CAA Safety Risk Analysis Process
&
Analysis Results

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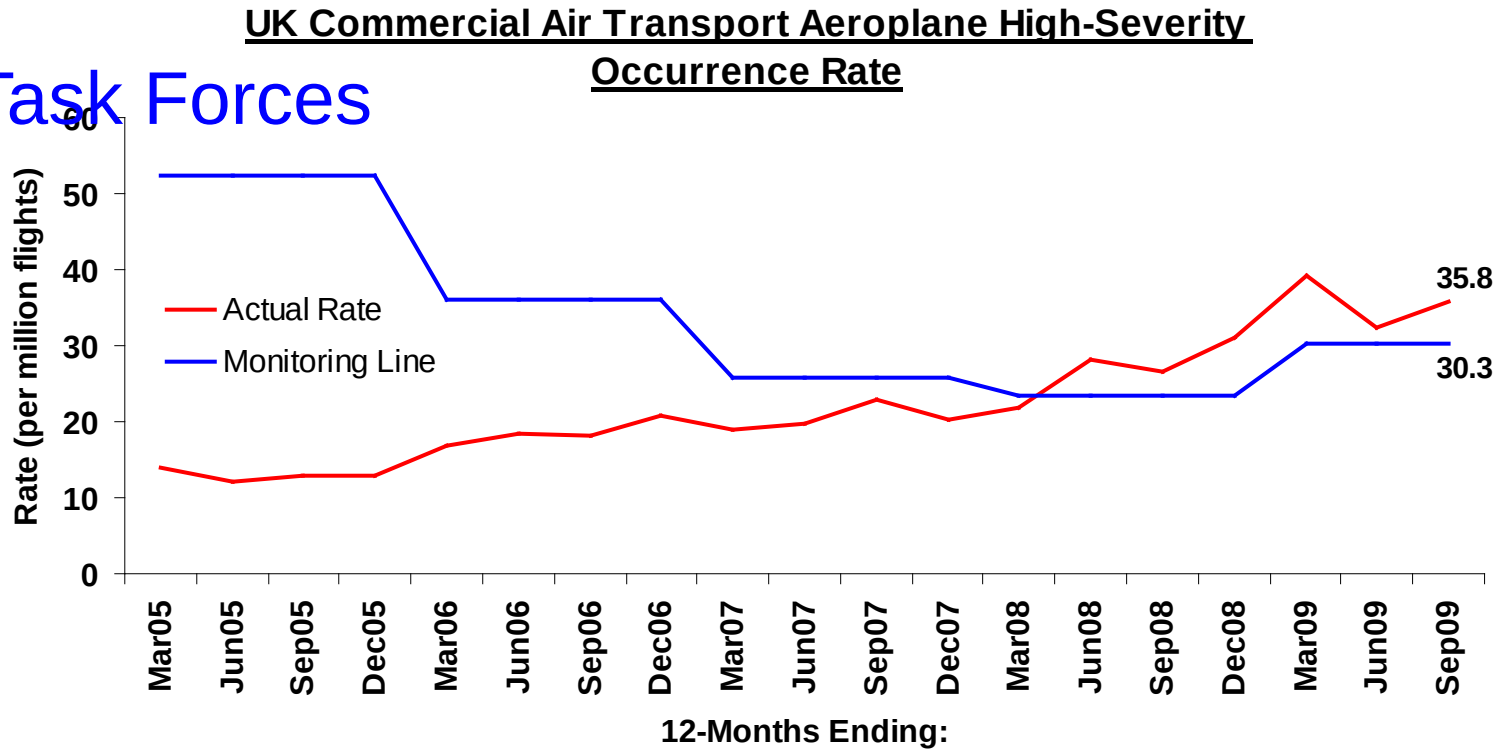
Background

- Safety Performance Indicator (SPI) 2
- 'Partnership in Safety' Conference 2009
- SPI 2 WG
- Task Forces



CAA Safety Risk Analysis Process

Identification of Main Risks Worldwide AAG

- Post crash fire
- Loss of control
- Controlled flight into terrain
- Runway excursions

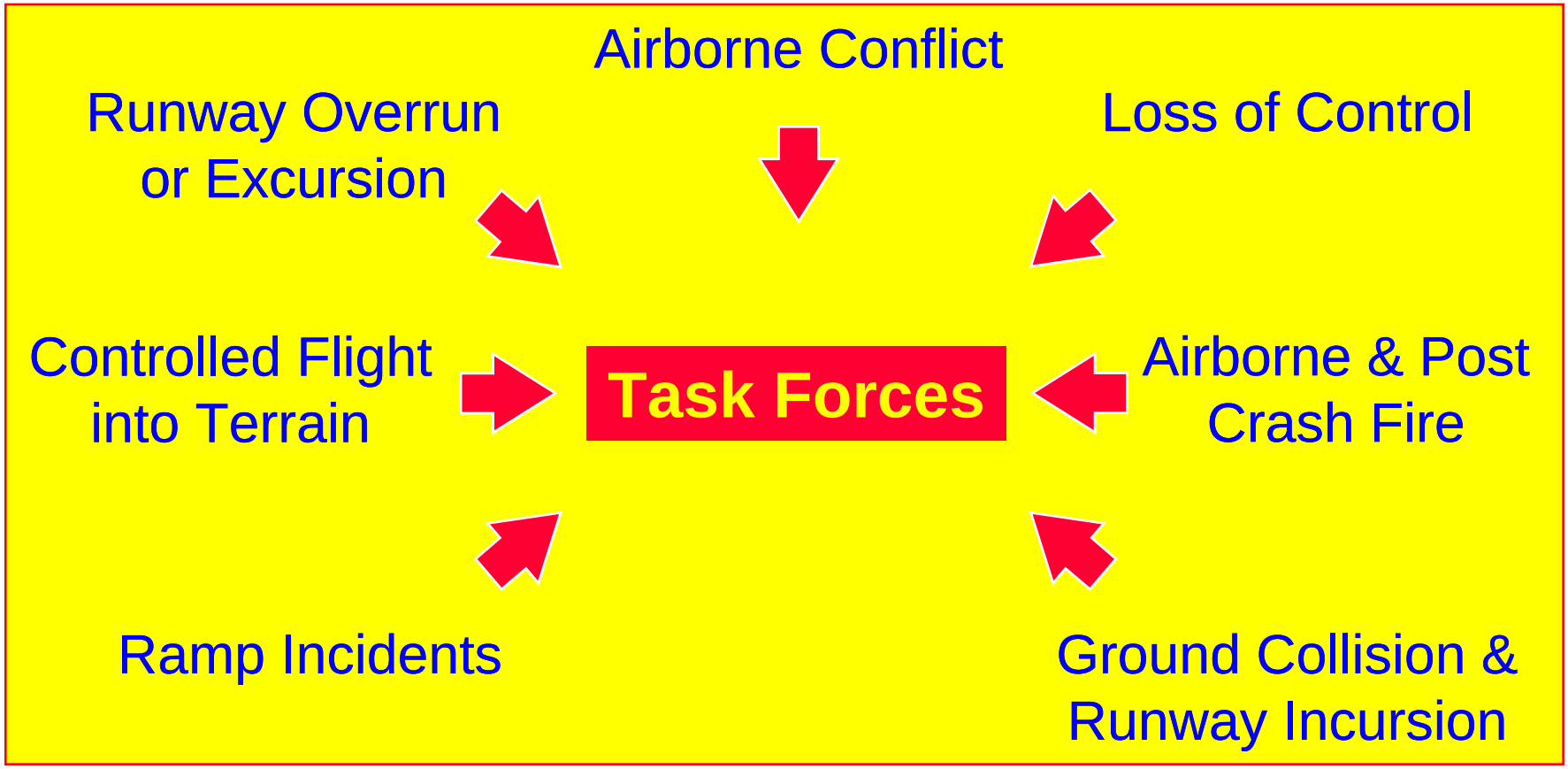
CAA Safety Risk Analysis Process

Identification of Main Risks Worldwide — AAG

Identification of Additional Risks in the UK Environment — THREAT

- Airborne conflict
- Ground conflict (including runway incursions)
- Ramp incidents

CAA Safety Risk Analysis Process



CAA Safety Risk Analysis Process

Identification of Main Risks Worldwide

AAG

Identification of Additional Risks in the UK Environment

THREAT

CAA Task Forces

Identification of Precursors of Main Risks

Prioritisation of Safety Risks and Definition of CAA Safety Plan

THREAT Dataset

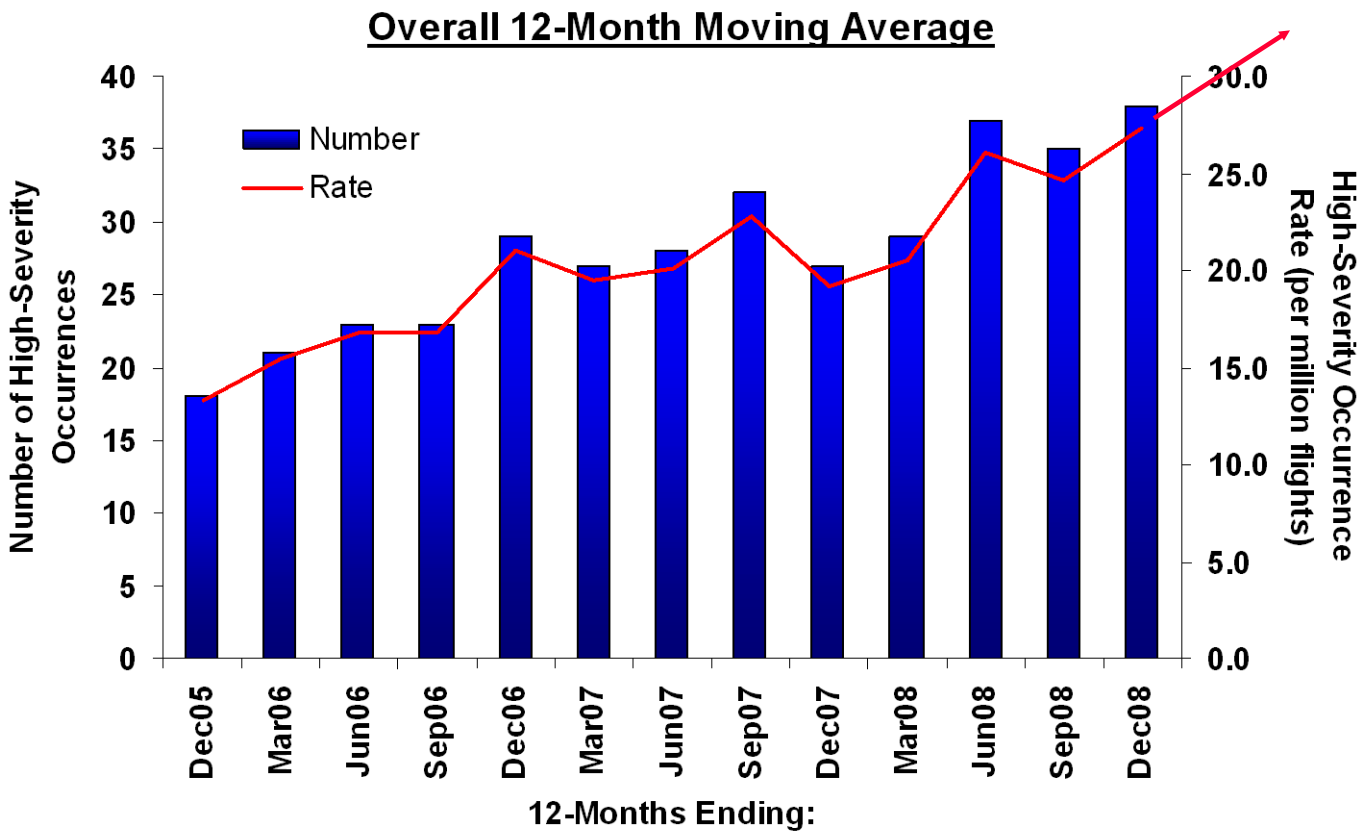
- Grade A or B MORs
- G-registered or UK operated (AOC):
  - Jet and turboprop aeroplanes > 5,700 kg
  - Turbine helicopters > 3,175 kg
- Passenger and cargo operations only
- Occurring worldwide since 1 Jan 2005

Analysis Overview

THREAT analysed:

- 112 high-severity occurrences in 2005-08
- 1 fatal accident
- 12 other accidents, 37 serious incidents, 62 occurrences
- 2 grade A occurrences
- 18 occurrences involving aircraft damage
- 10 occurrences involving injuries

Overall Trend



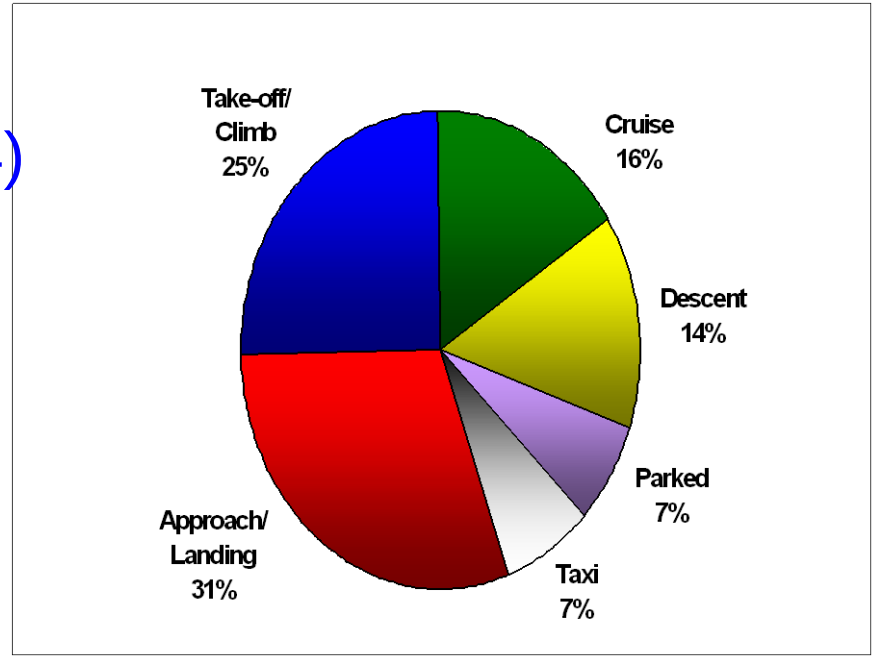
Location and Phase of Flight

Location:

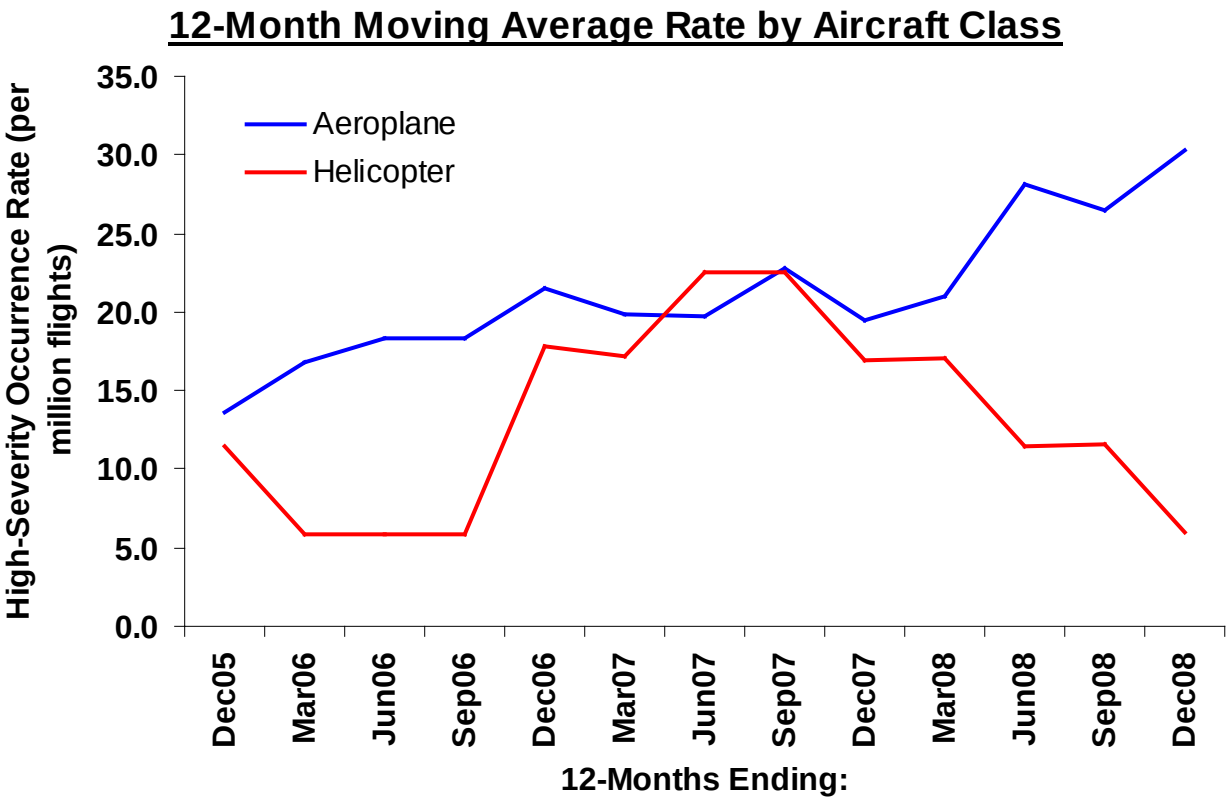
- Half in UK, half abroad
- Foreign included: Spain (11), USA (9), France (6) and Germany (5)

Phase of flight:

- Approach and landing (34)
- Take-off and climb (28)
- Cruise (18)



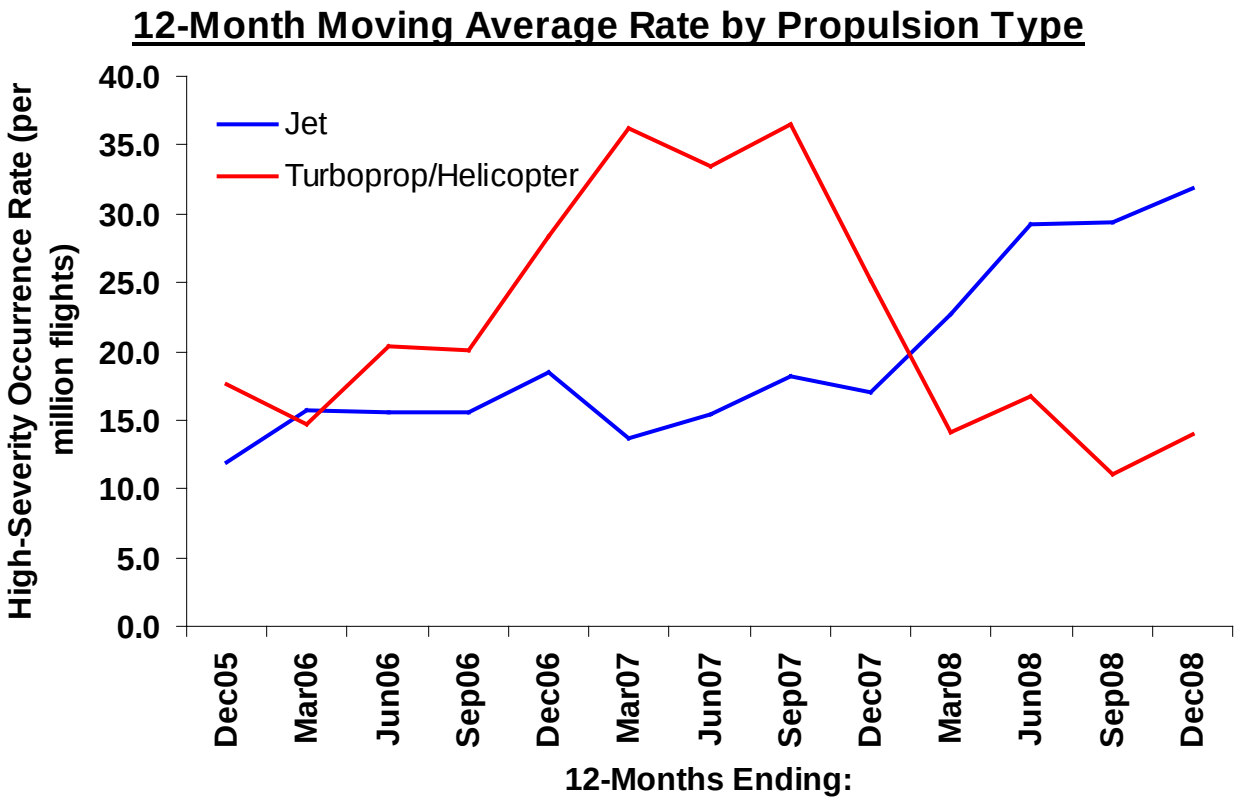
Aircraft Class



Aircraft Class	Number
Aeroplane	103
Helicopter	9

Aircraft Class	Rate (per million flights)
Aeroplane	21.3
Helicopter	13.0

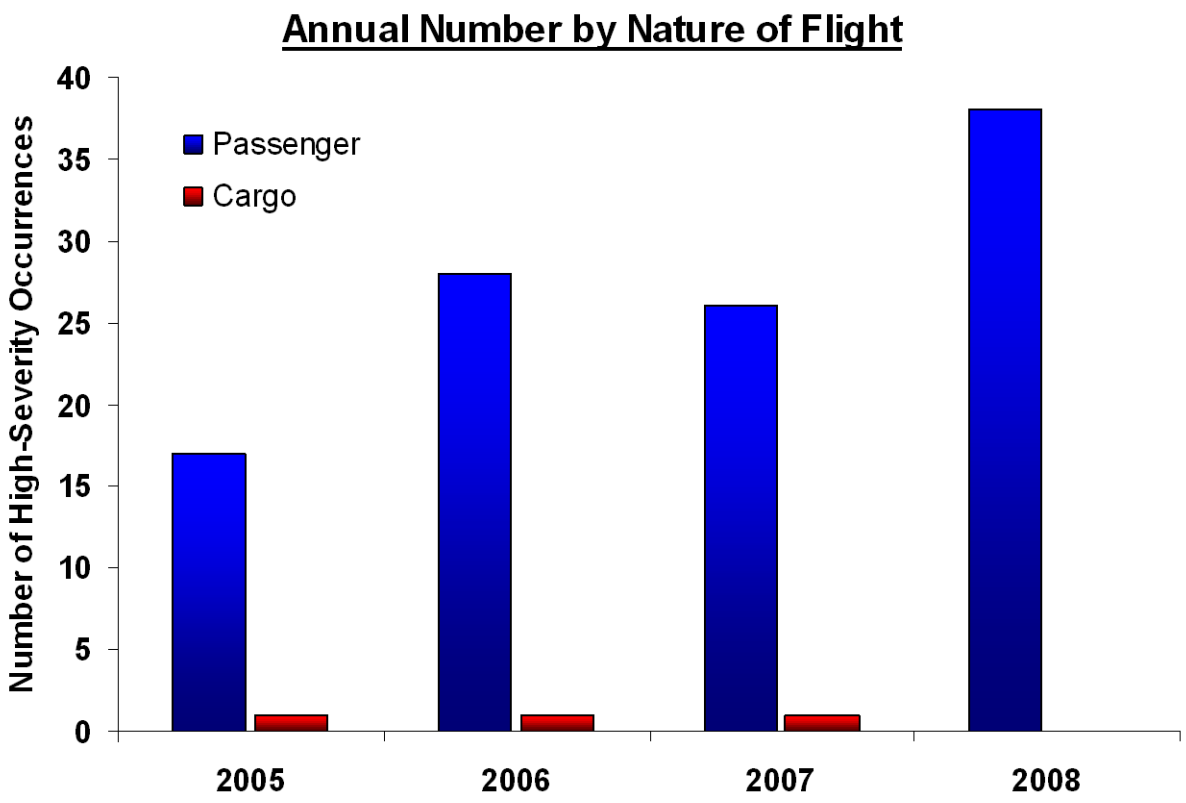
Propulsion Type



Propulsion Type	Number
Jet	82
Turboprop/ Helicopter	30

Propulsion Type	Rate (per million flights)
Jet	19.9
Turboprop/ Helicopter	21.3

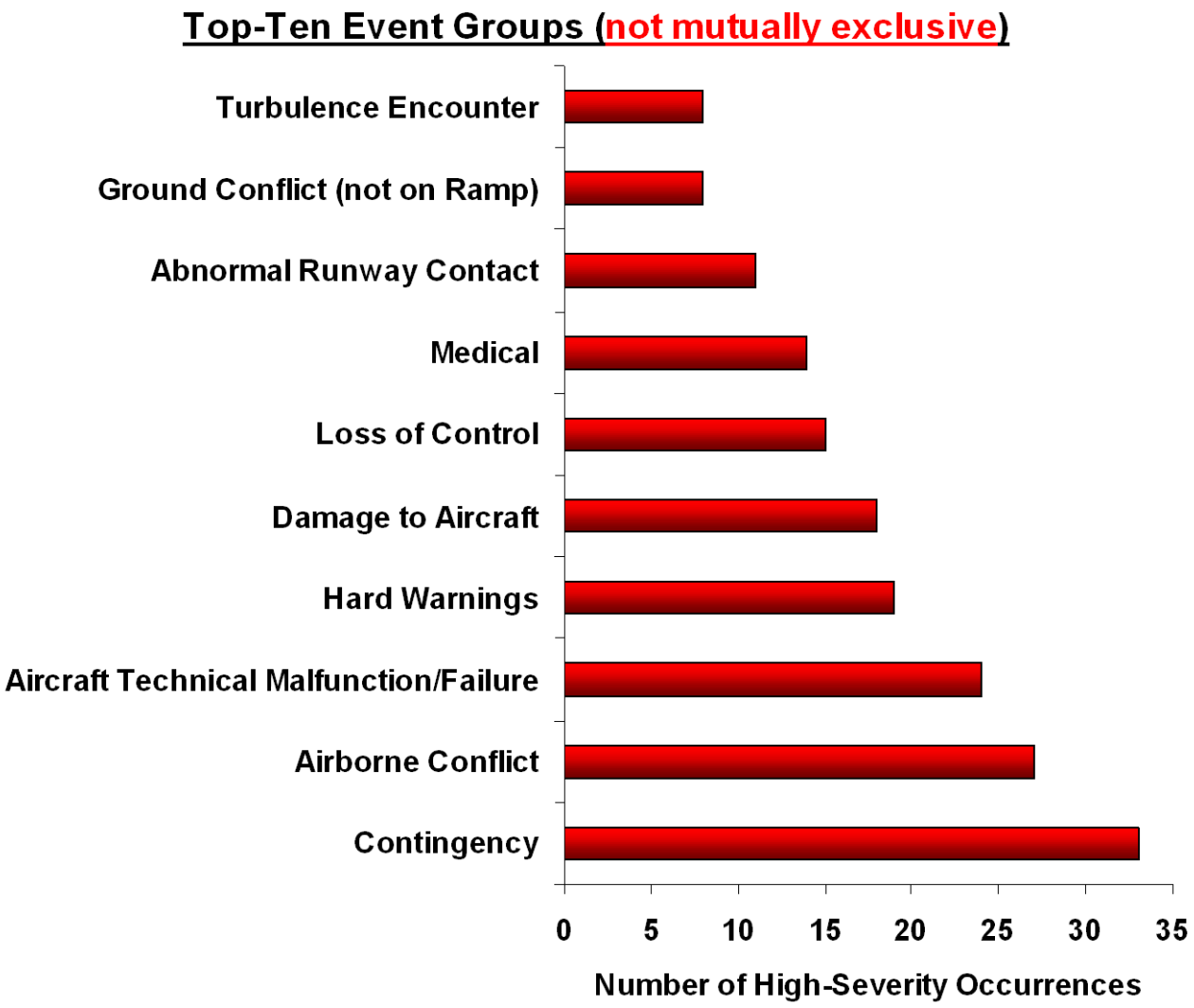
Nature of Flight



Nature of Flight	Number
Passenger	109
Cargo	3

Nature of Flight	Rate (per million flights)
Passenger	20.2
Cargo	20.8

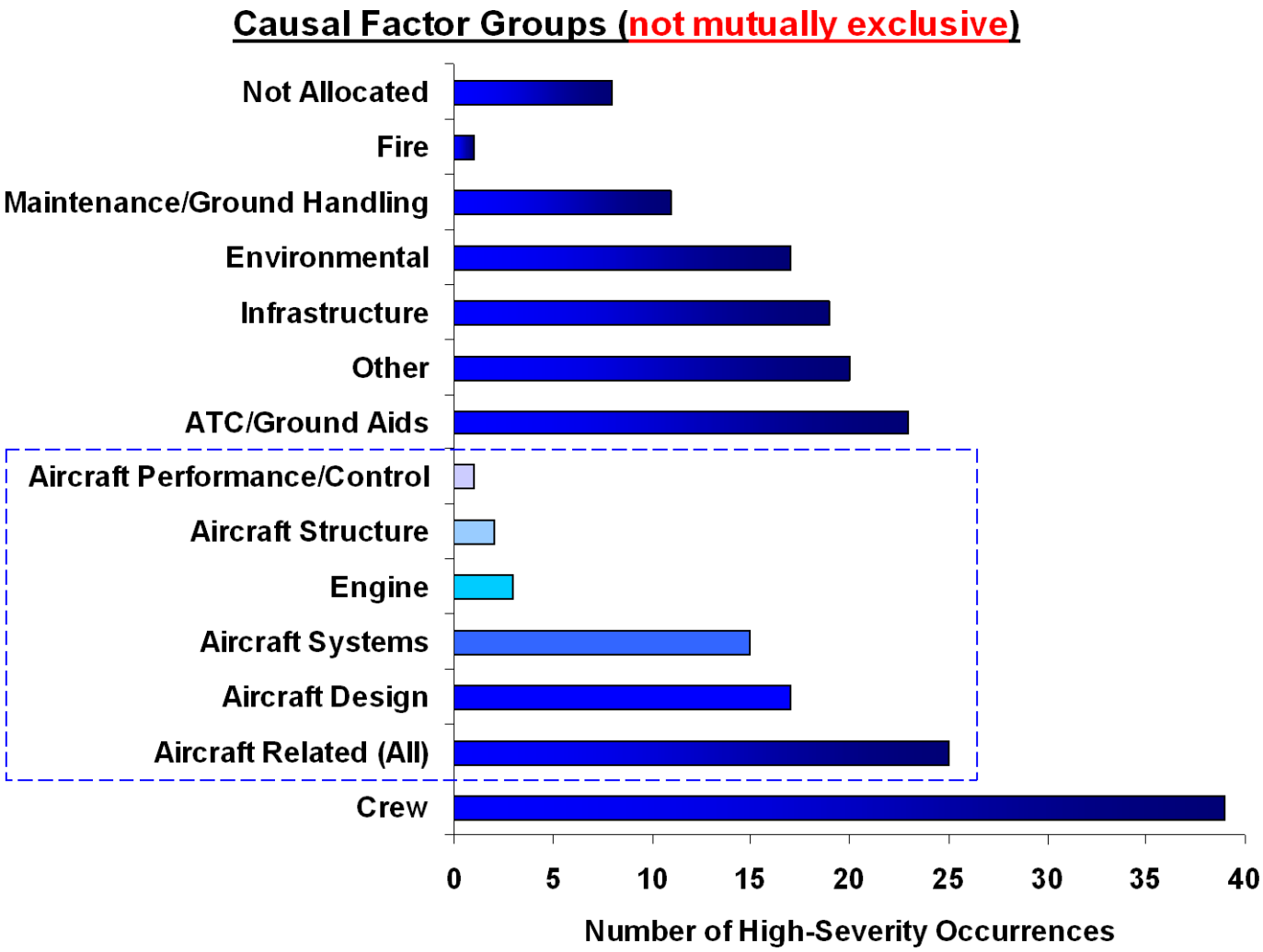
Event Groups



Event Types

Event Group	Top-Ten Event Types (not mutually exclusive)	
Airborne Conflict	Airprox	27
Damage to Aircraft	Damage to aircraft	18
Hard Warnings	TCAS RA	12
Aircraft Technical Malfunction/Failure	Instrumentation (including all flight deck displays)	9
Medical	Injury (non-fatal)	9
Aircraft Technical Malfunction/Failure	Engine (including loss of power for any reason)	7
Loss of Control	On ground	6
Abnormal Runway Contact	Hard landing	5
Airborne Conflict	Loss of separation	5
Hard Warnings	Stall warning/stickshake	5
Runway Excursions/Overruns	Runway excursions/overruns	5
Terrain Conflict	Flight below safety altitudes/decision heights	5
Turbulence Encounter	Wake turbulence	5

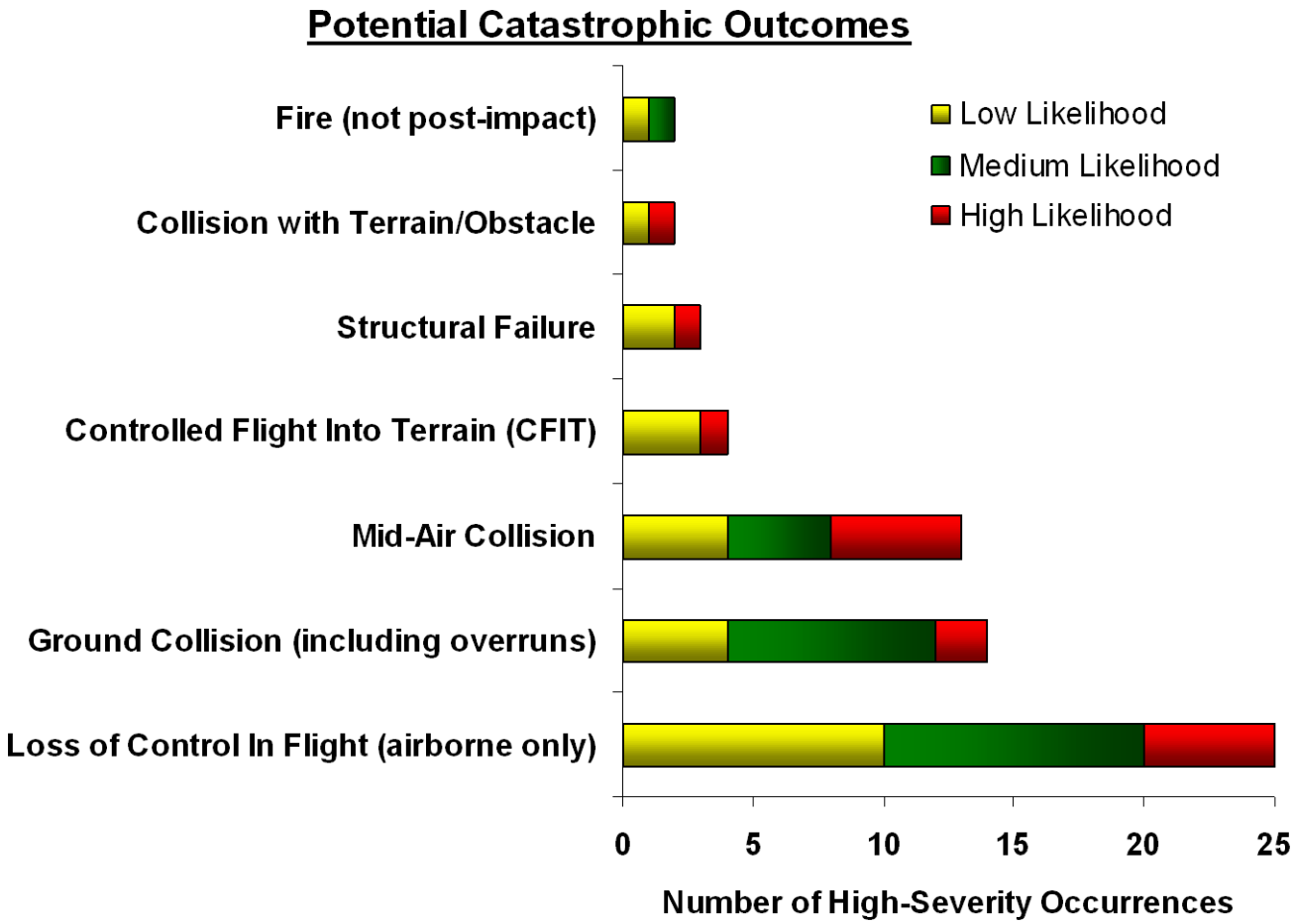
Causal Factor Groups



Causal Factors

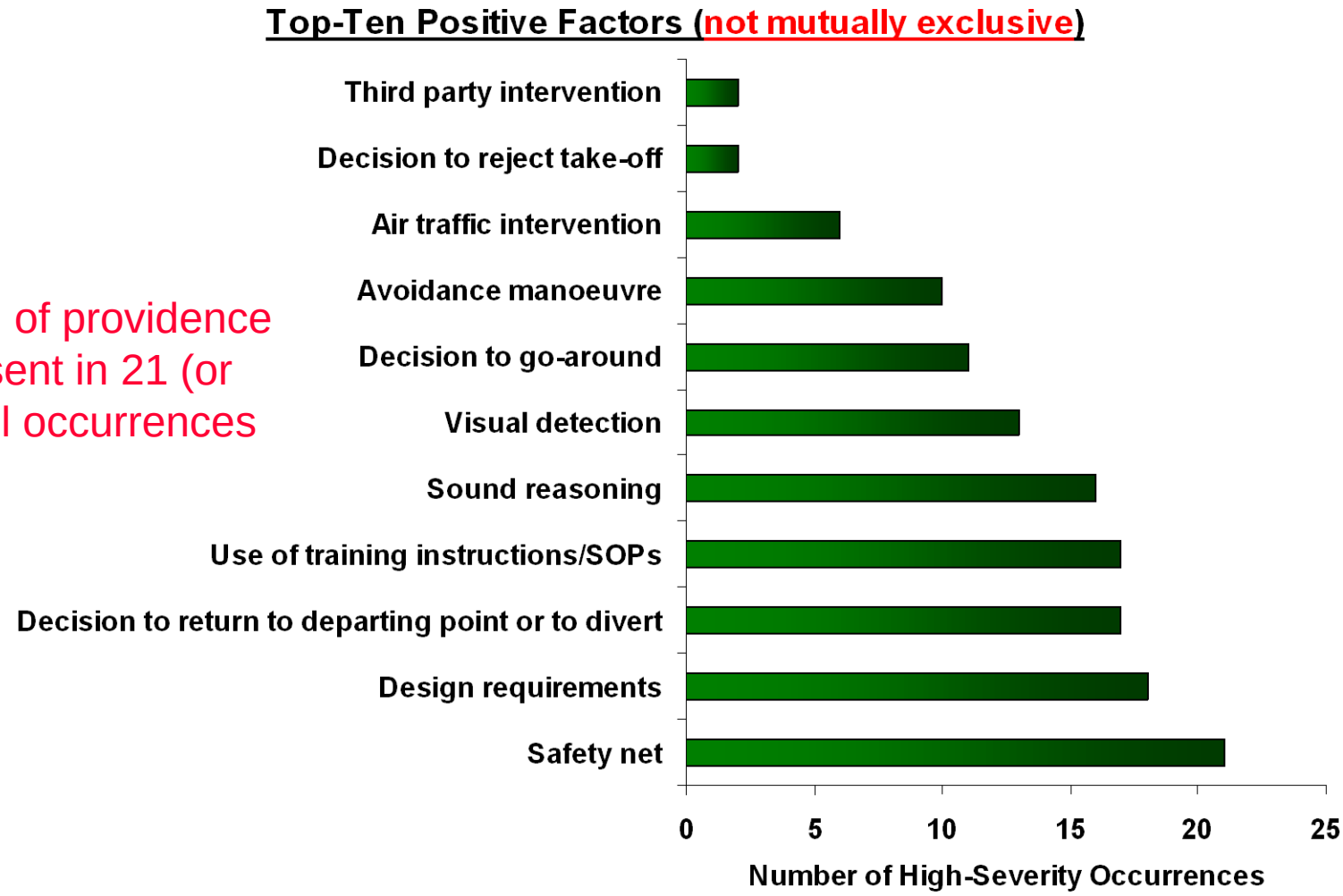
Causal Factor Group	Top-Ten Causal Factors (not mutually exclusive)	
Crew	Omission of action/inappropriate action	20
Crew	Failure in CRM	19
Other	Caused by other aircraft/vehicle	18
Crew	Poor professional judgement/airmanship	18
Crew	Flight handling	17
Aircraft Design	Design shortcomings	17
ATC/Ground Aids	Incorrect or inadequate instruction/advice	15
Infrastructure	Incorrect, inadequate or misleading information to crew	13
Crew	Lack of awareness of circumstances in flight	12
ATC/Ground Aids	Failure to provide separation – airborne	12

Potential Catastrophic Outcomes



Positive Factors

Some form of providence was present in 21 (or 19%) of all occurrences



THREAT Observations

- Lack of in-depth understanding by pilots of how aircraft operate beyond their interface with the technology
- Operators could make better use of FDM to identify and correct non-standard operating technique, which if uncorrected could lead to an accident
- Importance of pilots understanding the level of protection afforded by ATS provision in different types of airspace and knowing when heightened lookout is required

THREAT Observations

- It has been identified that some operator's Operations Manuals do not reflect the Aircraft Flight Manual nor the manufacturer's recommended procedures
- Need for the CAA to better share lessons learnt, through the investigation of safety data, with the aviation community in general

Summary

- Increasing trend in overall number and rate of high-severity occurrences
- Wide variety of events and causes
- Providence features strongly
- Relatively low number involving helicopters and cargo operations – are we seeing the true picture?

Thanks For Your Attention
Any Questions?