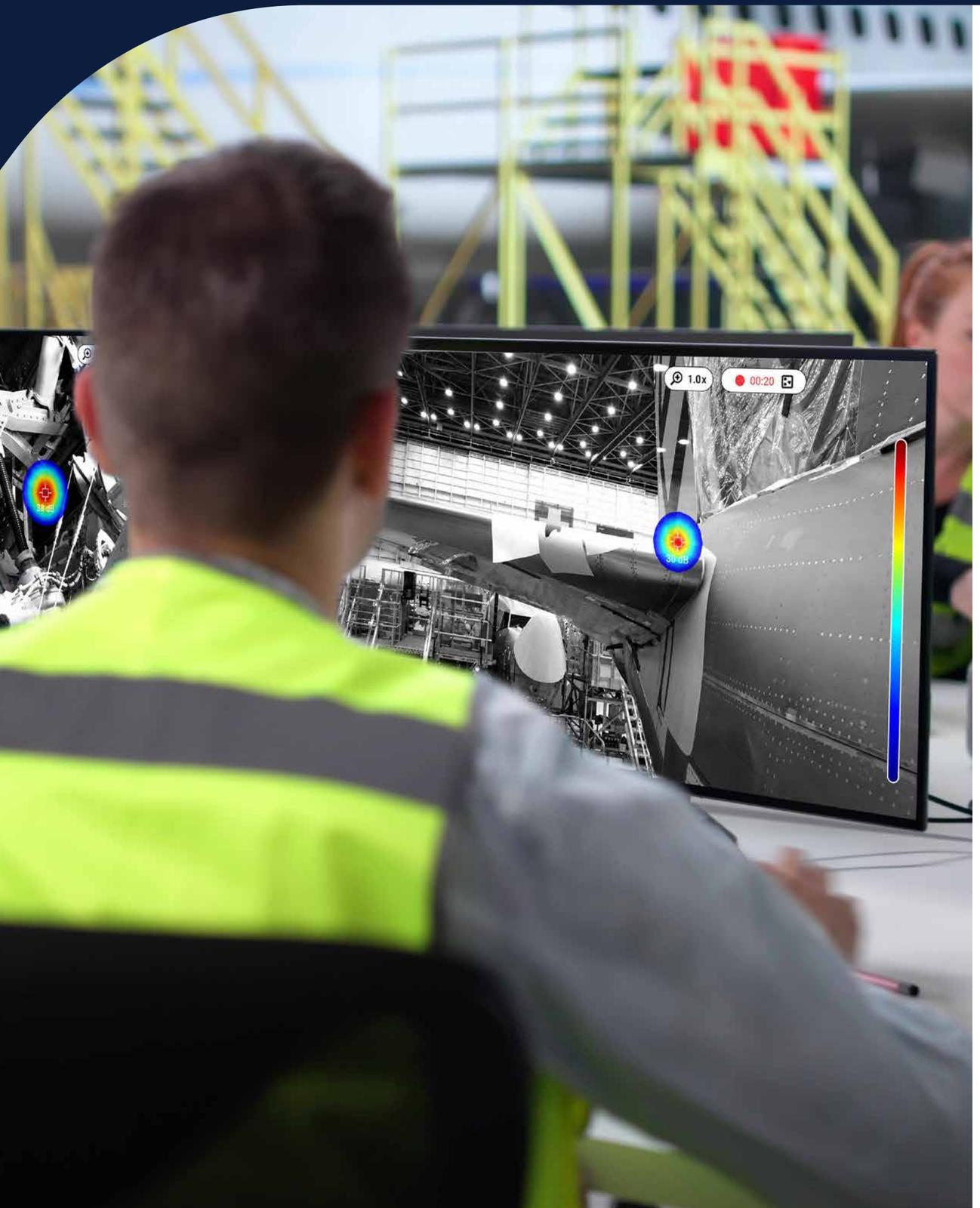
BOEING

Service above and beyond

Advanced Troubleshooting Program (ATSP)

Elevate maintenance skills. Reduce downtime. Enhance operational reliability.





BACKGROUND

Advanced Troubleshooting Program (ATSP)

The Advanced Troubleshooting Program (ATSP) is a comprehensive training initiative designed to equip the global aircraft maintenance workforce with the diagnostic skills necessary to effectively identify and resolve faults in today's increasingly complex aircraft systems. Developed to meet the evolving challenges of modern aviation maintenance, the program emphasizes safe, efficient troubleshooting aligned with industry best practices.

Structured as a progressive 5-level curriculum, the ATSP begins with foundational electrical theory and advances through systematic troubleshooting methodologies, culminating in complex, real-world fault isolation and resolution techniques. Each level builds upon the knowledge and skills acquired in the previous stage, combining theoretical instruction with hands-on practice to ensure learners are fully prepared before advancing.

Upon successful completion of the program, maintainers will possess enhanced troubleshooting capabilities, enabling them to confidently and competently address maintenance issues. This results in three key benefits: improved operational safety, increased aircraft reliability, and reduced maintenance downtime. These factors support fleet readiness and cost-effective maintenance operations.

> A step-by-step program that empowers technicians to quickly diagnose and fix complex aircraft issues, boosting safety, reliability, and fleet performance.

WHY IT MATTERS

The operational reality facing today's maintenance teams

Modern aircraft systems are more sophisticated than ever, integrating advanced electronics, avionics, and data-driven technologies. Traditional troubleshooting methods and experience alone are no longer sufficient. Technicians need advanced skills, modern diagnostic tools, and a structured approach to quickly isolate faults, especially intermittent and hard-to-find issues that characterize costly delays and cancellations. At the same time, the industry faces compounding workforce pressures:

- A critical shortage of qualified maintenance technicians is straining airline operations globally.
- Experienced troubleshooters are retiring at an accelerating rate, taking decades of institutional knowledge with them.
- 80% of aircraft delays with electrical or avionics root causes are intermittent faults—the most disruptive and expensive category to diagnose and resolve.
- Pressure to improve on-time performance and dispatch reliability is intensifying across the industry.

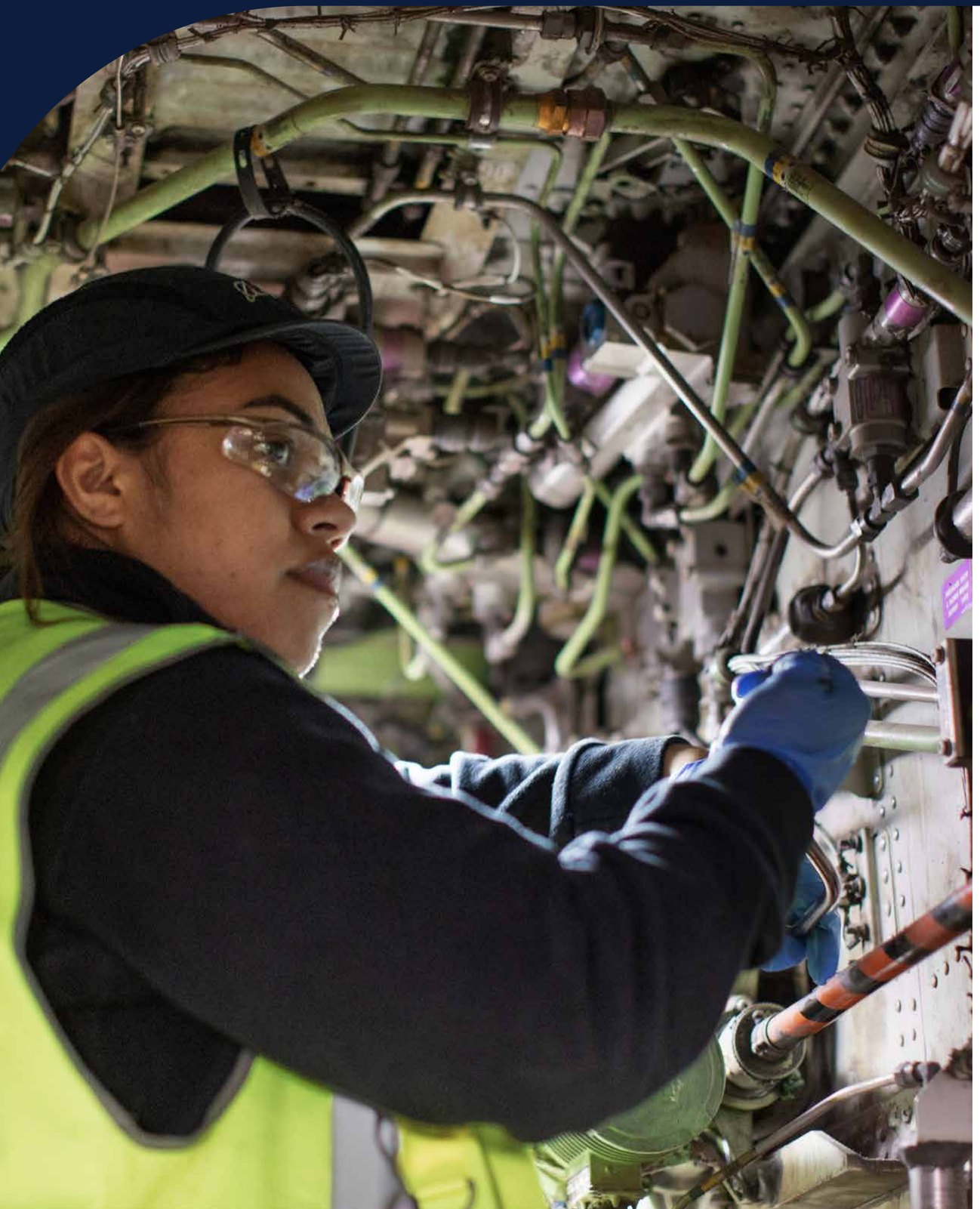
The Advanced Troubleshooting Program (ATSP) addresses these challenges by delivering measurable operational outcomes through a comprehensive training pathway that:

- **Reduce delays and cancellations** through faster, more accurate fault isolation and fewer no-fault-found (NFF) removals.
- **Improve dispatch reliability** by standardizing diagnostic methodologies across your maintenance workforce.
- **Build front-line troubleshooting capability**, reducing costly dependence on specialized Aircraft on Ground (AOG) support and engineering teams.
- **Enhance maintenance efficiency** and safety by equipping technicians with advanced skills, hands-on experience, and modern diagnostic tools.
- **Support predictive maintenance and compliance** by leveraging data analytics and aligning with evolving regulatory and OEM standards.

By investing in advanced troubleshooting skills, operators can significantly improve fleet reliability, reduce maintenance costs, and maintain a competitive edge in today's demanding aviation environment.

> In today's high-tech aircraft, fast and accurate troubleshooting is a game-changer. The ATSP equips your team to cut downtime, reduce no-fault-found removals, and build the front-line capability needed to address the intermittent faults driving 80% of avionics-related delays."





WHY BOEING

From technical training to operational reliability—the Boeing Difference

When it comes to advanced troubleshooting training, Boeing stands apart. While others focus on practical skills alone, Boeing delivers unmatched OEM authority, engineering depth, and a commitment to evolving maintenance methodologies that transform how fleets stay operationally ready.

Why Boeing? Because we are the only provider offering:

- **Unrivaled OEM Expertise:** Learn from Boeing-trained instructors with hands-on experience in flight test, production, and fleet-wide maintenance troubleshooting—expertise no independent provider can replicate.
- **Innovative, Industry-Leading Curriculum:** Our program integrates the latest troubleshooting techniques and proven best practices, continuously refreshed by insights from other industries to modernize and advance maintenance methodologies.
- **Hands-On, Realistic Training:** Immersive labs and realistic fault scenarios using industry-grade tools and airplane-specific materials prepare your team for real-world challenges.
- **Commitment to Safety, Quality, and Compliance**: Our courses emphasize safety, regulatory compliance, and continuous improvement aligned with evolving OEM standards.
- **Proven Operational Impact**: Operators worldwide trust Boeing training to improve maintenance efficiency, reduce downtime, and enhance fleet reliability.

Choosing Boeing isn't just about where to send your technicians for training—it's about transforming your maintenance performance into a competitive operational advantage. That's the Boeing difference.

PROGRAM OVERVIEW

A clear path to troubleshooting mastery

The Advanced Troubleshooting Program (ATSP) is a carefully designed, multi-level training journey that builds your team's troubleshooting expertise step-by-step. Starting with foundational electrical theory and progressing through systematic troubleshooting processes, the program culminates in advanced fault isolation and resolution techniques.

The full 5-level curriculum ensures technicians gain the right knowledge and hands-on experience at every stage, preparing them to confidently tackle the complexities of modern aircraft systems.

Level	Regulatory alignment	Duration	Availability
Level 1	Basic Electrical Theory	1 day	Coming soon
Level 2	Introduction to Troubleshooting	2 days	Coming soon
Level 3/4	Intermediate Troubleshooting	3 days	Coming soon
Level 5	Advanced Troubleshooting	5 days (40 hours)	Available now

Why follow the ATSP path?

Build confidence progressively

Each level prepares maintainers with the skills needed to succeed at the next

Hands-on learning

Practical labs and real-world scenarios reinforce theory with experience

Standardized diagnostic methodology

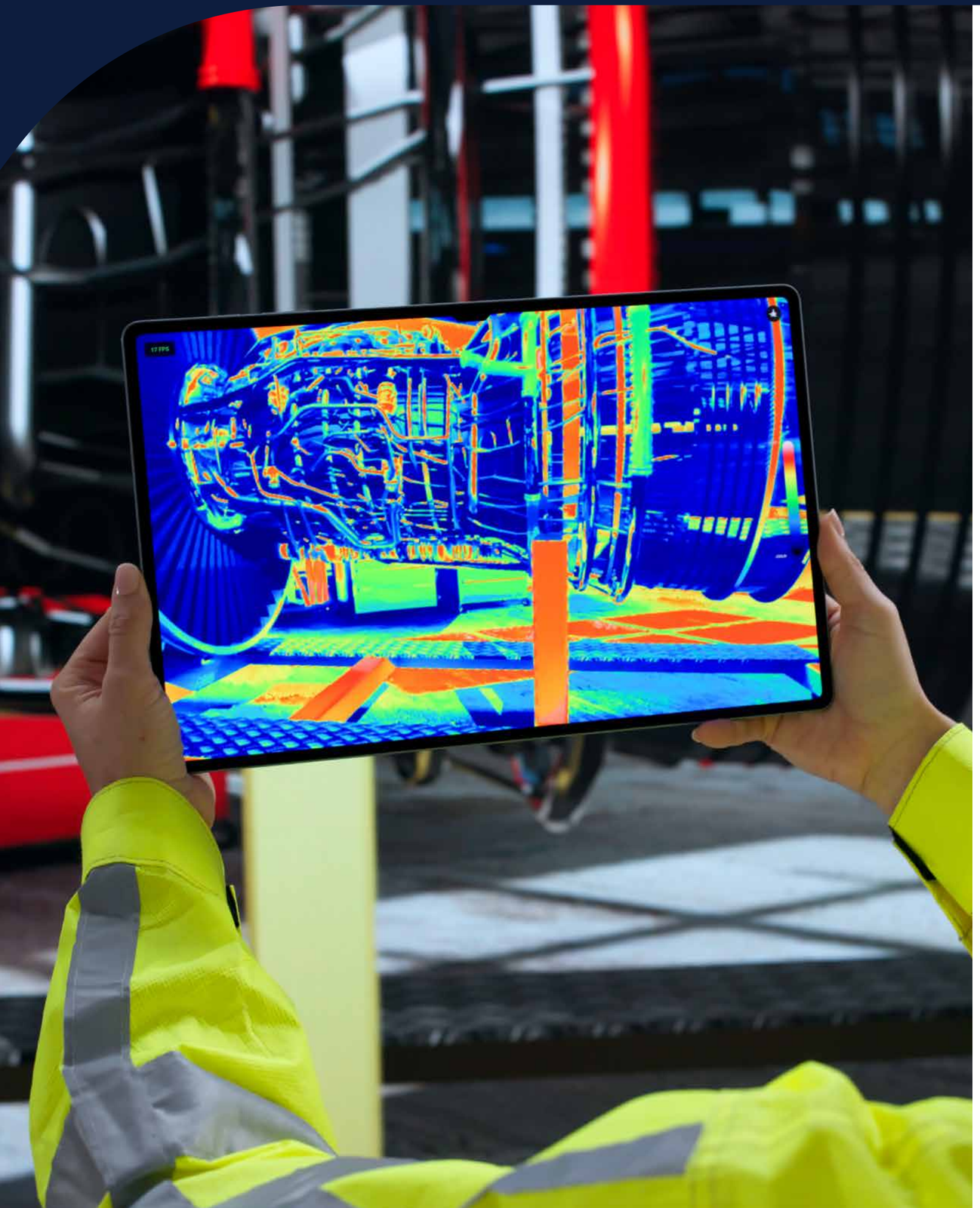
Graduates apply a consistent, data-driven approach targeting the faults characteristically responsible for the majority of maintenance delays

Flexible entry

Technicians can start at the level that matches their current skills and experience

Future-ready skills

Graduates are equipped to handle today's and tomorrow's aircraft maintenance challenges



LEVEL 5 COURSE OVERVIEW

Preventative Maintenance and Advanced Troubleshooting - Level 5

Level 5 is the capstone course in the Advanced Troubleshooting Program, designed to sharpen your skills in diagnosing and resolving the most challenging faults in modern aircraft—focusing on intermittent, chronic, and hard-to-find issues that cause the majority of costly maintenance delays. This intensive, 40-hour, hands-on course integrates advanced diagnostic tools, data analytics, and structured troubleshooting methodologies to minimize mean time to repair (MTTR), reduce no-fault-found (NFF) events, and support predictive maintenance strategies.

Course highlights

- 40 hours of immersive, instructor-led labs and real-time troubleshooting
- Practical use of industry-grade test equipment and diagnostic workflows
- Integration of data analytics and recorded system behavior into troubleshooting strategies
- Emphasis on safety, documentation, data-driven decision making, and reducing MTTR
- Focus on identifying and resolving intermittent faults—the root cause of 80% of avionics-related operational delays

Course objectives

By the end of this course, participants will be able to:

- Safely handle and effectively use advanced troubleshooting tools and equipment
- Detect and isolate wiring faults using electrical diagnostics, including:
  - Insulation Resistance Testing (IRT)
  - Voltage drop, current measurement, and resistance testing (DVM)
  - Time Domain and Frequency Domain Reflectometry (TDR/FDR)
- Perform Non-Destructive Inspections (NDI) such as:
  - Thermal imaging
  - Ultrasonic inspection
  - Acoustic inspection
- Conduct condition monitoring through:
  - Vibration analysis
  - Power quality analysis
  - Trend analysis using data-driven methodologies
- Apply KNOT chart methodologies to systematically document troubleshooting activities, eliminate redundant efforts, and maximize efficient root-cause determination



Prerequisites and who should attend

This course is designed for experienced avionics technicians, electricians, mechanics, and engineers who want to master advanced troubleshooting skills. Ideal candidates will have:

- Completion of Levels 1-4 or equivalent experience
- FAA A&P or Aircraft Electronics Technician Certification (or EASA B2 equivalent)
- Formal electrical or avionics training (degree or military)
- Hands-on experience in electrical and electronics troubleshooting

Aircraft coverage

The Level 5 Advanced Troubleshooting course uses airplane-specific training materials and systems manuals tailored to multiple Boeing models, including:

- 737 NG and 737 MAX
- 747
- 767
- 777
- 787

Training is conducted at Boeing facilities equipped with the appropriate tools and reference materials to ensure practical, relevant learning aligned with your fleet.

5-day course itinerary

Day 1 | Troubleshooting Fundamentals and Electrical Basics

- Voltage drop and amperage measurements
- Relay and electronics evaluation using the wedge trainer

Day 2 | Modern Wiring Electrical Troubleshooting

- Wiring REL%, Time Domain Reflectometer (TDR) use
- Opens, shorts, degradation, and insulation resistance testing (IRT)
- Amperage, voltage drop, and digital multimeter (DMM) recording

Day 3 | Frequency Domain Reflectometer and Fire/Overheat Protection

- Coax troubleshooting and evaluation
- Wire fault location using standard electrical tools
- Fire and overheat protection fault isolation

Day 4 | Infrared and Ultrasonic Detection Methods

- Ultrasonic leak detection and omni emitter use
- Power Quality Analyzer (PQA) and vibration analysis
- Anti-skid system troubleshooting
- Anti-skid trainer and power quality analyzer (PQA) simulator

Day 5 | Advanced Troubleshooting Methods

- Developing Health Checks and KNOT Chart methodology
- Vibration analysis recap
- Course wrap-up and competency review

Registration

Seats are limited. Secure your team's spot today to advance your troubleshooting capabilities.

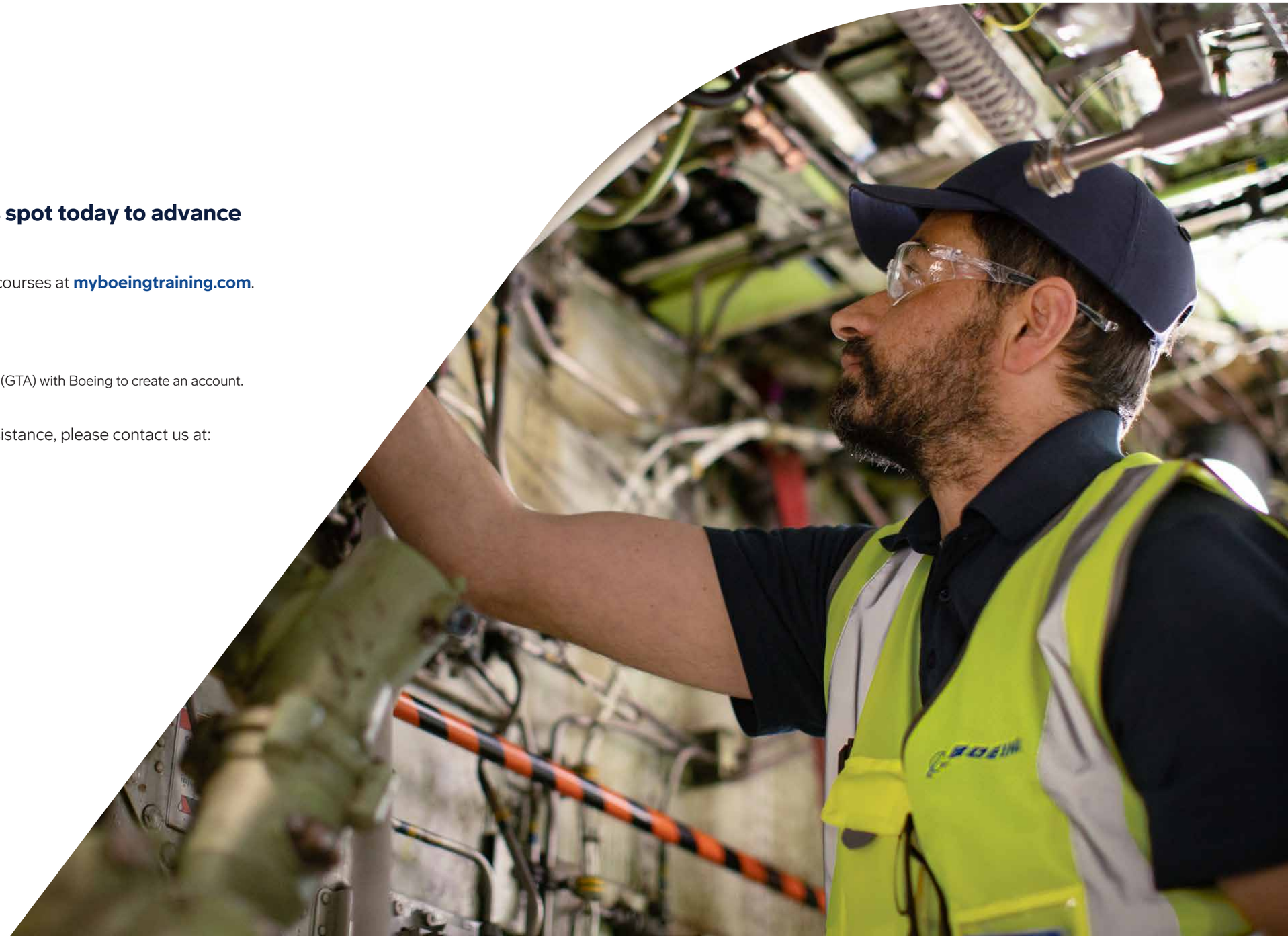
Register for the Advanced Troubleshooting Program courses at **myboeingtraining.com**.

Please note:

- An account is required to register.
- Your company must have an active General Terms Agreement (GTA) with Boeing to create an account.

If your company does not have a GTA or you need assistance, please contact us at:

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Service above and beyond

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