ENGINEERING PROFILE

THE WORLD’S OEM ALTERNATIVE
ONE STOP, EVERY SOLUTION.
PRECISION ENGINEERING

With an OEM-equivalent level of service and parts manufacturing approval, Precision offers comprehensive, integrated aircraft engineering of every size and level of complexity, including single-product support and full-scale modification.

Engineering Capability Overview
Skilled in ad-hoc, programmatic, and reverse engineering, our team can develop, integrate, or repair any structure, system, or electrical, from starting concept to final certification. We support legacy fleets as well as new aircraft, of every type, around the world.

- Design/modification engineering
- Liaison/repair engineering
- Structural substantiation and static analysis
- Fatigue and damage tolerance analysis
- Computational fluid dynamics analysis
- Loads database management
- Certification
- Technical publications
- Alternate means of compliance (AMOC) development
- Instructions for continued airworthiness (ICAW)
- Technical data management
- Configuration management
- Major repair evaluations
- Designated engineering representative (DER) Approvals
- Fleet Support
- Passenger to cargo conversions

PROFILE
Established 2001
Location Portland, OR
Employees 25+
Web precisionaircraft.com

MANAGEMENT
President Gary Warner
Director of Finance & HR Koni Cash
Director of Engineering Steven Lopez
Director of Production Brad Norman
VP of Sales Brian McCarthy

HEADQUARTERS
4900 SW Griffith Drive, Suite 133
Beaverton, OR, USA 97005
P: +1.503.601.3001

757-200PCF cargo compartment for more information go to precisionaircraft.com
ENGINEERING CAPABILITIES

Design/Modification Engineering
Precision engineers provide expertise in design and drawing development for structural, system, and electrical modifications, including interior reconfiguration and monument development. We support the design process from concept through the manufacturing and installation stages.

Liaison/Repair Engineering
Precision engineers excel in providing immediate and accurate solutions for system, structural, and electrical problems. The team consists of engineers who have provided liaison engineering support for multiple airlines and aircraft types. Precision engineers are well versed in and sensitive to stringent aircraft flight schedules and budgets, but clearly understand maintenance and regulatory requirements.

Structural Substantiation and Static Analysis
Our stress analysts are experienced in with industry analytical techniques and consistently provide timely and quality substantiation reports for modifications and repairs. Our analysts work closely with our FAA designees to ensure accurate results.

Fatigue and Damage Tolerance Analysis
Our stress analysts are fluent in fatigue and damage tolerance methods. In these areas and beyond, we maintain an open and positive relationship with the FAA and its designees. Our team has developed maintenance planning document (MPD) and damage tolerance rating (DTR) inspection methods and is fluent with Part 26 compliance, federal aviation regulation (FAR) 25.571, advisory circular AC 120-93, and the staged damage tolerance approval process. Precision engineers develop and maintain a certified loads data set for the B757 fuselage. We are able to provide timely and accurate analysis options for airlines operating the B757-200PCF. We are also capable of applying DT industry accepted methodologies for all model types.

Computational Fluid Dynamics Analysis and Loads Database Development
Experts in wind tunnel model development, Precision engineers validation and substantiation of wind tunnel results for your certification programs through its developed loads databases and extensive experience and relationship with the FAA.

for more information go to precisionaircraft.com or contact
Steve Lopez, Director of Engineering, steven.lopez@precisionaircraft.com / +1.503.601.3001 x343
ENGINEERING CAPABILITIES (CONTINUED)

**Major Repair Evaluations and DER Approvals**

Precision performs full-scale MRO maintenance and comprehensive aircraft on ground (AOG) repairs for all models, in new and legacy fleets. Our engineers generate detailed repair instructions, work with technicians and inspectors, and provide FAA Form 8110-3 approvals. Backed by long-standing relationships with multiple airlines and MROs, we work around the clock to meet your schedule deadlines and FAA 337 return to service.

**Engineering Specialists**

Precision’s team of FAA DERs are experienced in every step of the repair process, including structures, fatigue and damage tolerance, mechanical systems and equipment, electrical systems and equipment, flammability, and interior compliance and management. Our testing capabilities include static, DO-160 environmental, wind tunnel, and model development.

**ENGINEERING TOOLS**

- SolidWorks
- Autodesk Inventor
- AutoCAD
- NEi NASTRAN
- FEMAP
- NASGRO
- AFGRO
- Mathcad

**AIRCRAFT EXPERIENCE**

- B707, B727, B737, B747, B757, B767, B777
- DC-8, DC-9, DC-10, MD-11, MD-80
- A300, A319, A320

for more information go to precisionaircraft.com
ENGINEERING CAPABILITIES

Certification
Precision can manage any program from concept to supplemental type certificate (STC) issuance, including the development and execution of plans, compliance checklists, and amendment-level assessments. Our team has a long-standing, positive relationship with the FAA and its aircraft certification offices (ACOs), Flight Standard Service (AFS), and manufacturing inspection district offices (MIDOs).

Instructions for Continued Airworthiness (ICAW)
Precision engineers develop and support all aspects of an ICAW program, including inspection program development and management.

Technical Publications
Precision’s specialized staff of narrative writers and technical illustrators produces the highest quality aircraft manuals and supplements in support of STC programs and other aircraft modifications. Our tech pubs team consists of highly skilled individuals with diverse software experience and uncompromising standards for quality and accuracy. We can offer our customers complete and timely documents, with full 24/7 online access to manuals and annual revision service.

AMOC Development
Precision excels in rapid and accurate development of service bulletins and AMOCs to meet airworthiness directives.

Technical Data Management
Precision provides on-site setup support of document control systems as well as data storage management services.

Configuration Management
Precision offers configuration management and control services as well as aid in the development of kit logistics.

FLEET SUPPORT

Precision has a comprehensive, cost-effective array of fleet support services for new and existing airlines.

- SB Evaluation--We review and make SB incorporation recommendations.
- EO/EA Development--Our team creates Engineering Orders (EO) and Engineering Authorizations (EA) in any airline format.
- Maintenance Programs--Our engineers develop customized maintenance programs.
- Workcard Development--We write and revise workcards to support maintenance programs.
- OEM Interface--Precision represents each client on technical matters.
- FAA Interface--We assist in garnering FAA approval for new programs and operations.
- Operating Manuals--Let us create and revise 14 CFR 121 operating manuals.
- Records Review--Precision reviews records related to aircraft acquisition and leasing.
- Aircraft Evaluation--We will perform onsite reviews and configuration assessments.
- Aircraft Bridging--Our team develops total maintenance requirements for transfer between maintenance programs.

for more information go to precisionaircraft.com
AIRCRAFT MANUFACTURING

Precision utilizes an immense vendor network to provide broad manufacturing capabilities.

- **Complex Machining** — Including 3-, 4-, and 5-axis CNC milling for both low and high speed applications, as well as conventional machining, CNC turning, and grinding for production runs and prototype needs
- **Chemical Milling** — To reduce weight while maintaining structural strength and integrity for complex contour sheet metal parts
- **Composite Manufacturing** — For reinforced flat panels, bulkheads, ducting, honeycomb panels, and related products
- **Electrical Wiring & Components** — Including coax cables, trays, lighting, smoke detection, indication systems, and avionic systems/subsystems
- **Hydraulic & Air Conditioning Components** — Such as actuators, control valves, ECS valves, hydraulic tubing, and air conditioning ducts
- **Safety Equipment** — Including cargo and barrier nets, sling systems, tie-downs, life rafts, oxygen masks, and cabin interior products
- **Tube Bending & Sheet Metal Fabrication** — For stretch, hydroforming, brake forming, shearing, blanking, joggling, bending, flaring, and beading, as well as tube and component pressure testing

for more information go to precisionaircraft.com or contact
Steve Lopez, Director of Engineering, steven.lopez@precisionaircraft.com /+1 503.601.3001 x343
MANUFACTURING CAPABILITIES

**Parts Manufacturer Approval (PMA)**
Precision has an established fabrication inspection system (FIS) and a quality assurance manual that meets 14CFR 21.307 requirements. Therefore, the FAA has granted parts manufacturer approval (PMA) to Precision, which authorizes production of approved aircraft parts. Precision has received material review board (MRB) authority from the FAA.

**Kitting and Service Bulletin Development**
Precision develops detailed service bulletins and kitting for interior and modification programs.

**Structural and Component Assembly**
Precision maintains an alliance, through common ownership, with an Oregon federal aviation regulation (FAR) part-145-approved facility. The facility has extensive experience in the final assembly of primary aircraft components and structures, and supports the assembly of large-scale aircraft structures while maintaining stringent drawing tolerance requirements.

**Structural and Component Installation**
Precision has strong relationships with multiple FAR part-145-approved facilities to support any modification program.

**Tooling Design and Fabrication**
Precision utilizes unique and precise tooling for the assembly and installation of primary structural components. Tooling jigs are utilized both on and off the aircraft to ensure exact and consistent alignment. Precision also designs and manufactures tooling and jigs for various aircraft programs and maintenance requirements, including tooling equivalency assessment.

for more information go to precisionaircraft.com or contact
Steve Lopez, Director of Engineering, steven.lopez@precisionaircraft.com /+1 503.601.3001 x343