



UK Safety Plan

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Significant Seven Accident Types

Loss of Control due
Crew / aircraft

Loss of Control as
Runway Excursion

Loss of Control due
Ground Services

Mid Air Collision

Collision on Ground
due Runway Incursion

Controlled Flight into
Terrain

Aircraft Environment
Unsurvivable

Significant Seven Accident Types

Loss of Control due
Crew / aircraft

Loss of Control as
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Loss of Control due
Ground Services

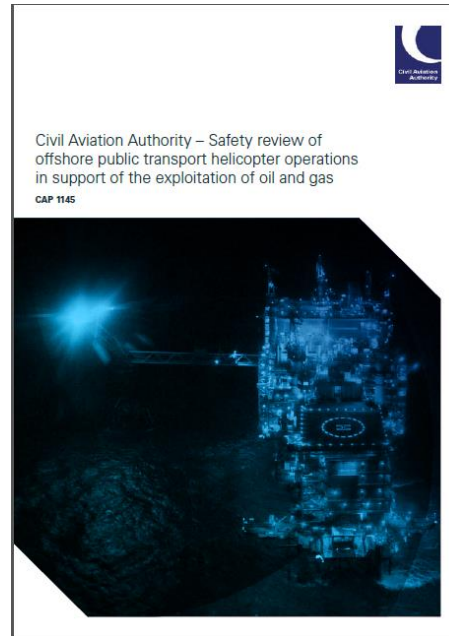
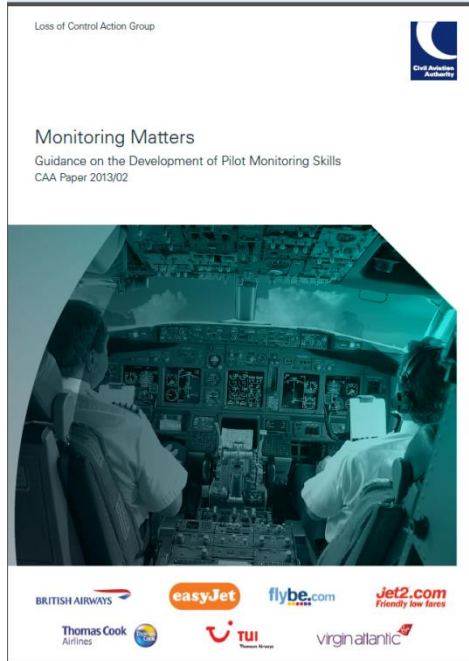
Mid Air Collision

Collision on Ground
due Runway Incursion

Controlled Flight into
Terrain

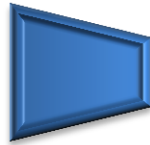
Aircraft Environment
Unsurvivable

Safety Plan Evolution

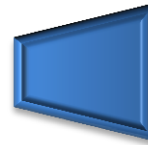


Moving upstream

Low airspeed



Prevent
Low Speed
situation



Deal with a
Low Speed
situation

Loss of Control due
Crew / aircraft

www.caa.co.uk/bowtie

Introduction to Bowtie

How this risk assessment tool works

Safety & Risk Management

Performance Based
Regulation

Introduction to Bowtie

What does Bowtie show?

How does Bowtie work?

Who is using Bowtie?

Where did Bowtie come
from?

Bowtie Elements

Creating a Simple Bowtie

Identifying Safety and Risk
Priorities in Bowtie

Implementing Bowtie into
Safety Management
Systems

Bowtie Templates

Access the Significant
Seven Bowtie Templates

Make Monitoring Matter

HSE Memo of Understanding

Helicopter Safety Research
Management Committee

Human Factors

Review of North Sea
Helicopter Operations

Safety Management Systems

Research Projects

Safety Data

Bowtie is one of many barrier risk models available to assist the identification and management of risk and it is this particular model we have found (and are still finding) useful.

These pages explain:

- what a bowtie can be used for,
- how it can help you,
- how to go about the methodology and
- what to look for within a model.

This information is based on how the CAA has gone about producing their own bowties with assistance from Across Safety and CGE.

There are different ways to go about a bowtie but we recommend trying different processes to see what works for you. We hope you can see the benefits in our approach which has been based on the bowtie software BowTie XP. However the terminology for the [bowtie elements](#) can be applied when using other methods to create a model such as on Visio, post-it notes or in Excel spreadsheets.

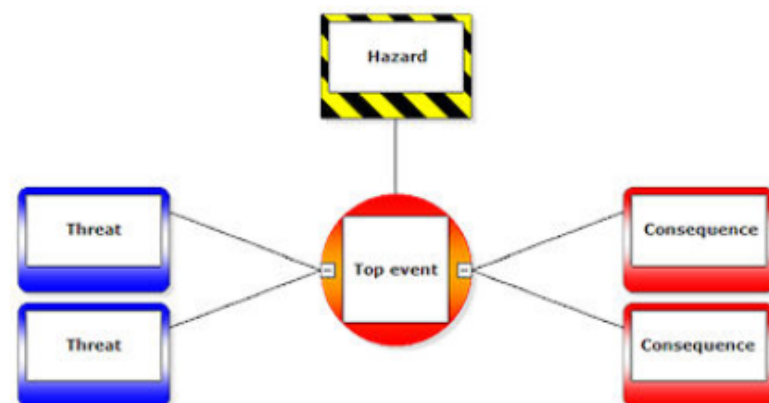
The assessment of the bowtie elements which helps in identifying the [safety and risk priorities](#) can also be applied without using the specific software – it is all part of the risk conversation to appreciate where those improvement areas are in the aviation system.

If you are part of the UK Aviation industry, you are able to access some starter bowties focusing on the Significant Seven and the relevant risks. These bowties have been jointly constructed by industry experts and colleagues from the CAA.

Special thanks to those who assisted from:

- Belfast City Airport
- British Airways
- easyJet
- Gates Aviation
- KLM UK Engineering
- Heathrow Airport Limited
- Manchester Airport Group
- NATS
- Swissport Group Services
- TAG Aviation
- Thomas Cook

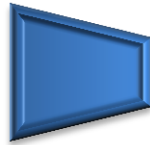
More information about Bowtie models:



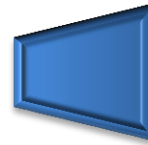
[return](#)

Moving upstream

Low airspeed



Prevent
Low Speed
situation

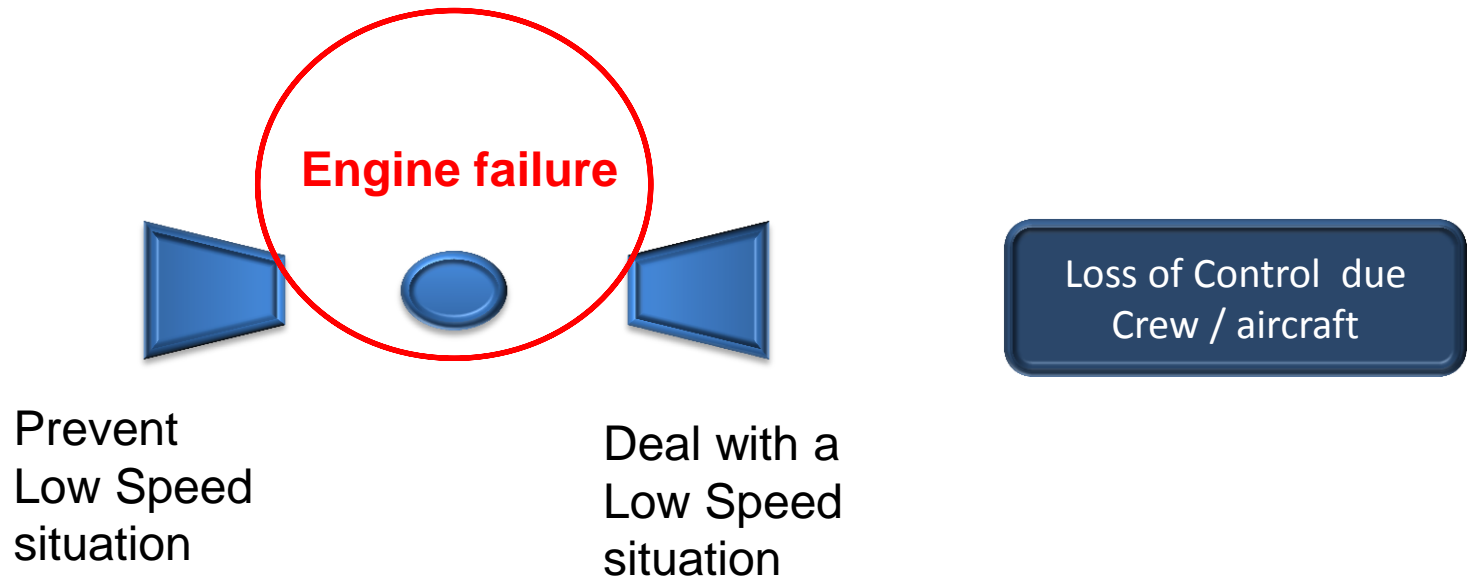


Deal with a
Low Speed
situation

Loss of Control due
Crew / aircraft

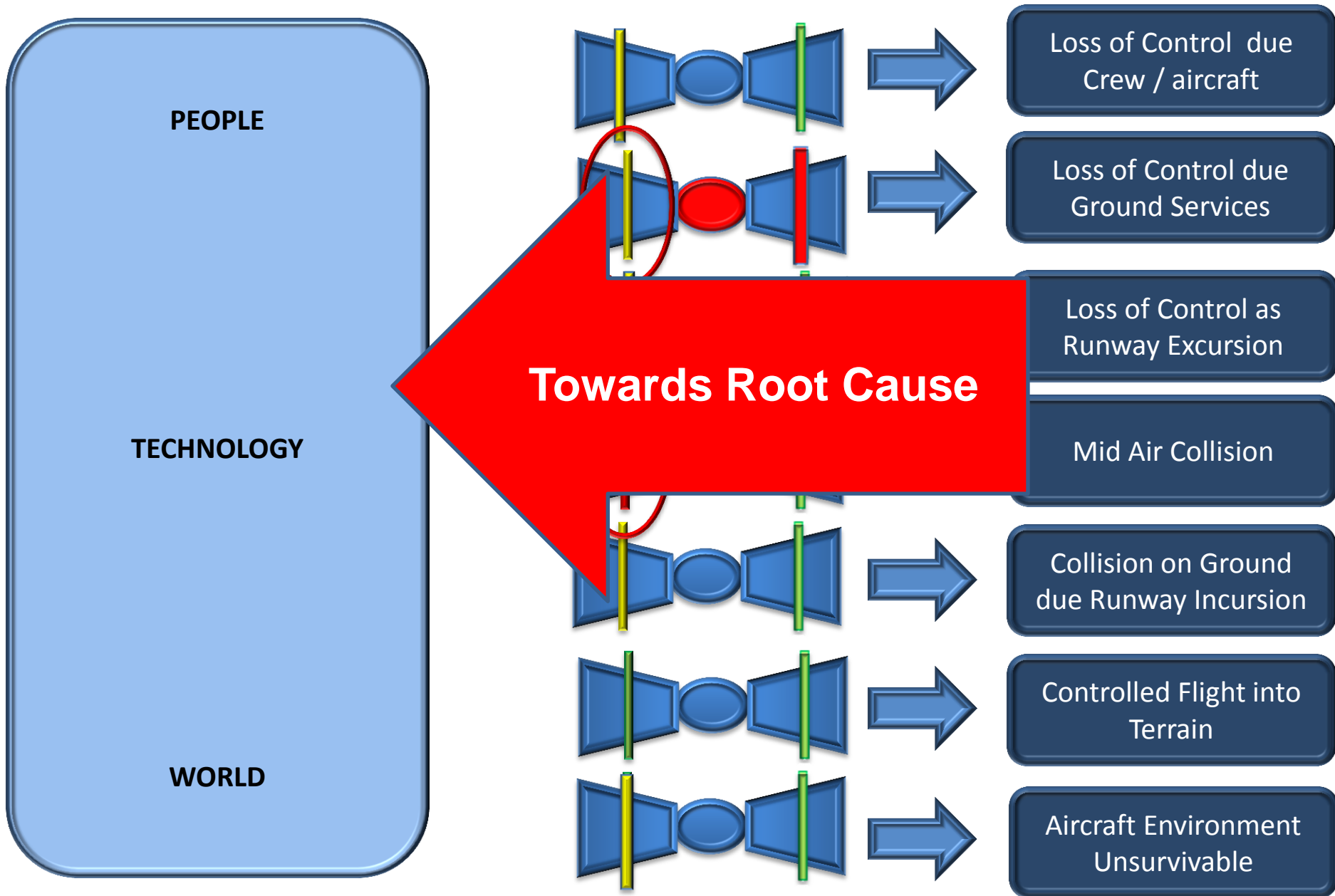
www.caa.co.uk/bowtie

Moving upstream



www.caa.co.uk/bowtie

Moving upstream



Moving upstream

PEOPLE
Pilot Performance

TECHNOLOGY

WORLD

Towards Root Cause

Loss of Control due
Crew / aircraft

Loss of Control due
Ground Services

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Safety Plan Activities

PEOPLE

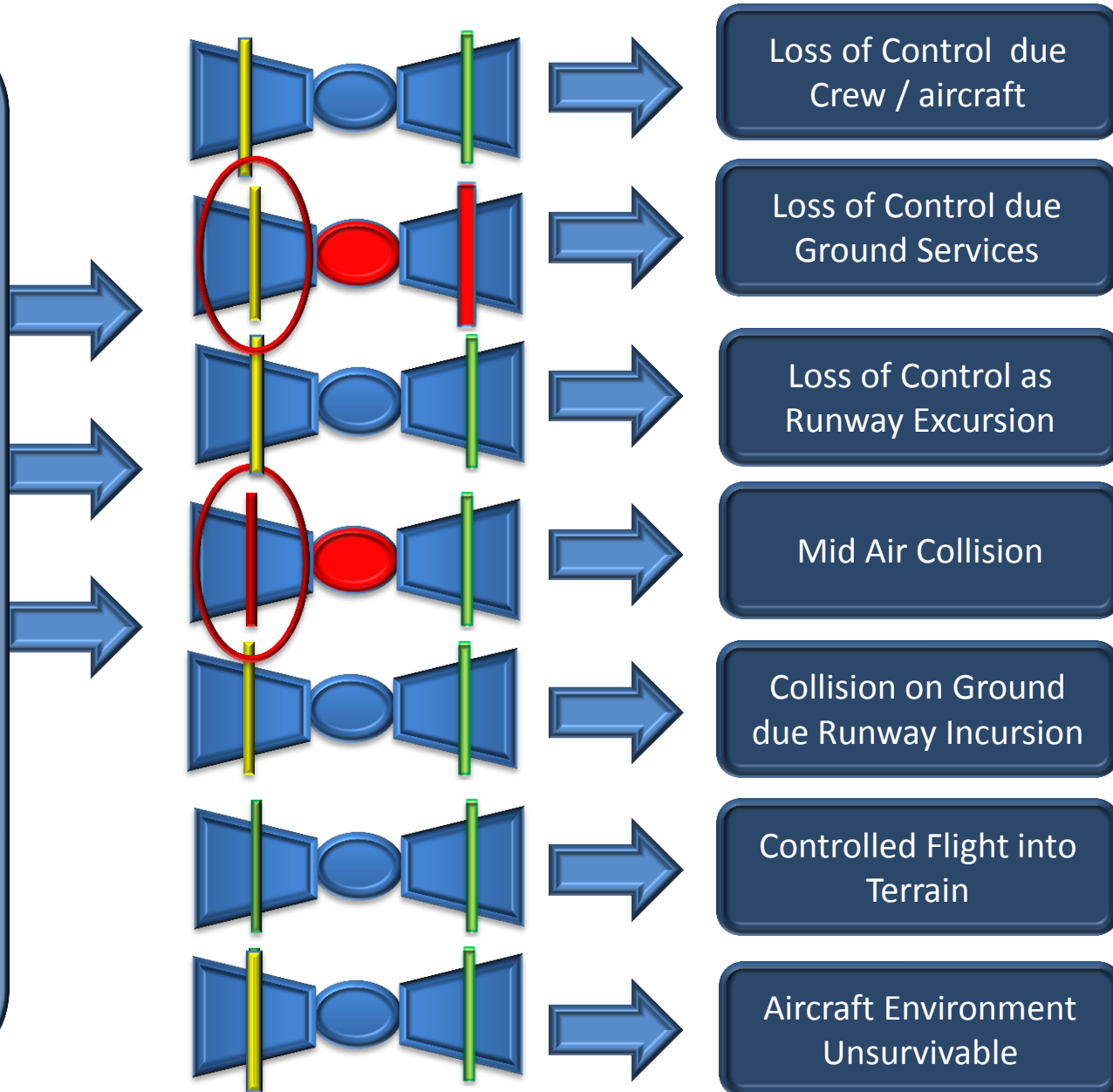
Pilot Performance
Fatigue Management
ATCO Performance
Engineer Performance
Ground Staff Performance

TECHNOLOGY

Precision Approaches
Un-stabilised Approaches/ FDM
Pilot Information
Engineering Supply Chain
Lithium Batteries

WORLD

CAT in Class G
Ground Operations/ De-Icing
Overseas Operators
Destination Hotspots
Saturation of Airspace
Weather /Turbulence
New Business Models



Strategic Plan

PEOPLE

Fitness of Persons

Accountable Managers / key
post holders and Governance
Structures

Stressed Organisations

WORLD (UK)

Integrated Surveillance

Future Airspace Strategy
implementation / refresh

Ground Handling



TECHNOLOGY

Automation

Preparing for regulation of new
technology

Influencing developments of
technology and regulatory
process within 'total system'


WORLD (International)

Exploring Co-operative Oversight

Data Sharing with partners

Addressing specific hotspot risks
through Safety Partnerships and
Data Sharing



A detailed view of an aircraft cockpit, showing the instrument panel with multiple digital displays, analog gauges, and control panels. The cockpit is equipped with two seats, each with a blue and white striped headrest. The central console features a large display and numerous buttons and switches. The overall lighting is bright, and the image has a slightly faded, high-key appearance.

Thank You

Any Questions?