

The Many Devils in the Details of **AI for MRO**

Every squawk
has a story.
Until recently,
those stories
couldn't be told.



AIXI

Oxygen.

It sounds like a simple word.

Pull up a decade of logbook entries from any commercial fleet and you will find it spelled dozens of different ways:

O2 light

Oxy lght

O2 lite

Oxygen lite

oxy lite

O₂ It

oxygen lgh

In one dataset, AIXI found 45 distinct variations of this single term. Multiply that across thousands of components, hundreds of fault descriptions, and millions of maintenance records.

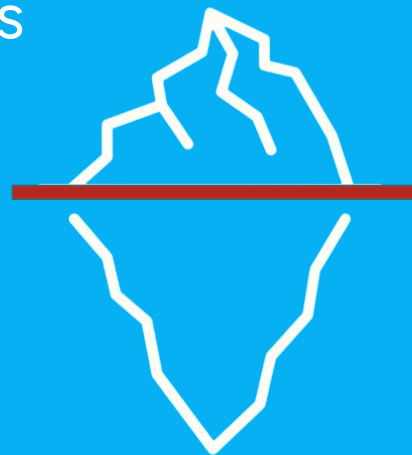
Now, you start to understand why working with aviation maintenance data has historically been so difficult. For years, the industry has accepted "junk in, junk out." AIXI flips it: junk in, intelligence out.

A demo is the easy part.

Large Language Models (LLMs) have democratized the ability to build impressive AI prototypes. Give a talented engineer access to a modern LLM, and they can produce a tool that codes a squawk, answers a maintenance question, or summarizes a work order. The demo will look polished, maybe even be accurate some of the time.

That's not good enough in aviation.

What separates a demo from a production-grade system is **everything that happens underneath.**



AIXI calls this the iceberg.

The four years of work that nobody shows.

What's below AIXI's surface?

Guardrails. A production system must know the boundaries of its own competence. When AIXI's platform is uncertain, it abstains rather than guesses. Enforced limits keep answers safe, in scope, and auditable.

MLOps, forever. Fleets change. Data changes. A model trained on today's records will drift if left unattended. AIXI manages drift detection, retraining, and versioning as a permanent operational discipline, not a one-time deployment.

Experts back on expert work. Most AI tools still lean on people to catch what the model misses. Once fine-tuned, AIXI's accuracy and consistency exceed human performance on coding and data tasks. People move from cleanup to quality control, and to decisions grounded in standardized fleet history. They stay accountable for every airworthiness call.



What's below AIXI's surface?

Enforced citation. Every output is tied back to a source: the Aircraft Maintenance Manual, the parts catalog, or the raw maintenance record itself. There are no floating answers. Every conclusion has a reference.

Back to birth. Since AIXI structures data cleanly and consistently, the platform draws insights from a fleet's full maintenance history, not just recent records. Every event, every repair, every squawk, as far back as the digital record goes.

Airworthiness-grade evaluation. AIXI maintains a rigorous model evaluation harness with logging built for the regulatory environment of commercial aviation. Model performance is tested and documented, not assumed.



One Platform. Five Products. Real Numbers.

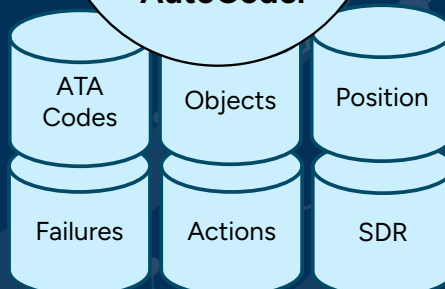
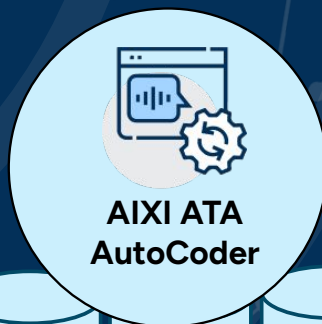
AIXI's Flight Deck is built on an industry-specific language model (ILM) trained across the world's most common fleet types: Boeing 737, Airbus A320 and A330, Embraer E170 and E175, and more.

The ILM turns decades of free-text logbooks into structured, machine-readable data. Everything else runs on top of that foundation.

Failure:
during engine crossbleed
start with inop apu, #2 engine
would not start. after two
attempts after fuel added at
normal n2, egt auto abort
impending hot start flashed
and we cu
high egt ri
was around
second 50

Maintenance Log

Fix:
t/s per fin
egt indica
automatic
fail hmu, r
r and r #2
hydromechanical unit (hmu)
iaw mt 773 -21-21-10
ops and leak ck good



AIXI's Flight Deck



AIXI's Flight Deck



ATA
AutoCoder™



Prescriptive
Maintenance



Ask
OTTO



Repeat Defect
Identifier



Authority
Reporting

ATA AutoCoder codes maintenance logs in real time, more consistently than human coders. As the platform's foundation, it delivers structured data from day one and frees up multiple full-time staff.

Prescriptive Maintenance predicts the failure, the fix, and the action before there's an AOG, capturing what your most experienced technicians already know. With parts allocation and delay avoidance, avoided exposure runs over \$3M.¹

Ask OTTO gives fleet health transparency through a plain-language interface, driving data over emotion. The ROI model runs from \$2.6M to \$4.2M annually depending on query volume and complexity.

Repeat Defect Identifier flags recurring squawks before the pattern hides across separate work orders. Uncovering repeat and rogue parts is a major ROI driver.

Authority Reporting, including FAA-ready Service Difficulty Reports (SDRs) in minutes, supports reliability reporting across the fleet.

1- ROI figures based on anonymized data / AIXI modeling for a 737 fleet. Individual results vary.

The Real Question.

Your airline has spent decades generating maintenance data. Most has never been fully utilized, because the tools to unlock it did not exist.

AI teams will show you the tip of the iceberg. Few can show you what holds it up.

That foundation is what a System of Intelligence needs underneath it, and it's what AIXI has built. Our AI tools have been in production at airlines since 2022.

So if you're evaluating AI for maintenance, reliability, or airworthiness, ask the question:

Has the system in front of you done the hard work below the waterline?

See Flight Deck live.

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