36662 Final Project: EDA Plots
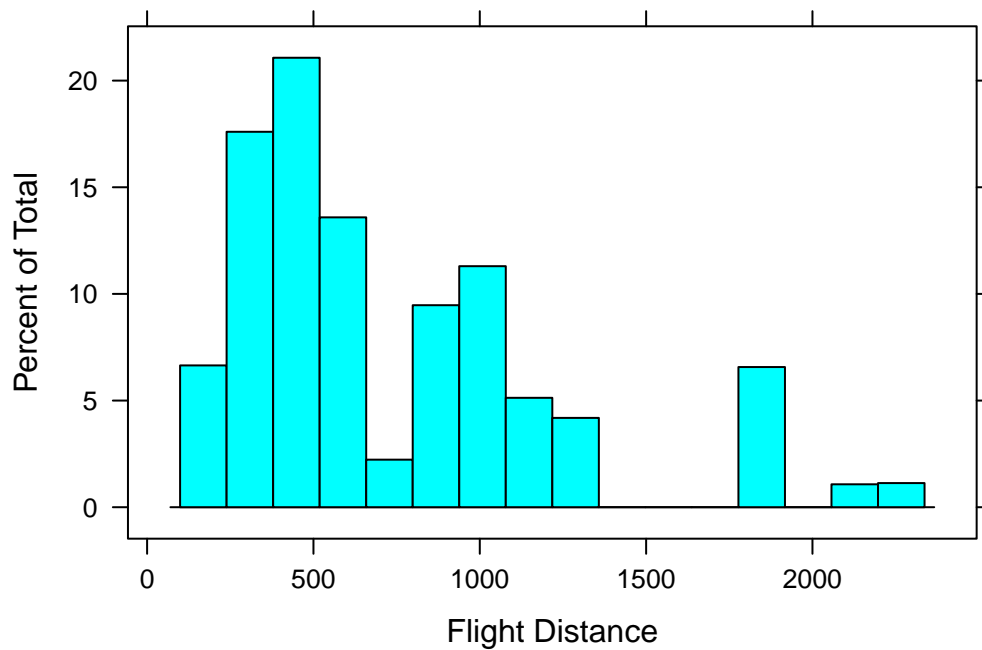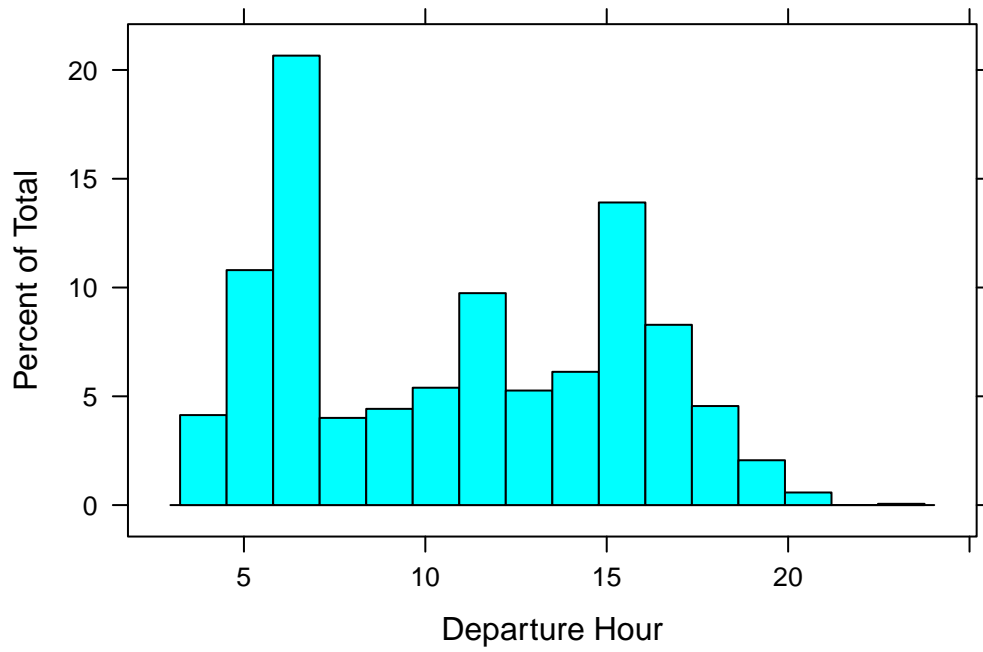
Yuxi Chang

April 30, 2017

Flight Distance and Time

Flight Distance: Distances of most flights are in the range of 0-1000.
Departure Time: 5-8am is the peak time. 15-17 is another peak time.
Week Day: No big difference across week days.
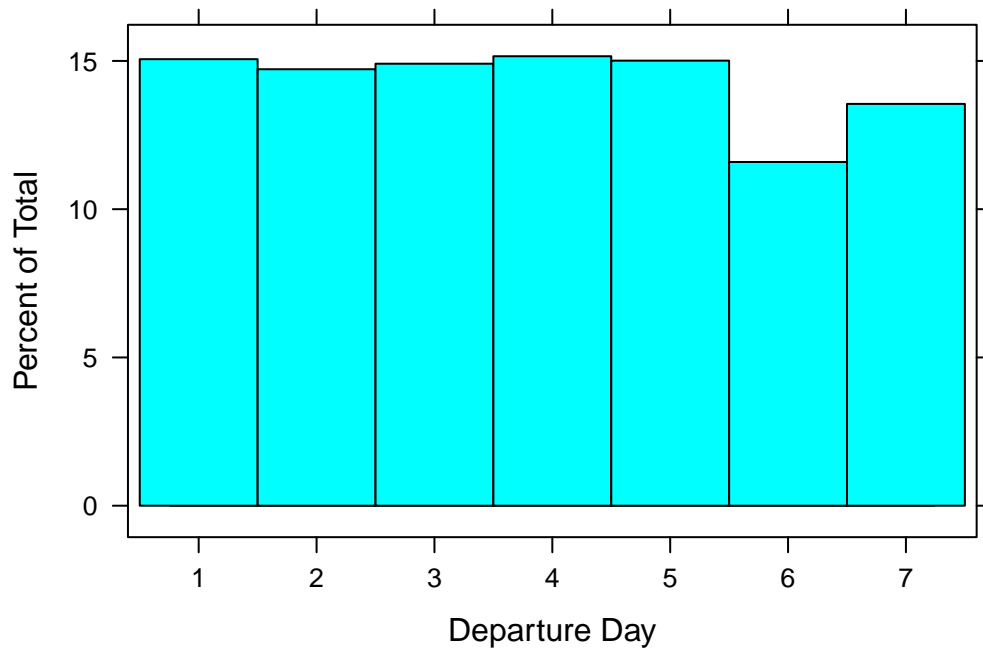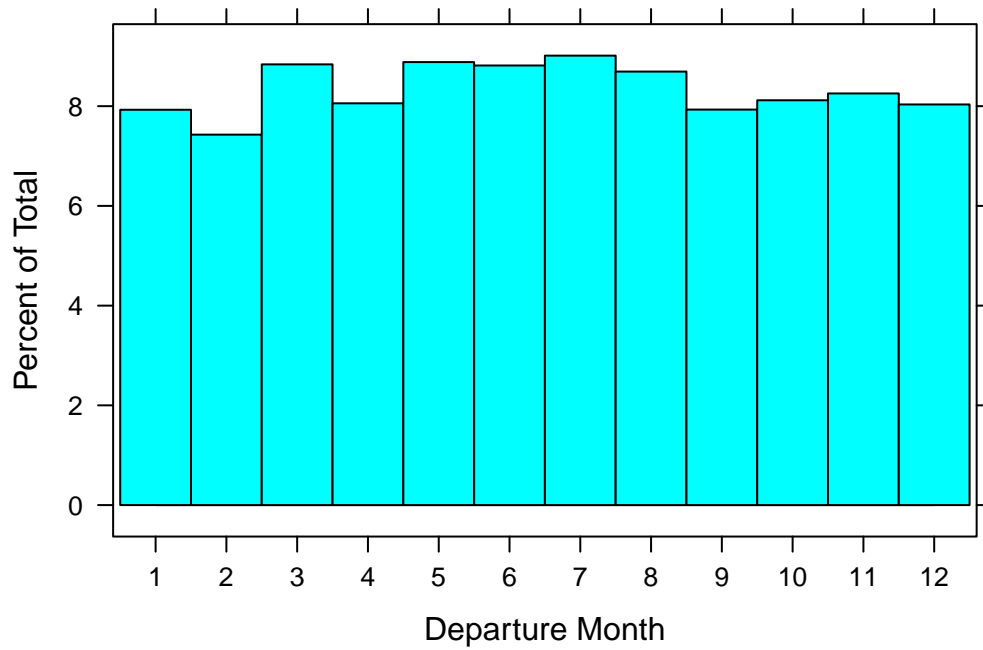Yearly: No apparent seasonality across months.

Flight Distance Distribution

Departure Time Distribution

Departure Week Day Distribution
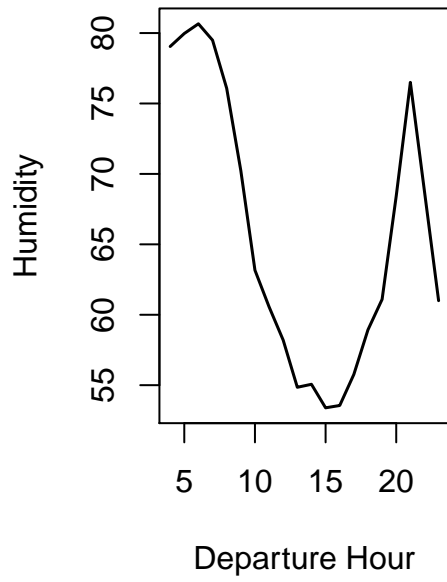
Departure Month Distribution

Features of Departure airport (Pittsburgh)
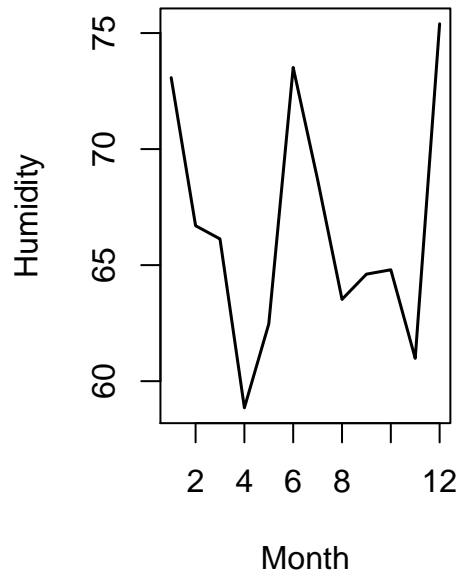
The heavier the snow, the lower the visibility.

Rain is a little trickier; Level 2 has better visibility than Level 1?
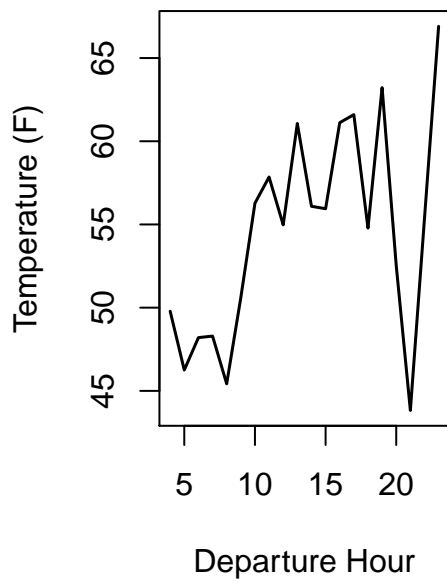
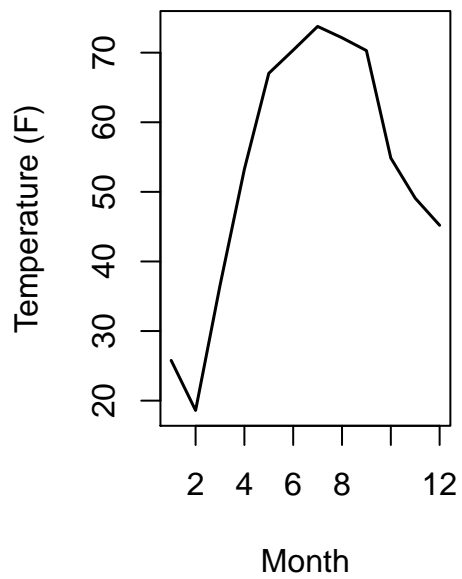Heavier Rain/Snow, lower pressure.

Daily Humidity Trend

Departure Hour

Yearly Humidity Trend

Month

Daily Temperature Trend

Departure Hour

Yearly Temperature Trend

Month

Daily Pressure Trend

Pressure (in.)

Departure Hour
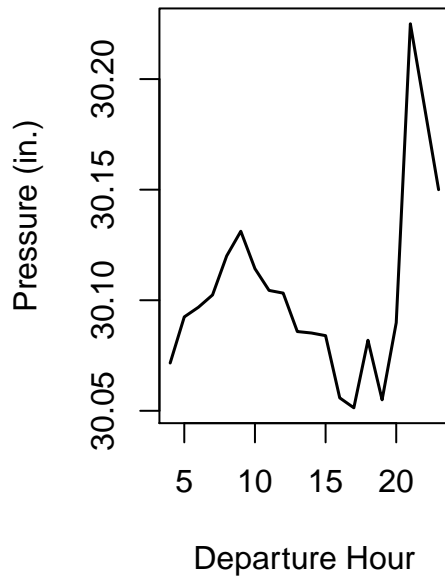
Yearly Pressure Trend

Pressure (in.)

Month

Daily Visibility Trend

Visibility (mi.)

Departure Hour
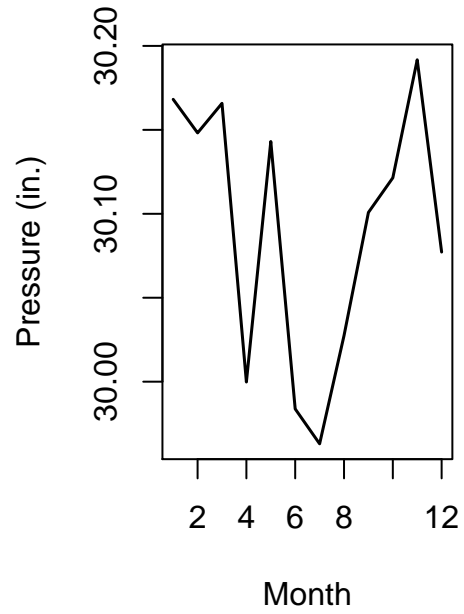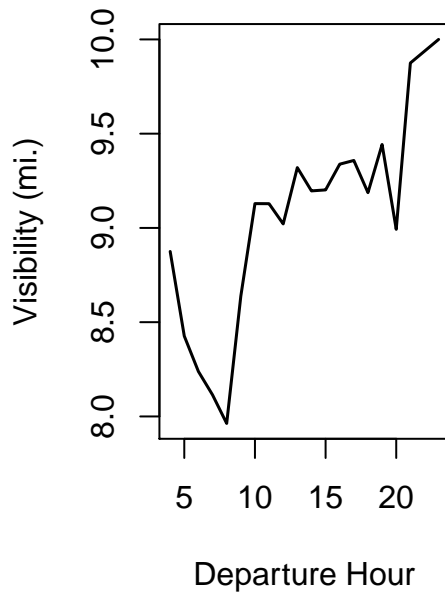
Yearly Visibility Trend

Visibility (mi.)

Month
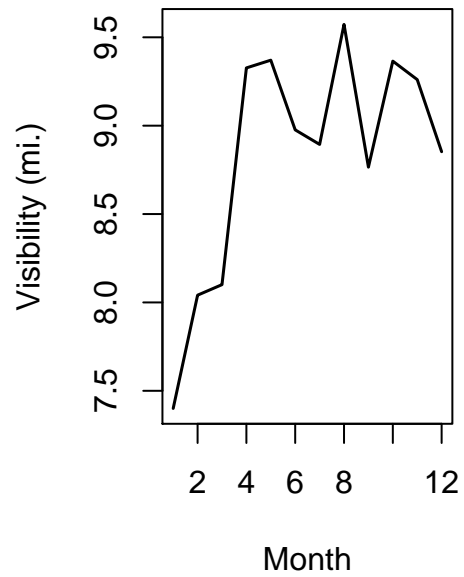
Daily Wind Speed Trend
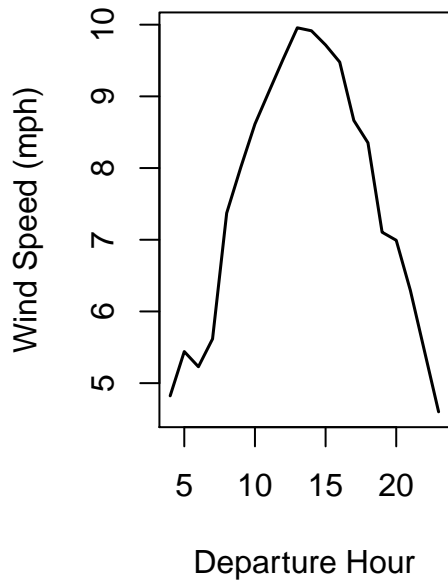
Yearly Wind Speed Trend
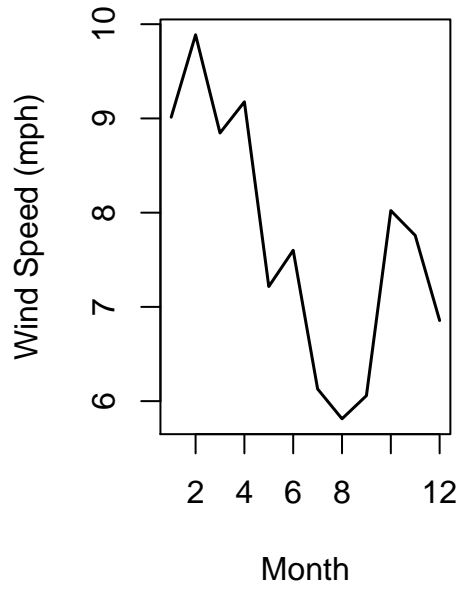
Yearly Rain
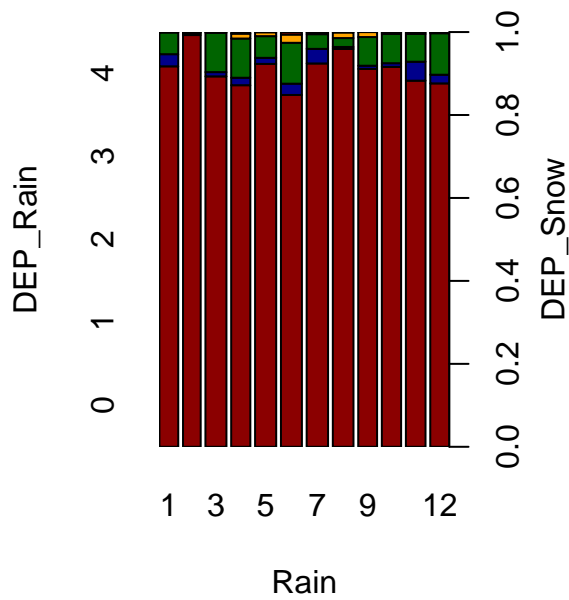
Yearly Snow
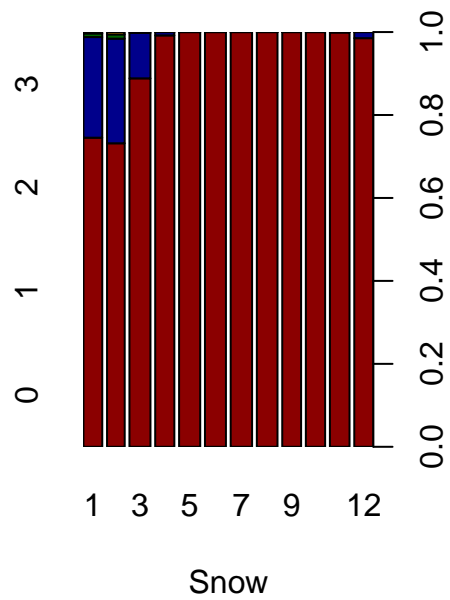
Visibility vs. Snow
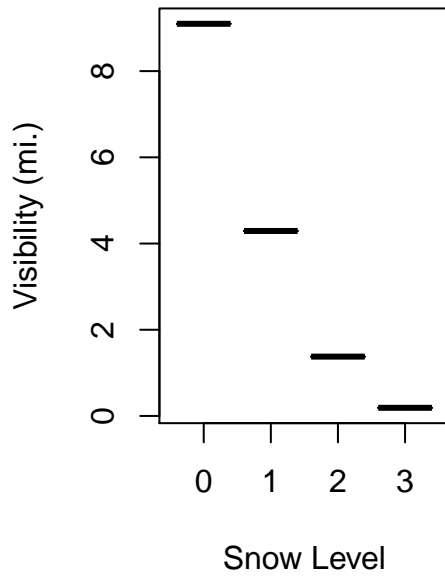
Visibility vs. Rain
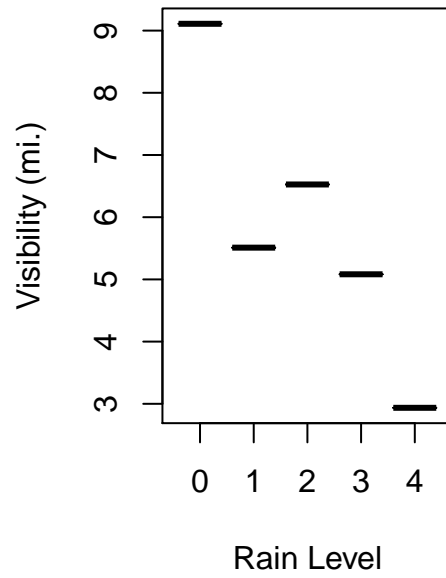
Pressure vs. Snow
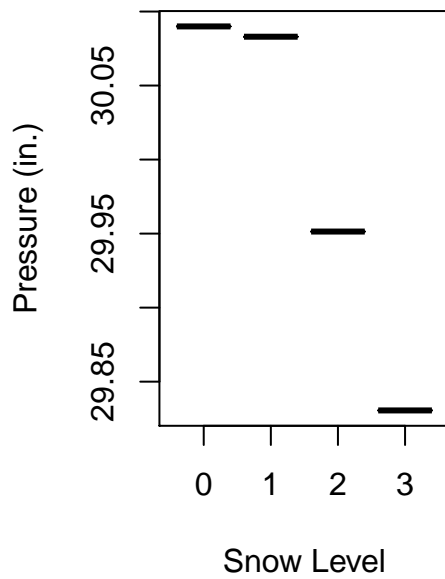
Pressure vs. Rain
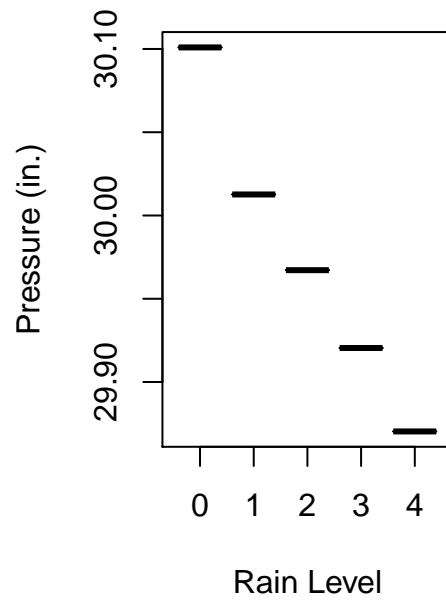
Features of Destination Airports

There are several destination airports with data of only a few months.

SFO, TPA, PBI, RSW, LAX, MCO, FLL have stable temperature.

High Wind Speed: BOS, LGA, FLL, DAL

Visibility:
STL, MDW, MSP, ORD, PHL, IAH, DTW, EWR, HOU, ATL, BNA, BOS, BWI, CLT have ???low visibility during winter months.

MCO, MDW, ATL, CLT, ??? High frequency of Thunder and Tornado

Destination Monthly Average Temperature
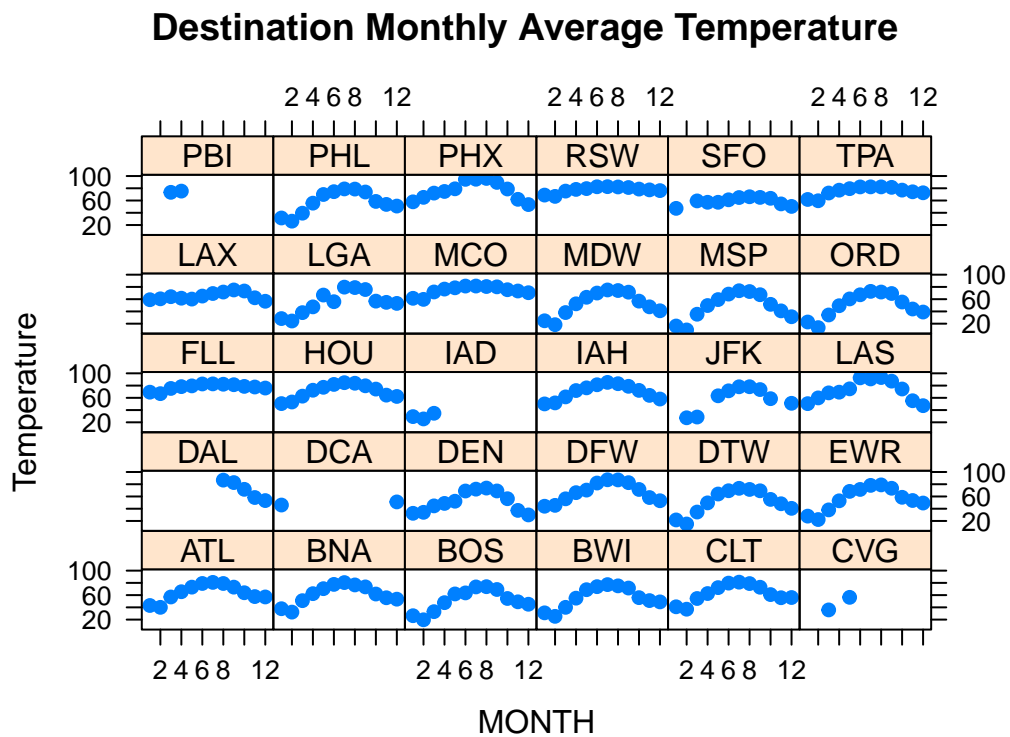
Destination Monthly Average Pressure
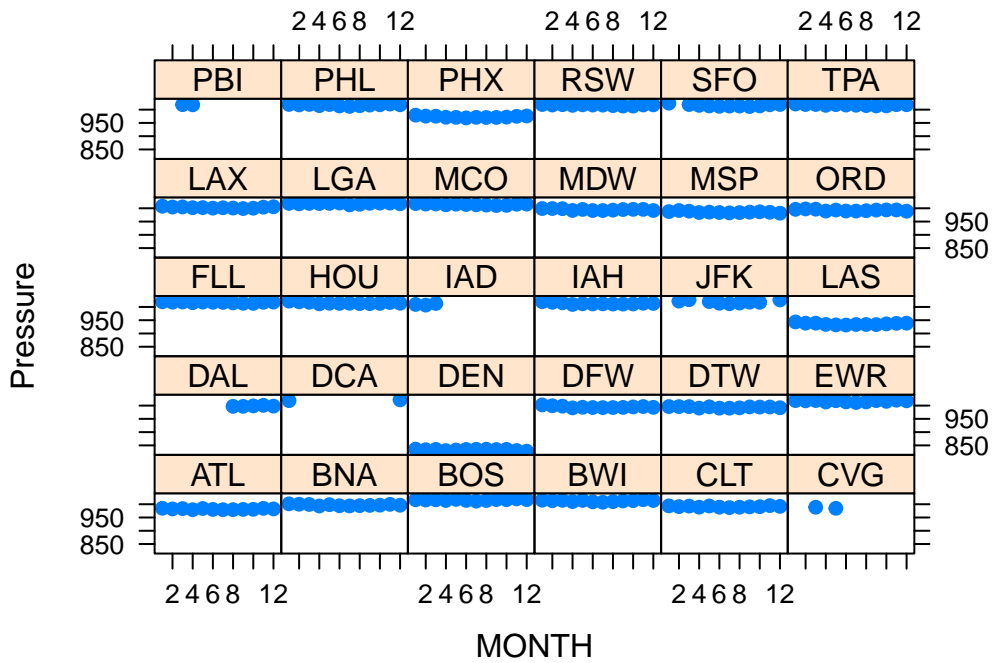
MONTH

Destination Monthly Average Visibility
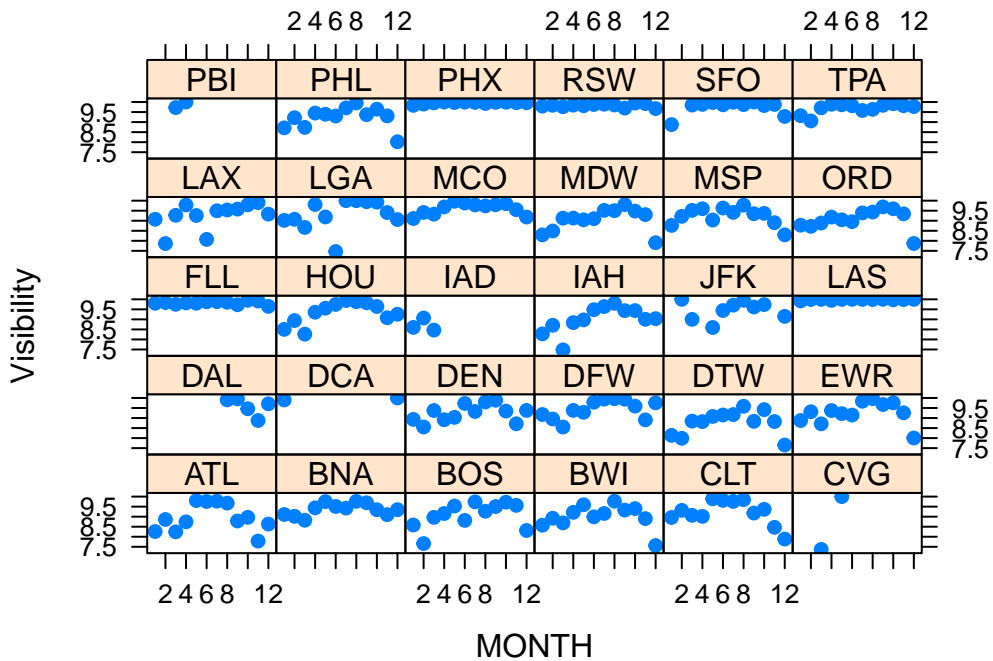
MONTH

Destination Monthly Average Wind Speed

Destination Monthly Average Precipitation

10

Destination Monthly Average Snow Depth

Destination Monthly Rain

Destination Monthly Hail

Destination Monthly Thunder

Destination Monthly Tornado

Carriers Distribution

Carrier Distribution

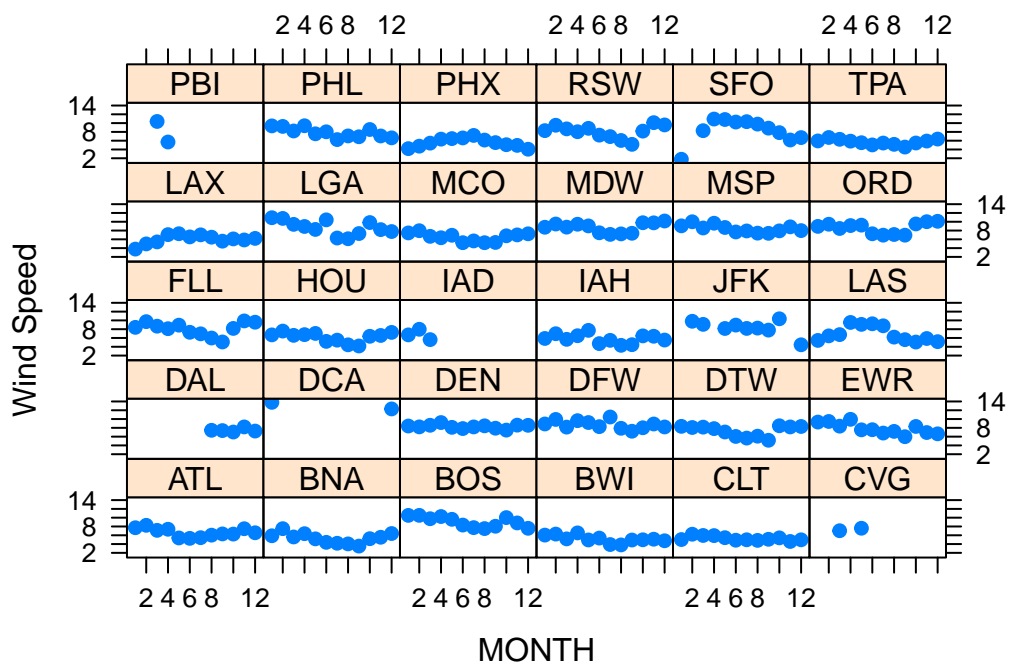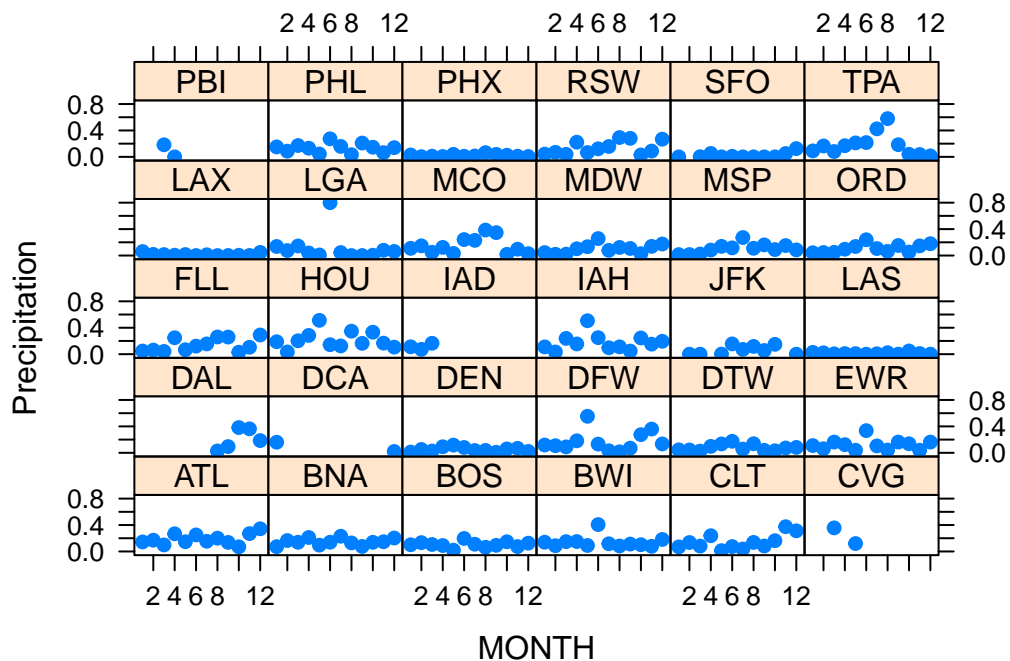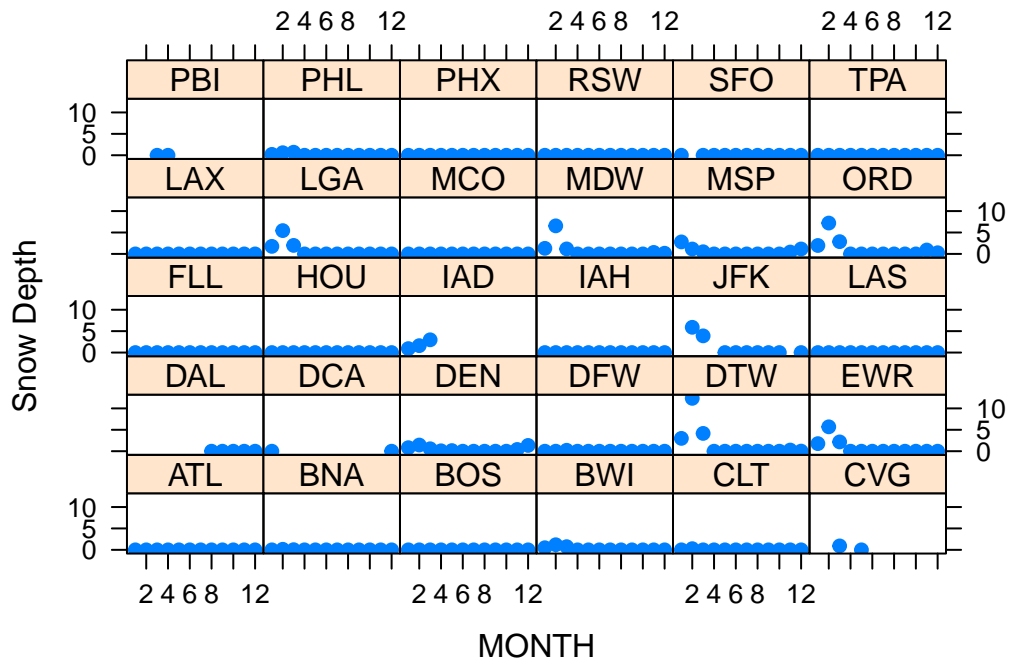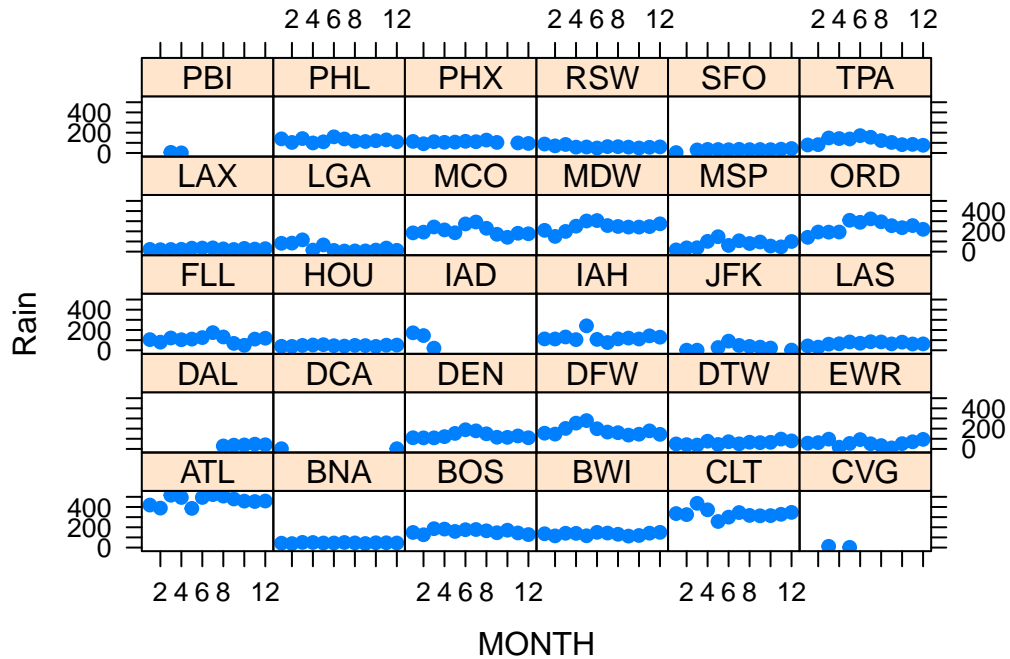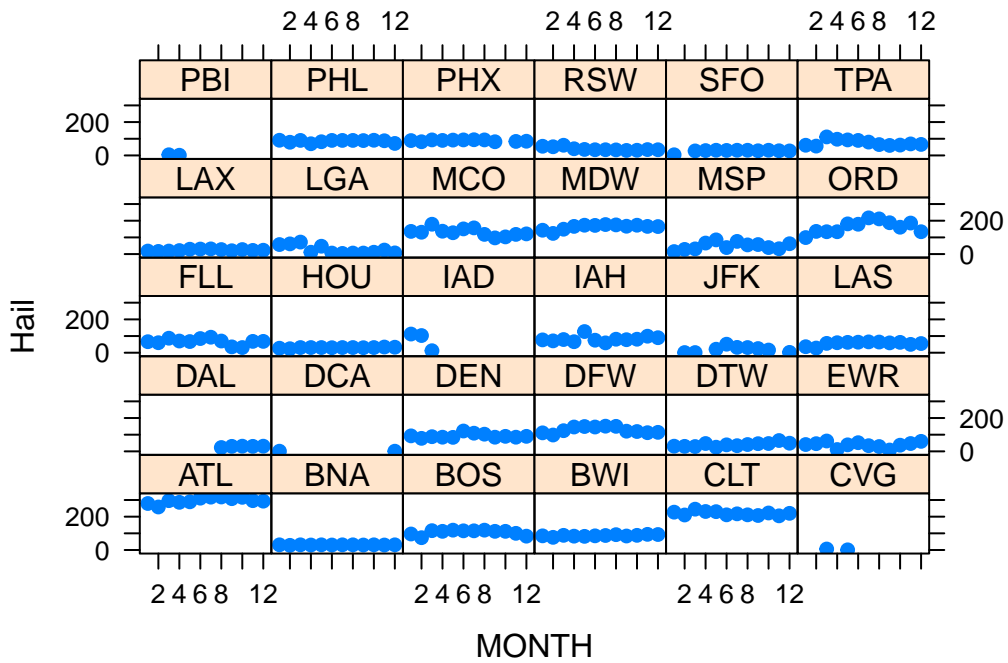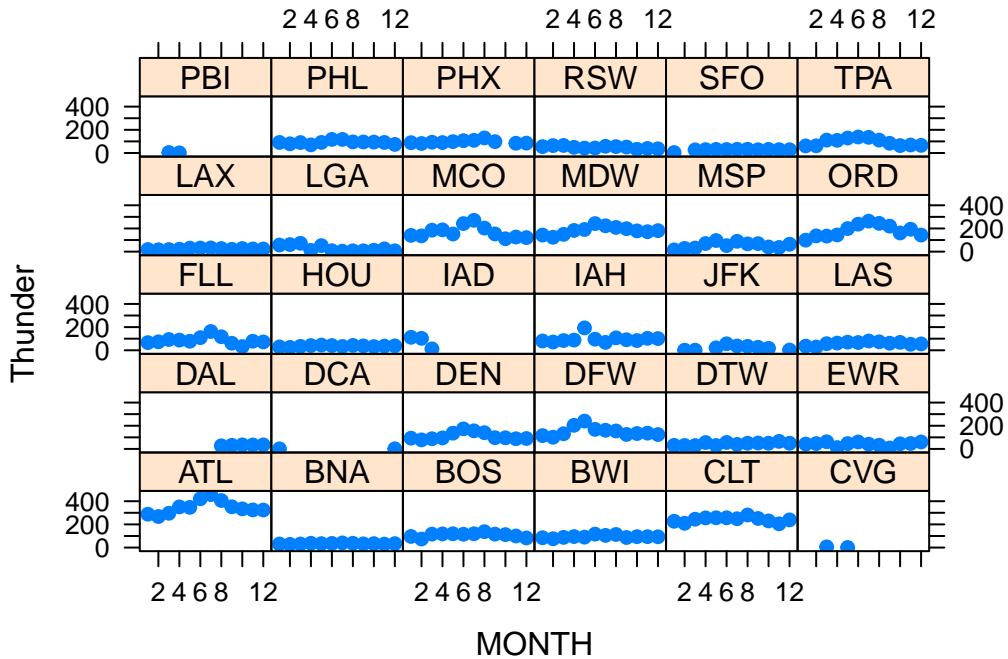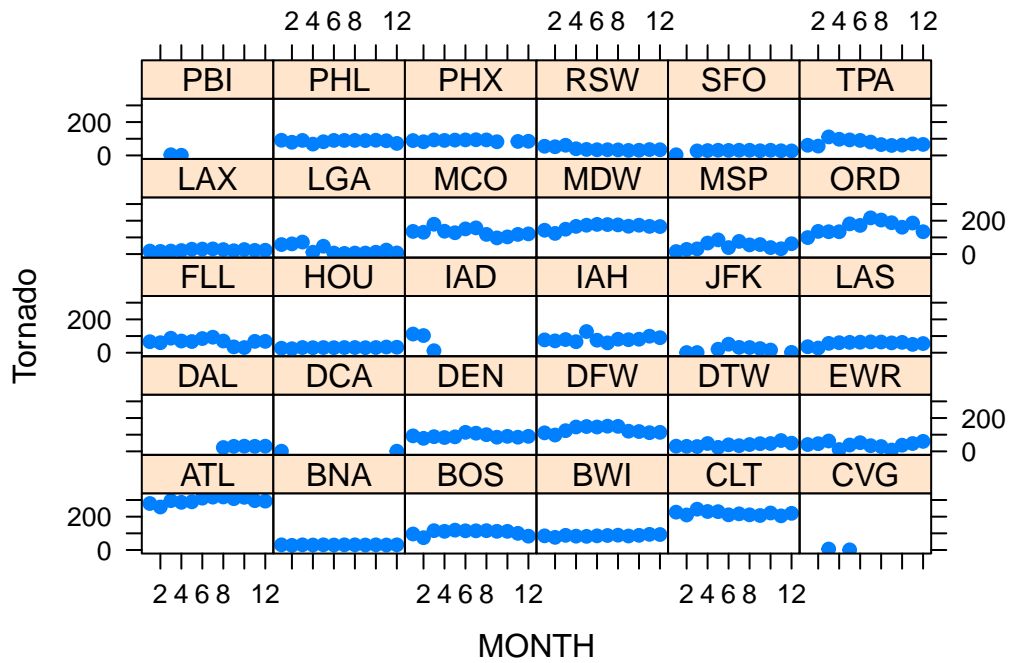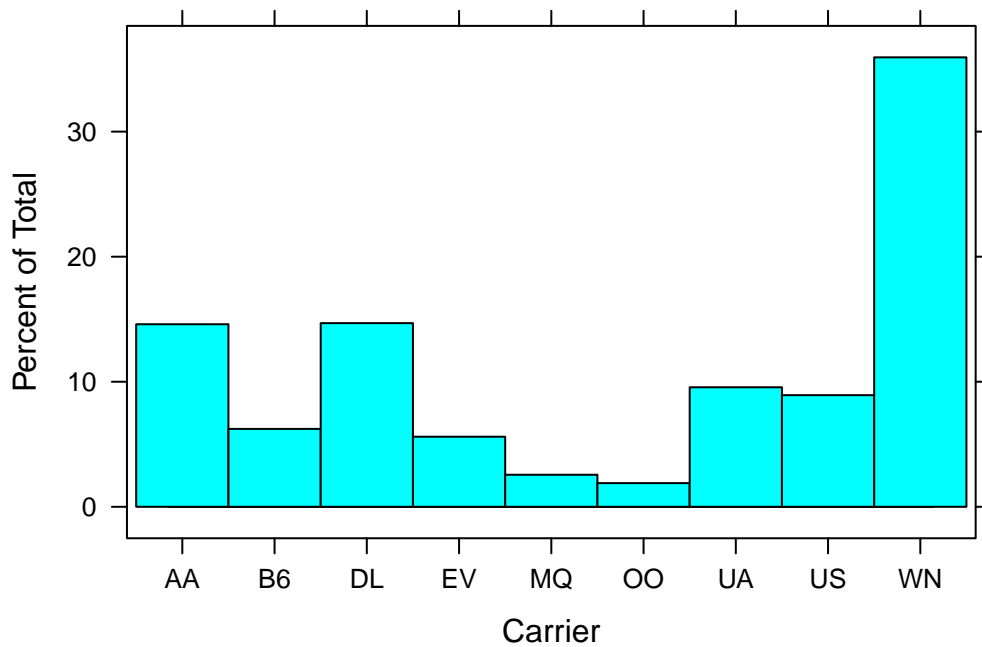|	ATL	BNA	BOS	BWI	CLT	CVG	DAL	DCA	DEN	DFW	DTW	EWR	FLL	HOU
AA	0	0	0	0	1282	0	0	1	0	1541	0	0	0	0
B6	0	0	1270	0	0	0	0	0	0	0	0	0	365	0
DL	2849	0	0	0	0	0	0	0	0	0	423	0	0	0
EV	1	0	0	0	0	6	0	0	9	0	59	465	0	0
MQ	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OO	0	0	0	0	0	1	0	0	30	0	0	0	0	0
UA	0	0	0	0	0	0	0	0	633	0	0	0	0	0
US	0	0	0	0	1354	0	0	1	0	0	0	0	0	0
WN	717	365	0	1034	0	0	145	0	427	0	0	0	435	363
F9	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	IAD	IAH	JFK	LAS	LAX	LGA	MCO	MDW	MSP	ORD	PBI	PHL	PHX	PIT
AA	0	0	0	0	150	1	0	0	0	0	0	520	337	0
B6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DL	0	0	180	0	0	1	0	0	402	0	0	0	0	0
EV	227	126	0	0	0	303	0	0	130	145	0	0	0	0
MQ	0	0	0	0	0	7	0	0	0	666	0	0	0	0
OO	0	130	0	0	0	0	0	0	53	283	0	0	0	0
UA	0	727	0	0	0	0	0	0	0	852	0	0	0	0
US	0	0	0	0	132	0	0	0	0	0	0	500	356	0
WN	0	0	0	660	0	0	1576	1950	0	0	5	0	372	0
F9	0	0	0	0	0	0	0	0	0	0	0	0	0	0

|	RSW	SFO	TPA	STL
AA	0	0	0	0
B6	0	0	0	0
DL	0	0	0	0
EV	0	0	0	0
MQ	0	0	0	0
OO	0	0	0	0
UA	0	297	0	0
US	0	0	0	0
WN	475	0	910	0
F9	0	0	0	0

Delay vs. Not Delay

No difference detected for distance and elapsed time.
More delay flights during evening, less in the morning.
Not delayed flights tend to have higher humidity.
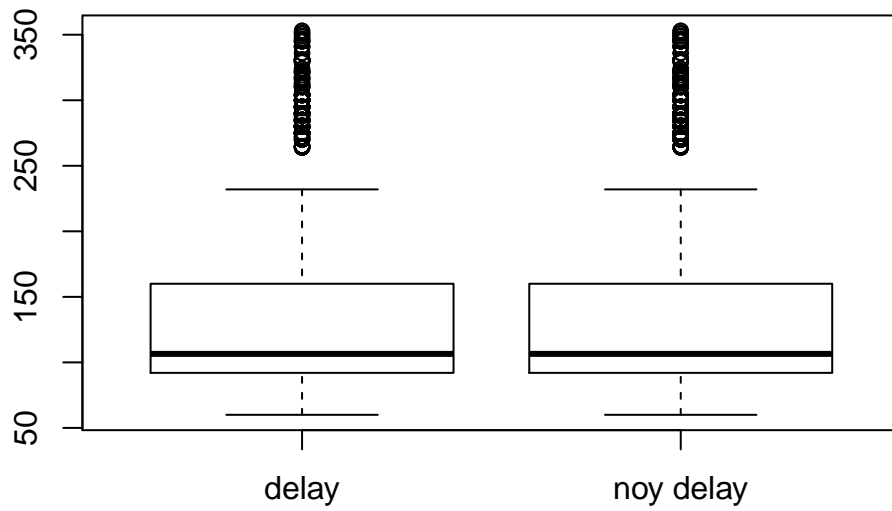Not delayed flights tend to have lower wind speed.
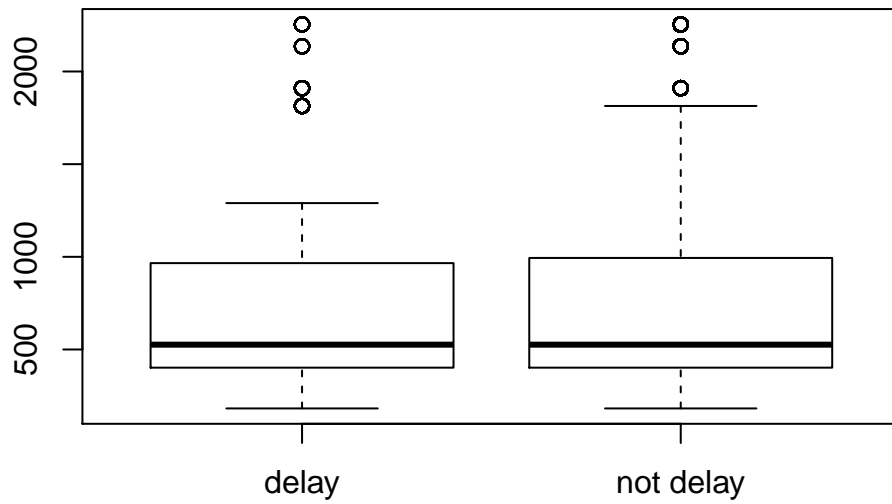
Elapsed time for delayed flights
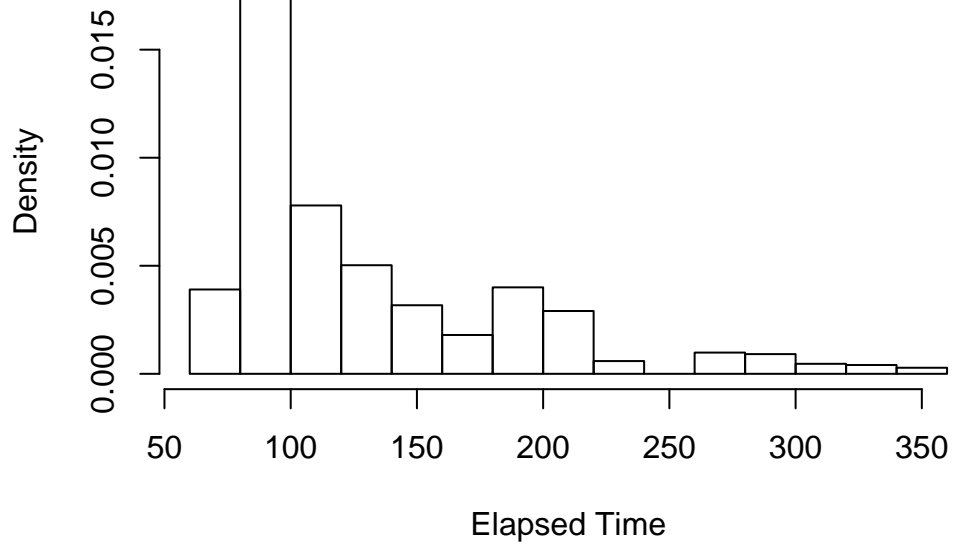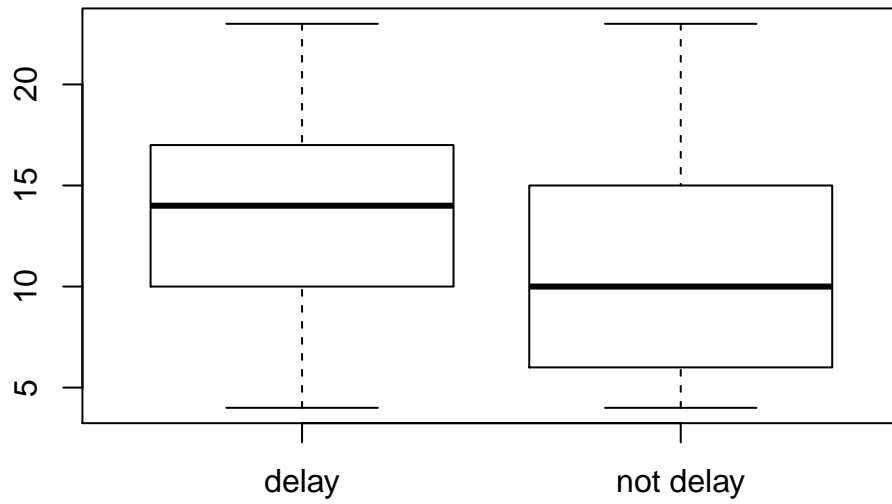

Elapsed time for non−delayed flights
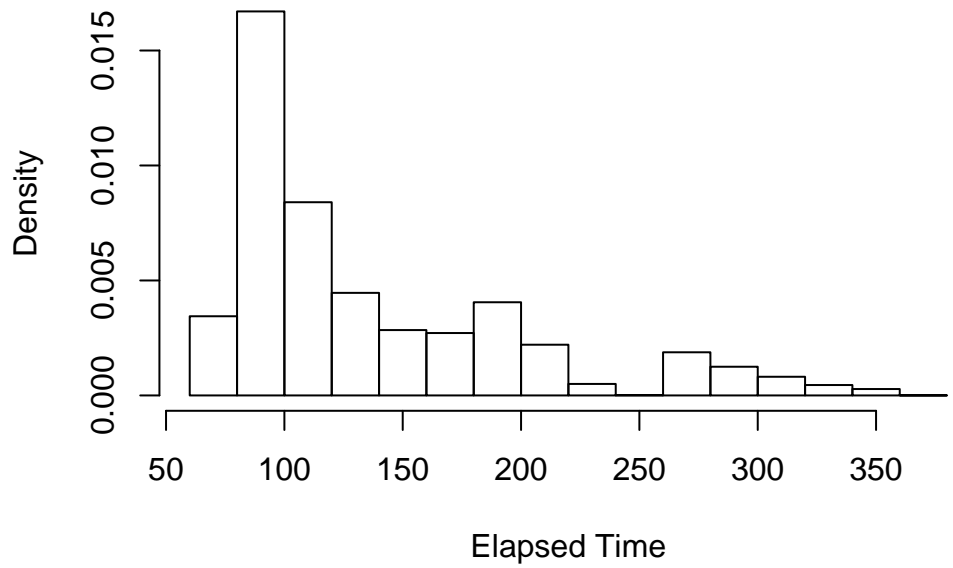
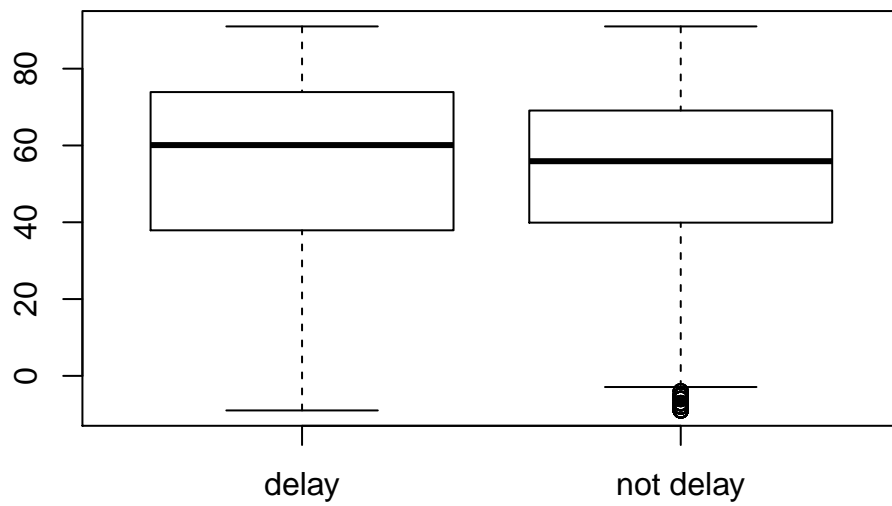## Delay vs. Not Delay: Elapsed time
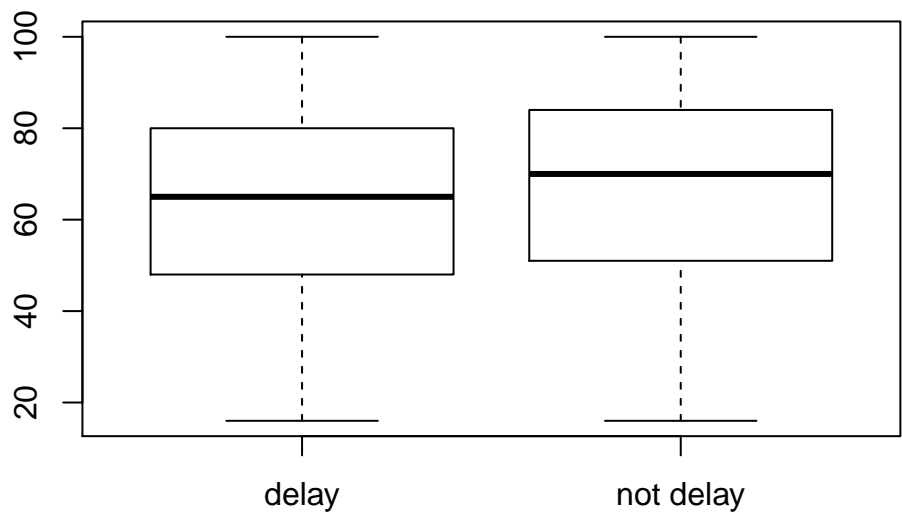

Delay vs. Not Delay: Distance

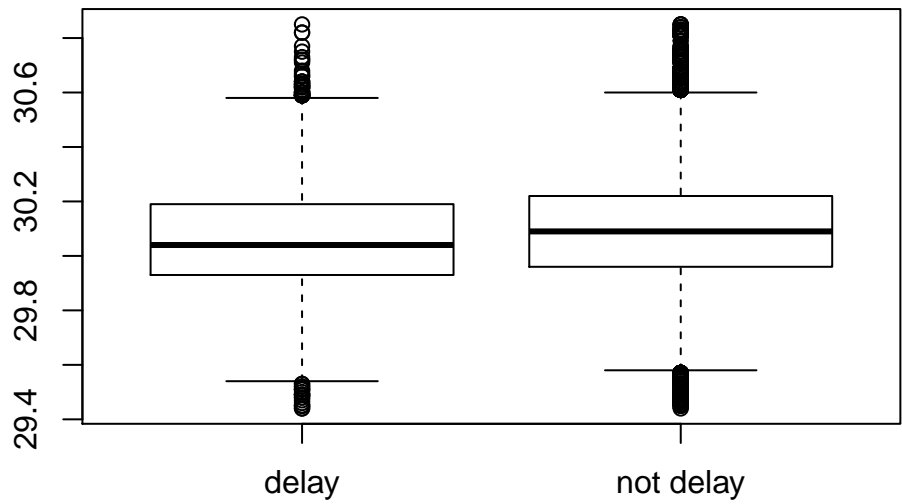# Delay vs. Not Delay: Departure Time

Delay vs. Not Delay: Temperature

Delay vs. Not Delay: Humidity

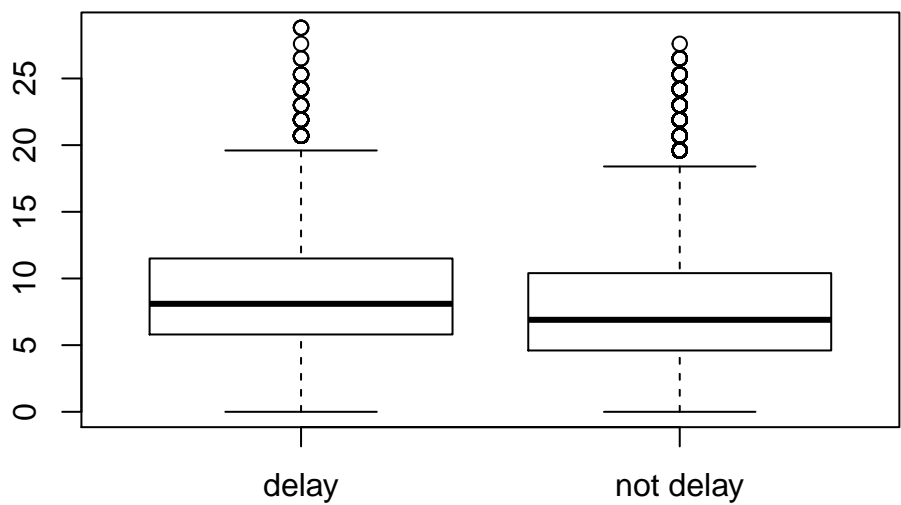## Delay vs. Not Delay: Pressure

```
           Min. 1st Qu. Median  Mean 3rd Qu. Max. NA's
Delay      0.1       9      10 8.772      10   10    1
Not delay  0.0       9      10 8.864      10   10   12
```
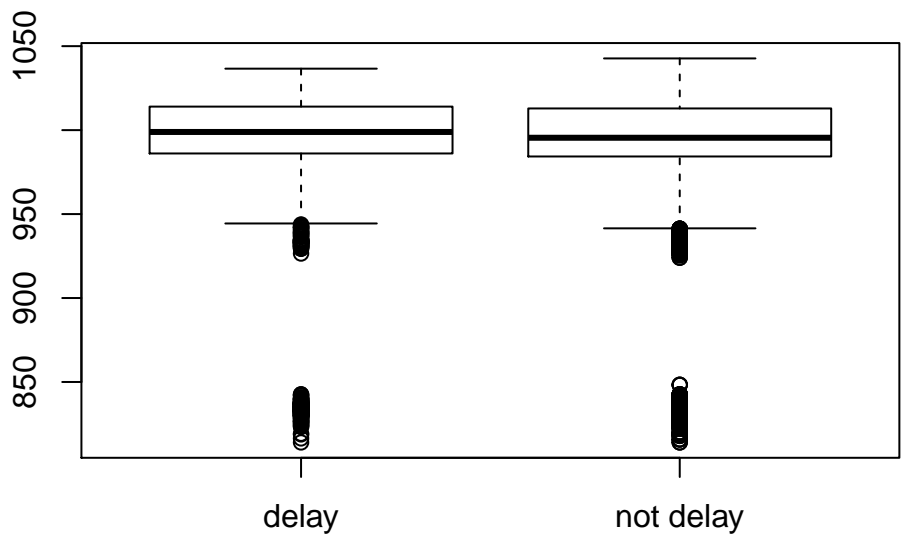
Delay vs. Not Delay: Wind Speed

Delay vs. Not Delay: Arrival Pressure

Delay vs. Not Delay: Arrival Temperature