



Spring 2024

# AT-10 WICHITA



AIRCORPS AVIATION

Cadet Air Corps Museum AT-10 Wichita Restoration

by Chuck Cravens



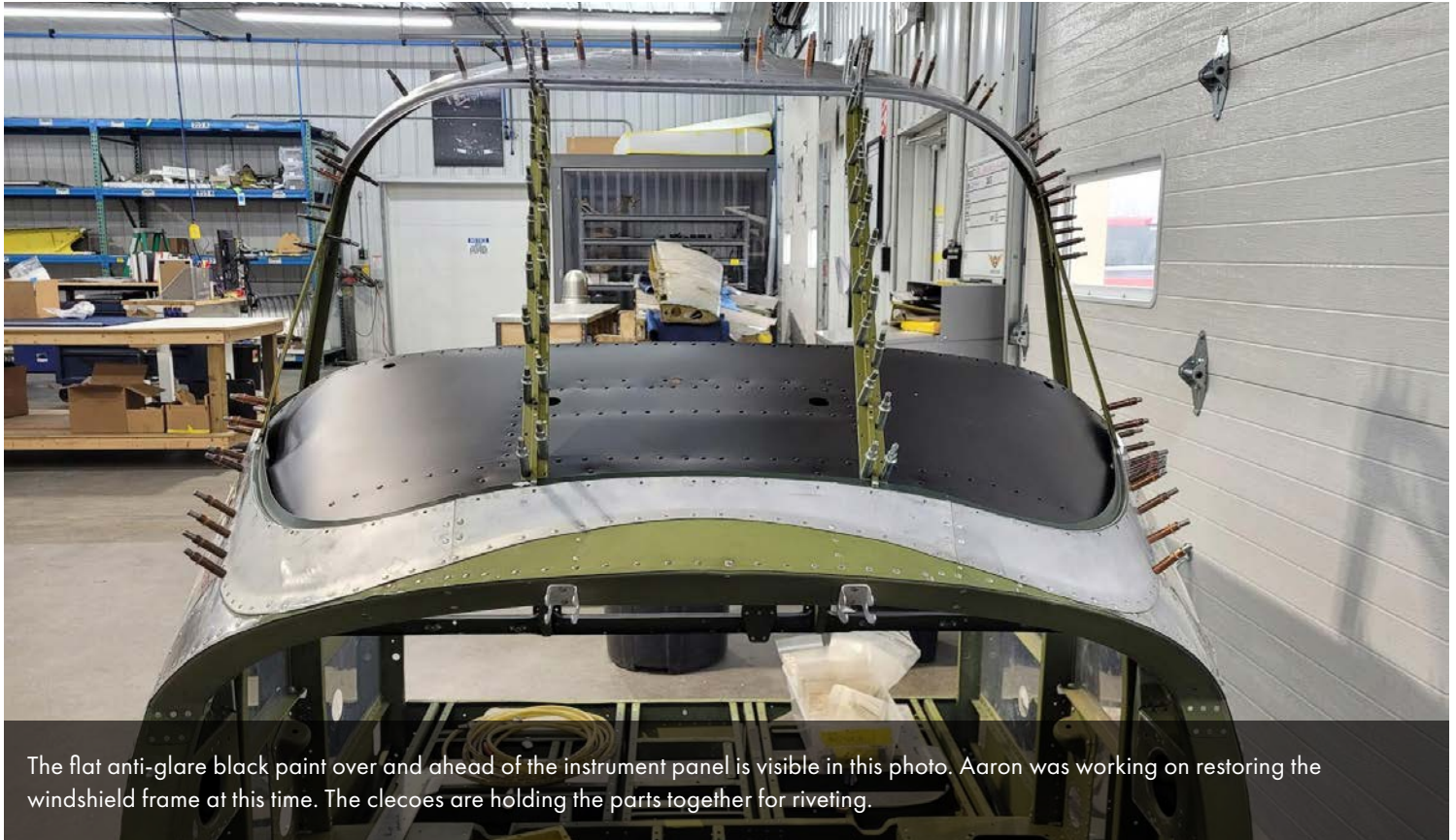
It appears that the ground crewman is adjusting the flaps on an AT-10 in this great color image from WWII.

These past few months, most of the work on the AT-10 was done on the cockpit section, the main fuselage, and the vertical fin.

A major milestone was achieved when the cockpit section was mounted to the main fuselage.







The flat anti-glare black paint over and ahead of the instrument panel is visible in this photo. Aaron was working on restoring the windshield frame at this time. The clecoes are holding the parts together for riveting.

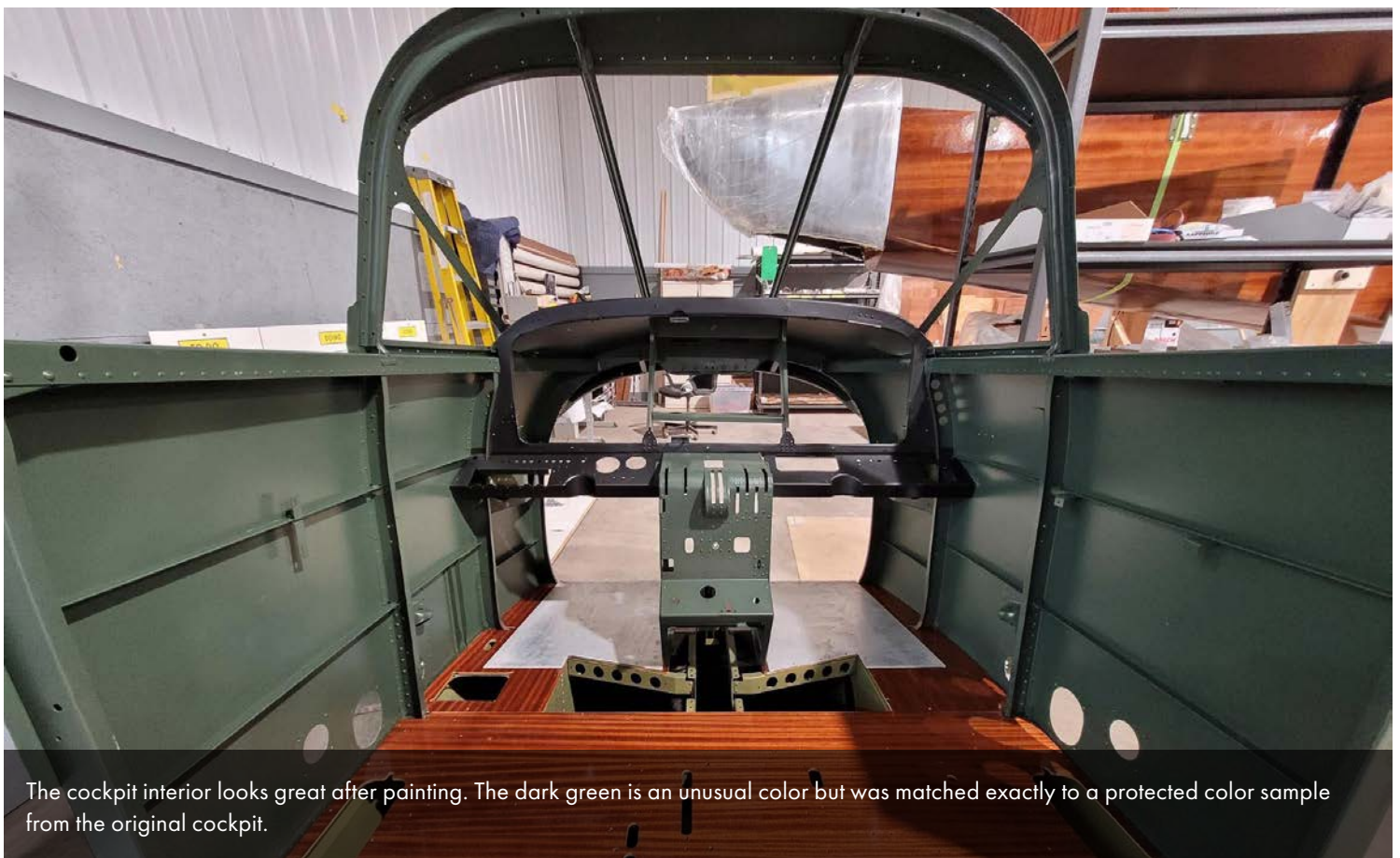


The throttle console and main electrical box are masked for paint.





The cockpit section as it looked prepped for painting.



The cockpit interior looks great after painting. The dark green is an unusual color but was matched exactly to a protected color sample from the original cockpit.





## Fuselage

Work on the fuselage included attaching handholds and footsteps. Once that was done, the two main sections of the fuselage were prepared for fitting together.



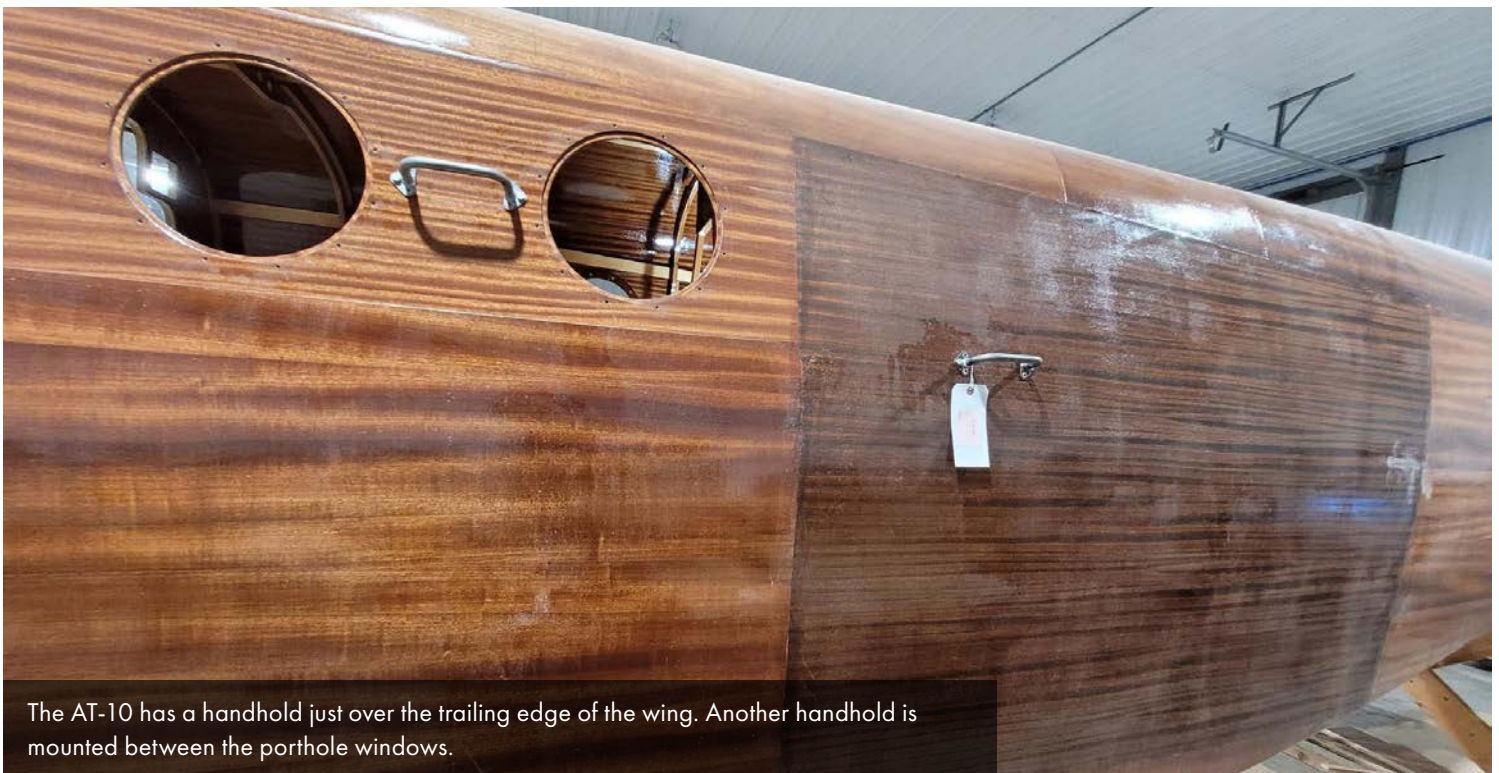
Aaron tests the fit of one of the footsteps.



Here is the step as it looks after installation.

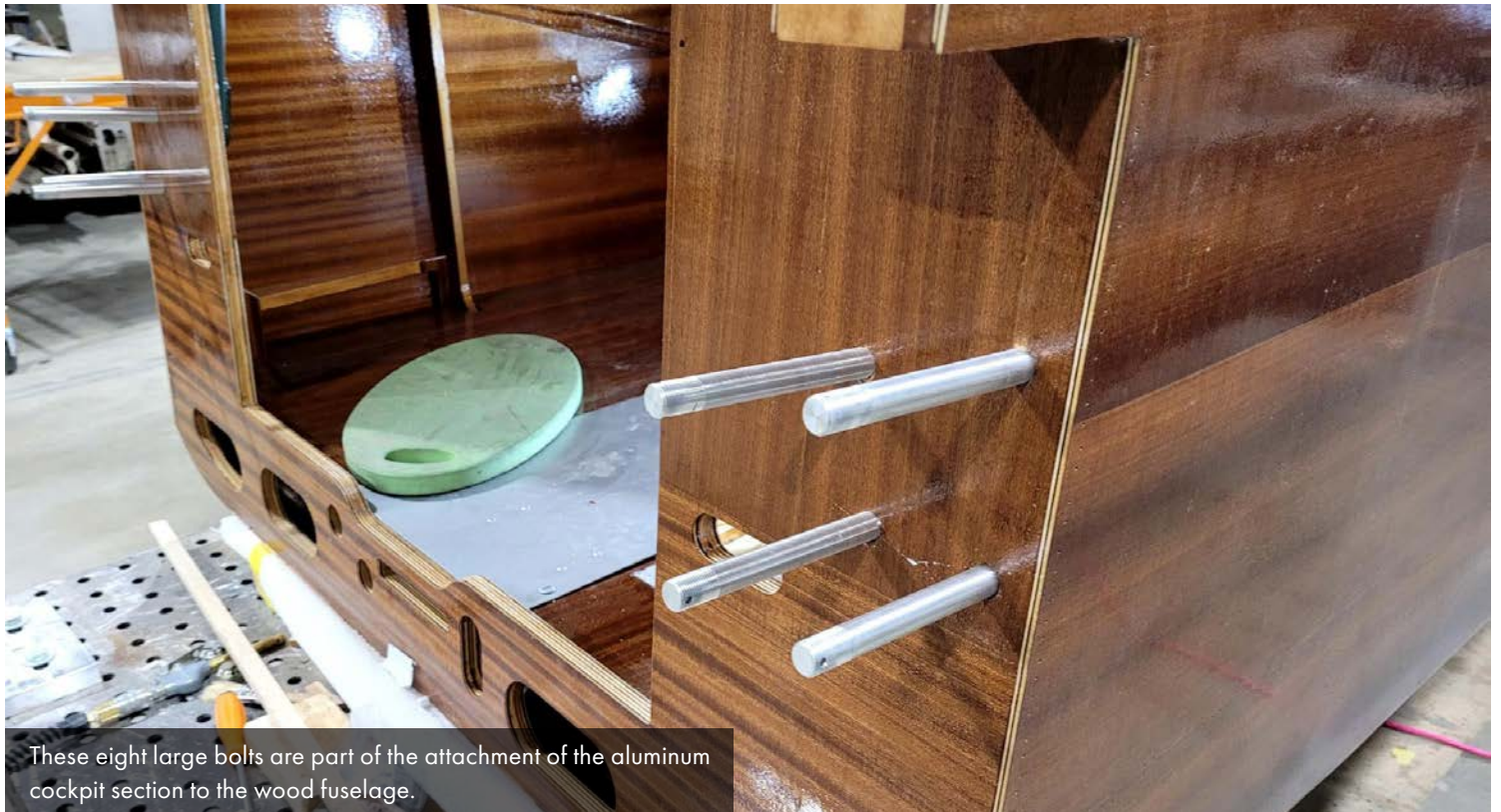


The woodwork inside the fuselage is stunning in this photo.



The AT-10 has a handhold just over the trailing edge of the wing. Another handhold is mounted between the porthole windows.





These eight large bolts are part of the attachment of the aluminum cockpit section to the wood fuselage.



The first test mating of the cockpit section to the main fuselage was successful.

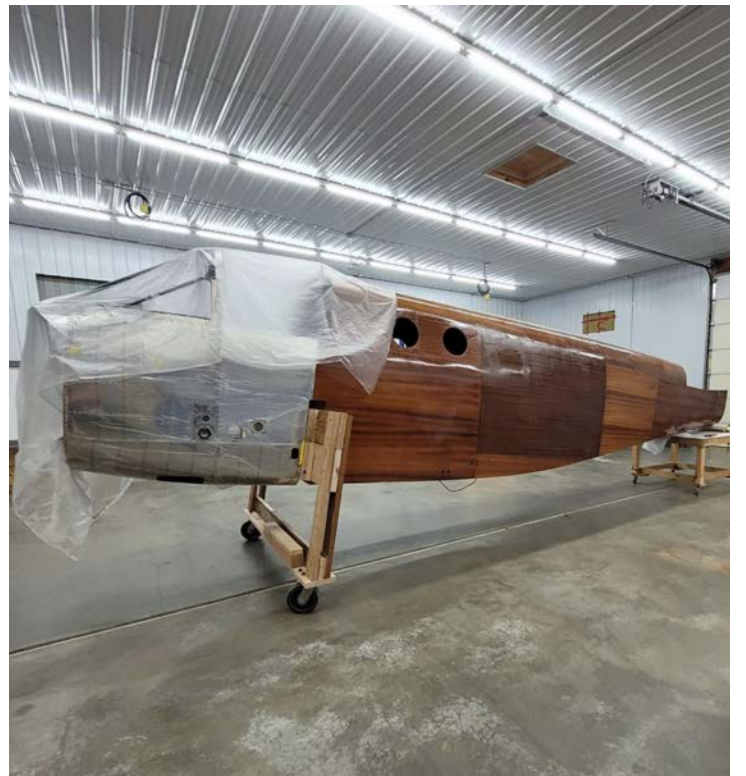




Project manager Aaron Prince looks happy with the fit of the main and cockpit sections of the fuselage.



This AT-10 tailwheel is new old stock, has never been mounted on a plane, and came in a box that was packaged in 1952.

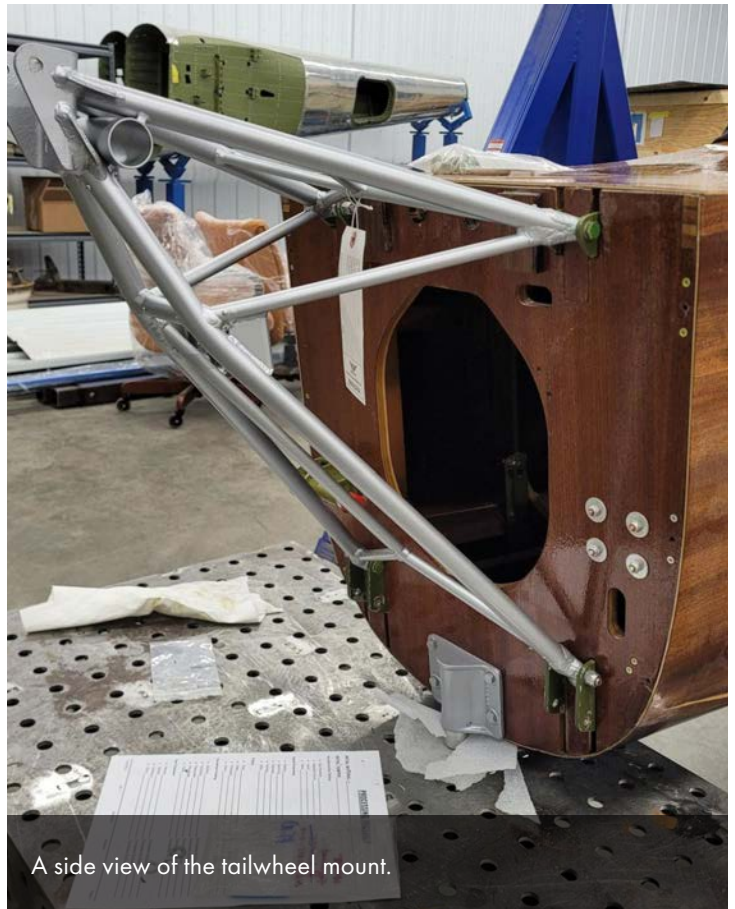


The fuselage has been moved to another area of the shop to make room in the woodworking area to restore the center section of the wings and the horizontal stabilizer.

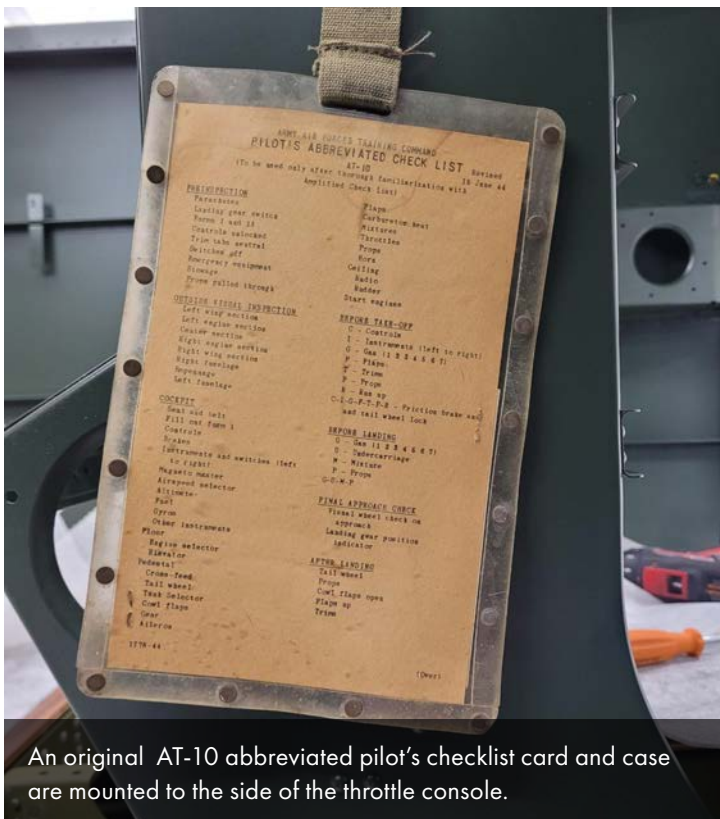




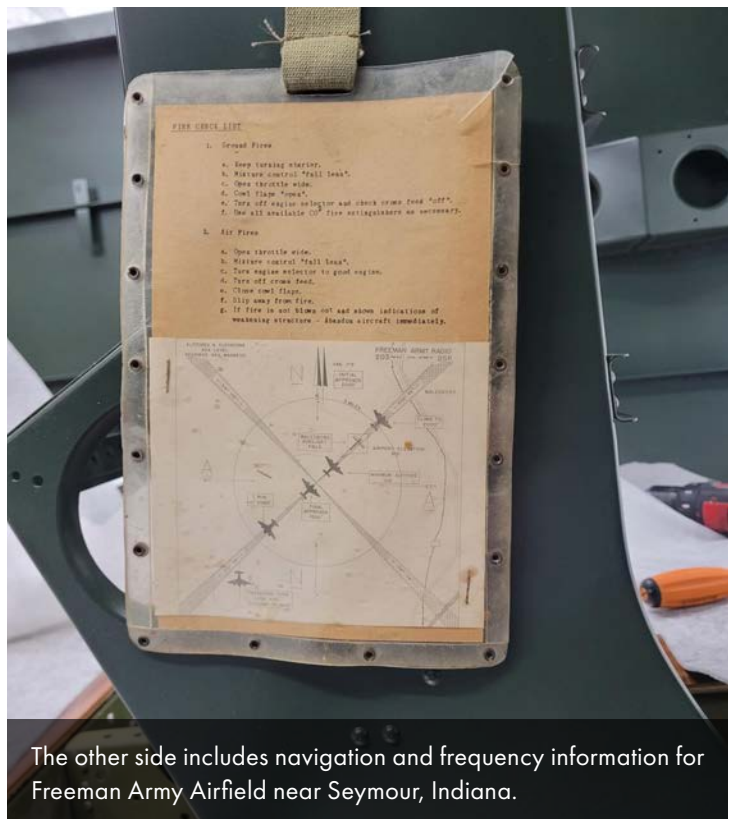
This is a view from the rear of the tailwheel mount.



A side view of the tailwheel mount.



An original AT-10 abbreviated pilot's checklist card and case are mounted to the side of the throttle console.



The other side includes navigation and frequency information for Freeman Army Airfield near Seymour, Indiana.



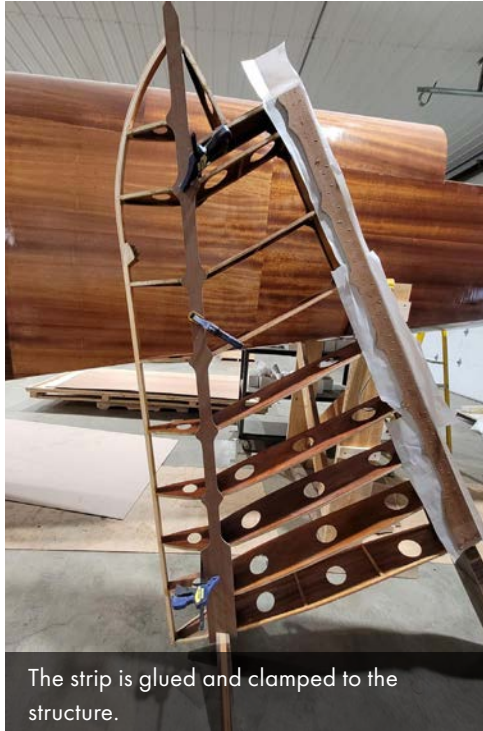


## Vertical Fin

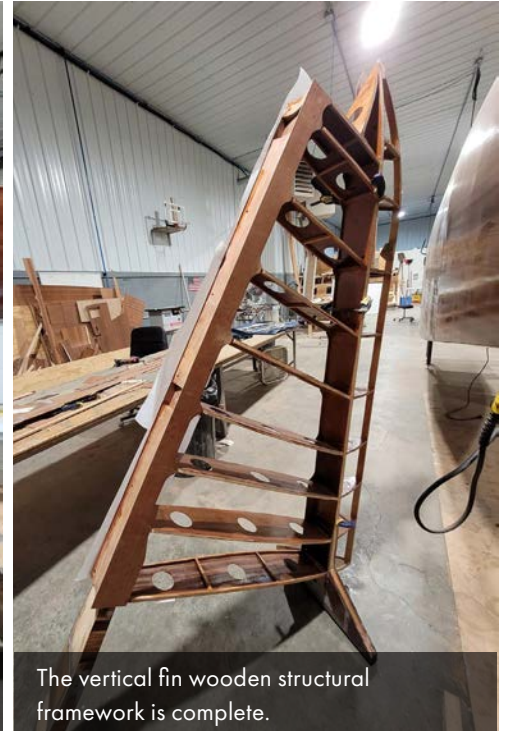
Project manager Aaron Prince finished the internal structure of the vertical fin. Once that was complete, he had to cut and form the skins to conform to the curved section of the fin. Especially challenging was the compound curvature near the top of the rudder.



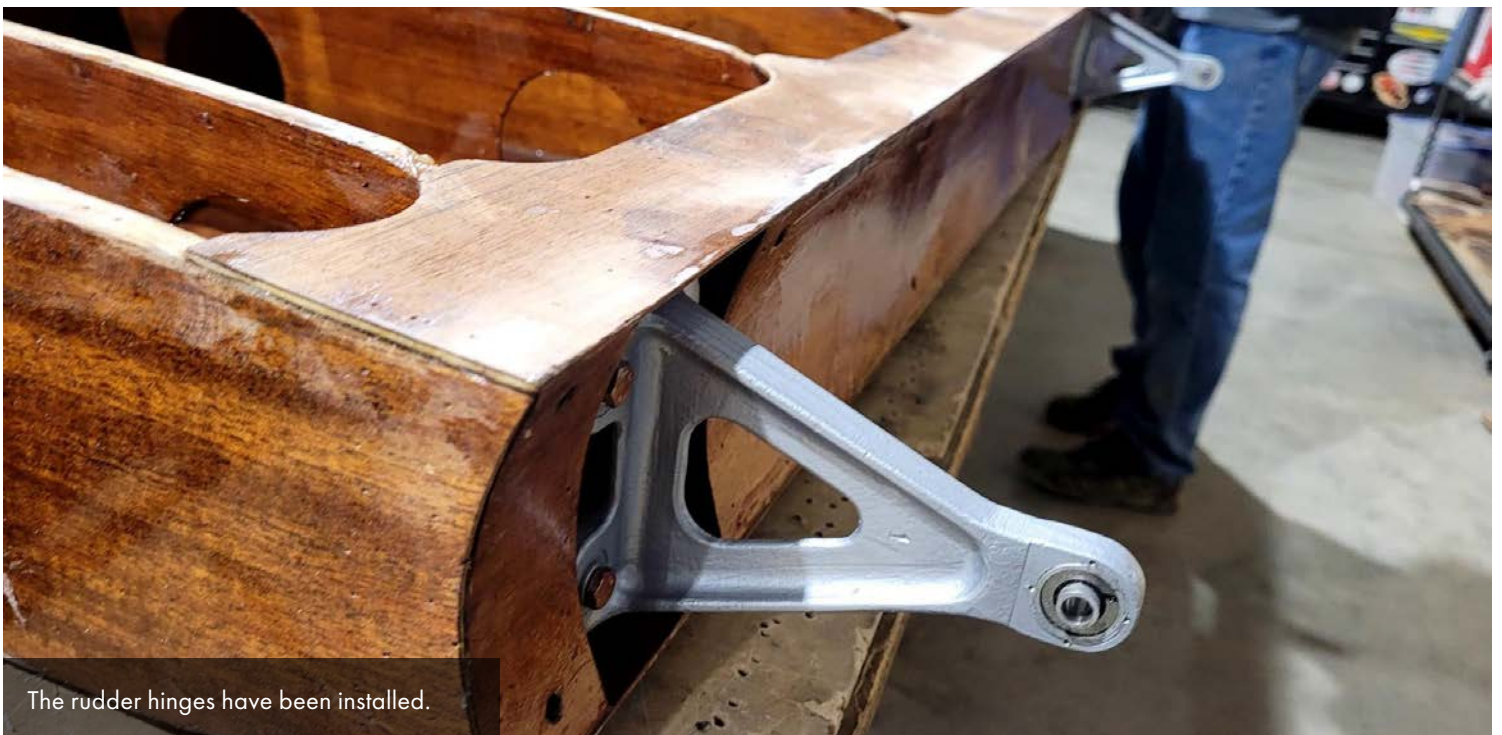
This is a reinforcement for the spar and an added gluing surface for the skin.



The strip is glued and clamped to the structure.



The vertical fin wooden structural framework is complete.



The rudder hinges have been installed.





Here is another view of the rudder hinge.



The edges of the ribs and all gluing surfaces have been carefully sanded.

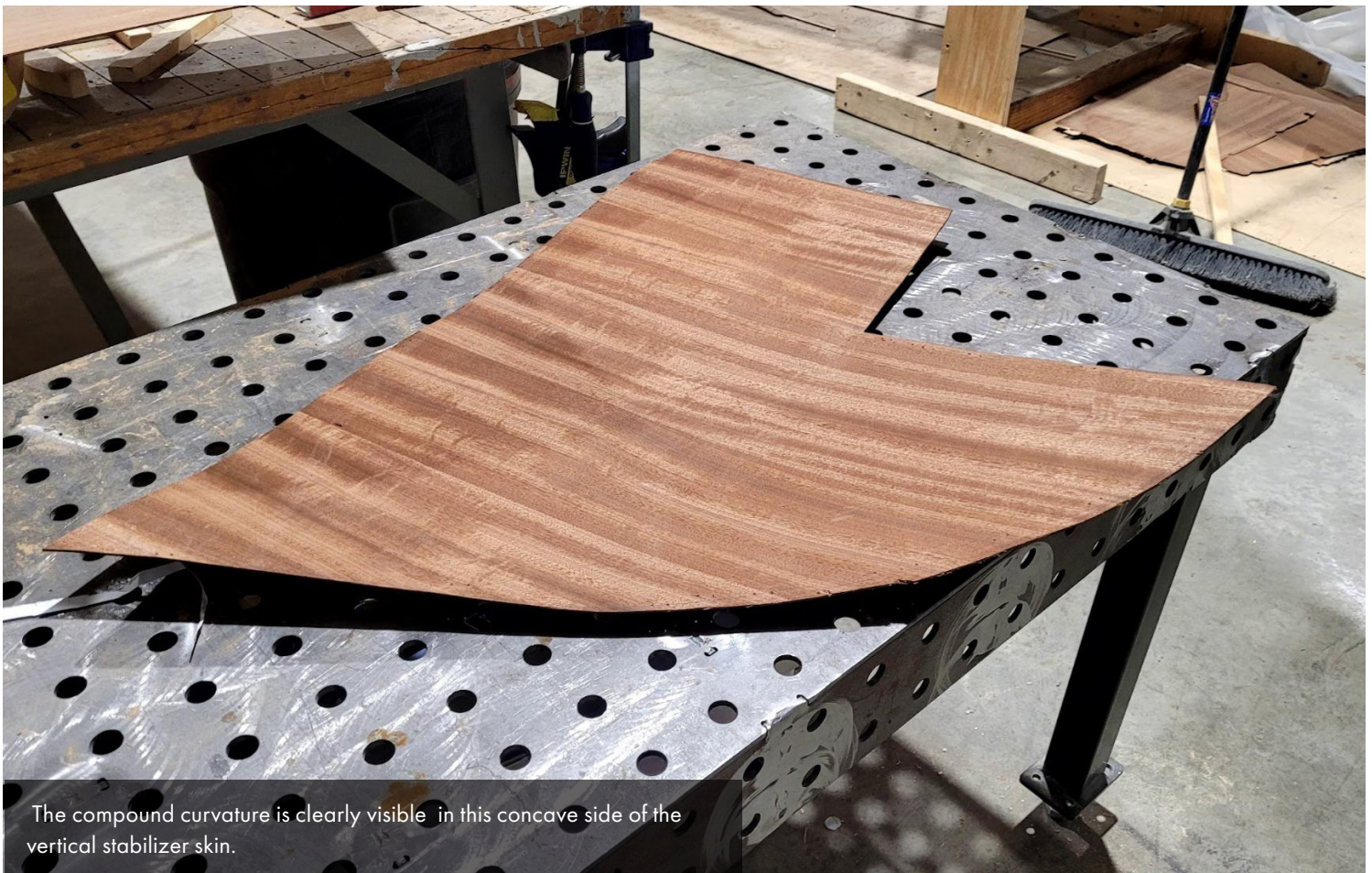
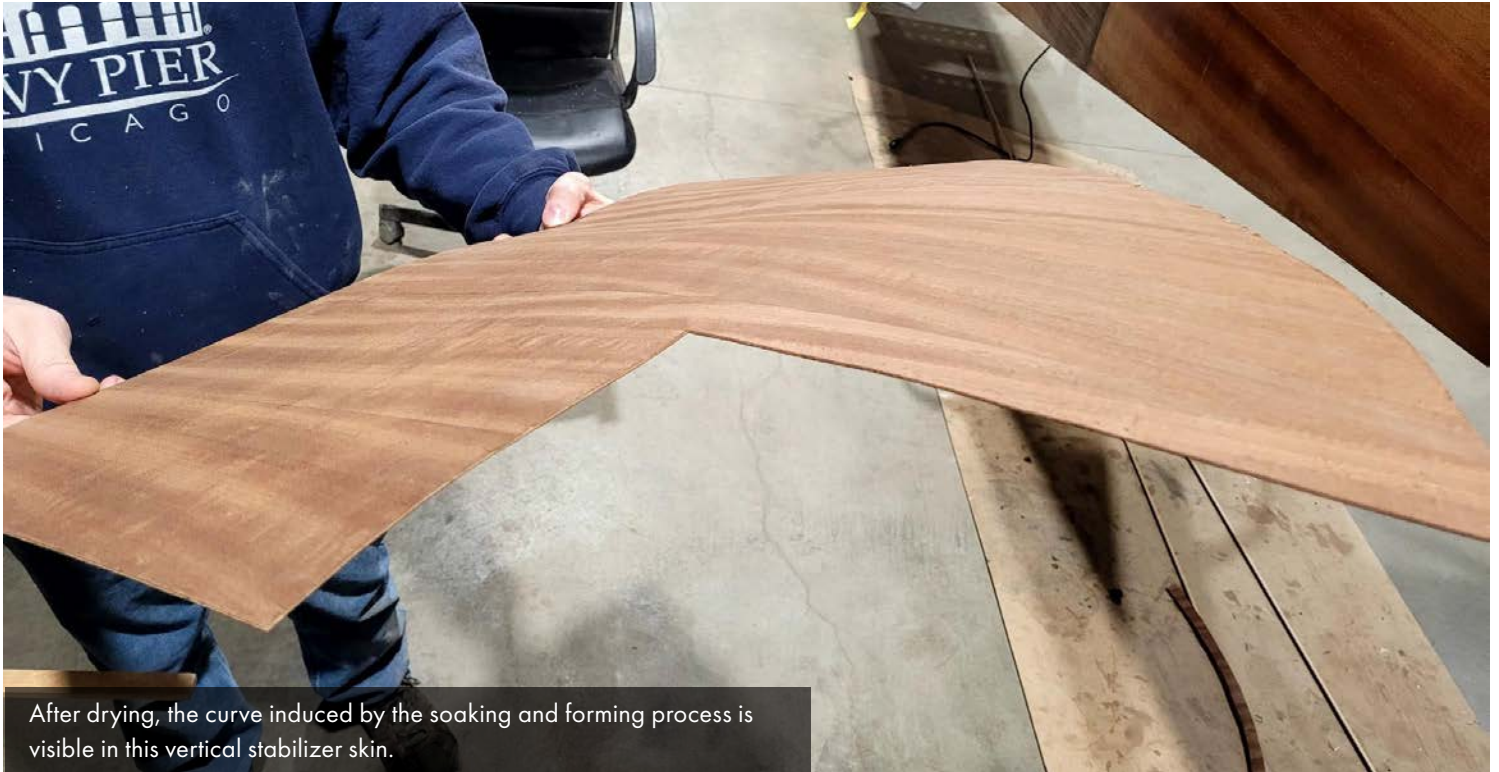


The compound curvature of the upper vertical fin can be seen here.



A skin section is soaked in ammonia and water to make it bendable for forming over curved sections.

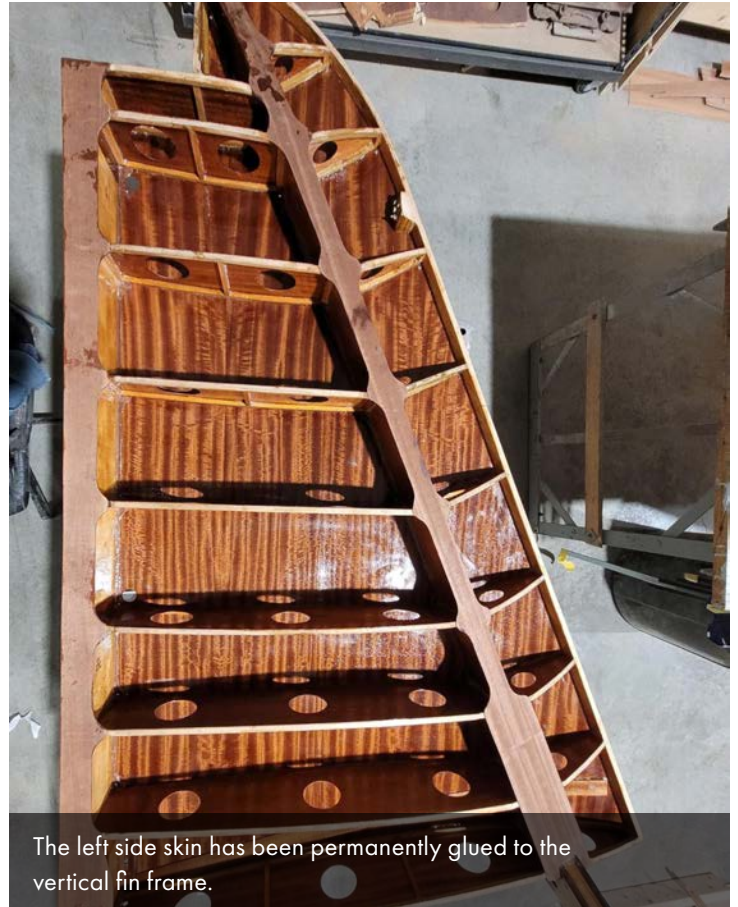




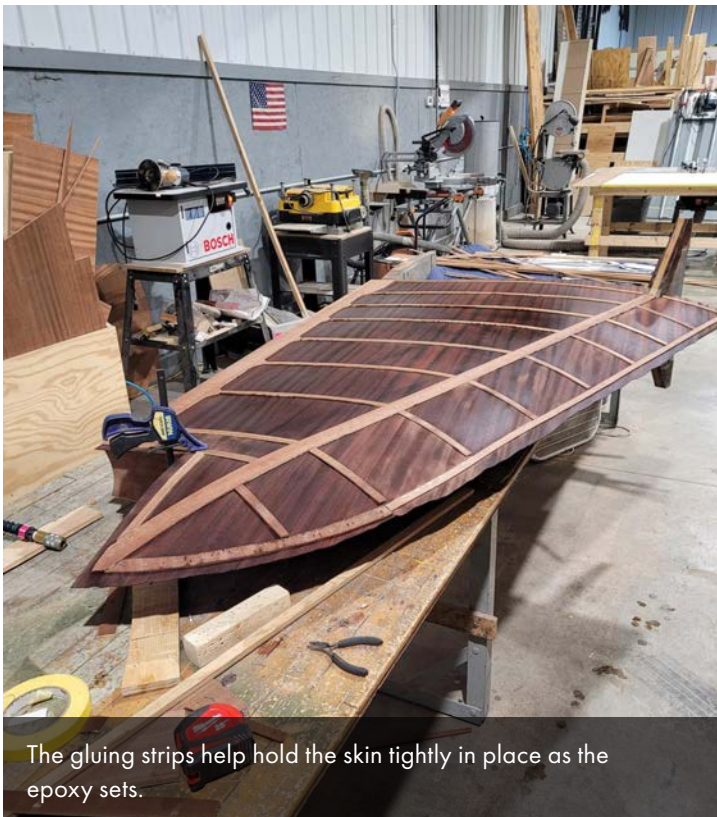




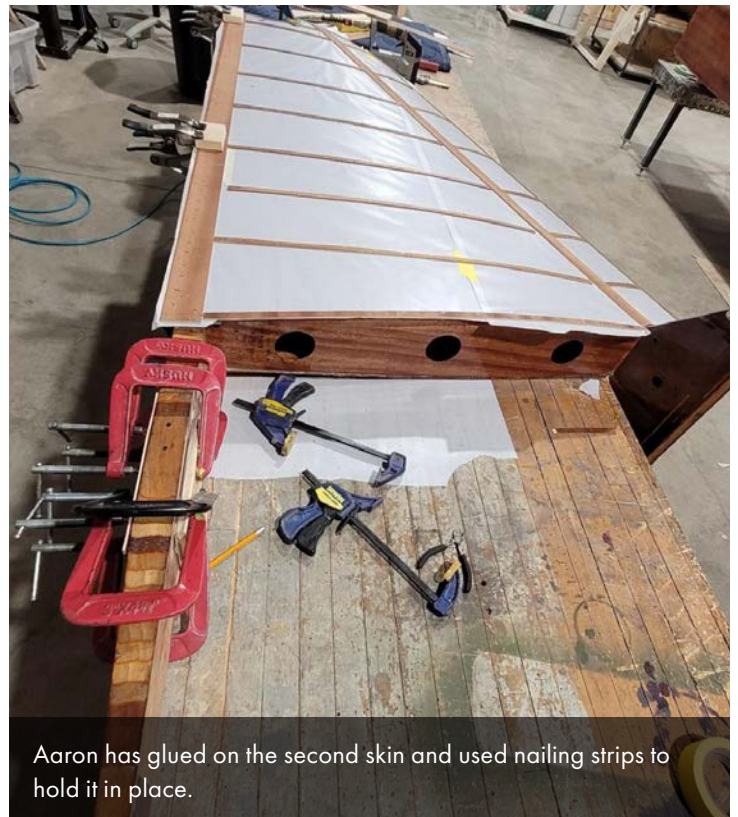
Epoxy coats the areas of the skin that will not have glue applied.



The left side skin has been permanently glued to the vertical fin frame.



The gluing strips help hold the skin tightly in place as the epoxy sets.



Aaron has glued on the second skin and used nailing strips to hold it in place.





The vertical fin structure is essentially complete, needing only another hinge and its fabric covering.







Here is the vertical with the rudder frame attached.

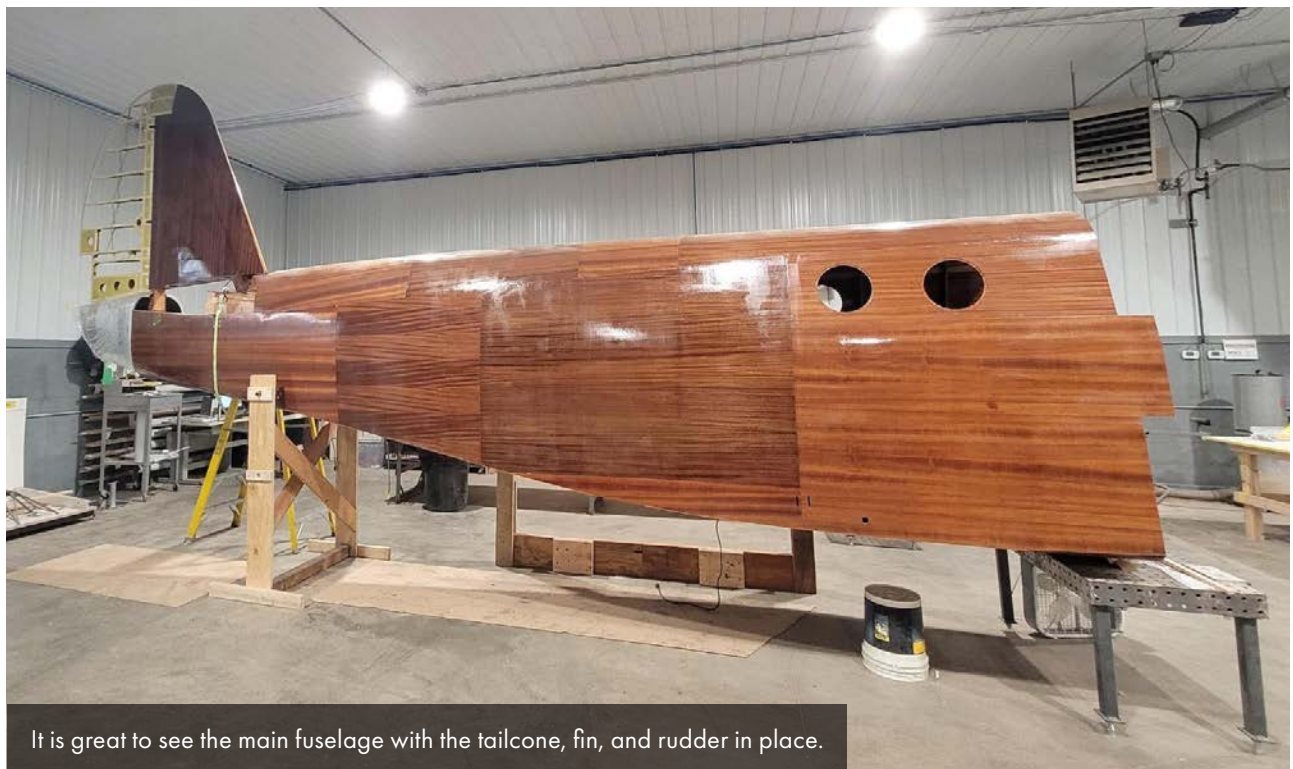


The fin and rudder are in place on the fuselage as the fit is checked.





Here is a view from the left side of the fin and rudder sitting on the fuselage.



It is great to see the main fuselage with the tailcone, fin, and rudder in place.





## Want to get involved?

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We are constantly looking for new technical material related to the AT-10. Due to the rarity of this aircraft, and the relatively low number that were produced, acquiring engineering drawings, parts catalogs, maintenance manuals, and other documentation has been much more difficult than with our past restorations. If you have any AT-10 material, or know someone who does, we'd like to hear from you!

### **Be a part of helping the AT-10 return to the skies!**

Contact Ester Aube, email or phone  
estera@aircorpsaviation.com or 218-444-4478



Should anyone wish to contribute to the Cadet Air Corps Museum's efforts, please contact board members Brooks Hurst at 816 244 6927, email at wingnutsflyingcircus@yahoo.com or Todd Graves, todd.graves@pobox.com. Contributions are tax deductible.