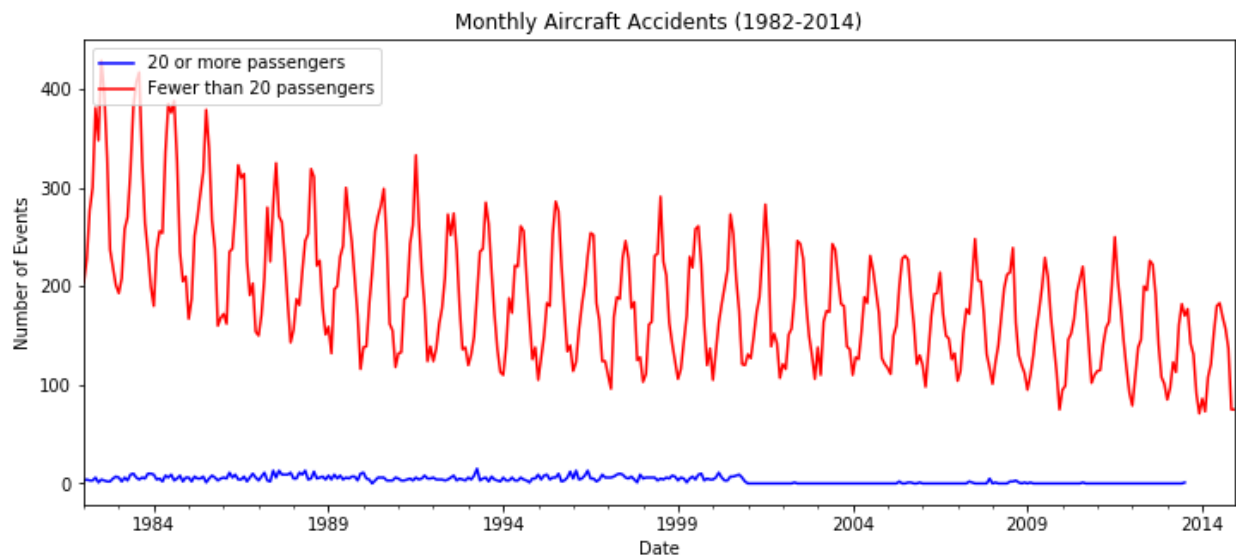


# NTSB Exploratory Analysis

## Seasonality and downward trend in aircraft accidents over time

Flight incidents are trending downward, with 5.3 fewer incidents per year on average from 1982 to 2015. Over 98% of incidents involve aircraft carrying fewer than 20 passengers - the most common make and model reported was a Cessna 152. This indicates that most incidents involve amateur aviators, and that commercial flight is very safe given the high volume of air traffic daily.



An annual pattern exists in aircraft accidents, with the number of events peaking in June - August. On average, one would expect there to be 150 more reported incidents in the peak of summer than in winter. While the reasoning for this relationship is unclear, the periodic pattern encompasses a substantial portion of accidents over time.

## Text patterns in reported probable cause of accidents

Among aircraft with more than 20 passengers, terms like “turbulence”, “inadequate”, “personnel” appear when modeling textual patterns on the probable cause of an incident. These patterns may indicate weather and human error play a component for larger aircraft accidents. Across all aircraft, the odds of a fatal accident were 8.21 greater during instrumental meteorological conditions than during visual conditions or when the weather was unknown. Aircraft with fewer than 10 passengers see a greater emphasis on terms like “control”, “power”, and “terrain”. Comparatively, this may indicate aircraft operation plays a more substantive role for smaller incidents.

Language in NTSB narratives has changed over time - most notably the replacement of “airplane” with the word “aircraft”. Further analysis is required to determine possible reasons for changes in word frequency over time.