AI IN AVIATION SAFETY AND COMPLIANCE

a practical course for aviation safety and compliance professionals

AI tools are already in your organisation. Your staff is using them to draft reports, summarise findings, prepare for audits and respond to regulatory queries. The question is no longer whether AI will be used — it is whether it is being used well.

In a compliance and safety context, poorly used AI is not just inefficient. It produces reports that sound authoritative but miss the regulatory point. It generates safety assessments padded with text that no one has critically reviewed. It writes audit findings that look complete but do not hold up under scrutiny. And it leaves the professional who signed off on the work exposed.

This course gives aviation safety and compliance professionals the practical skills to use AI tools effectively, to recognise their limitations, and to maintain the professional judgment and accountability that no tool can replace. It is built around real regulatory material, real compliance documents, and real examples — not a technology lecture.

What sets this course apart?

There are plenty of AI awareness courses. Most of them are built by technology companies and taught by people who know AI but have never written a safety case, sat in a regulatory meeting, or held a nominated post.

This course is built and delivered by practitioners. The examples are real. The regulatory framework is one that participants work in every day. The limitations of AI are taught from the perspective of someone who has seen what happens when those limitations are not understood — not from a theoretical risk matrix.

Participants leave with tools they can use the next day: a draft AI use policy, a checklist for reviewing AI-generated compliance documentation, and a clear framework for deciding when AI assistance is appropriate and when professional judgment must take over.

SIG AVIATION

AI does not carry regulatory responsibility

You do

This course makes sure you know the difference

Why SIG Aviation?

We do not teach AI from a technology perspective. We teach it from an operational and regulatory one.

SIG Aviation has worked directly with EASA, national civil aviation authorities, and air operators across Europe on compliance, safety management, and regulatory oversight. We have produced real safety assessments, audit findings, and regulatory submissions — and we have seen what happens when AI is misapplied in each of these domains.

We bring the same honest, pragmatic approach to AI that we bring to every course we deliver: no vendor agenda, no technology evangelism, and no check-in-the-box approach to a subject that genuinely matters.

This course is designed for professionals working in aviation safety and compliance who are already using — or considering using — AI tools in their daily work. No technical background in AI is required or assumed.

This course is built specifically for

- Nominated persons in CAT, CAMO and Part-145
- Quality and Safety managers
- Flight ops and safety inspectors from CAA's
- Compliance and Safety staff and experts
- Safety and accident investigators

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Each day of this course can be booked independently, or tailored to satisfy auditor/inspector recurrent training requirements.

Course Structure

Day 1 - AI in regulatory compliance and safety management

The first day establishes the foundation. We examine what AI tools can and cannot do in a regulatory context — drawing on EASA and ICAO frameworks that participants already work with. We work through practical exercises using real regulatory material: gap analysis, report drafting, risk assessment support, and document review. A central session covers how to identify AI-generated content in submissions received from operators or third parties — a skill that is increasingly relevant for authority staff and auditors alike. An AI use policy is introduced as a working document. Participants adapt it for their own organisation during a group exercise, leaving with a draft policy they can implement immediately.

Day 2 — Auditing techniques in an AI-influenced environment

The second day covers auditing — planning and executing effective audits, interview techniques, evidence gathering, and writing findings that hold up under challenge. A specific focus is placed on how AI tools are changing what auditors find and how organisations prepare for audits.
Participants work through case studies where AI-generated compliance documentation passed initial review but contained substantive errors. They practice the questioning and verification techniques needed to identify these issues during an audit. A session on writing defensible audit findings rounds out the day — because a finding that cannot be sustained under regulatory scrutiny is worse than no finding at all.

Day 3 — Safety investigation and root cause analysis

The third day addresses safety investigation methodology: how investigations are structured, how root cause analysis is conducted, and how findings and recommendations are written. This day draws directly on cause mapping and structured investigation techniques already used by SIG Aviation.
A central theme is the specific risks of using AI in investigation work, where independence, traceability of reasoning, and professional accountability are regulatory requirements — not preferences. Participants work through investigation scenarios and practice identifying where AI assistance is appropriate and where it crosses the line into substituting for professional judgment. The day concludes with report writing: how to produce an investigation report that is clear, defensible, and unambiguously the product of the investigator's own analysis.

Learning objectives

At the end of this course the participant will be able to:

- Use AI tools to accelerate document review, gap analysis, and report drafting without compromising regulatory accuracy or professional accountability
- Recognise AI-generated content in regulatory submissions, audit responses, and safety documentation — and know what to do about it
- Plan and execute effective compliance audits that account for the increasing use of AI in operator compliance systems
- Write audit findings and investigation reports that are clear, specific, and defensible under regulatory scrutiny
- Conduct root cause analyses that remain the product of the investigator's own judgment, supported rather than replaced by AI tools

"EVERY TOOL THAT MAKES EXPERTISE LOOK EASY...
ALSO MAKES INCOMPETENCE LOOK CONVINCING."..