



AIRCORPS AVIATION

FABRICATION & **MANUFACTURING** PORTFOLIO

aircorpsaviation.com

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.

FABRICATED PARTS

- 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 a 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



SUPPORT BRACKET

Fabrication Process:
Press Brake



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



DOOR HINGE

Fabrication Process:
CNC Machining



THREADED ROD END

Fabrication Process:
CNC Machining



TANK FILLER DOOR PANEL

Fabrication Process:
Hydro Press



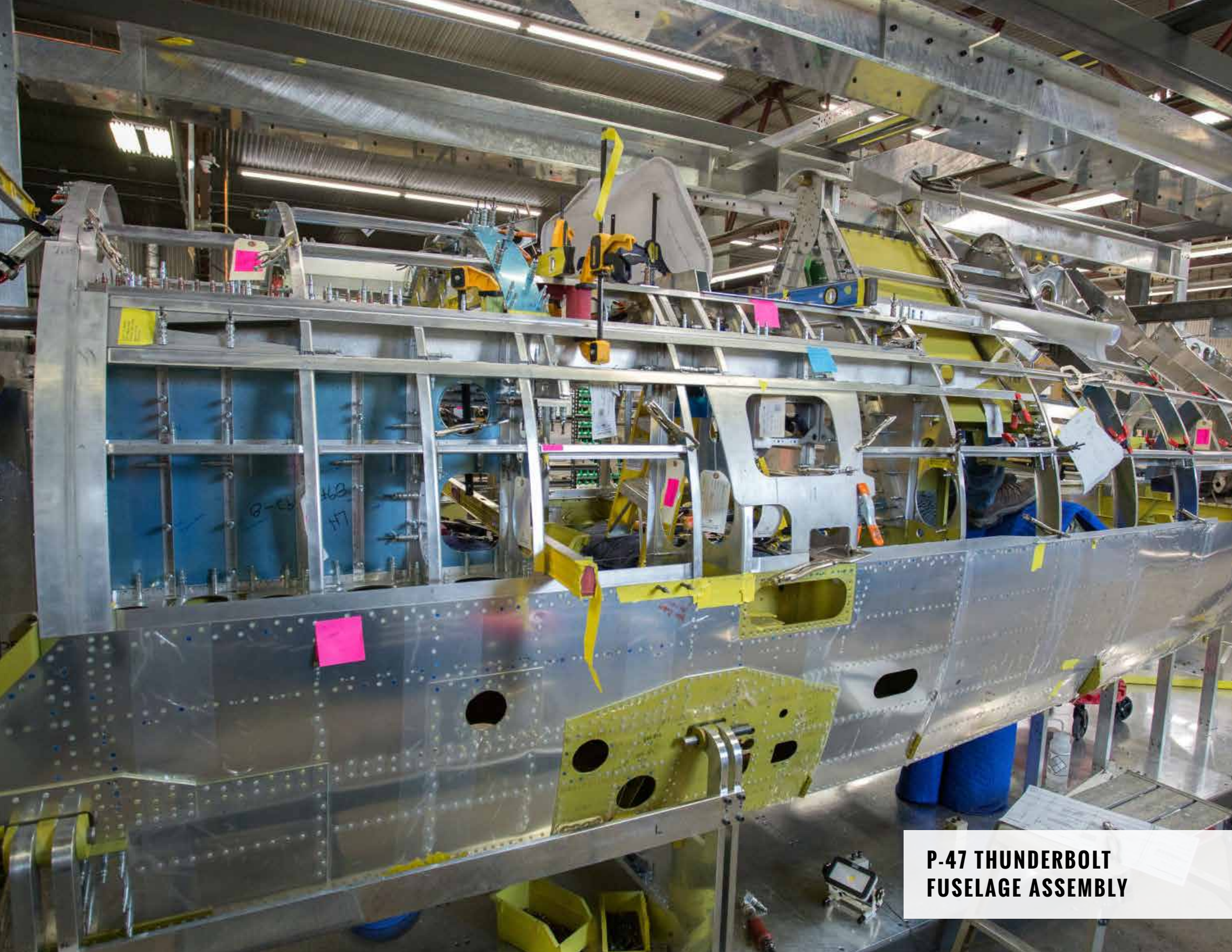
HYDRAULIC COMPONENT

Fabrication Process:
CNC Machining

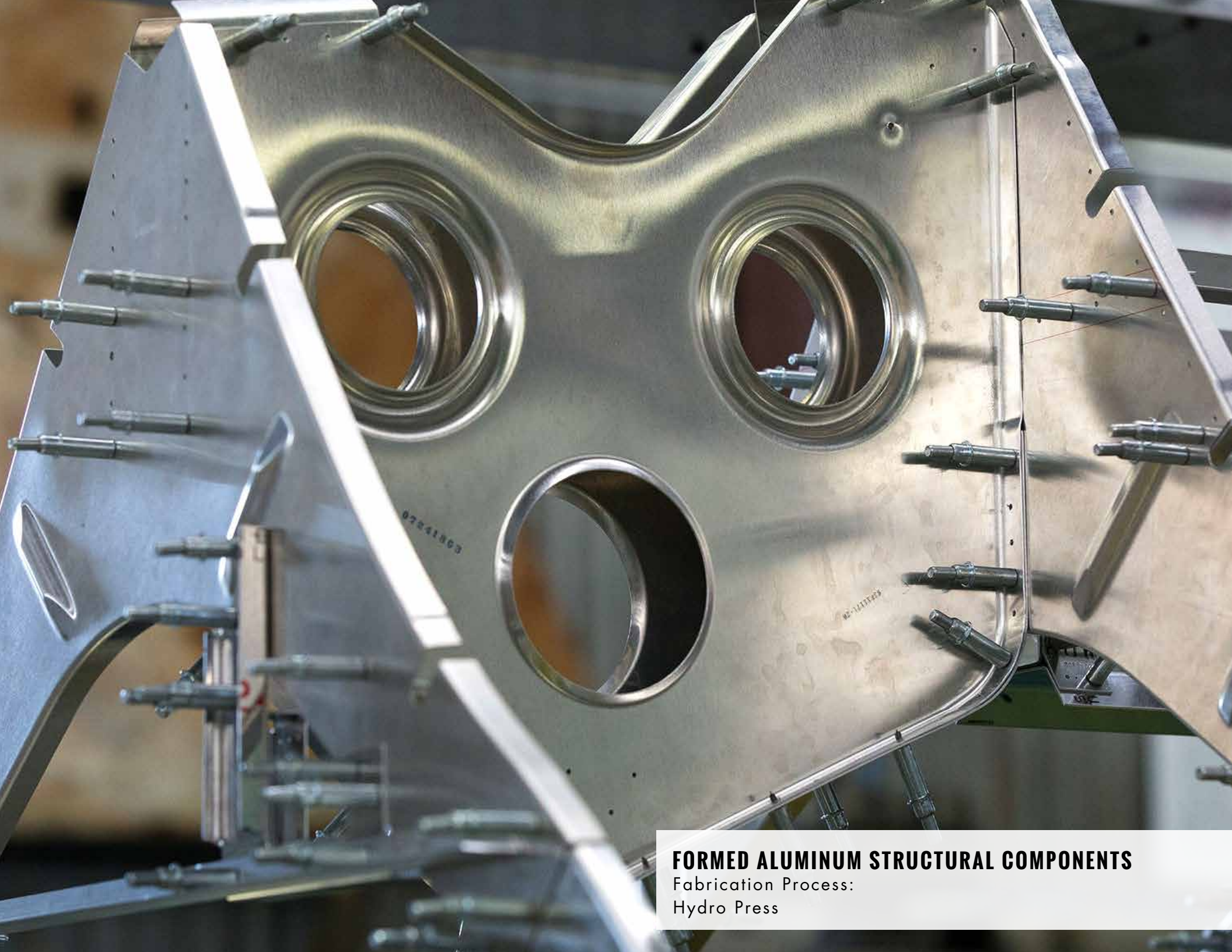


RECESS BOX

Fabrication Process:
Hydro Press, Welding & Paint



**P-47 THUNDERBOLT
FUSELAGE ASSEMBLY**



FORMED ALUMINUM STRUCTURAL COMPONENTS

Fabrication Process:
Hydro Press



FORMED ALUMINUM STRUCTURAL COMPONENTS

Fabrication Process:
Hydro Press



STRETCH FORMING



STRETCH FORMING



AIRCORPS AVIATION

EQUIPMENT DETAILS

METAL FORMING

PROCESSES:

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

CNC MACHINING

PROCESSES:

- 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



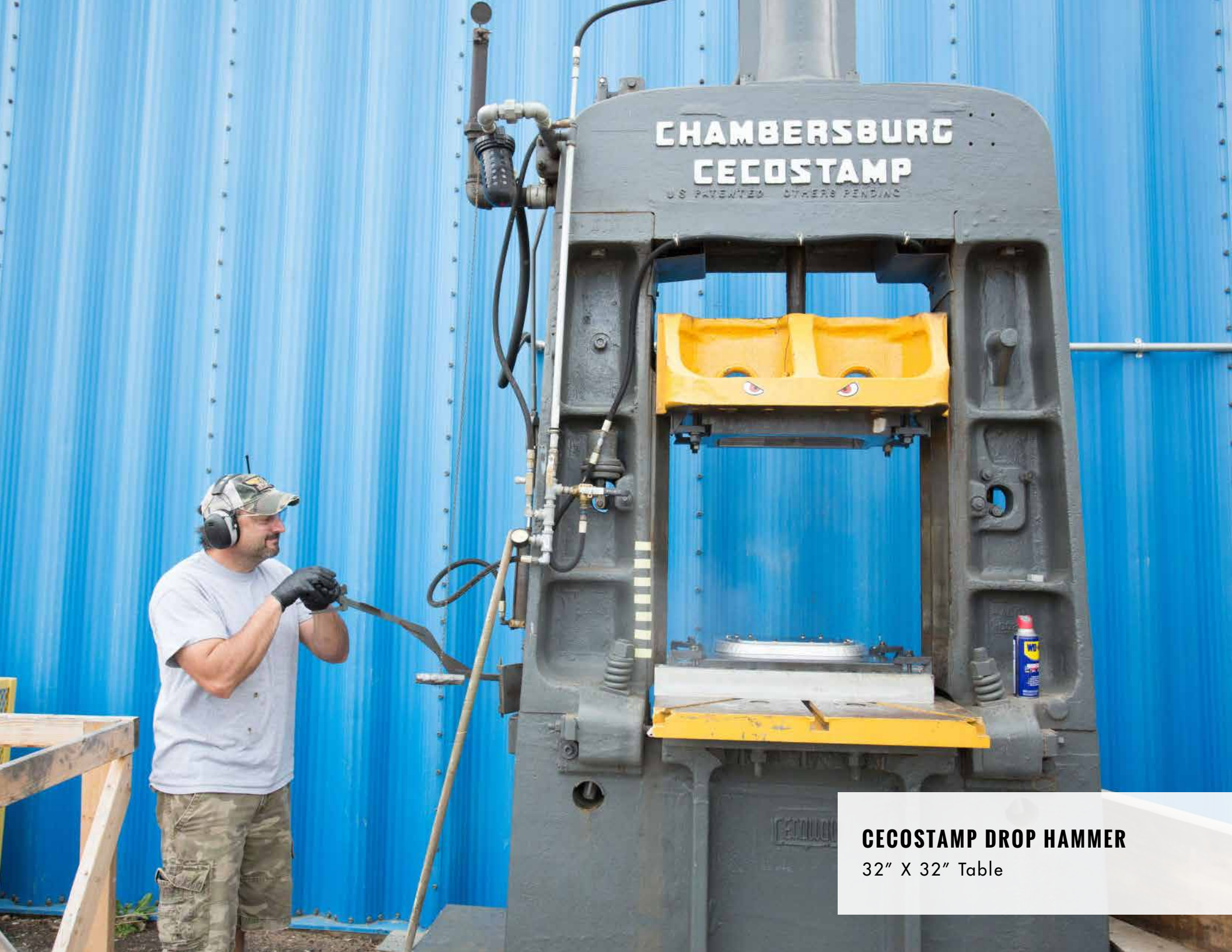
CNC PRESS BRAKE

6 Foot, 35 Ton



570 & 1500 TON PRESS

24" X 34" & 30" X 72" Rubber Pad Boxes



**CHAMBERSBURG
CECOSTAMP**

U.S. PATENTED OTHERS PENDING

CECOSTAMP DROP HAMMER

32" X 32" Table



AMS2770 CERTIFIED

DIGITAL CONTROL HEAT TREAT OVENS

24" x 18" x 43" & 60" x 60" x 60"



HAAS 5-AXIS CNC VERTICAL MILL

XYZ: 30" x 20" x 20"



HAAS CNC LATHE W/ LIVE TOOLING

X-Travel: 9", Z-Travel: 21"

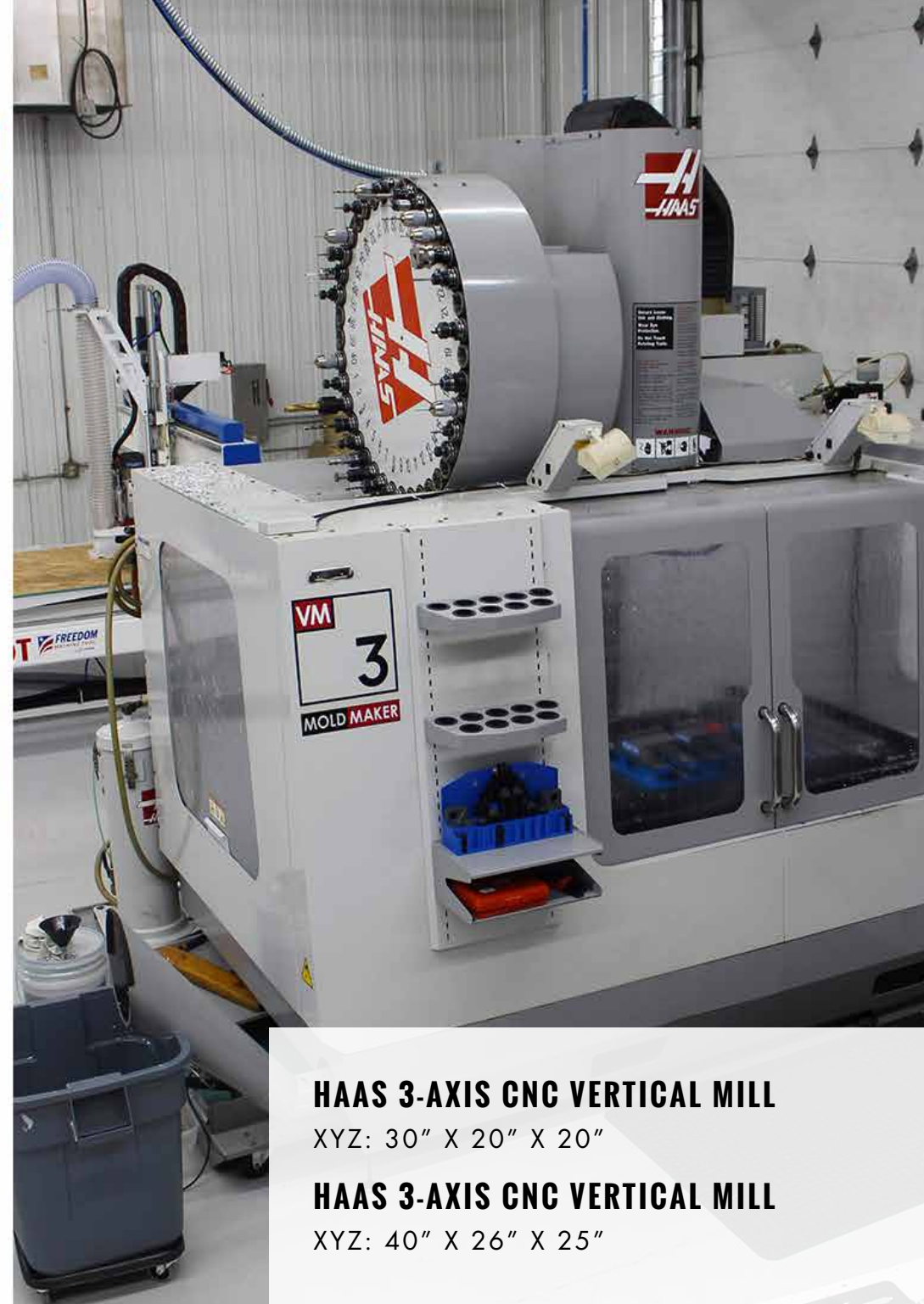


HAAS 3-AXIS CNC VERTICAL MILL

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"



FARNHAM ROLLER

12ft Capacity



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



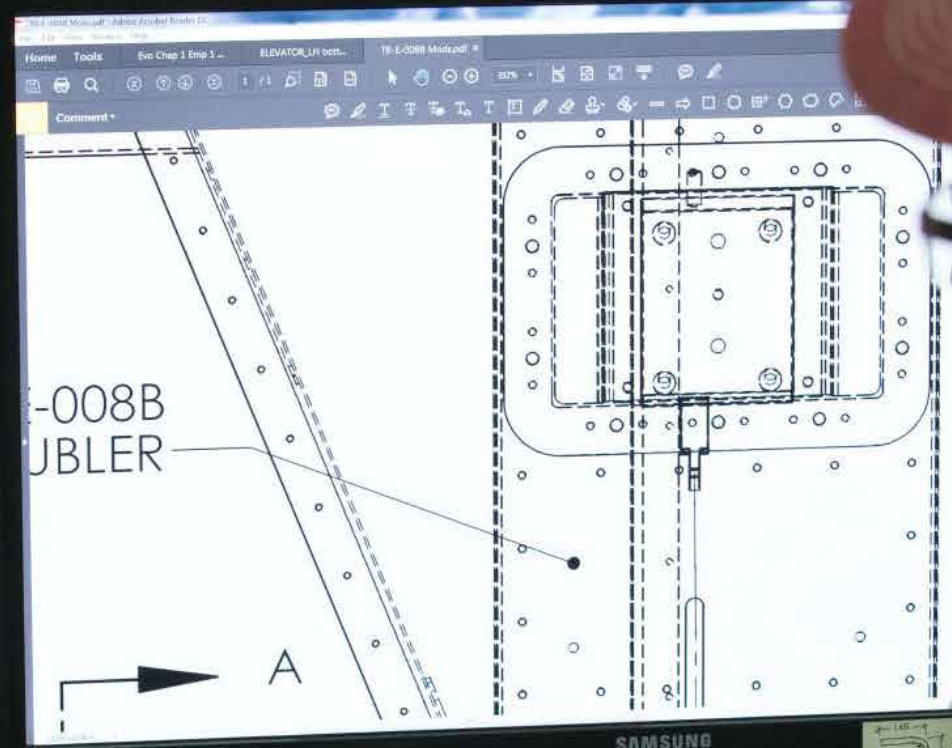
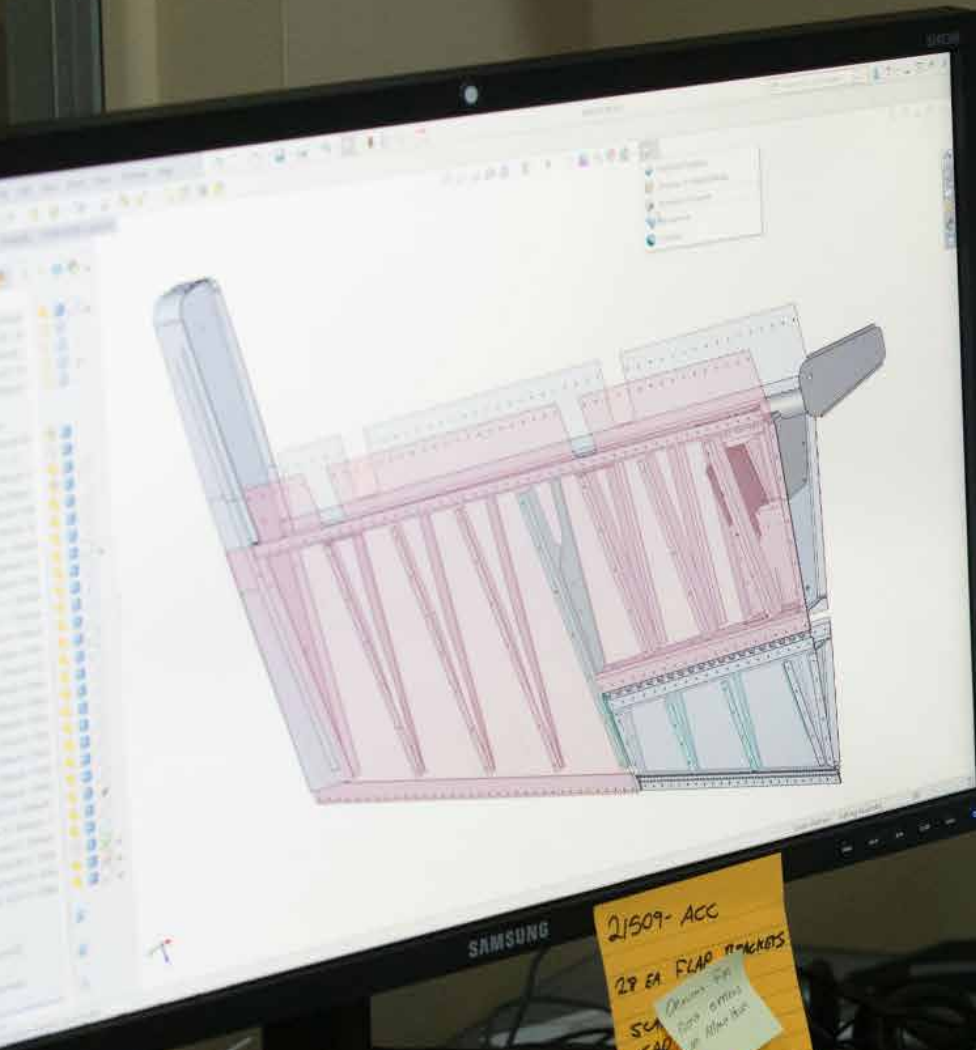
AIRCORPS AVIATION

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

PMA HOLDER
NO. PQ04274CE

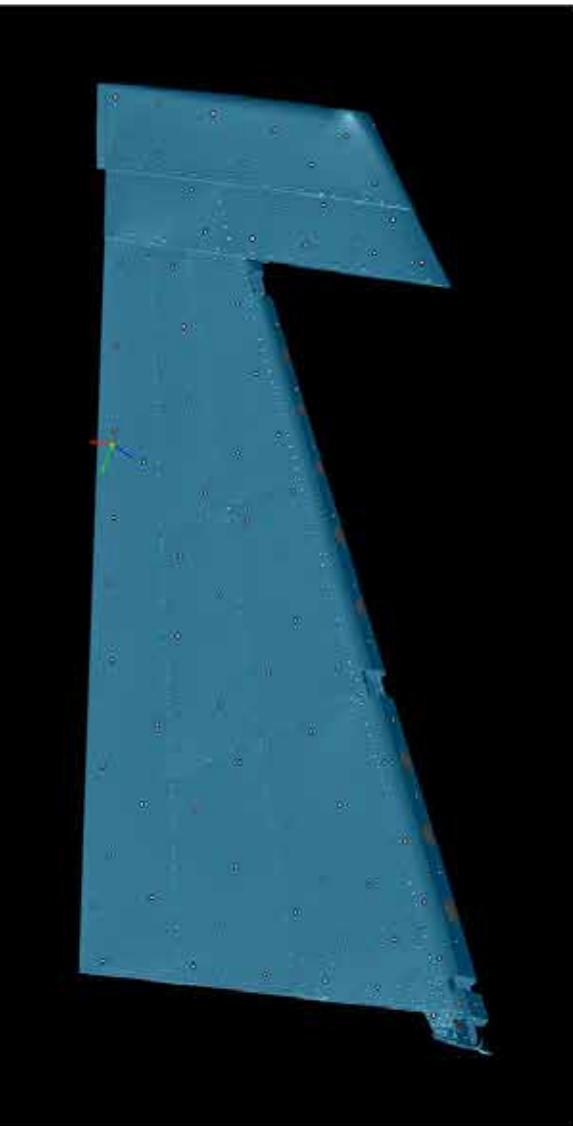




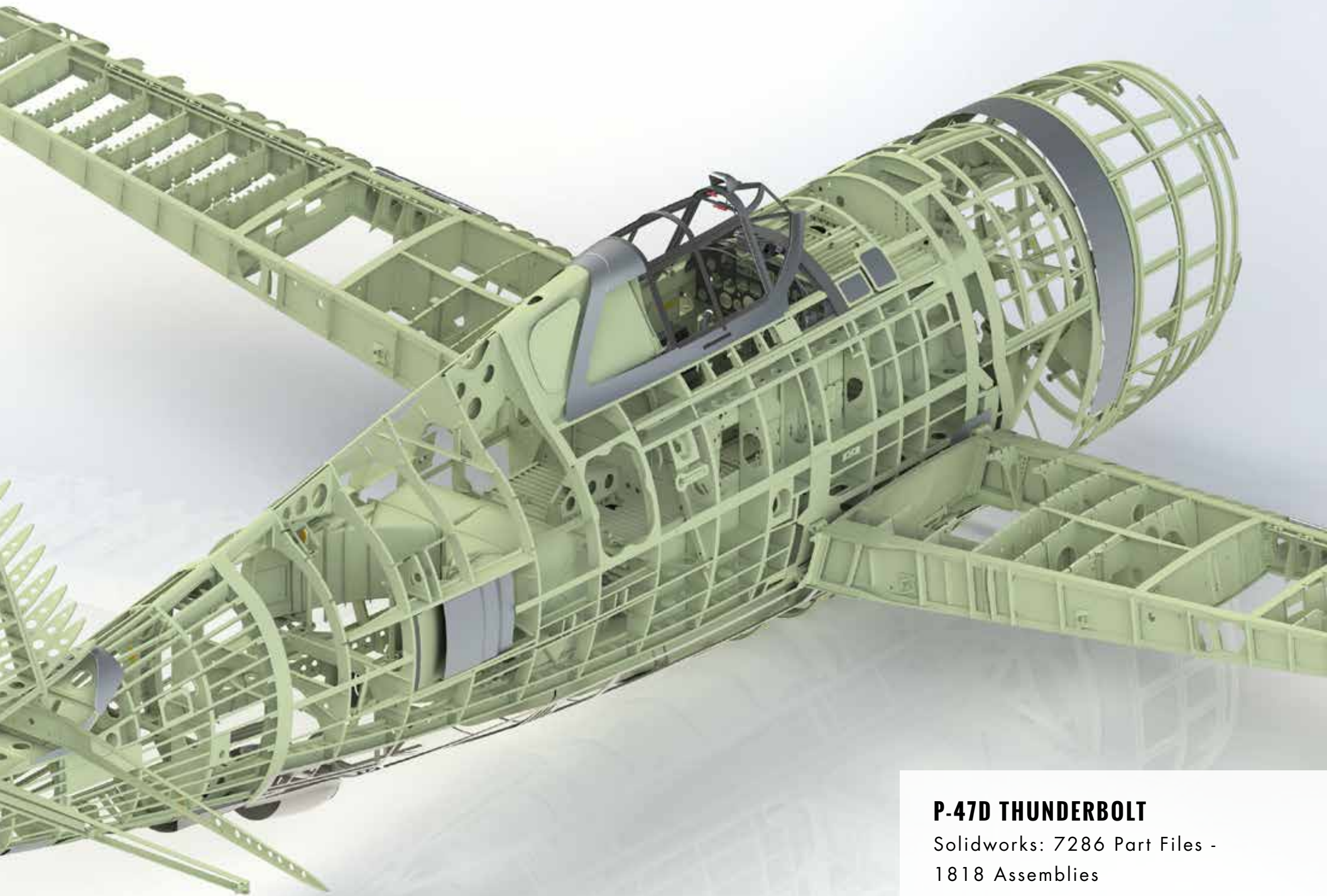
21509- ACC
28 EA FLAP HOOKS
54 Drawing
CAD
DRAWING
Look into combining
PARTS.

RIVET HOLE SIZES			
	RIVET DIAMETER		TAP DRILL SIZE
AD3	3/32	0.094	#40 0.098
AD4	1/8	0.125	#30 0.128
AD5	5/32	0.156	#21 0.159
AD6	3/16	0.188	#11 0.191
AD8	1/4	0.25	#8 0.257

CAD: SOLIDWORKS 2019 - 2020
CAM: CAMWORKS 2019 - 2020

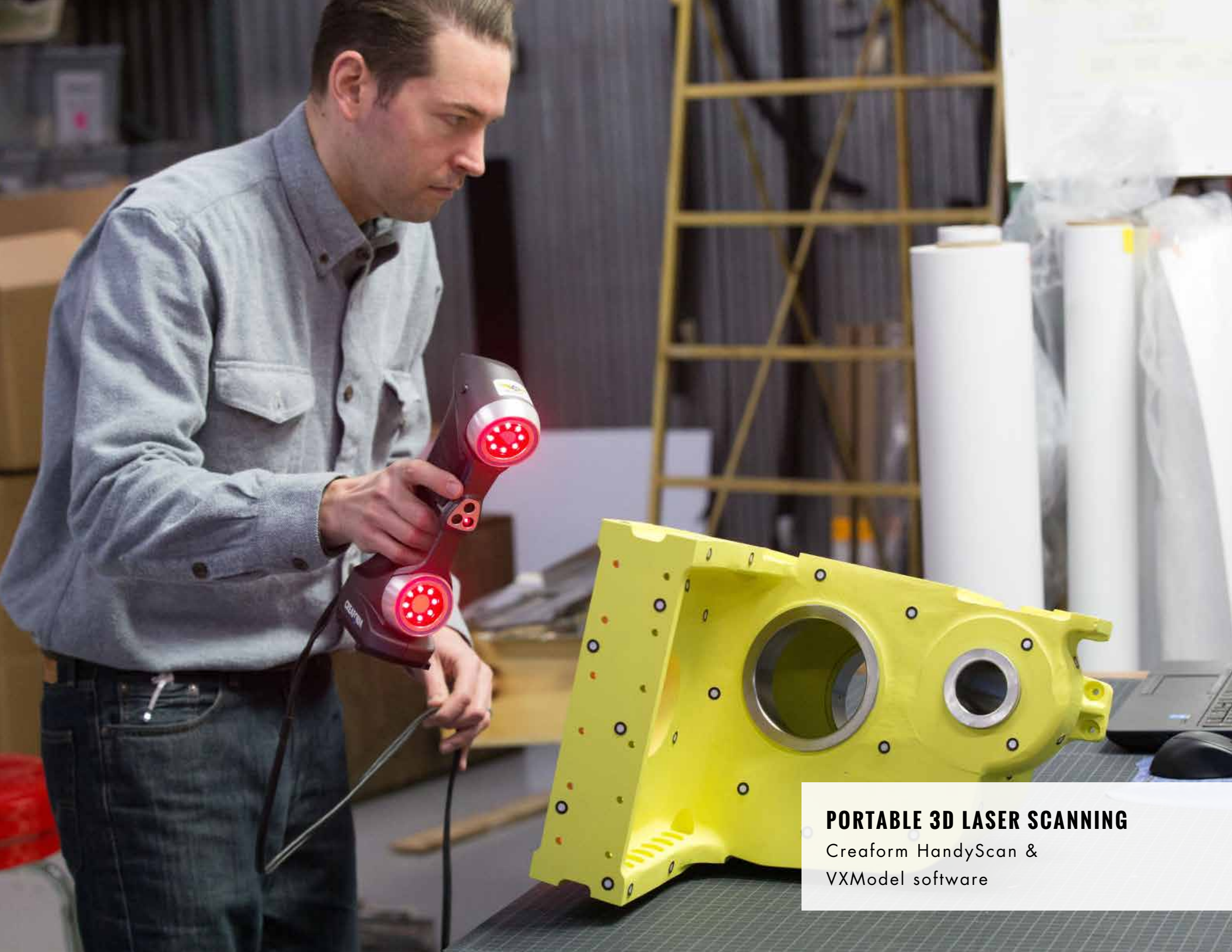


**RUDDER - SCAN TO CAD
DEVELOPMENT**



P-47D THUNDERBOLT

Solidworks: 7286 Part Files -
1818 Assemblies



PORTABLE 3D LASER SCANNING

Creaform HandyScan &
VXModel software



P-47D FUSELAGE FIXTURE



P-51D WING FIXTURE



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



FAA Certified



ART SERVICES

CUSTOM MADE PLACARDS, DECALS & NAME PLATES

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

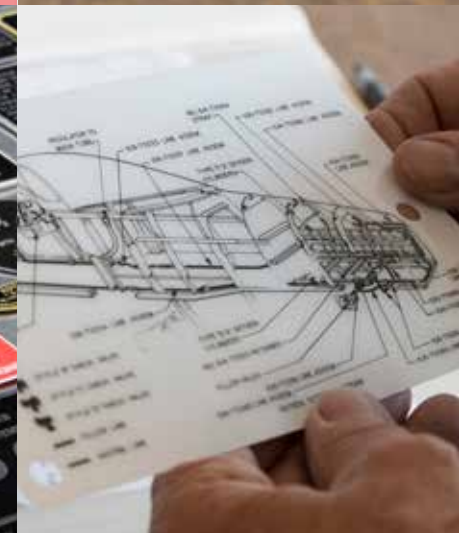
THE MATERIALS WE USE

- 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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