

Strategies for Prevention of Accidents

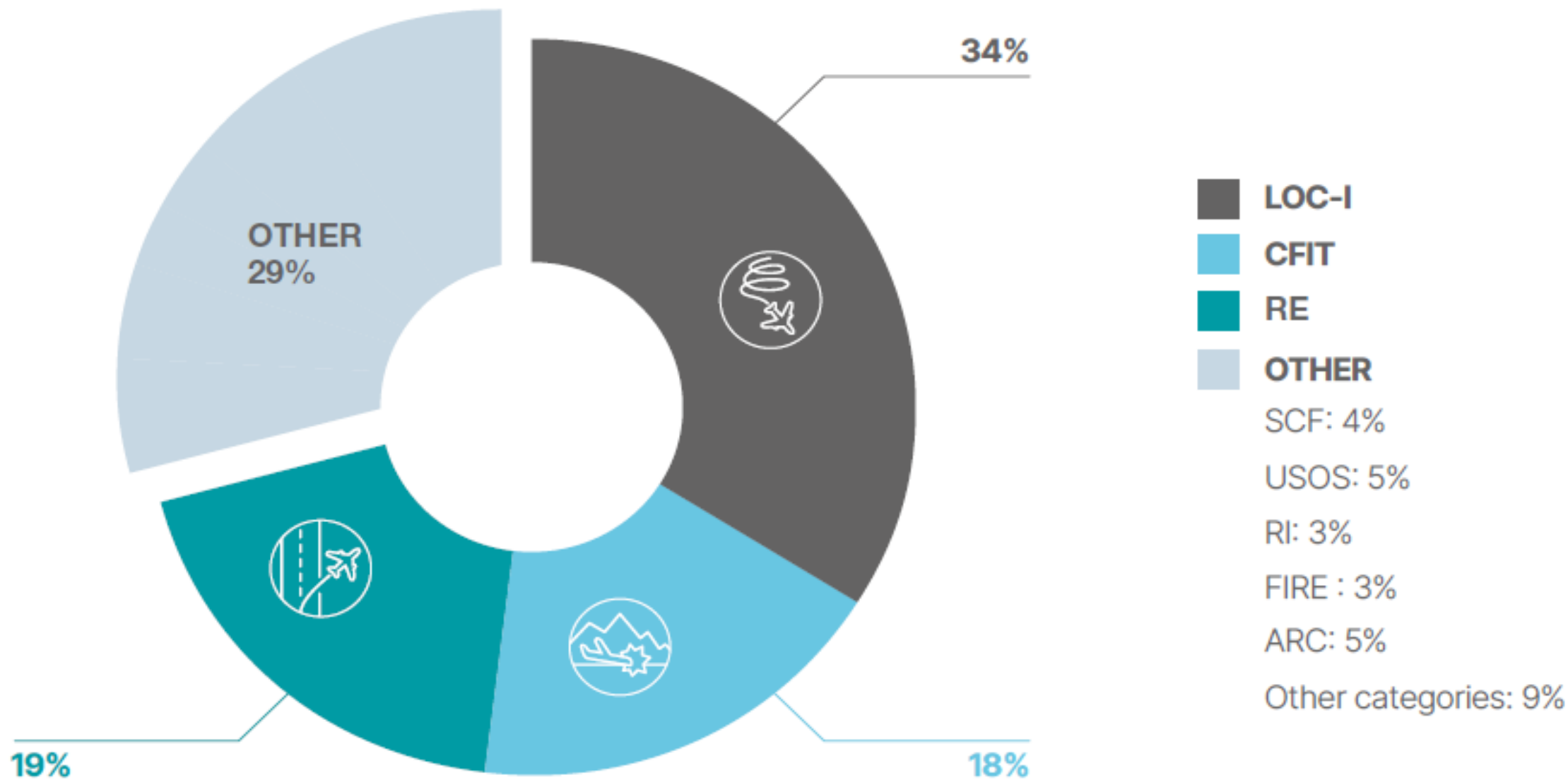
- **Yes, can be**
- **10 fatal in year 2000**
 - **Compilation of 1991-2000**
 - **Stringent follow up of SOPs**
 - **Reduce absolute numbers: 10 Fatal out of 95 in 2024**
- **Hands on work experience of Auditors: Out of Box Solutions**
- **Tech: 1960 > 80% reduced to <20%**
- **HF: Repeat: Actors are new**
- **Importance of implementation of Recommendations**

Need for Classification of Recommendations

- **Common Taxonomy**
- **Objective**
- **Ease of implementation**
- **Can be contested to refine/withdraw**
- **Learning value for other**
 - **Designers, Manufacturers, Operators, Trainers**
 - **Refinement in Maintenance Evaluation**
- **Research on the major contributory factors**

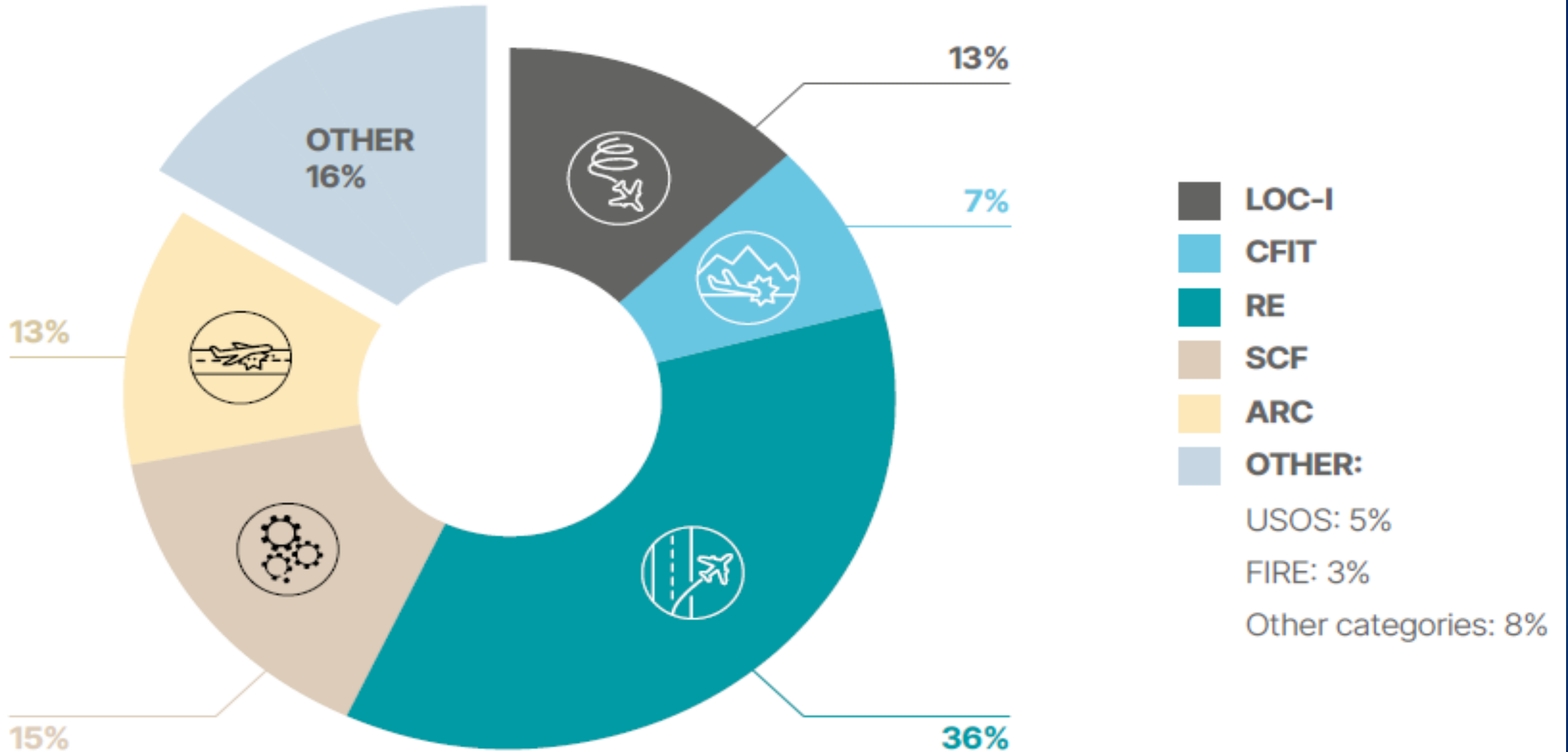
Fatal accident distribution per accident category 2004-2024

Source: Airbus-A Statistical Analysis of Commercial Aviation Accidents 1958 - 2024



Hull loss accident distribution per accident category 2004-2024

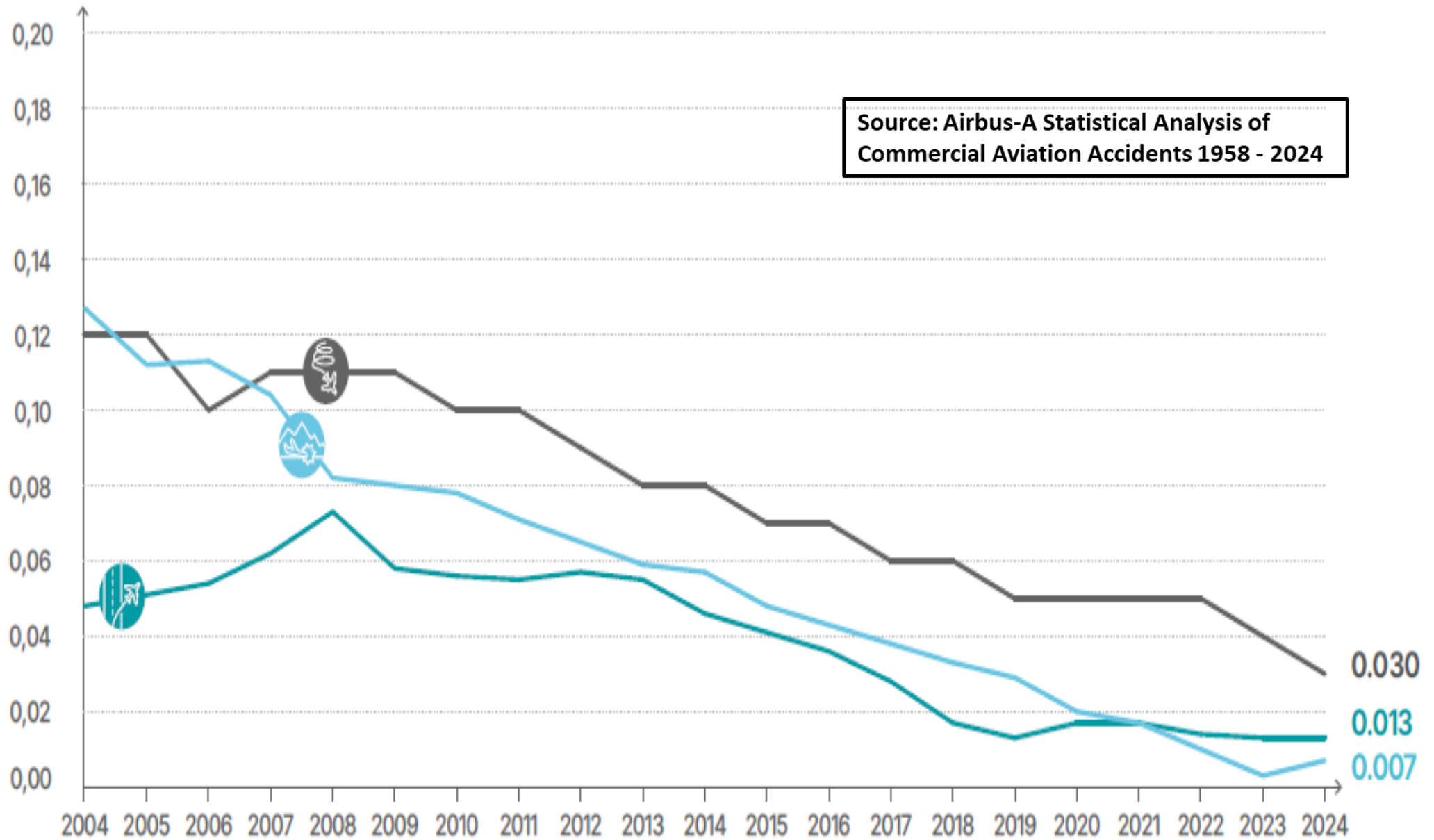
Source: Airbus-A Statistical Analysis of Commercial Aviation Accidents 1958 - 2024



Fatal

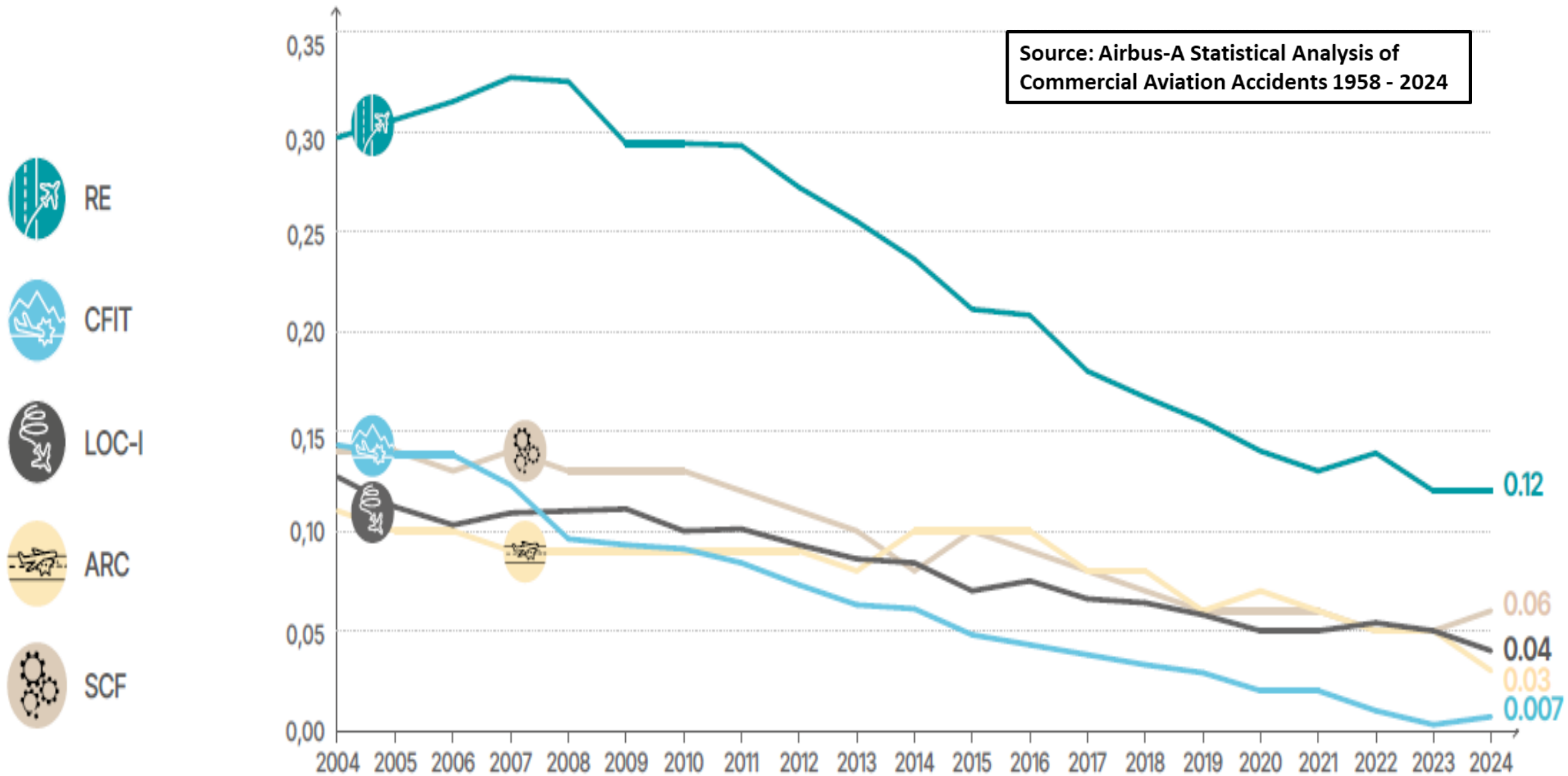
10-year moving average fatal accident rate (per million flights) per accident category

-  CFIT
-  LOC-I
-  RE



Hull loss

10-year moving average hull loss accident rate (per million flights) per accident category



Objective Classification of Recommendations

Accident Category	Recommendations Category	Sub-Classification
Runway Excursion (RE)	Human Factors	Pilot
		Maintainer
		Support Service (Ground, ATC)
Loss of Control in Flight (LOC-I)	Human Factors	Pilot
		Maintainer
		Support Service (Ground, ATC)
Controlled Flight Into Terrain (CFIT)	Organizational (Training, Duty Cycle, Resources, SOP)	Pilot
		Maintainer
		Support Service (Ground, ATC)
Abnormal Runway Contact (ARC)	Organizational (Training, Duty Cycle, Resources, SOP)	Pilot
		Maintainer
		Support Service (Ground, ATC)
Undershoot/Overshoot (USOS)	Technical	Manufacturer
		Design (Including Software)
		Regulatory (Including SOP)
System/Component Failure or Malfunction (SCF)	Technical	Manufacturer
		Design (Including Software)
FIRE (F-NI and F-POST)	Technical	Regulatory (Including SOP)
		Servicing Induced Ex: Windscreen Blown off

Hastening Investigations

Hastening Investigations

- ▶ **Collection and Transportation of Physical Evidences**
- ▶ **Data Recovery**
- ▶ **Decision to Subclassify the Occurrence**
- ▶ **Defect Investigation: Major Timelines**
- ▶ **Analysis: Collaborate**

Hastening Investigations

- ▶ AI as a toll for Simulations and analysis
- ▶ Report Writing (2/3 in writing stage)
 - ▶ Software Tools
 - ▶ Optimize
 - ▶ Legal Immunity?
- ▶ Draft Approval
- ▶ Final Report

Decision to Subclassify the Occurrence

- ▶ **Field Investigations**
- ▶ **Correspondence Investigations**
- ▶ **Oversees Investigations**
- ▶ **Fatal Accidents**
- ▶ **Full Reports**
- ▶ **Short Reports**
- ▶ **Safety Recommendations**
- ▶ **Safety Actions**



Source: AAIB, UK

Statistics for 2024

- 762 Notifications
- 20 Field Investigations
- 57 Correspondence Investigations
- 10 Fatal Accidents (11 deaths)
- 53 Overseas investigations
- 36 Full Reports
- 65 Short Reports
- 20 Safety Recommendations
- 103 Safety Actions



Thank You

Thank You