



flightframe™ *Turning Data Into Decision* 

flightframe.net TrendBox200

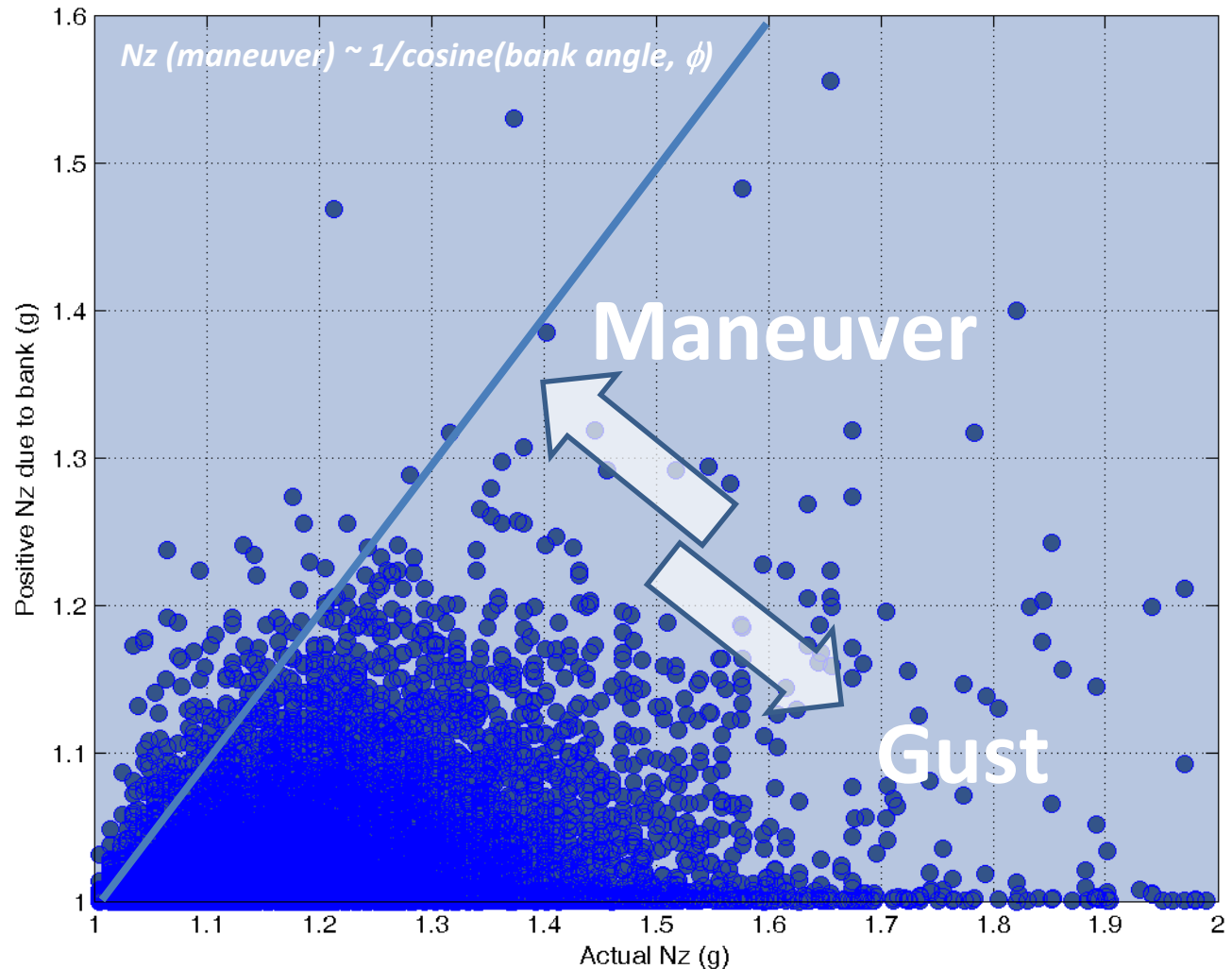
General aviation flight statistics

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- All charts discussed herein are based on actual flight data captured across 12 distinct aircraft (varying types and models)

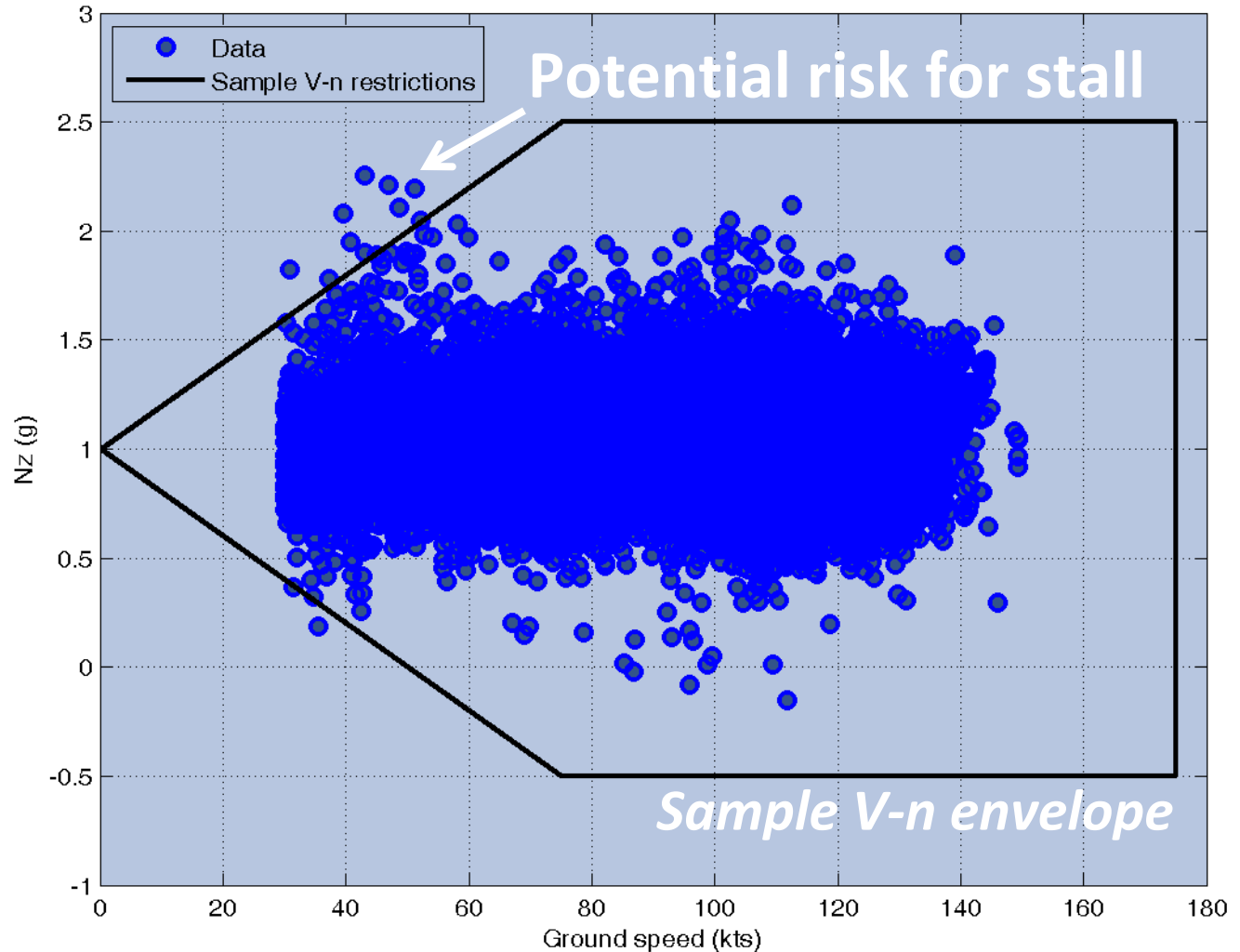
Vertical g's: gust and maneuver

- By measuring g's and computing bank, effects due to pilot-induced maneuvers and environmental gust (turbulence) can be determined
- Both are essential for damage estimates/safety, but for different reasons
 - Maneuvers are lower occurrence, higher magnitude
 - Gust is higher occurrence, lower magnitude



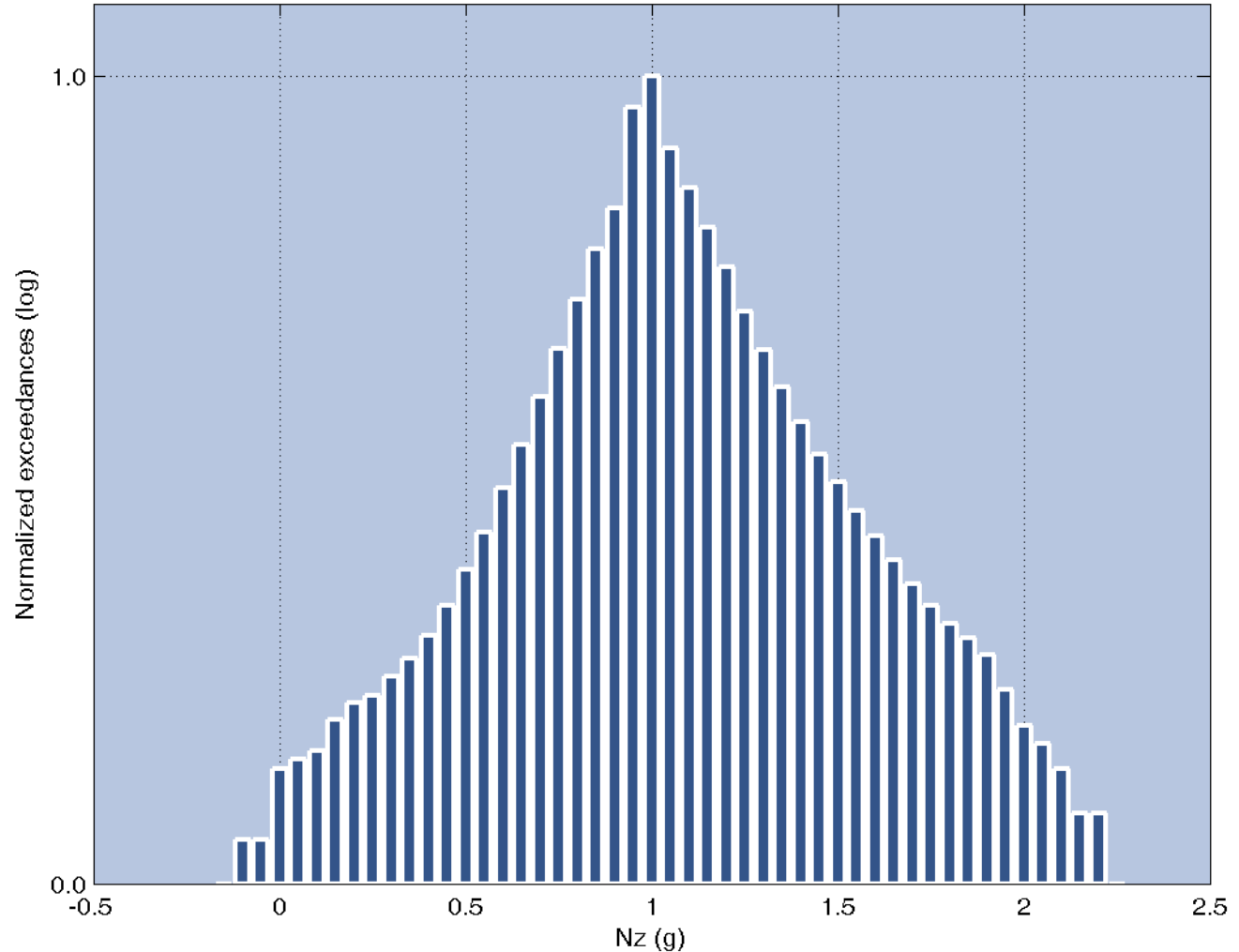
V-n diagram (speed-g's)

- A V-n diagram (speed v. g's envelope) can be computed for each flight
- This can be used to look for outliers or safety risks



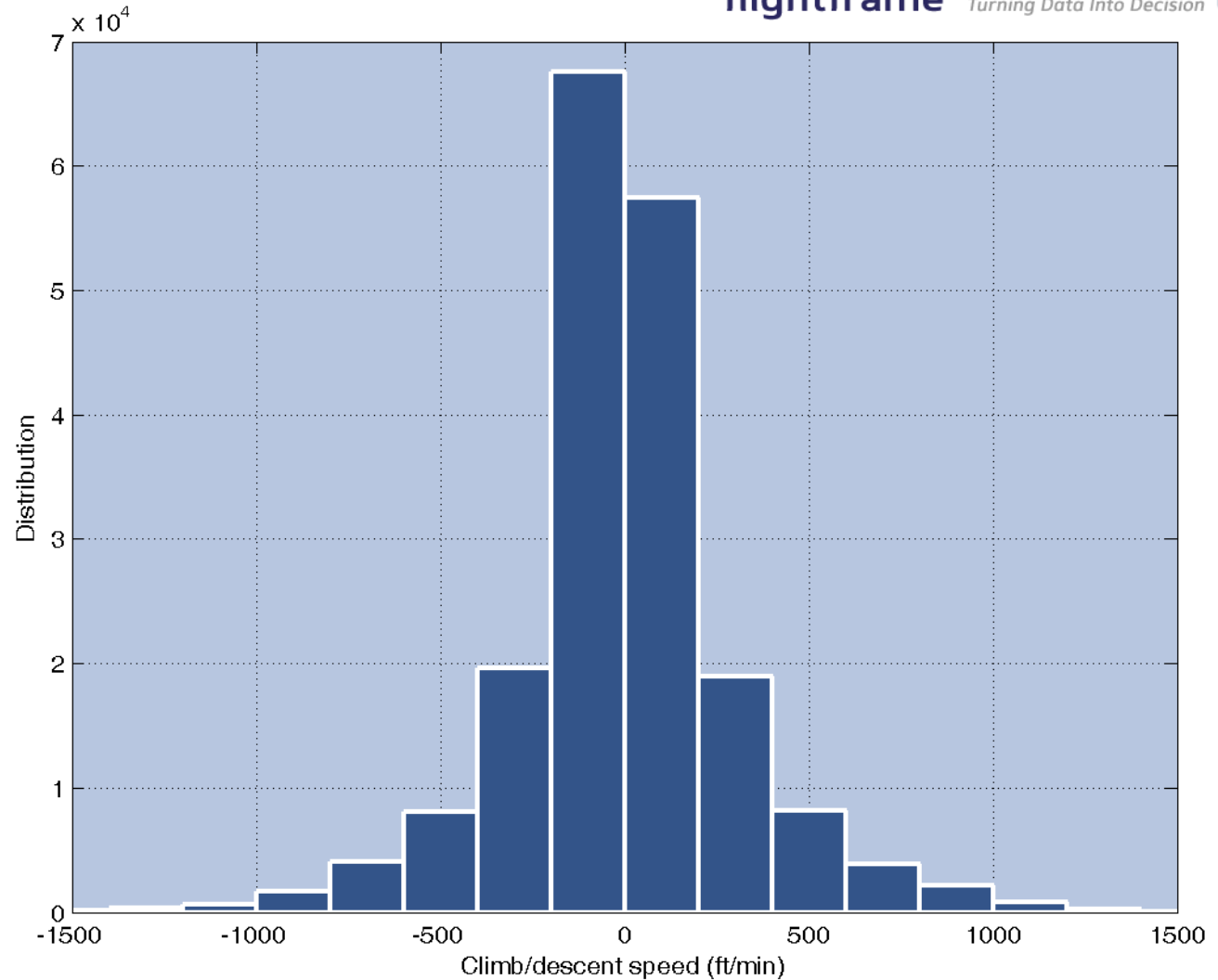
Vertical g's distribution

- Nz exceedances (g's at-or=above a given level) are an excellent metric used for airframe health monitoring
- Outliers and atypical trends can be identified
- Both high-g's as well as high occurrences of lower-g's are important and must be tracked



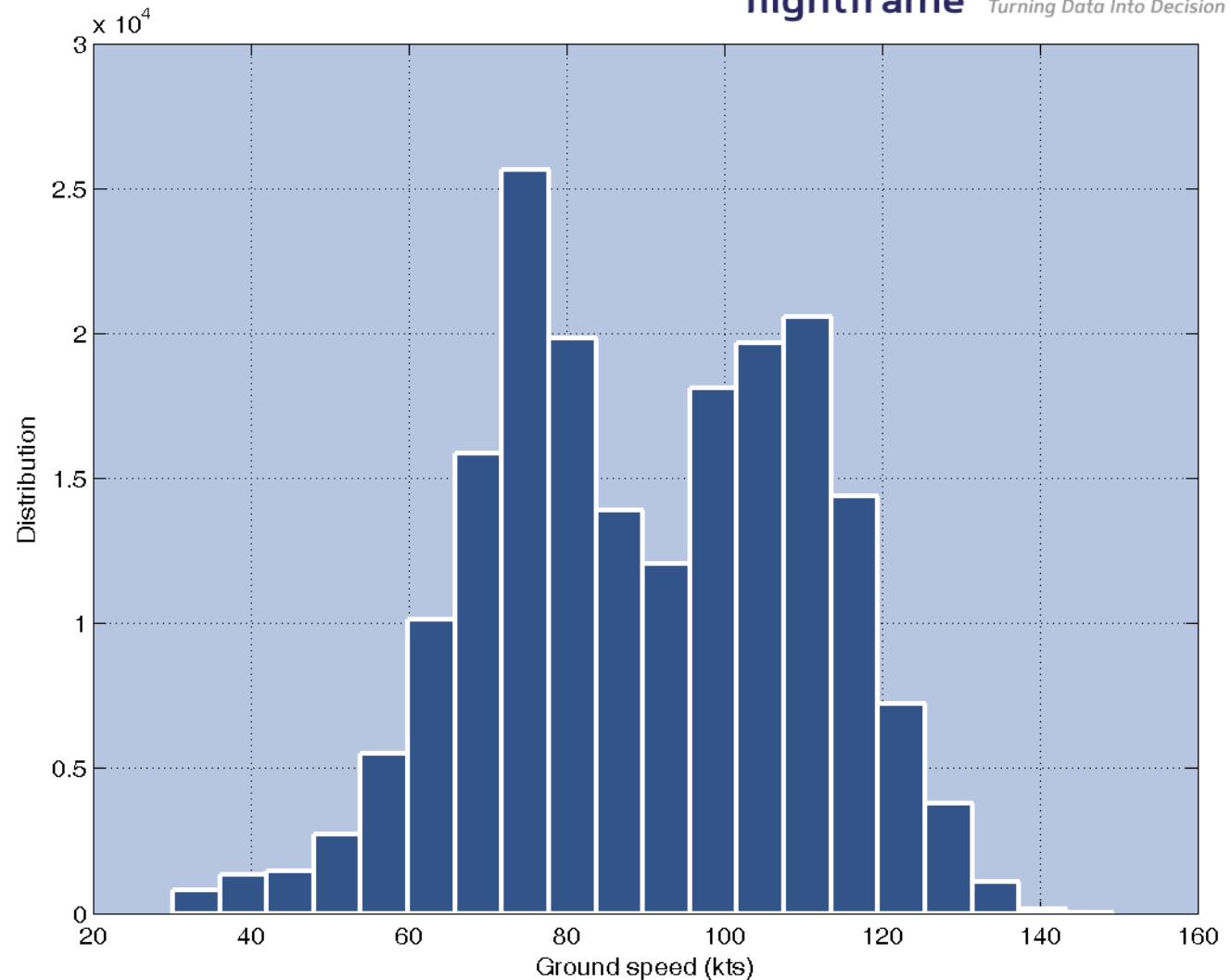
Climb/descent speed distribution

- Distributions of climb and descent rates affect both safety and performance



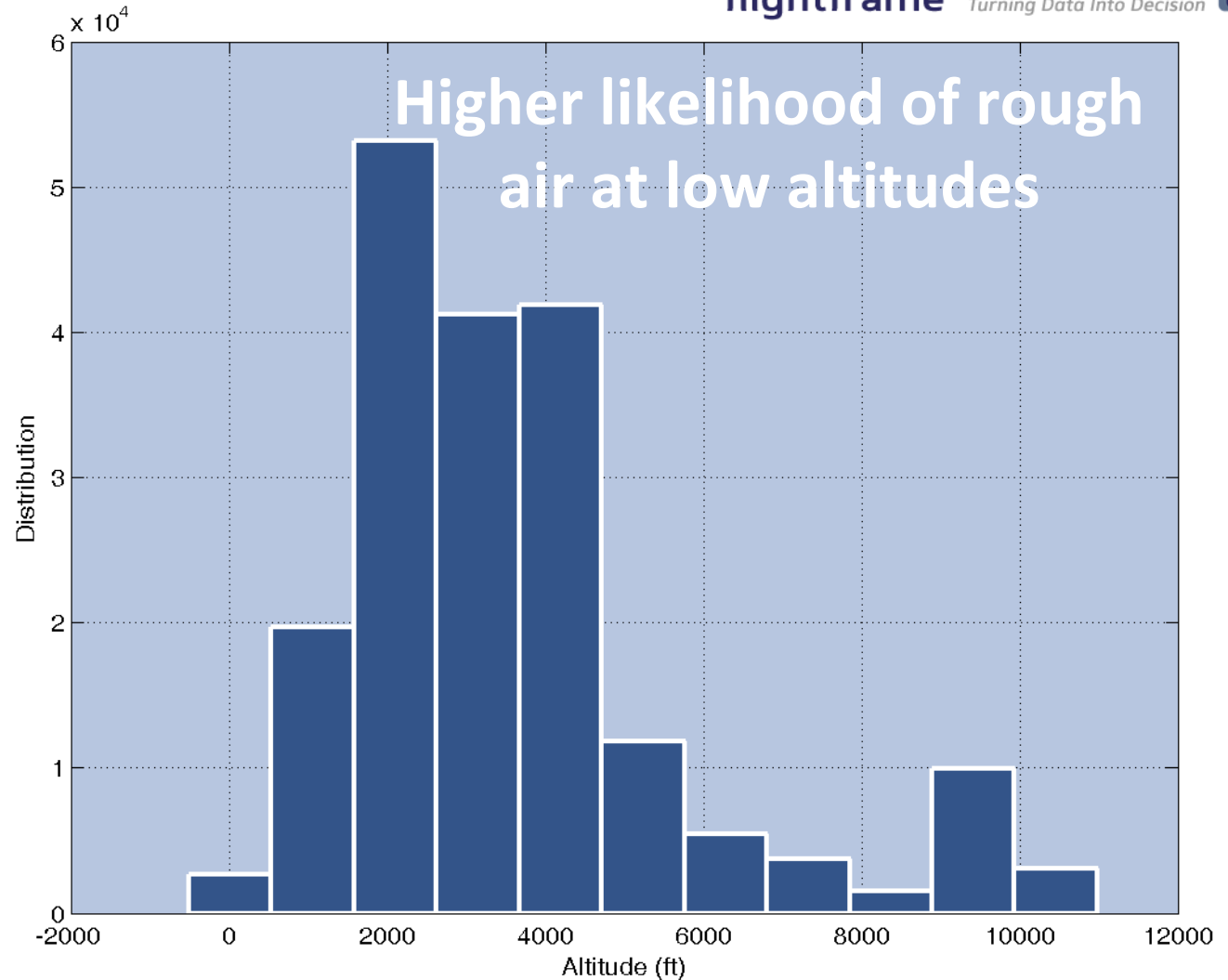
Ground speed distribution

- Distributions of vehicle speed affect both safety and performance



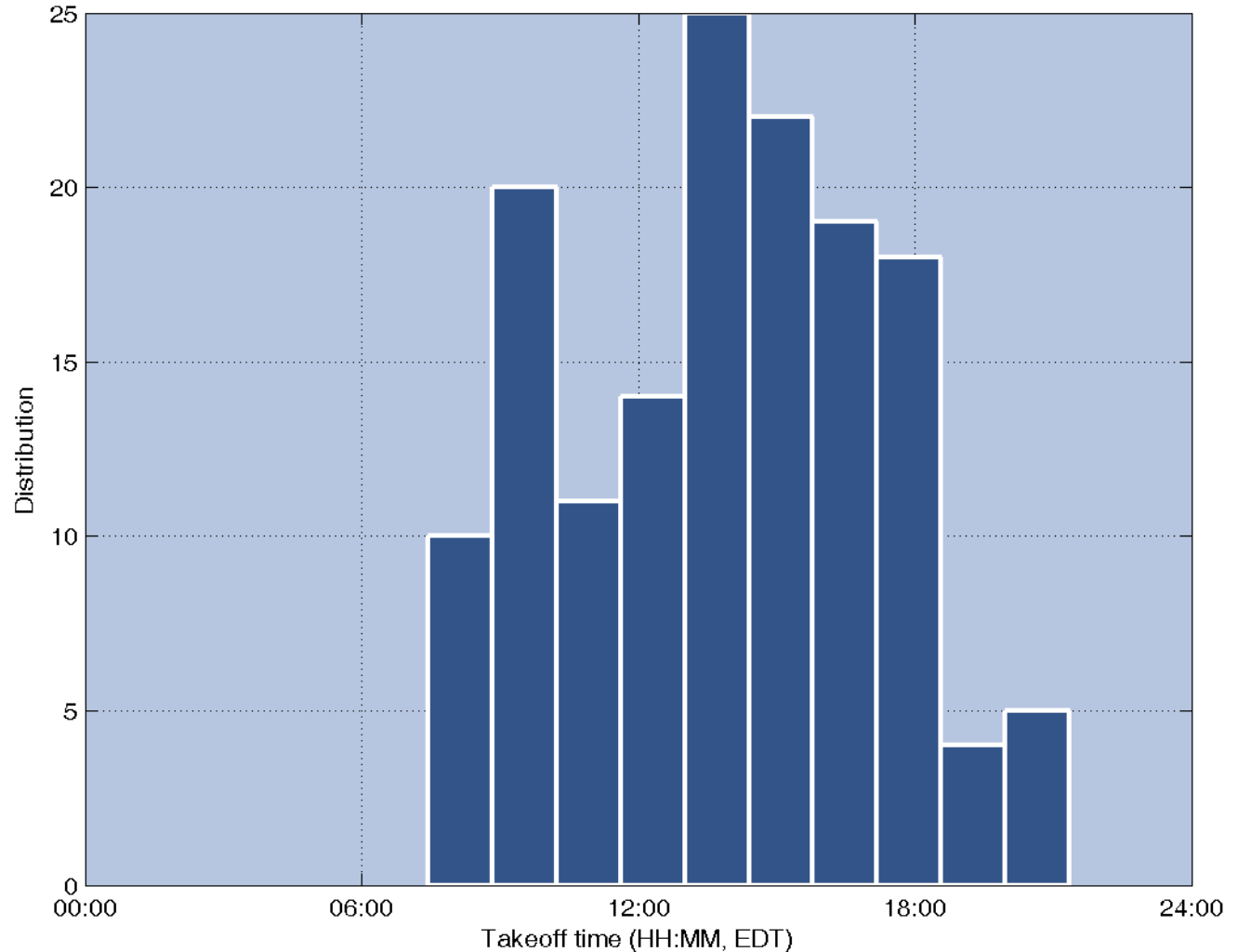
Altitude distribution

- The distribution of altitude affects both safety and performance



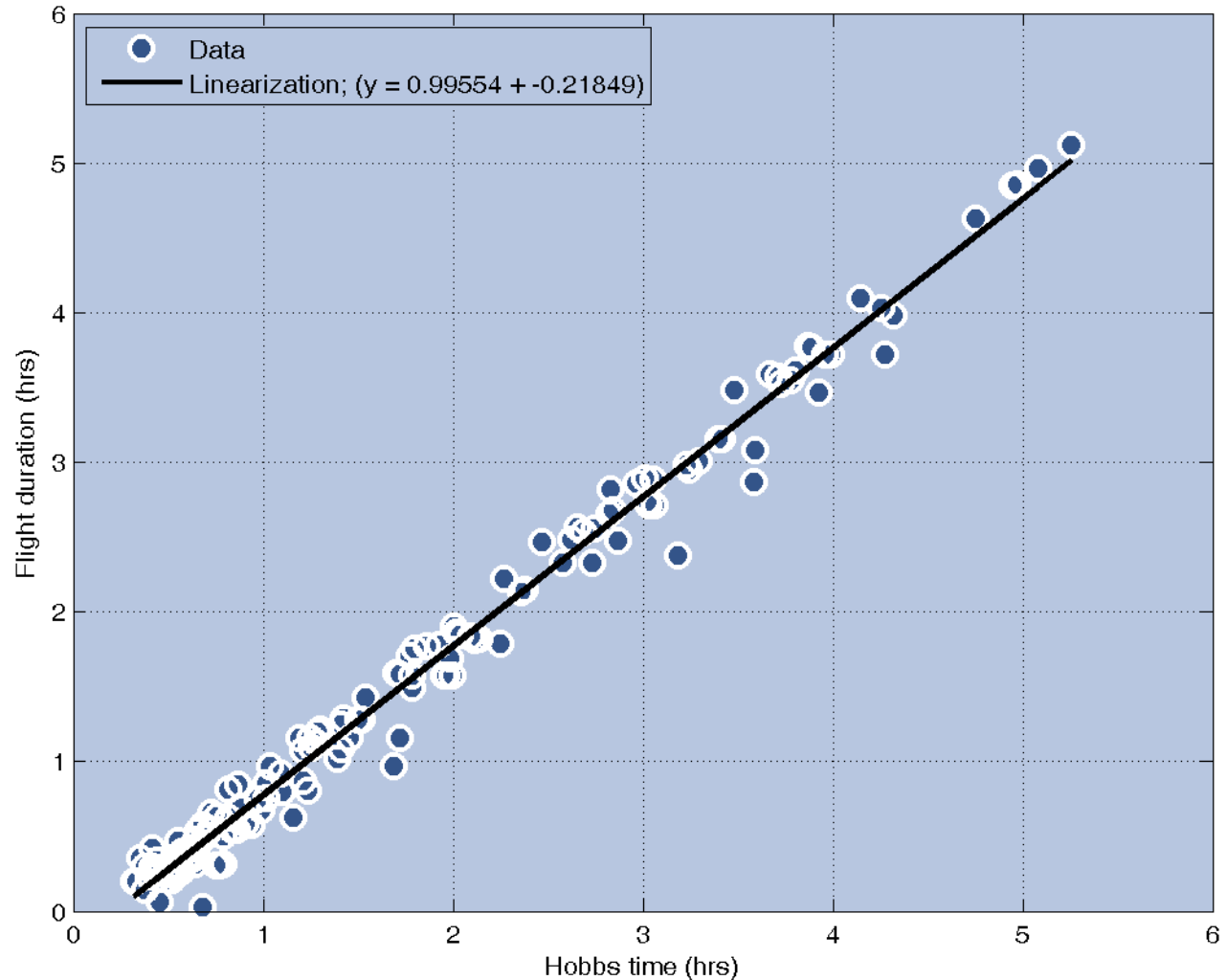
Takeoff time

- Statistical models of traffic patterns can be developed based on airport, time-of-day, season, etc.



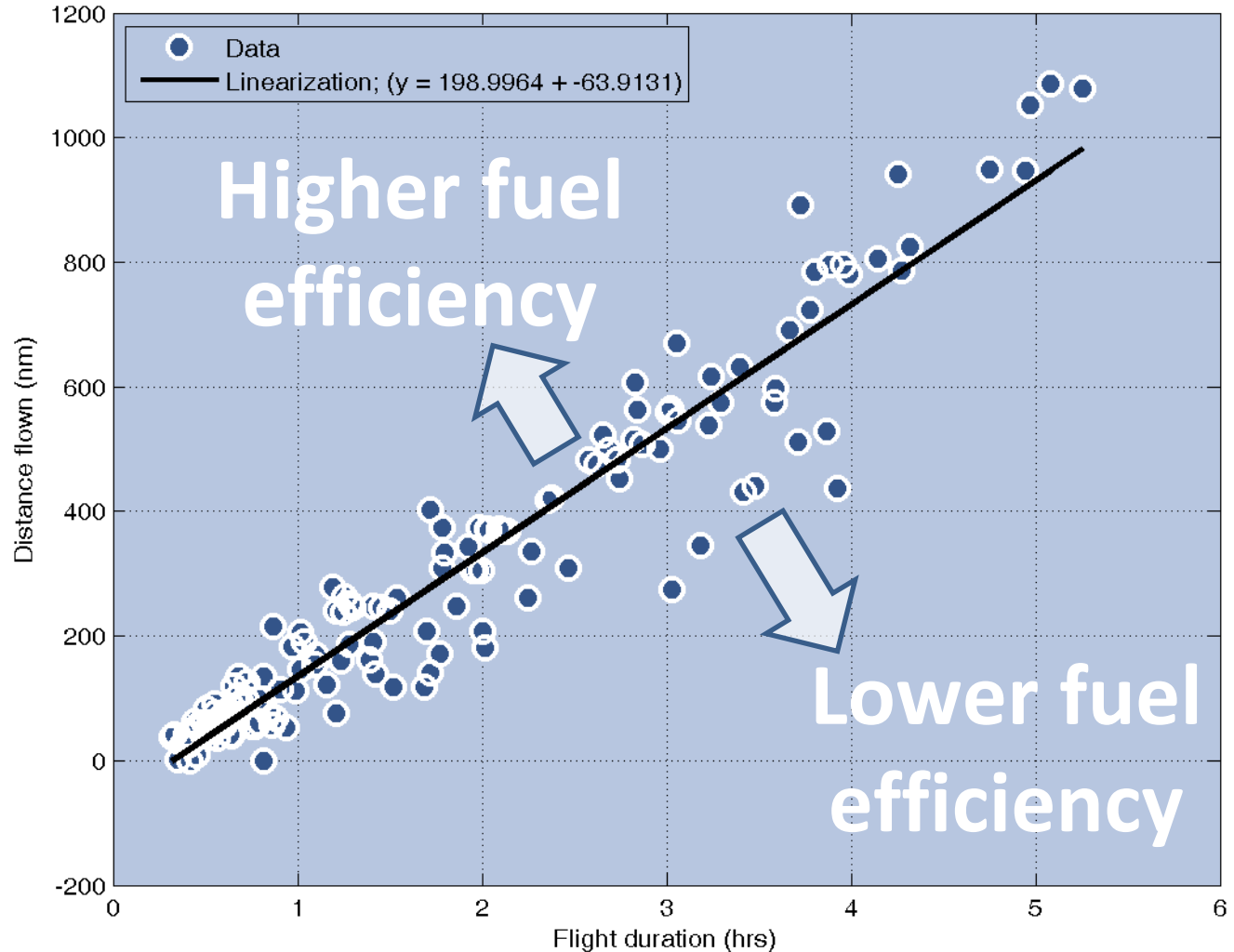
Hobbs time v. flight duration

- Pilots often cite the need to differentiate between Hobbs time and actual flight time
- The trends show good linearity with a fairly predictable pre-/post-flight ground segments



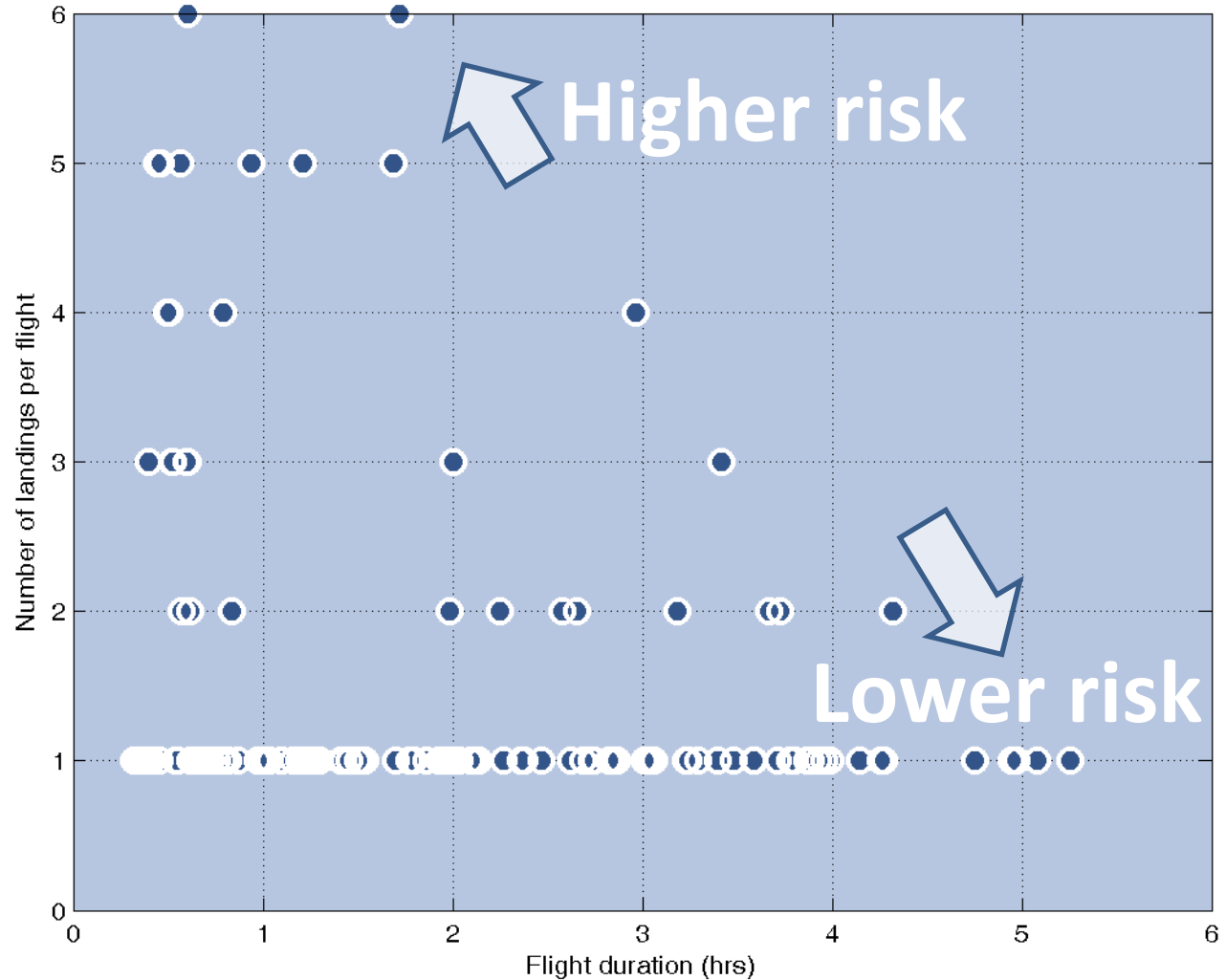
Flight duration v. distance

- For a given aircraft, flight duration v. actual distance can be used to assess fuel efficiency
- Access to these trends help owners and operators improve their operations and reduce costs



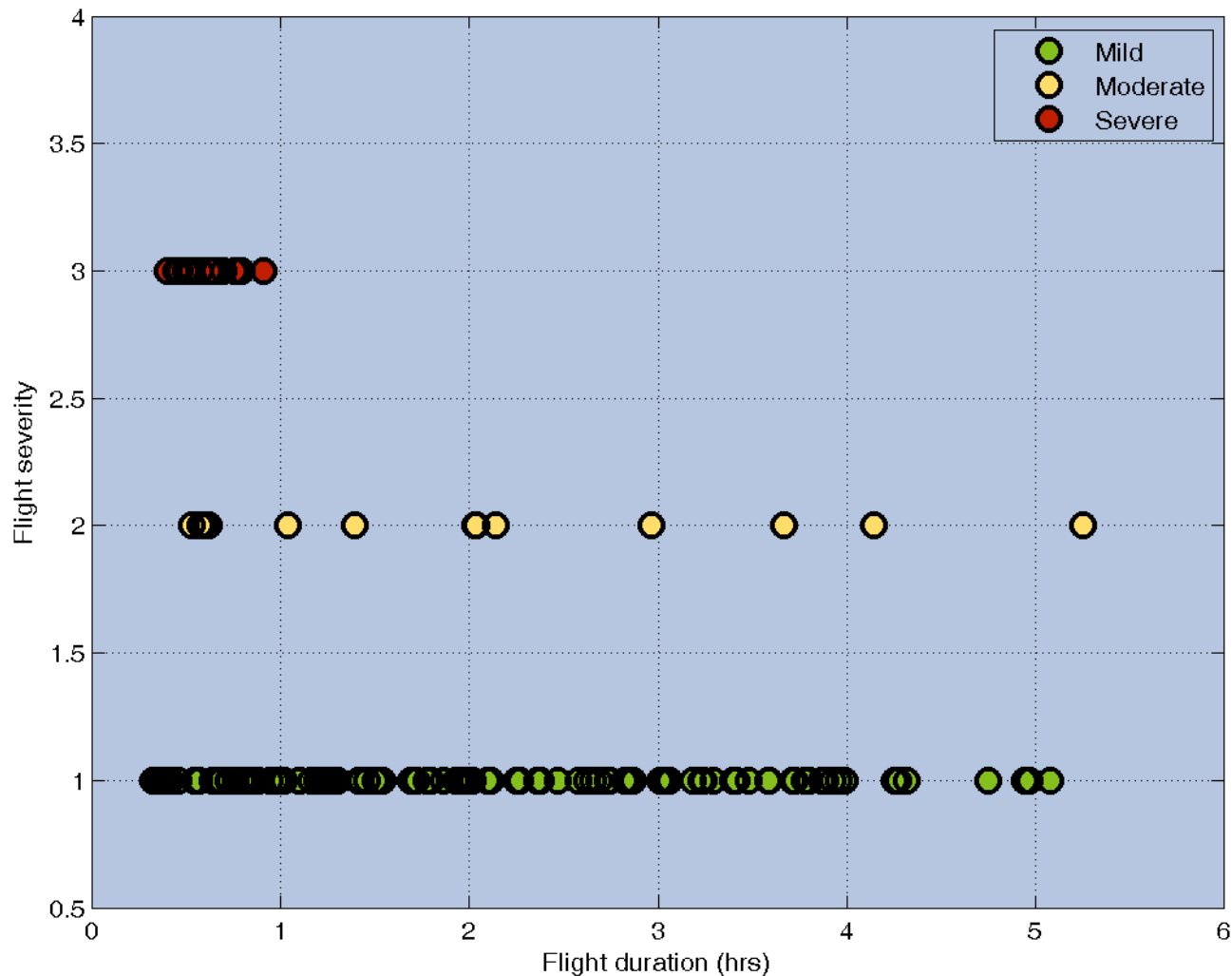
Number of landings

- Landings per flight (or per hour) are a good metric for airframe health monitoring
- Higher landing rates negatively impact airframe health and increase likelihood of an accident



Flight severity

- flightframe.net computes a flight severity for each flight
- Severity is a relative weighting from 1 (good) to 4 (bad)
- Based on g's, landings, turbulence, etc.
- Excellent, easy-to-understand metric for airframe health



Max g's per flight

- This chart shows the broad distribution of max g's per flight
- This stresses the importance of monitoring the usage of each individual airframe

