OUR COMPANY

AIRCORPS AVIATION

The AirCorps fabrication team specializes in the use of traditional and state-of-the-art methods to manufacture and produce aircraft parts. Our adherence to the FAA-PMA Quality System, range of capabilities, and exacting detail are evident in the award-winning work for which AirCorps is known.

SHOP HIGHLIGHTS

- 10,000 sq. ft. machine shop
- 9,500 sq. ft. assembly & finishes facility
- Specialization in formed aluminum structural components
- Full repertoire of CNC machining equipment
- FAA PMA Quality System
- Full service engineering to built-to-print part delivery

Headquartered in Bemidji, Minnesota
Our team includes 36 Employees

AIRCORPS AVIATION
CAPABILITIES

REVERSE ENGINEERING
- Portable handheld 3D laser scanning
- Highly accurate part measurement
- 3D scan to 3D CAD model creation

CAD/CAM PART DESIGN
- Conversion of 2D drawings to 3D models
- Expertise in complex aircraft drawings & assemblies
- Design & engineering of tooling for fabrication

METAL FORMING
- Specialize in fabrication of forming aluminum structural components
- Equipment includes hydro-press, drop-hammer & stretch form table
- In-house tooling design & fabrication

CNC MACHINING
- 3, 4 & 5 axis CNC machining
- 4 axis CNC lathe
- CNC router

ASSEMBLY & INSPECTION
- Fully capable of manufacturing simple or complex assemblies
- Utilize custom developed software to manage large Bill of Materials & assemblies
- PMA quality control & inspection system

FIXTURES & JIGS
- Fixed CAD model design & engineering
- Fabrication & assembly of fixtures
- Full-scope services from small part to entire aircraft

VALUE ADDED SERVICES
- In-house aluminum heat treating
- Managed processes for anodizing, coating, polishings & platings
- In-house painting to spec
- In-house welding including TIG & aluminum spot-welding

THE BENEFITS

EXPERTISE
Experienced team producing parts under an approved FAA-PMA quality control system. Our diversity of clients and world-class restorations have guided our comprehensive understanding of parts fabrication.

QUOTING
Our team can quickly provide a quote and timeline for production of parts drawing based on our years of experience at no cost.

PRODUCTION
By internally managing the processing of manufactured parts everyday we can deliver customers precise, high-quality parts quickly and efficiently.
AirCorps Aviation has fabricated thousands of different parts. Because our team assembles, installs, and fits our fabricated parts we have an intimate knowledge of what works and what doesn’t. We deliver parts organized and labeled professionally that integrate seamlessly into a shop setting.

Our team embraces, studies and perfects manufacturing techniques used on prior generations of aircraft and by vendors not in business today. The AirCorps team of fabricators will accurately reproduce challenging obsolete parts while balancing the cost and efficiency afforded by modern technologies.

Client relationships are rooted in our knowledge of being both an world class restorer of aircraft, consumer, and by supporting outside customers. Our interactions are relationship driven, long-term, and valued.
SHROUD
Fabrication Process: Hydro Press
HORIZONTAL STABILIZER RIB
Fabrication Process: Hydro Press
BULKHEAD - REAR SECTION SPINNER
Fabrication Process:
Metal Spinning, CNC Machining, Hydro Press
EXHAUST BAFFLE
Fabrication Process: Drop Hammer
ELEVATOR ATTACHMENT ARM
Fabrication Process:
CNC Machining
PLATE - ANTENNA RELAY UNIT

Fabrication Process:
Press Brake
BRACKET - SHIELD ASSEMBLY
Fabrication Process:
Press Brake
BRAKE CALIPER
Fabrication Process:
CNC Machining
WING SPAR FITTING
Managed Fabrication Process:
Forging
WING SPAR FITTING

Fabrication Process:
CNC Machining
ANTENNA BRACKET
Fabrication Process:
CNC Machining
INNER MOUNTING PLATE
Fabrication Process:
CNC Machining
HOUSING - RETRACTING LEVEL LUG
Fabrication Process: CNC Machining
LANDING GEAR PNEUMATIC COMPONENT
Fabrication Process:
CNC Machining
ACCESS DOOR
Fabrication Process:
CNC Machining
CLEVIS - LANDING GEAR DOOR

Fabrication Process: CNC Machining
LANDING GEAR PLATE - BRAKE
Fabrication Process: CNC Machining
ENGINE ISOLATION MOUNT

Fabrication Process:
CNC Machining
THREADED ROD END

Fabrication Process:
CNC Machining
TANK FILLER DOOR PANEL

Fabrication Process:
Hydro Press
HYDRAULIC COMPONENT
Fabrication Process: CNC Machining
RECESS BOX
Fabrication Process:
Hydro Press, Welding & Paint
FORMED ALUMINUM STRUCTURAL COMPONENTS

Fabrication Process:
Hydro Press
FORMED ALUMINUM STRUCTURAL COMPONENTS

Fabrication Process:
Hydro Press
STRETCH FORMING
METAL FORMING

- Hydro-Pressing Sheet Metal Parts
- Stretch / Shrink Forming
- Brake Forming
- CNC Routering Flat Patterns
- Design to Fab Complex Tooling Forms

CNC MACHINING

- High quality, repeatable machining
- High tolerance results
- Low to Medium volume
- Milling and turning variety of material types
SHEET METAL STRETCHER TABLE

250 Ton - 102" x 70" Capacity
570 & 1500 TON PRESS
24" X 34" & 30" X 72" Rubber Pad Boxes
DIGITAL CONTROL HEAT TREAT OVENS
24" x 18" x 43" & 60" x 60" x 60"

AMS2770 CERTIFIED
HAAS CNC LATHE W/ LIVE TOOLING

X-Travel: 9”, Z-Travel: 21”
HAAS 3-AXIS CNC VERTICAL MILL
XYZ: 30” x 16” x 20”

HAAS 3-AXIS CNC VERTICAL MILL
XYZ: 40” x 20” x 25”
HAAS 3-AXIS CNC VERTICAL MILL
XYZ: 30” X 20” X 20”

HAAS 3-AXIS CNC VERTICAL MILL
XYZ: 40” X 26” X 25”
CNC ROUTER TABLES

XYZ: 120” X 48” X 10”
XYZ: 120” X 60” X 15”
XYZ: 96” X 48” X 7”
ENGINE LATHE
15" Diameter - 48" Length

CNC CHUCKER LATHE
6" Diameter - 6" Length

BRIDGEPORT MILL
XYZ: 36" x 13" x 20"
ALUMINUM SPOT-WELDING
Sciaky 90KVA Mil-spec
3/16 2024-T3 Capacity
ADDITIONAL SERVICES

- Expertise in aerospace CAD
- Tooling CAD Design & Fabrication
- Legacy 2D drawing to 3D CAD conversion
- Reverse Engineering parts thru state-of-the-art portable hand-held 3D laser scanning
- Engineering, CAD and fabrication of machining, assembly or inspection fixtures
- Painting - finishes
- Metrology grade CMM inspections
- CAD file to part inspection reports
- FAA PMA Quality Program
P-47D THUNDERBOLT
Solidworks: 7286 Part Files - 1818 Assemblies
PORTABLE 3D LASER SCANNING
Creaform HandyScan & VXModel software
TIG WELDING
Ferrous & Non-Ferrous AWS D17.1
IN-HOUSE PAINT BOOTH
HEXAGON TIGO SF CMM
XYZ: 20” x 23” x 20”
Hexagon PC-DMIS software
FAA REPAIR STATION
8ORR202D
RATINGS:
• Landing Gear
• Accessories
ART SERVICES

CUSTOM MADE PLACARDS, DECALS & NAME PLATES

- Etching
- Engraving
- Laser Cutting
- Screen Printing
- Water Transfers
- Stencils
- Masks
- Rubber Stamps
- Metal Stamps

THE MATERIALS WE USE

- Aluminum
- Brass
- Stainless Steel
- Steel
- Phenolic
- Acetate
- Rubber Stamps
- Vinyl

C-47A SKYTRAIN "THAT'S ALL BROTHER"
500+ Douglas Factory Markings, Paint Scheme Design, Insignia
& Radio Call, Rubber Stamps, Paint Masks
WORLD CLASS QUALITY

Our award winning services have earned us numerous awards from AirVenture since 2011. We use our knowledge, experience and expert technique to produce the highest quality product. From fabricated replacement parts to PMA’d manufactured parts, we offer a full range of services required for the legacy and modern aircraft industry.

P-51C Lope’s Hope 3rd a 2018 AirCorps Aviation restoration
For more information please contact:

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