<.0001
ArrDelayLag2Ind	1	-1.59355	1.26404	-1.26	0.2075
CancelledLag	1	13.25961	10.99781	1.21	0.2280
DistanceLag	1	0.00031207	0.00098770	0.32	0.7520

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay
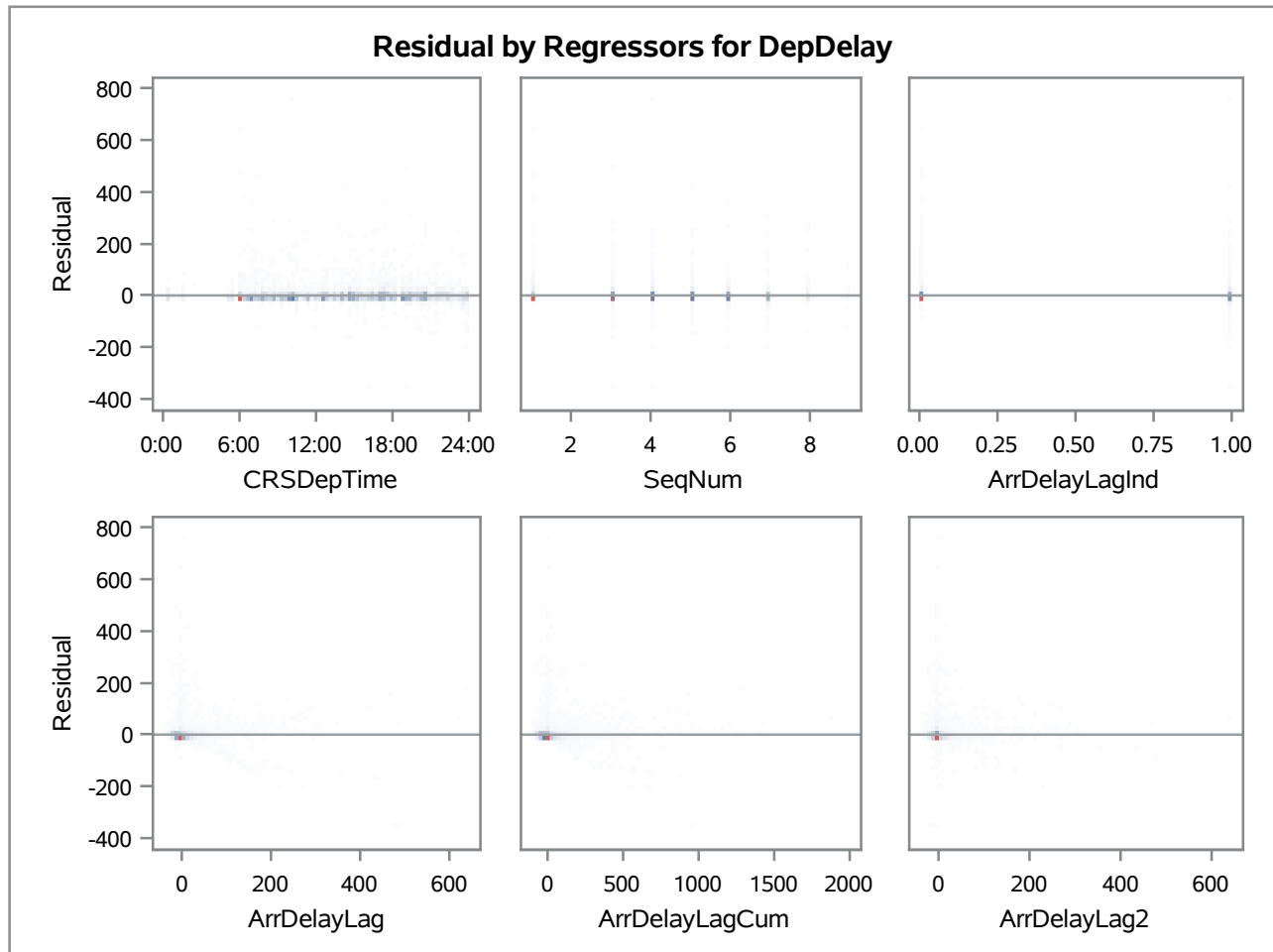
Carrier=F9

Residual by Regressors for DepDelay

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=F9

Residual by Regressors for DepDelay
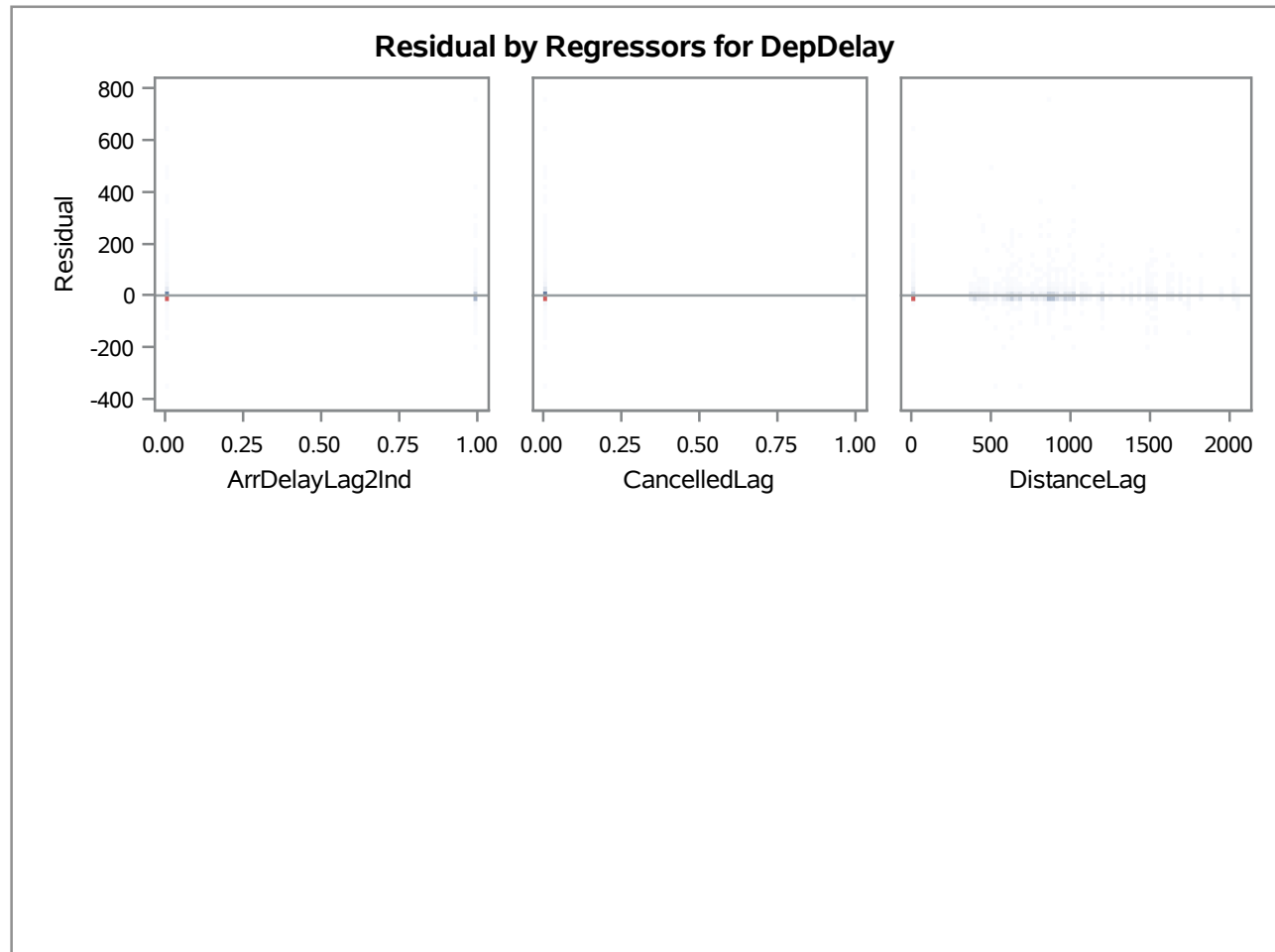
The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=HA

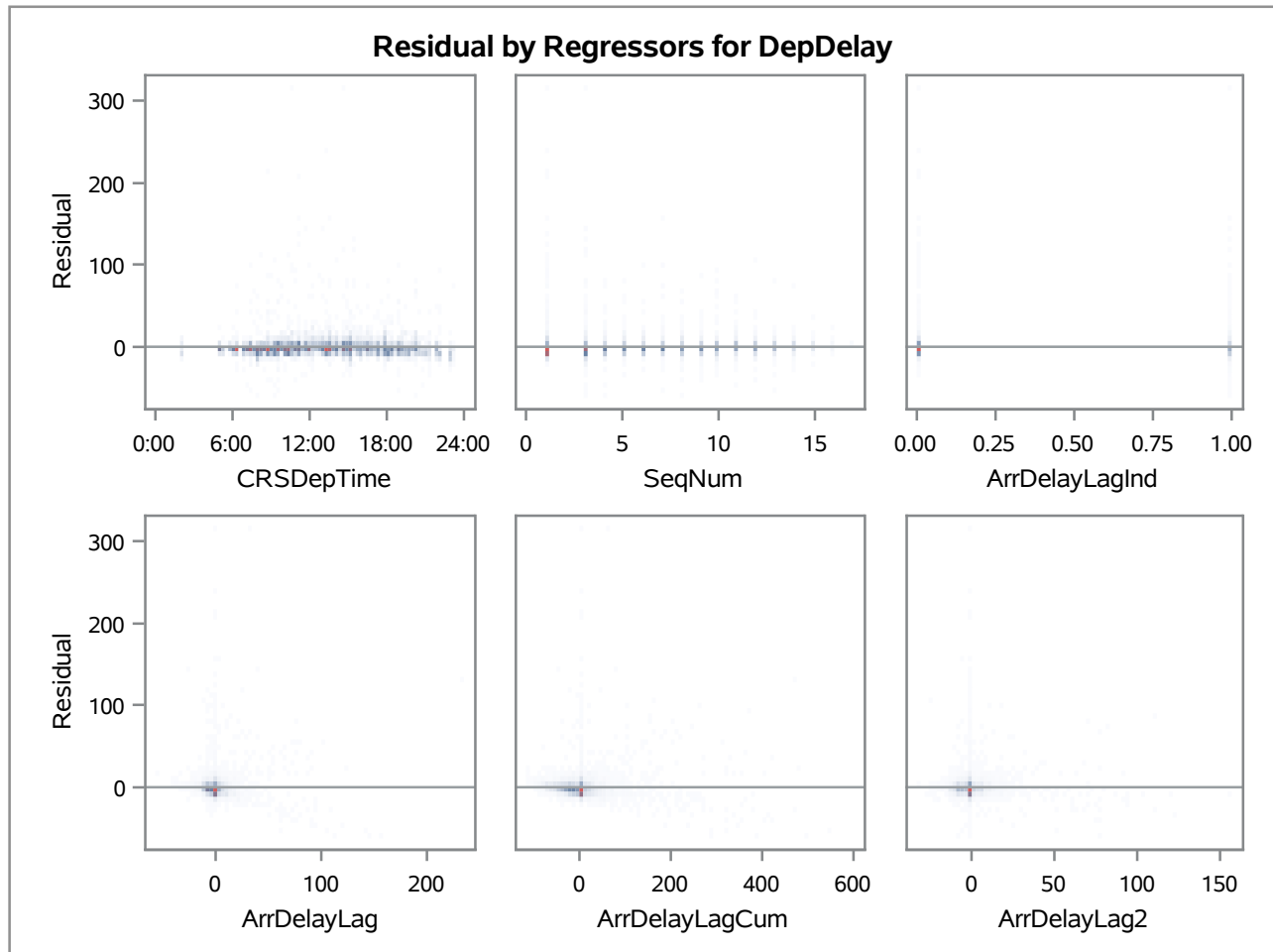| Number of Observations Read	5116
Number of Observations Used	5116

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	155329	17259	76.11	<.0001
Error	5106	1157874	226.76733		
Corrected Total	5115	1313203			

Root MSE	15.05880	R-Square	0.1183
Dependent Mean	-1.30629	Adj R-Sq	0.1167
Coeff Var	-1152.78765		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-2.63345	0.69770	-3.77	0.0002
CRSDepTime	1	0.00006398	0.00001321	4.84	<.0001
SeqNum	1	-0.22846	0.05811	-3.93	<.0001
ArrDelayLagInd	1	-1.63545	0.59890	-2.73	0.0063
ArrDelayLag	1	0.22700	0.02686	8.45	<.0001
ArrDelayLagCum	1	0.06698	0.00710	9.44	<.0001
ArrDelayLag2	1	-0.06563	0.03027	-2.17	0.0302
ArrDelayLag2Ind	1	-0.55904	0.66275	-0.84	0.3990
CancelledLag	1	-0.36499	7.53725	-0.05	0.9614
DistanceLag	1	0.00095567	0.00033725	2.83	0.0046

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=HA

Residual by Regressors for DepDelay

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=HA

Residual by Regressors for DepDelay
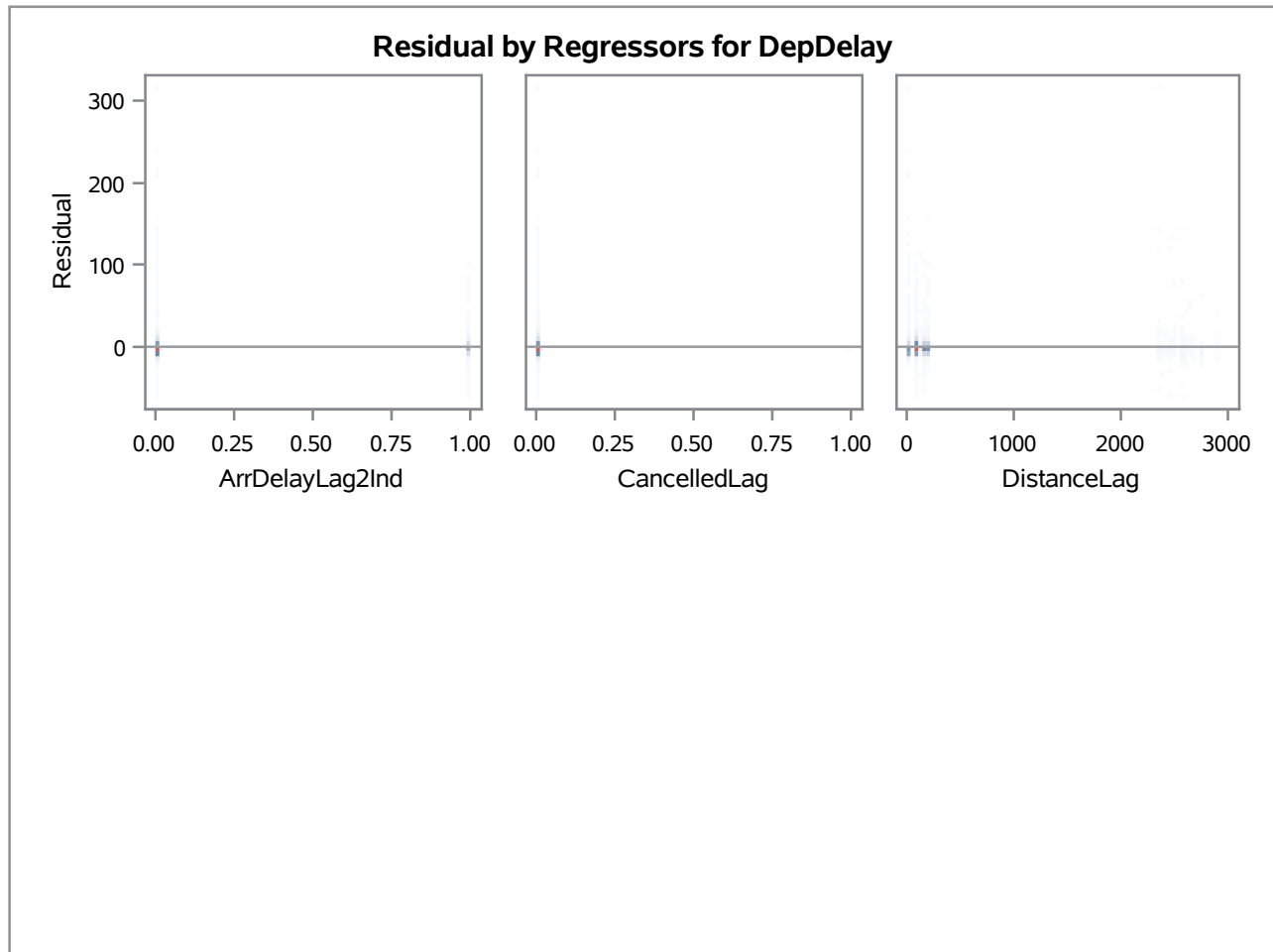
The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=MQ

Number of Observations Read	20225
Number of Observations Used	20225

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	2298647	255405	162.22	<.0001
Error	20215	31826504	1574.40037		
Corrected Total	20224	34125151			

Root MSE	39.67871	R-Square	0.0674
Dependent Mean	8.87471	Adj R-Sq	0.0669
Coeff Var	447.09874		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	7.89837	1.05230	7.51	<.0001
CRSDepTime	1	0.00006353	0.00001697	3.74	0.0002
SeqNum	1	-0.94007	0.14431	-6.51	<.0001
ArrDelayLagInd	1	4.61526	0.79827	5.78	<.0001
ArrDelayLag	1	0.08211	0.01776	4.62	<.0001
ArrDelayLagCum	1	0.06611	0.00728	9.08	<.0001
ArrDelayLag2	1	-0.02037	0.01505	-1.35	0.1759
ArrDelayLag2Ind	1	0.11687	0.90484	0.13	0.8972
CancelledLag	1	9.86766	1.72057	5.74	<.0001
DistanceLag	1	-0.00158	0.00111	-1.42	0.1559

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=NK

Number of Observations Read	8001
Number of Observations Used	8001

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	5207857	578651	325.37	<.0001
Error	7991	14211687	1778.46166		
Corrected Total	8000	19419544			

Root MSE	42.17181	R-Square	0.2682
Dependent Mean	22.96688	Adj R-Sq	0.2674
Coeff Var	183.62012		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	10.92828	1.53958	7.10	<.0001
CRSDepTime	1	0.00030126	0.00002396	12.57	<.0001
SeqNum	1	-3.24799	0.32051	-10.13	<.0001
ArrDelayLagInd	1	1.64501	1.31089	1.25	0.2096
ArrDelayLag	1	0.12471	0.02514	4.96	<.0001
ArrDelayLagCum	1	0.13574	0.00932	14.56	<.0001
ArrDelayLag2	1	0.00193	0.02121	0.09	0.9276
ArrDelayLag2Ind	1	-0.20849	1.46161	-0.14	0.8866
CancelledLag	1	18.54972	3.77049	4.92	<.0001
DistanceLag	1	-0.00205	0.00096521	-2.13	0.0334

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=NK

Residual by Regressors for DepDelay
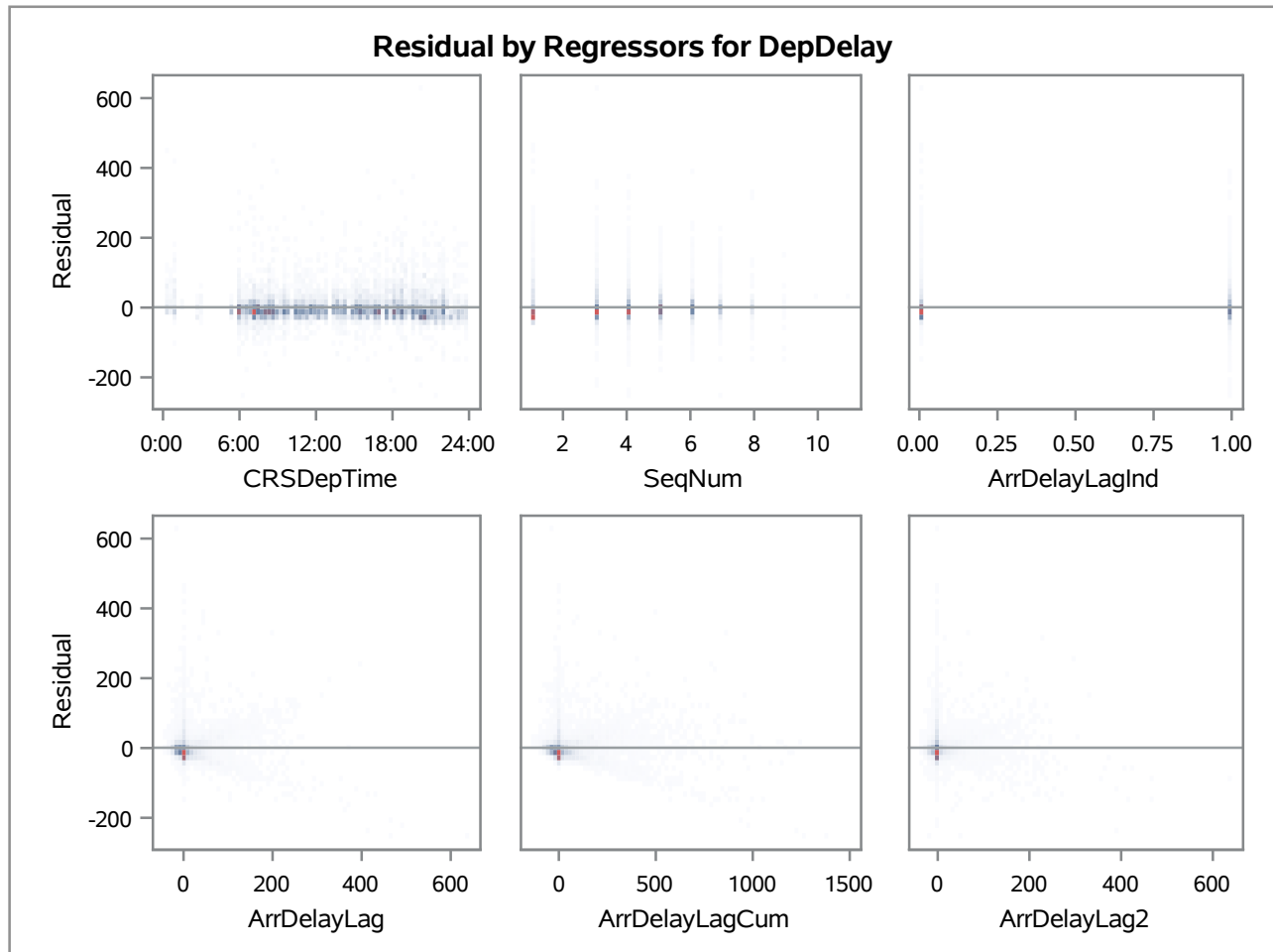
The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=NK
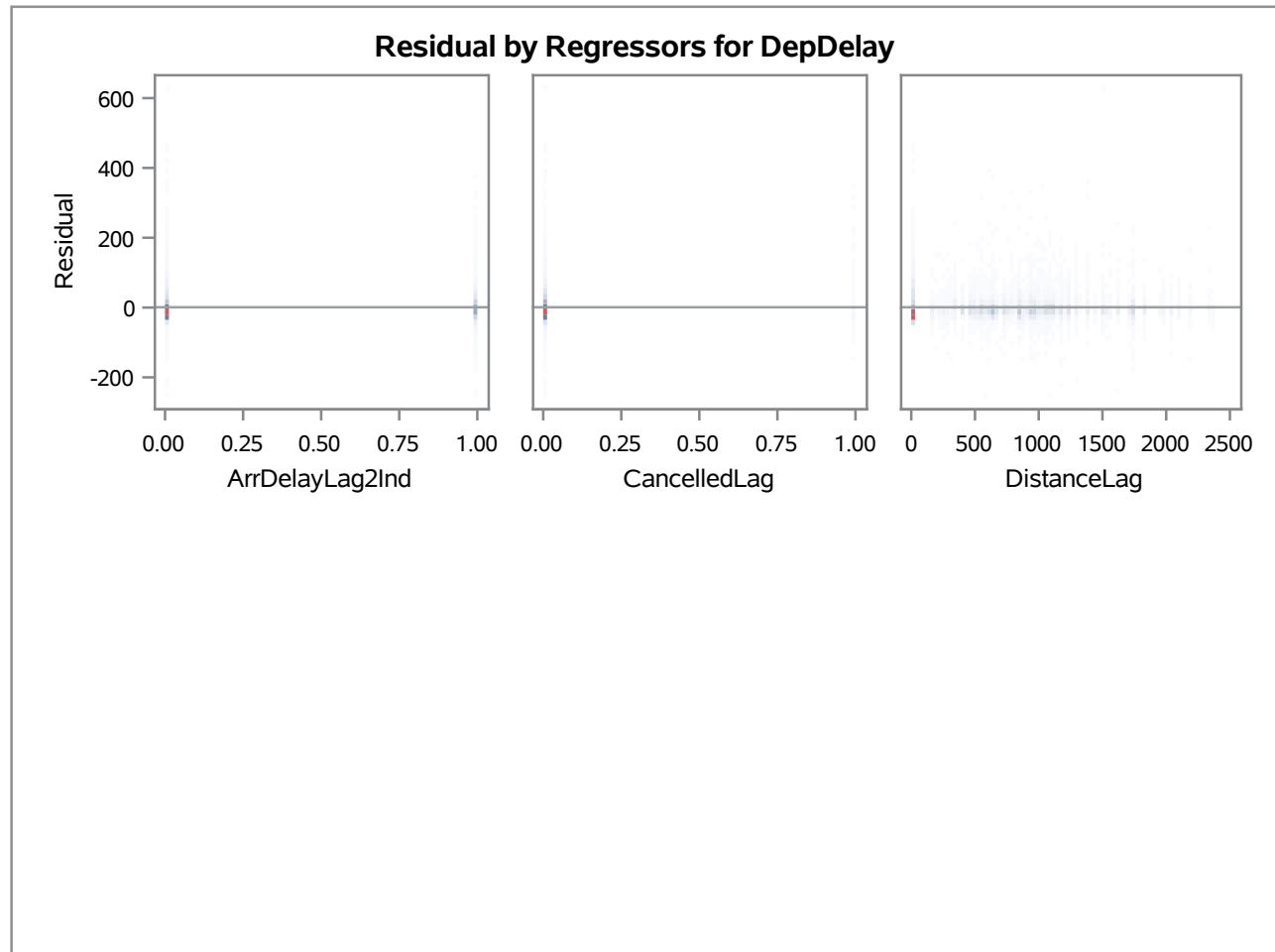
The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=OO

Number of Observations Read	39678
Number of Observations Used	39678

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	5218148	579794	556.89	<.0001
Error	39668	41299748	1041.13512		
Corrected Total	39677	46517895			

Root MSE	32.26663	R-Square	0.1122
Dependent Mean	5.96918	Adj R-Sq	0.1120
Coeff Var	540.55402		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	3.13251	0.59113	5.30	<.0001
CRSDepTime	1	0.00009847	0.00000966	10.19	<.0001
SeqNum	1	-0.82327	0.08056	-10.22	<.0001
ArrDelayLagInd	1	-0.01657	0.44790	-0.04	0.9705
ArrDelayLag	1	0.06864	0.01163	5.90	<.0001
ArrDelayLagCum	1	0.09464	0.00437	21.66	<.0001
ArrDelayLag2	1	0.06400	0.01014	6.31	<.0001
ArrDelayLag2Ind	1	-0.92710	0.50394	-1.84	0.0658
CancelledLag	1	8.57256	1.72160	4.98	<.0001
DistanceLag	1	0.00067900	0.00050528	1.34	0.1790

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=UA

Number of Observations Read	35411
Number of Observations Used	35411

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	6875914	763990	526.40	<.0001
Error	35401	51379112	1451.34636		
Corrected Total	35410	58255027			

Root MSE	38.09654	R-Square	0.1180
Dependent Mean	14.49953	Adj R-Sq	0.1178
Coeff Var	262.74320		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-2.51816	0.66088	-3.81	0.0001
CRSDepTime	1	0.00039058	0.00001125	34.73	<.0001
SeqNum	1	-0.89359	0.13884	-6.44	<.0001
ArrDelayLagInd	1	-1.46577	0.61148	-2.40	0.0165
ArrDelayLag	1	-0.00347	0.02129	-0.16	0.8706
ArrDelayLagCum	1	0.14613	0.00960	15.22	<.0001
ArrDelayLag2	1	0.01458	0.01514	0.96	0.3355
ArrDelayLag2Ind	1	-1.30161	0.74611	-1.74	0.0811
CancelledLag	1	-2.92261	2.89822	-1.01	0.3133
DistanceLag	1	-0.00041621	0.00027952	-1.49	0.1365

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=US

Number of Observations Read	27058
Number of Observations Used	27058

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	1731313	192368	304.09	<.0001
Error	27048	17110517	632.59823		
Corrected Total	27057	18841829			

Root MSE	25.15151	R-Square	0.0919
Dependent Mean	4.07129	Adj R-Sq	0.0916
Coeff Var	617.77710		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-1.74660	0.52067	-3.35	0.0008
CRSDepTime	1	0.00016063	0.00000849	18.92	<.0001
SeqNum	1	-0.53395	0.09541	-5.60	<.0001
ArrDelayLagInd	1	-1.27012	0.47453	-2.68	0.0074
ArrDelayLag	1	0.13084	0.01699	7.70	<.0001
ArrDelayLagCum	1	0.07426	0.00711	10.44	<.0001
ArrDelayLag2	1	0.00878	0.01326	0.66	0.5078
ArrDelayLag2Ind	1	-0.26454	0.55519	-0.48	0.6337
CancelledLag	1	0.03895	2.10867	0.02	0.9853
DistanceLag	1	0.00026408	0.00024416	1.08	0.2794

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=VX

Number of Observations Read	4082
Number of Observations Used	4082

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	647767	71974	82.01	<.0001
Error	4072	3573481	877.57383		
Corrected Total	4081	4221247			

Root MSE	29.62387	R-Square	0.1535
Dependent Mean	10.61832	Adj R-Sq	0.1516
Coeff Var	278.98821		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-4.63715	1.52054	-3.05	0.0023
CRSDepTime	1	0.00031451	0.00002857	11.01	<.0001
SeqNum	1	-0.93958	0.35803	-2.62	0.0087
ArrDelayLagInd	1	-2.46108	1.40018	-1.76	0.0789
ArrDelayLag	1	0.27094	0.04440	6.10	<.0001
ArrDelayLagCum	1	0.04948	0.01845	2.68	0.0073
ArrDelayLag2	1	0.05582	0.03729	1.50	0.1345
ArrDelayLag2Ind	1	1.51075	1.72330	0.88	0.3807
CancelledLag	1	6.31026	6.44141	0.98	0.3273
DistanceLag	1	0.00102	0.00051655	1.98	0.0479

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=VX

Fit Diagnostics for DepDelay
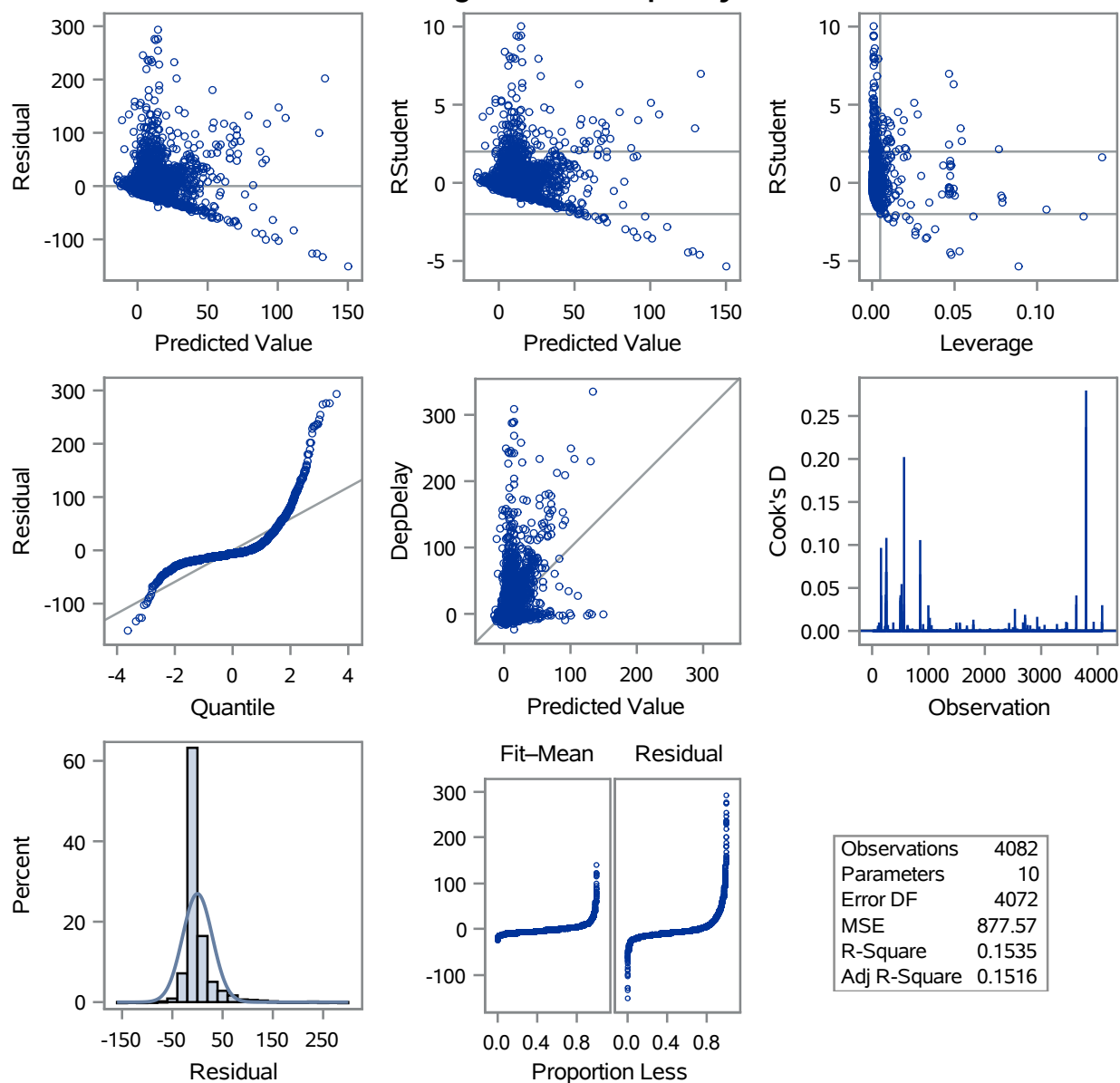
**The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay**
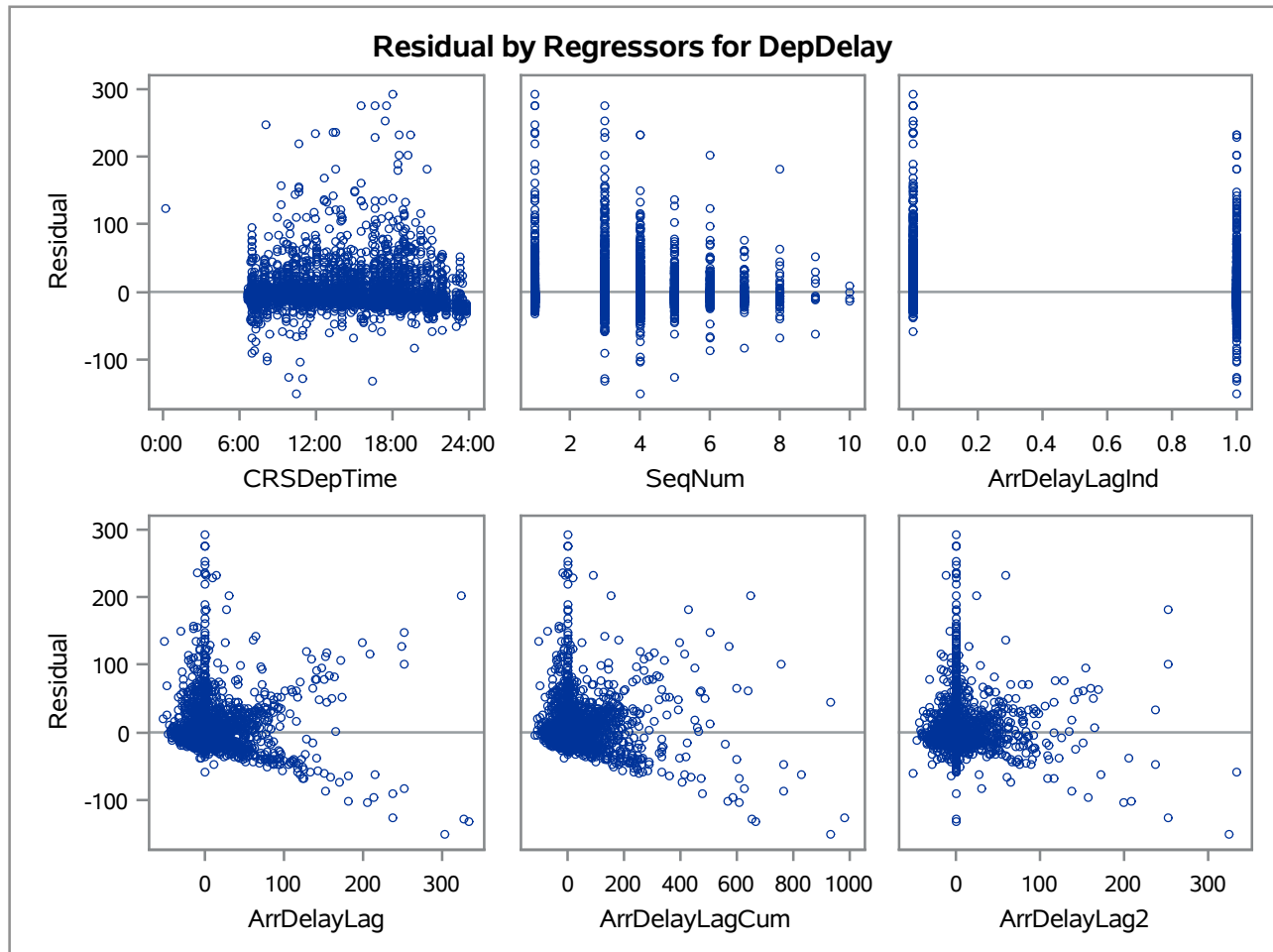
Carrier=VX

Residual by Regressors for DepDelay

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=VX

Residual by Regressors for DepDelay
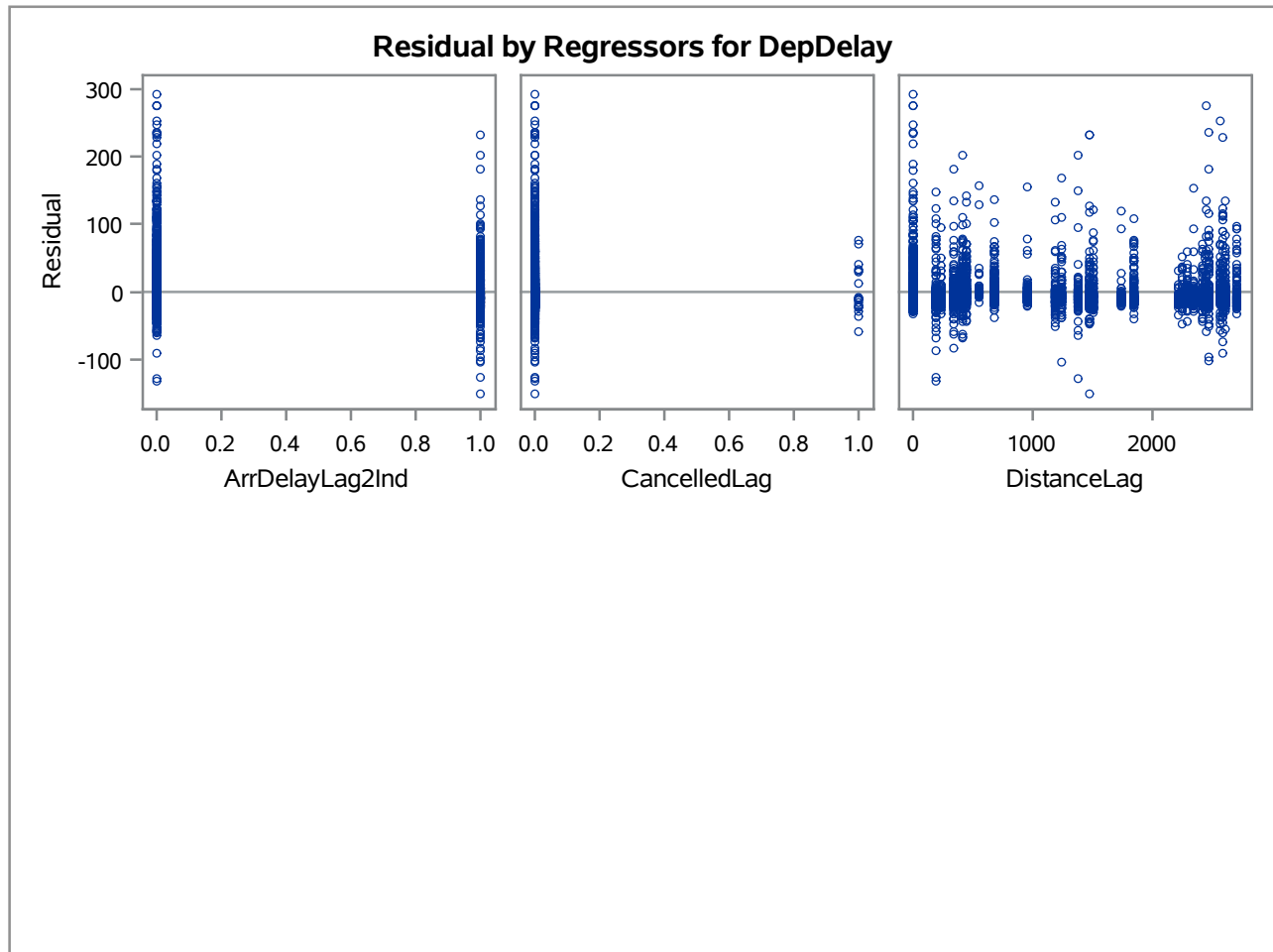
The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Carrier=WN

Number of Observations Read	86156
Number of Observations Used	86156

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	9	18013126	2001458	2275.15	<.0001
Error	86146	75782826	879.70221		
Corrected Total	86155	93795952			

Root MSE	29.65977	R-Square	0.1920
Dependent Mean	11.78925	Adj R-Sq	0.1920
Coeff Var	251.58312		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-8.75750	0.36725	-23.85	<.0001
CRSDepTime	1	0.00045529	0.00000581	78.36	<.0001
SeqNum	1	-0.94726	0.05413	-17.50	<.0001
ArrDelayLagInd	1	-0.67604	0.28236	-2.39	0.0167
ArrDelayLag	1	-0.00665	0.00701	-0.95	0.3426
ArrDelayLagCum	1	0.11543	0.00246	46.94	<.0001
ArrDelayLag2	1	0.07504	0.00582	12.89	<.0001
ArrDelayLag2Ind	1	-0.98069	0.31161	-3.15	0.0016
CancelledLag	1	7.43280	1.16295	6.39	<.0001
DistanceLag	1	0.00044227	0.00021851	2.02	0.0430

Obs	_MODEL_	_NAME_	_LABEL_	AA	AS	B6	DL	EV
1	MODEL1	_RMSE_	Root mean squared error	46.4788	18.8512	31.3497	36.4658	39.3227
2	MODEL1	Intercept	Intercept	1.3755	-3.3895	-9.5028	-5.8452	-0.5269
3	MODEL1	CRSDepTime		0.0002	0.0001	0.0004	0.0003	0.0003
4	MODEL1	SeqNum		-1.2547	-0.3129	-0.1746	-0.1877	-1.0392
5	MODEL1	ArrDelayLagInd		3.1294	-2.4987	0.8590	4.9660	0.4145
6	MODEL1	ArrDelayLag		-0.0584	0.3056	0.0712	0.0119	0.1443
7	MODEL1	ArrDelayLagCum		0.1316	0.0306	0.1065	0.0881	0.0647
8	MODEL1	ArrDelayLag2		-0.0565	0.0730	-0.0189	0.0352	0.0291
9	MODEL1	ArrDelayLag2Ind		1.1051	-1.0868	0.1192	-0.1814	1.0837
10	MODEL1	CancelledLag		16.5780	1.7615	3.2645	14.0351	19.7102
11	MODEL1	DistanceLag		-0.0004	0.0017	-0.0004	-0.0011	-0.0014
12	MODEL1	DepDelay		-1.0000	-1.0000	-1.0000	-1.0000	-1.0000

Obs	F9	HA	MQ	NK	OO	UA	US	VX	WN
1	32.9361	15.0588	39.6787	42.1718	32.2666	38.0965	25.1515	29.6239	29.6598
2	4.9023	-2.6334	7.8984	10.9283	3.1325	-2.5182	-1.7466	-4.6371	-8.7575
3	-0.0000	0.0001	0.0001	0.0003	0.0001	0.0004	0.0002	0.0003	0.0005
4	0.3133	-0.2285	-0.9401	-3.2480	-0.8233	-0.8936	-0.5339	-0.9396	-0.9473
5	-4.6264	-1.6354	4.6153	1.6450	-0.0166	-1.4658	-1.2701	-2.4611	-0.6760
6	0.7063	0.2270	0.0821	0.1247	0.0686	-0.0035	0.1308	0.2709	-0.0067
7	0.0060	0.0670	0.0661	0.1357	0.0946	0.1461	0.0743	0.0495	0.1154
8	0.1426	-0.0656	-0.0204	0.0019	0.0640	0.0146	0.0088	0.0558	0.0750
9	-1.5935	-0.5590	0.1169	-0.2085	-0.9271	-1.3016	-0.2645	1.5108	-0.9807
10	13.2596	-0.3650	9.8677	18.5497	8.5726	-2.9226	0.0389	6.3103	7.4328
11	0.0003	0.0010	-0.0016	-0.0021	0.0007	-0.0004	0.0003	0.0010	0.0004
12	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000

Obs	_NAME_	AA	AS	B6	DL	EV	F9	HA	MQ	NK	OO
1	_RMSE_	46.4788	18.8512	31.3497	36.4658	39.3227	32.9361	15.0588	39.6787	42.1718	32.2666
2	Intercept	1.3755	-3.3895	-9.5028	-5.8452	-0.5269	4.9023	-2.6334	7.8984	10.9283	3.1325
3	CRSDepTime	0.0002	0.0001	0.0004	0.0003	0.0003	-0.0000	0.0001	0.0001	0.0003	0.0001
4	SeqNum	-1.2547	-0.3129	-0.1746	-0.1877	-1.0392	0.3133	-0.2285	-0.9401	-3.2480	-0.8233
5	ArrDelayLagInd	3.1294	-2.4987	0.8590	4.9660	0.4145	-4.6264	-1.6354	4.6153	1.6450	-0.0166
6	ArrDelayLag	-0.0584	0.3056	0.0712	0.0119	0.1443	0.7063	0.2270	0.0821	0.1247	0.0686
7	ArrDelayLagCum	0.1316	0.0306	0.1065	0.0881	0.0647	0.0060	0.0670	0.0661	0.1357	0.0946
8	ArrDelayLag2	-0.0565	0.0730	-0.0189	0.0352	0.0291	0.1426	-0.0656	-0.0204	0.0019	0.0640
9	ArrDelayLag2Ind	1.1051	-1.0868	0.1192	-0.1814	1.0837	-1.5935	-0.5590	0.1169	-0.2085	-0.9271
10	CancelledLag	16.5780	1.7615	3.2645	14.0351	19.7102	13.2596	-0.3650	9.8677	18.5497	8.5726

Obs	UA	US	VX	WN	delta_AS	delta_B6	delta_DL	delta_EV	delta_F9	delta_HA
1	38.0965	25.1515	29.6239	29.6598	59.4412%	32.5505%	21.5432%	15.3966%	29.1374%	67.6007%
2	-2.5182	-1.7466	-4.6371	-8.7575	346.424%	790.873%	524.957%	138.304%	(256.412%)	291.458%
3	0.0004	0.0002	0.0003	0.0005	64.7375%	(43.2885%)	(15.9585%)	(2.8542%)	103.104%	73.8360%
4	-0.8936	-0.5339	-0.9396	-0.9473	75.0645%	86.0865%	85.0429%	17.1766%	124.966%	81.7919%
5	-1.4658	-1.2701	-2.4611	-0.6760	179.846%	72.5505%	(58.6900%)	86.7542%	247.837%	152.261%
6	-0.0035	0.1308	0.2709	-0.0067	623.426%	221.927%	120.395%	347.221%	1309.89%	488.832%
7	0.1461	0.0743	0.0495	0.1154	76.7387%	19.0909%	33.0820%	50.8691%	95.4747%	49.1179%
8	0.0146	0.0088	0.0558	0.0750	229.210%	66.4821%	162.315%	151.599%	352.586%	(16.2051%)
9	-1.3016	-0.2645	1.5108	-0.9807	198.339%	89.2101%	116.414%	1.9432%	244.195%	150.586%
10	-2.9226	0.0389	6.3103	7.4328	89.3745%	80.3079%	15.3389%	(18.8937%)	20.0167%	102.202%

Obs	delta_MQ	delta_NK	delta_OO	delta_UA	delta_US	delta_VX	delta_WN
1	14.6306%	9.2666%	30.5778%	18.0346%	45.8861%	36.2637%	36.1865%
2	(474.230%)	(694.512%)	(127.741%)	283.076%	226.982%	437.131%	736.691%
3	74.0184%	(23.1997%)	59.7296%	(59.7268%)	34.3109%	(28.6197%)	(86.1915%)
4	25.0761%	(158.866%)	34.3852%	28.7804%	57.4441%	25.1155%	24.5027%
5	(47.4813%)	47.4335%	100.530%	146.839%	140.587%	178.644%	121.603%
6	240.644%	313.610%	217.571%	94.0604%	324.121%	564.103%	88.6063%
7	49.7777%	(3.1237%)	28.1000%	(11.0137%)	43.5892%	62.4075%	12.3056%
8	63.9355%	103.416%	213.326%	125.822%	115.546%	198.850%	232.884%
9	89.4252%	118.865%	183.890%	217.779%	123.937%	(36.7034%)	188.739%
10	40.4772%	(11.8939%)	48.2894%	117.629%	99.7651%	61.9359%	55.1646%

Obs	_NAME_	AA	AS	B6	DL	EV	F9	HA	MQ	NK	OO
11	DistanceLag	-0.0004	0.0017	-0.0004	-0.0011	-0.0014	0.0003	0.0010	-0.0016	-0.0021	0.0007
12	DepDelay	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000	-1.0000

Obs	UA	US	VX	WN	delta_AS	delta_B6	delta_DL	delta_EV	delta_F9	delta_HA
11	-0.0004	0.0003	0.0010	0.0004	567.513%	(9.0033%)	(193.551%)	(275.475%)	185.698%	362.434%
12	-1.0000	-1.0000	-1.0000	-1.0000	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%

Obs	delta_MQ	delta_NK	delta_OO	delta_UA	delta_US	delta_VX	delta_WN
11	(332.746%)	(463.983%)	286.459%	(14.2940%)	172.518%	380.704%	221.452%
12	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%

The GENMOD Procedure

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	395896
Number of Observations Used	395896

Class Level Information		
Class	**Levels**	**Values**
Carrier	14	AA AS B6 DL EV F9 HA MQ NK OO UA US VX WN

Criteria For Assessing Goodness Of Fit			
Criterion	**DF**	**Value**	**Value/DF**
Deviance	4E5	492358.5162	1.2437
Scaled Deviance	4E5	492358.5162	1.2437
Pearson Chi-Square	4E5	607902.7333	1.5356
Scaled Pearson X2	4E5	607902.7333	1.5356
Log Likelihood		-319530.6133	
Full Log Likelihood		-393989.0168	
AIC (smaller is better)		788012.0336	
AICC (smaller is better)		788012.0352	
BIC (smaller is better)		788197.1450	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates					Wald 95% Confidence Limits			
Parameter		**DF**	**Estimate**	**Standard Error**			**Wald Chi-Square**	**Pr > ChiSq**
Intercept		1	-1.0199	0.0082	-1.0359	-1.0039	15644.8	<.0001
Carrier	AA	1	-0.5610	0.0089	-0.5784	-0.5435	3970.86	<.0001
Carrier	AS	1	-1.2850	0.0194	-1.3231	-1.2469	4370.01	<.0001
Carrier	B6	1	-0.6778	0.0121	-0.7016	-0.6540	3114.30	<.0001
Carrier	DL	1	-0.7445	0.0079	-0.7600	-0.7290	8838.27	<.0001
Carrier	EV	1	-0.0791	0.0079	-0.0946	-0.0636	99.84	<.0001
Carrier	F9	1	-0.3763	0.0177	-0.4110	-0.3415	450.48	<.0001

The GENMOD Procedure

Analysis Of Maximum Likelihood Parameter Estimates								
Parameter		**DF**	**Estimate**	**Standard Error**	**Wald 95% Confidence Limits**		**Wald Chi-Square**	**Pr > ChiSq**
Carrier	HA	1	-1.0742	0.0304	-1.1337	-1.0147	1250.38	<.0001
Carrier	MQ	1	-0.0636	0.0104	-0.0839	-0.0433	37.65	<.0001
Carrier	NK	1	0.1874	0.0117	0.1645	0.2103	257.85	<.0001
Carrier	OO	1	-0.2445	0.0083	-0.2607	-0.2284	877.96	<.0001
Carrier	UA	1	-0.4582	0.0083	-0.4744	-0.4420	3070.80	<.0001
Carrier	US	1	-0.9127	0.0116	-0.9355	-0.8899	6141.21	<.0001
Carrier	VX	1	-0.5992	0.0226	-0.6435	-0.5548	701.02	<.0001
Carrier	WN	0	0.0000	0.0000	0.0000	0.0000	.	.
MaxCRSDepTime		1	0.0000	0.0000	0.0000	0.0000	1405.95	<.0001
DistanceCum		1	0.0002	0.0000	0.0002	0.0002	22084.5	<.0001
CancelledCount		1	-0.1426	0.0021	-0.1467	-0.1386	4798.03	<.0001
Scale		0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=AA

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	35627
Number of Observations Used	35627

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	36E3	38348.5600	1.0765
Scaled Deviance	36E3	38348.5600	1.0765
Pearson Chi-Square	36E3	44719.2023	1.2553
Scaled Pearson X2	36E3	44719.2023	1.2553
Log Likelihood		-27715.2288	
Full Log Likelihood		-31418.5475	
AIC (smaller is better)		62845.0951	
AICC (smaller is better)		62845.0962	
BIC (smaller is better)		62879.0185	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.4950	0.0252	-1.5445	-1.4455	3506.61	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	92.95	<.0001
DistanceCum	1	0.0002	0.0000	0.0002	0.0002	1293.74	<.0001
CancelledCount	1	0.2103	0.0140	0.1829	0.2378	225.05	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=AS

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	11744
Number of Observations Used	11744

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	12E3	10460.6740	0.8910
Scaled Deviance	12E3	10460.6740	0.8910
Pearson Chi-Square	12E3	18217.7613	1.5518
Scaled Pearson X2	12E3	18217.7613	1.5518
Log Likelihood		-6692.1033	
Full Log Likelihood		-7379.0355	
AIC (smaller is better)		14766.0711	
AICC (smaller is better)		14766.0745	
BIC (smaller is better)		14795.5555	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.8919	0.0583	-2.0061	-1.7777	1054.34	<.0001
MaxCRSDepTime	1	0.0000	0.0000	-0.0000	0.0000	2.90	0.0884
DistanceCum	1	0.0001	0.0000	0.0001	0.0001	135.04	<.0001
CancelledCount	1	0.2657	0.1007	0.0683	0.4630	6.96	0.0083
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=B6

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	17924
Number of Observations Used	17924

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	18E3	20596.8623	1.1494
Scaled Deviance	18E3	20596.8623	1.1494
Pearson Chi-Square	18E3	27012.1876	1.5074
Scaled Pearson X2	18E3	27012.1876	1.5074
Log Likelihood		-13674.0858	
Full Log Likelihood		-15926.9325	
AIC (smaller is better)		31861.8649	
AICC (smaller is better)		31861.8672	
BIC (smaller is better)		31893.0405	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.5611	0.0377	-1.6349	-1.4872	1716.94	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	47.02	<.0001
DistanceCum	1	0.0002	0.0000	0.0001	0.0002	723.82	<.0001
CancelledCount	1	0.3578	0.0261	0.3066	0.4090	187.43	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=DL

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	59461
Number of Observations Used	59461

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	59E3	62621.2190	1.0532
Scaled Deviance	59E3	62621.2190	1.0532
Pearson Chi-Square	59E3	87609.2157	1.4735
Scaled Pearson X2	59E3	87609.2157	1.4735
Log Likelihood		-41883.7285	
Full Log Likelihood		-47419.1268	
AIC (smaller is better)		94846.2536	
AICC (smaller is better)		94846.2543	
BIC (smaller is better)		94882.2259	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.7415	0.0217	-1.7840	-1.6989	6430.28	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	330.27	<.0001
DistanceCum	1	0.0002	0.0000	0.0001	0.0002	1483.56	<.0001
CancelledCount	1	0.4249	0.0303	0.3654	0.4843	196.28	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=EV

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	38915
Number of Observations Used	38915

Criteria For Assessing Goodness Of Fit			
Criterion	**DF**	**Value**	**Value/DF**
Deviance	39E3	50290.4436	1.2924
Scaled Deviance	39E3	50290.4436	1.2924
Pearson Chi-Square	39E3	58099.8748	1.4931
Scaled Pearson X2	39E3	58099.8748	1.4931
Log Likelihood		-32511.3307	
Full Log Likelihood		-40632.5536	
AIC (smaller is better)		81273.1073	
AICC (smaller is better)		81273.1083	
BIC (smaller is better)		81307.3838	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald 95% Confidence Limits**		**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	-1.6137	0.0252	-1.6632	-1.5642	4087.10	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	254.53	<.0001
DistanceCum	1	0.0004	0.0000	0.0004	0.0004	3749.16	<.0001
CancelledCount	1	0.1658	0.0078	0.1504	0.1811	446.35	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=F9

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	6498
Number of Observations Used	6498

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	6494	8760.4125	1.3490
Scaled Deviance	6494	8760.4125	1.3490
Pearson Chi-Square	6494	11014.2200	1.6961
Scaled Pearson X2	6494	11014.2200	1.6961
Log Likelihood		-5103.8230	
Full Log Likelihood		-6624.4502	
AIC (smaller is better)		13256.9005	
AICC (smaller is better)		13256.9067	
BIC (smaller is better)		13284.0175	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.7612	0.0663	-1.8912	-1.6312	704.86	<.0001
MaxCRSDepTime	1	0.0000	0.0000	-0.0000	0.0000	0.75	0.3854
DistanceCum	1	0.0003	0.0000	0.0003	0.0003	1064.32	<.0001
CancelledCount	1	-0.1933	0.1644	-0.5155	0.1289	1.38	0.2396
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=HA

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	5116
Number of Observations Used	5116

Criteria For Assessing Goodness Of Fit			
Criterion	**DF**	**Value**	**Value/DF**
Deviance	5112	5302.4190	1.0372
Scaled Deviance	5112	5302.4190	1.0372
Pearson Chi-Square	5112	14005.9430	2.7398
Scaled Pearson X2	5112	14005.9430	2.7398
Log Likelihood		-2793.6838	
Full Log Likelihood		-3341.6294	
AIC (smaller is better)		6691.2588	
AICC (smaller is better)		6691.2667	
BIC (smaller is better)		6717.4193	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald 95% Confidence Limits**		**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	-1.5825	0.1014	-1.7814	-1.3837	243.41	<.0001
MaxCRSDepTime	1	0.0000	0.0000	-0.0000	0.0000	0.35	0.5569
DistanceCum	1	-0.0000	0.0000	-0.0000	0.0000	0.03	0.8570
CancelledCount	1	-17.7032	15098.96	-29611.1	29575.71	0.00	0.9991
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=MQ

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	20225
Number of Observations Used	20225

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	2E4	25449.9694	1.2586
Scaled Deviance	2E4	25449.9694	1.2586
Pearson Chi-Square	2E4	28857.7293	1.4271
Scaled Pearson X2	2E4	28857.7293	1.4271
Log Likelihood		-16697.1192	
Full Log Likelihood		-20686.7805	
AIC (smaller is better)		41381.5609	
AICC (smaller is better)		41381.5629	
BIC (smaller is better)		41413.2196	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.4421	0.0331	-1.5069	-1.3772	1899.67	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	14.51	0.0001
DistanceCum	1	0.0005	0.0000	0.0004	0.0005	2319.73	<.0001
CancelledCount	1	0.1019	0.0107	0.0810	0.1228	91.16	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=NK

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	8001
Number of Observations Used	8001

Criteria For Assessing Goodness Of Fit			
Criterion	**DF**	**Value**	**Value/DF**
Deviance	7997	12188.5338	1.5241
Scaled Deviance	7997	12188.5338	1.5241
Pearson Chi-Square	7997	11294.6887	1.4124
Scaled Pearson X2	7997	11294.6887	1.4124
Log Likelihood		-7008.5416	
Full Log Likelihood		-11153.4836	
AIC (smaller is better)		22314.9673	
AICC (smaller is better)		22314.9723	
BIC (smaller is better)		22342.9166	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald 95% Confidence Limits**		**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	-0.7013	0.0324	-0.7648	-0.6378	468.60	<.0001
MaxCRSDepTime	1	-0.0000	0.0000	-0.0000	-0.0000	74.57	<.0001
DistanceCum	1	0.0003	0.0000	0.0003	0.0003	1968.39	<.0001
CancelledCount	1	0.0362	0.0188	-0.0007	0.0731	3.69	0.0547
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=OO

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	39678
Number of Observations Used	39678

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	4E4	51754.5075	1.3045
Scaled Deviance	4E4	51754.5075	1.3045
Pearson Chi-Square	4E4	67263.4065	1.6954
Scaled Pearson X2	4E4	67263.4065	1.6954
Log Likelihood		-31673.3216	
Full Log Likelihood		-39297.6270	
AIC (smaller is better)		78603.2541	
AICC (smaller is better)		78603.2551	
BIC (smaller is better)		78637.6083	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.5887	0.0248	-1.6374	-1.5400	4090.21	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	96.54	<.0001
DistanceCum	1	0.0004	0.0000	0.0004	0.0004	3682.27	<.0001
CancelledCount	1	0.1319	0.0176	0.0974	0.1664	56.06	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=UA

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	35411
Number of Observations Used	35411

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	35E3	38989.2644	1.1012
Scaled Deviance	35E3	38989.2644	1.1012
Pearson Chi-Square	35E3	40580.8448	1.1461
Scaled Pearson X2	35E3	40580.8448	1.1461
Log Likelihood		-29656.1155	
Full Log Likelihood		-34467.4301	
AIC (smaller is better)		68942.8603	
AICC (smaller is better)		68942.8614	
BIC (smaller is better)		68976.7594	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.4622	0.0239	-1.5090	-1.4153	3741.13	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	260.57	<.0001
DistanceCum	1	0.0002	0.0000	0.0002	0.0002	2293.21	<.0001
CancelledCount	1	-0.3482	0.0426	-0.4318	-0.2647	66.73	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=US

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	27058
Number of Observations Used	27058

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	27E3	26592.8920	0.9830
Scaled Deviance	27E3	26592.8920	0.9830
Pearson Chi-Square	27E3	39608.6417	1.4641
Scaled Pearson X2	27E3	39608.6417	1.4641
Log Likelihood		-17789.0173	
Full Log Likelihood		-19807.9706	
AIC (smaller is better)		39623.9413	
AICC (smaller is better)		39623.9427	
BIC (smaller is better)		39656.7642	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.8763	0.0361	-1.9471	-1.8056	2704.81	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	165.03	<.0001
DistanceCum	1	0.0001	0.0000	0.0001	0.0001	370.28	<.0001
CancelledCount	1	-0.2428	0.0549	-0.3505	-0.1351	19.53	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=VX

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	4082
Number of Observations Used	4082

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	4078	5266.1994	1.2914
Scaled Deviance	4078	5266.1994	1.2914
Pearson Chi-Square	4078	7043.1226	1.7271
Scaled Pearson X2	4078	7043.1226	1.7271
Log Likelihood		-3380.0126	
Full Log Likelihood		-4078.2964	
AIC (smaller is better)		8164.5928	
AICC (smaller is better)		8164.6026	
BIC (smaller is better)		8189.8502	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.3303	0.0702	-1.4678	-1.1927	359.27	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	19.37	<.0001
DistanceCum	1	0.0001	0.0000	0.0001	0.0001	90.98	<.0001
CancelledCount	1	0.2715	0.0527	0.1683	0.3747	26.58	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The GENMOD Procedure

Carrier=WN

Model Information	
Data Set	HW3.BTS201505_660185526_DEL15S
Distribution	Poisson
Link Function	Log
Dependent Variable	DelayCt

Number of Observations Read	86156
Number of Observations Used	86156

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Deviance	86E3	126281.6091	1.4658
Scaled Deviance	86E3	126281.6091	1.4658
Pearson Chi-Square	86E3	135840.2260	1.5768
Scaled Pearson X2	86E3	135840.2260	1.5768
Log Likelihood		-78225.0265	
Full Log Likelihood		-107027.6778	
AIC (smaller is better)		214063.3555	
AICC (smaller is better)		214063.3560	
BIC (smaller is better)		214100.8112	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.2893	0.0144	-1.3176	-1.2610	7984.79	<.0001
MaxCRSDepTime	1	0.0000	0.0000	0.0000	0.0000	649.26	<.0001
DistanceCum	1	0.0003	0.0000	0.0003	0.0003	10232.2	<.0001
CancelledCount	1	0.1860	0.0070	0.1724	0.1996	714.68	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Number of Observations Read	395896
Number of Observations Used	395896

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	111828847	13978606	12480.7	<.0001
Error	395887	443399164	1120.01446		
Corrected Total	395895	555228011			

Root MSE	33.46662	R-Square	0.2014
Dependent Mean	9.30726	Adj R-Sq	0.2014
Coeff Var	359.57549		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.64151	0.16164	3.97	<.0001
CRSDepTime	1	0.00013606	0.00000508	26.80	<.0001
SeqNum	1	-0.25076	0.04415	-5.68	<.0001
ArrDelayLagInd	1	1.28978	0.15570	8.28	<.0001
ArrDelayLag	1	0.44468	0.00299	148.62	<.0001
ArrDelayLagCum	1	0.01172	0.00189	6.20	<.0001
ArrDelayLag2	1	0.14035	0.00357	39.29	<.0001
CancelledLag	1	9.54129	0.61449	15.53	<.0001
DistanceLag	1	0.00249	0.00010502	23.69	<.0001

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Number of Observations Read	395896
Number of Observations Used	395896

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	111395170	13924396	12420.2	<.0001
Error	395887	443832841	1121.10991		
Corrected Total	395895	555228011			

Root MSE	33.48298	R-Square	0.2006
Dependent Mean	9.30726	Adj R-Sq	0.2006
Coeff Var	359.75130		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.60599	0.16172	3.75	0.0002
CRSDepTime	1	0.00013752	0.00000508	27.08	<.0001
SeqNum	1	-0.25012	0.04417	-5.66	<.0001
ArrDelayLagInd	1	1.29295	0.15579	8.30	<.0001
ArrDelayLag	1	0.44036	0.00299	147.25	<.0001
ArrDelayLagCum	1	0.01775	0.00189	9.41	<.0001
ArrDelayLag2	1	0.12417	0.00357	34.77	<.0001
CancelledLag	1	9.61514	0.61483	15.64	<.0001
DistanceLag	1	0.00243	0.00010507	23.17	<.0001

Obs	_NAME_	easter1	easter2	delta
1	_RMSE_	33.4666	33.4830	(0.0489%)
2	Intercept	0.6415	0.6060	5.5364%
3	CRSDepTime	0.0001	0.0001	(1.0754%)
4	SeqNum	-0.2508	-0.2501	0.2581%
5	ArrDelayLagInd	1.2898	1.2929	(0.2453%)
6	ArrDelayLag	0.4447	0.4404	0.9730%
7	ArrDelayLagCum	0.0117	0.0178	(51.4414%)
8	ArrDelayLag2	0.1403	0.1242	11.5308%
9	CancelledLag	9.5413	9.6151	(0.7740%)
10	DistanceLag	0.0025	0.0024	2.1697%
11	DepDelay	-1.0000	-1.0000	0.0000%

Obs	_NAME_	easter1	easter2	delta

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Number of Observations Read	395896
Number of Observations Used	395896

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	61734471	7716809	6190.53	<.0001
Error	395887	493493540	1246.55152		
Corrected Total	395895	555228011			

Root MSE	35.30654	R-Square	0.1112
Dependent Mean	9.30726	Adj R-Sq	0.1112
Coeff Var	379.34415		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-1.39051	0.19528	-7.12	<.0001
CRSDepTime	1	0.00023108	0.00000326	70.86	<.0001
SeqNum	1	-0.42171	0.10679	-3.95	<.0001
ArrDelayLagInd	1	-7.58125	0.30105	-25.18	<.0001
ArrDelayLag	1	0.87525	0.01311	66.78	<.0001
ArrDelayLagCum	1	0.01467	0.01207	1.22	0.2241
ArrDelayLag2	1	-0.01768	0.01920	-0.92	0.3572
CancelledLag	1	-6.35899	1.63384	-3.89	<.0001
DistanceLag	1	0.00181	0.00021211	8.54	<.0001

The REG Procedure
Model: MODEL1
Dependent Variable: DepDelay

Number of Observations Read	395896
Number of Observations Used	395896

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	61734471	7716809	6190.53	<.0001
Error	395887	493493540	1246.55152		
Corrected Total	395895	555228011			

Root MSE	35.30654	R-Square	0.1112
Dependent Mean	9.30726	Adj R-Sq	0.1112
Coeff Var	379.34415		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-1.39051	0.19528	-7.12	<.0001
CRSDepTime	1	0.00023108	0.00000326	70.86	<.0001
SeqNum	1	-0.42171	0.10679	-3.95	<.0001
ArrDelayLagInd	1	-7.58125	0.30105	-25.18	<.0001
ArrDelayLag	1	0.87525	0.01311	66.78	<.0001
ArrDelayLagCum	1	0.01467	0.01207	1.22	0.2241
ArrDelayLag2	1	-0.01768	0.01920	-0.92	0.3572
CancelledLag	1	-6.35899	1.63384	-3.89	<.0001
DistanceLag	1	0.00181	0.00021211	8.54	<.0001

Obs	_NAME_	easter1	easter2	delta
1	_RMSE_	35.3065	35.3065	0.0000%
2	Intercept	-1.3905	-1.3905	0.0000%
3	CRSDepTime	0.0002	0.0002	0.0000%
4	SeqNum	-0.4217	-0.4217	0.0000%
5	ArrDelayLagInd	-7.5813	-7.5813	0.0000%
6	ArrDelayLag	0.8752	0.8752	0.0000%
7	ArrDelayLagCum	0.0147	0.0147	0.0000%
8	ArrDelayLag2	-0.0177	-0.0177	0.0000%
9	CancelledLag	-6.3590	-6.3590	0.0000%
10	DistanceLag	0.0018	0.0018	0.0000%
11	DepDelay	-1.0000	-1.0000	0.0000%