



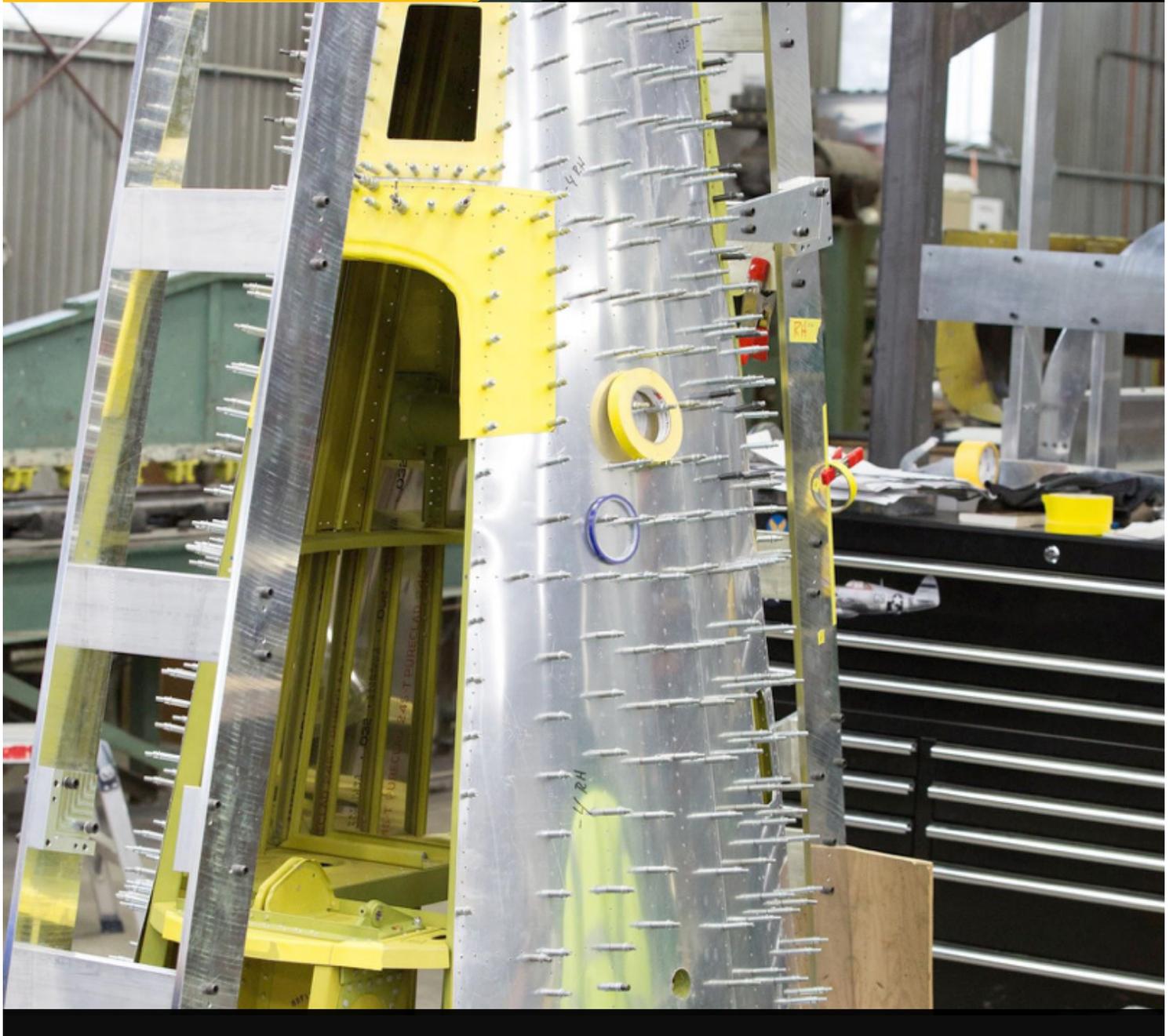
Nov/Dec-2017

NOV/DEC

Texas Flying Legends' P-47 Update
by Chuck Cravens



AIRCORPS AVIATION



Most of the skin has been fitted to the tail cone.



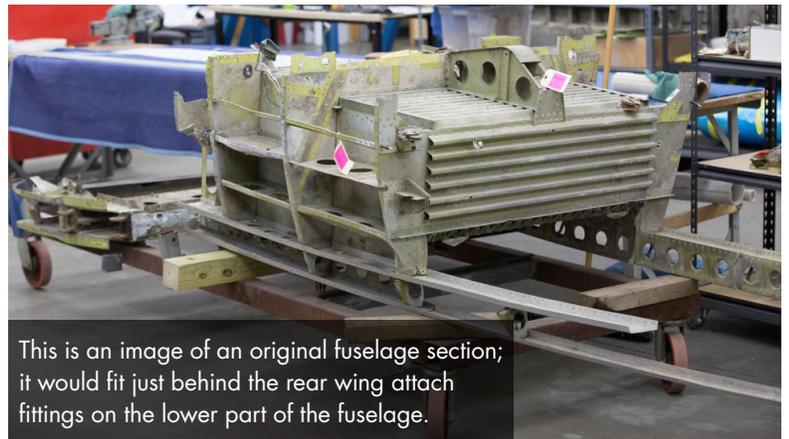
Update

Last month we looked into the fabrication and assembly of the horizontal and vertical stabilizers. This month the restoration technicians moved on to skinning the tail cone where those stabilizers will eventually mount.

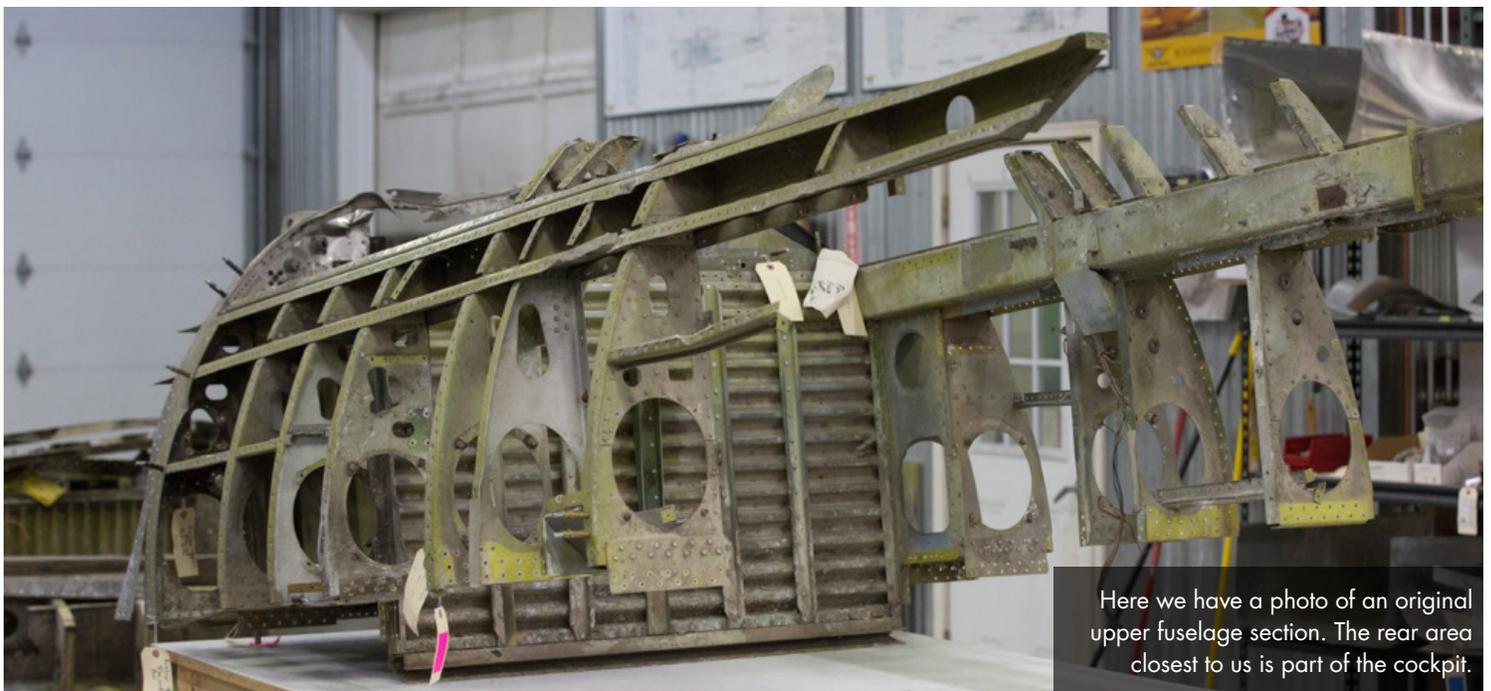
We continue to seek information on 5th Air Force Thunderbolts to try and identify the original squadron in which this one served. The current leading candidate is the 35th Fighter Group, 40th Squadron. I am waiting to get some earlier wreck images from an Australian friend who once had salvage rights to the wreck and took some images that may show some faint markings.

Inspections

Sections of the fuselage were separated again to examine them carefully as patterns, while the new parts and assemblies are created. Landing gear components were disassembled, which was a real challenge after 75 years in a wet, tropical climate. They were closely checked for condition and serviceability. Any of those landing gear parts that can be restored to service will save a great deal in fabrication costs, so it was time well spent.



This is an image of an original fuselage section; it would fit just behind the rear wing attach fittings on the lower part of the fuselage.

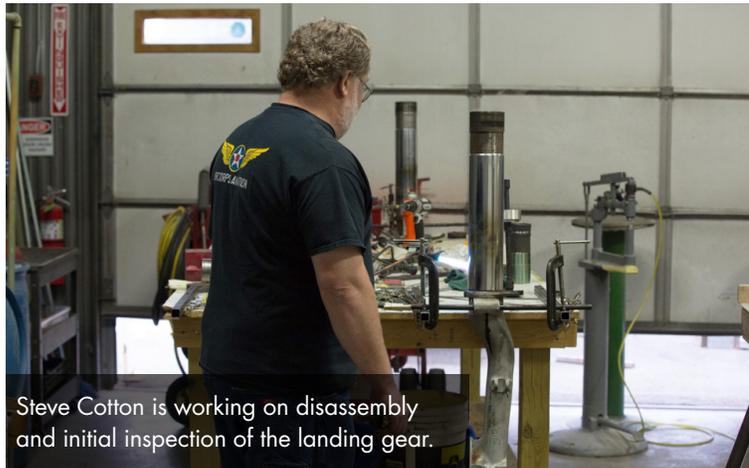


Here we have a photo of an original upper fuselage section. The rear area closest to us is part of the cockpit.



Landing Gear Disassembly and Inspection

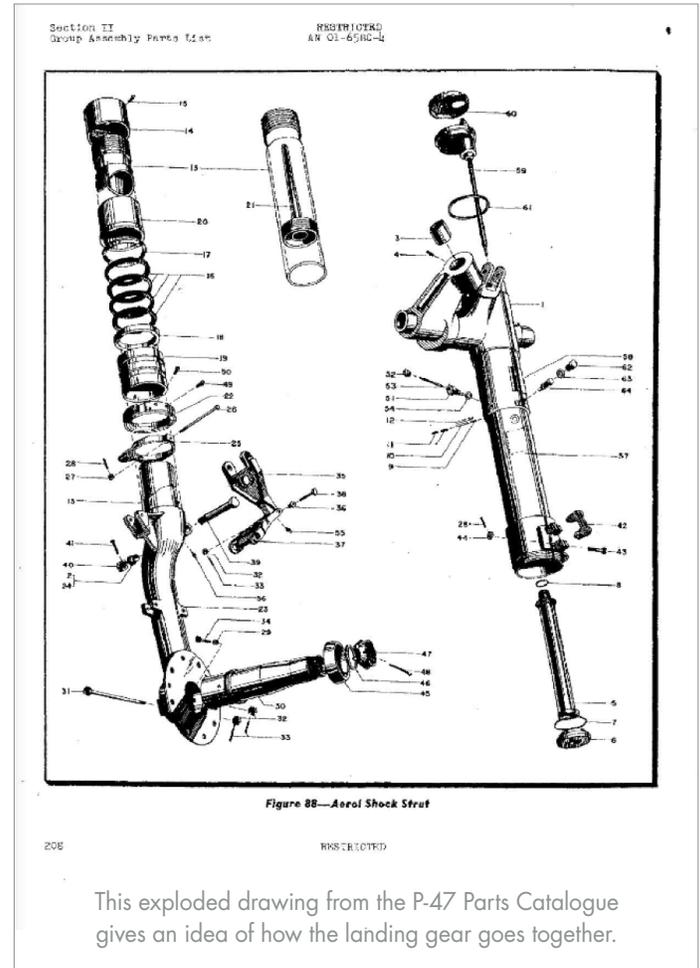
Reforging new landing gear parts unique to P-47s would be extremely costly so the initial inspection of the original parts acquired for the restoration was done carefully. Many more inspections and testing procedures will follow before we can determine whether or not the parts can be reused in the restored airframe.



Steve Cotton is working on disassembly and initial inspection of the landing gear.



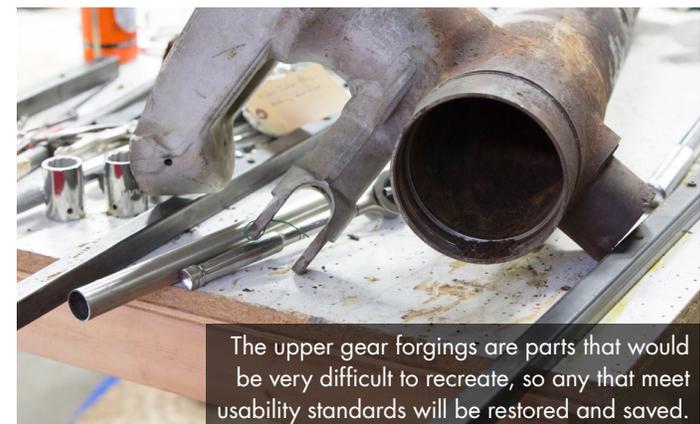
Here Steve heats a portion of the Aerol strut for removal. Aerol is the Cleveland Pneumatic Tool company trademark name for their pneumatic air-oil hydraulic shock absorber, or oleo strut.



This exploded drawing from the P-47 Parts Catalogue gives an idea of how the landing gear goes together.



These are plungers that fit inside the cylinders from the last image.

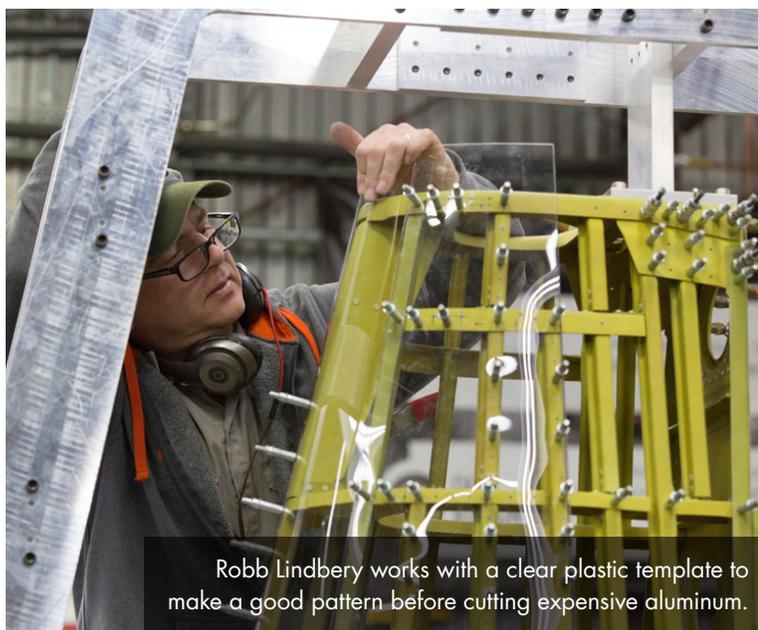


The upper gear forgings are parts that would be very difficult to recreate, so any that meet usability standards will be restored and saved.



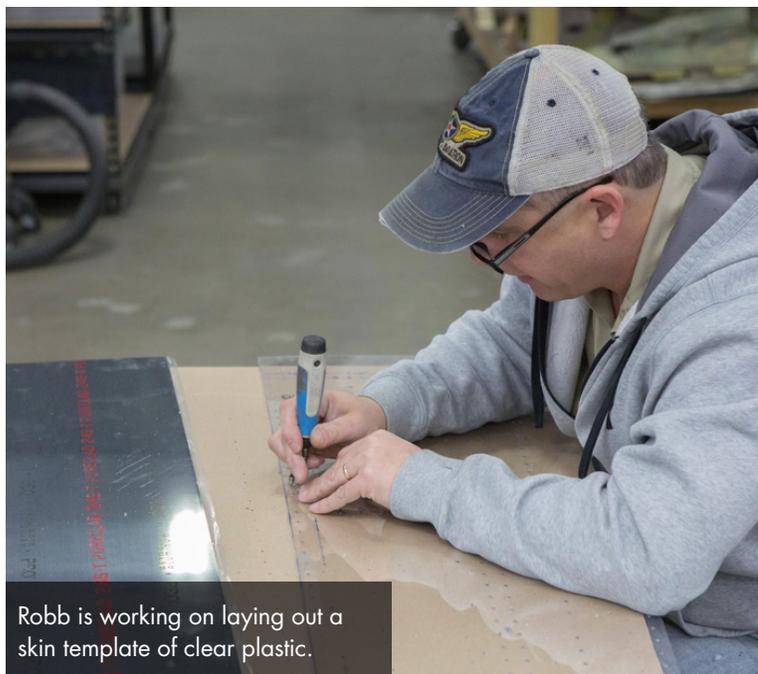
Rear Fuselage Skins

The process of making and fitting skins on a P-47 comes with the challenge of compound curves on nearly every skin piece. A template is made of clear plastic, trimmed and fitted until it lays smoothly on its intended location. Then the plastic template is used to mark a piece of Alclad or PureClad skin for cutting. Holes are drilled, deburred, and the skin is clecoed on to trial fit. Once the guys are happy with the fit, the skin section gets a coat of zinc chromate on what will be the interior surface. Only then can the skin be permanently riveted on.



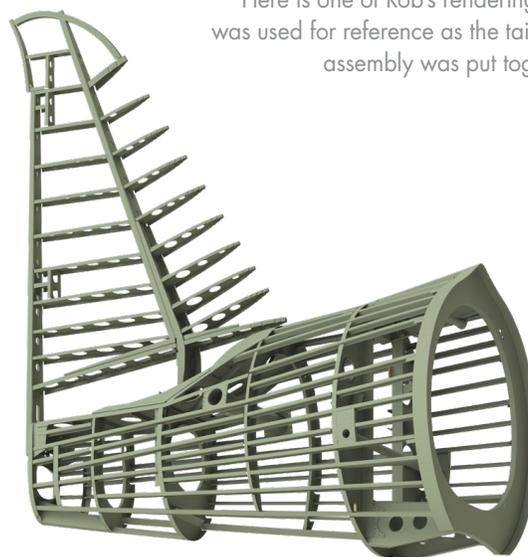
Robb Lindbery works with a clear plastic template to make a good pattern before cutting expensive aluminum.

Here is one of Rob McCune's fine CAD renderings of the framework. This image shows the fuselage ribs in the tailcone.



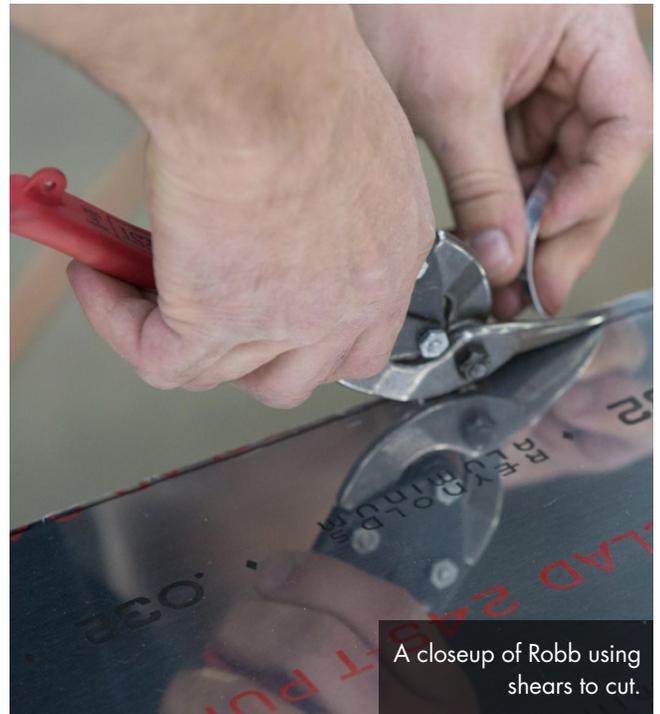
Robb is working on laying out a skin template of clear plastic.

Here is one of Rob's renderings that was used for reference as the tail cone assembly was put together.

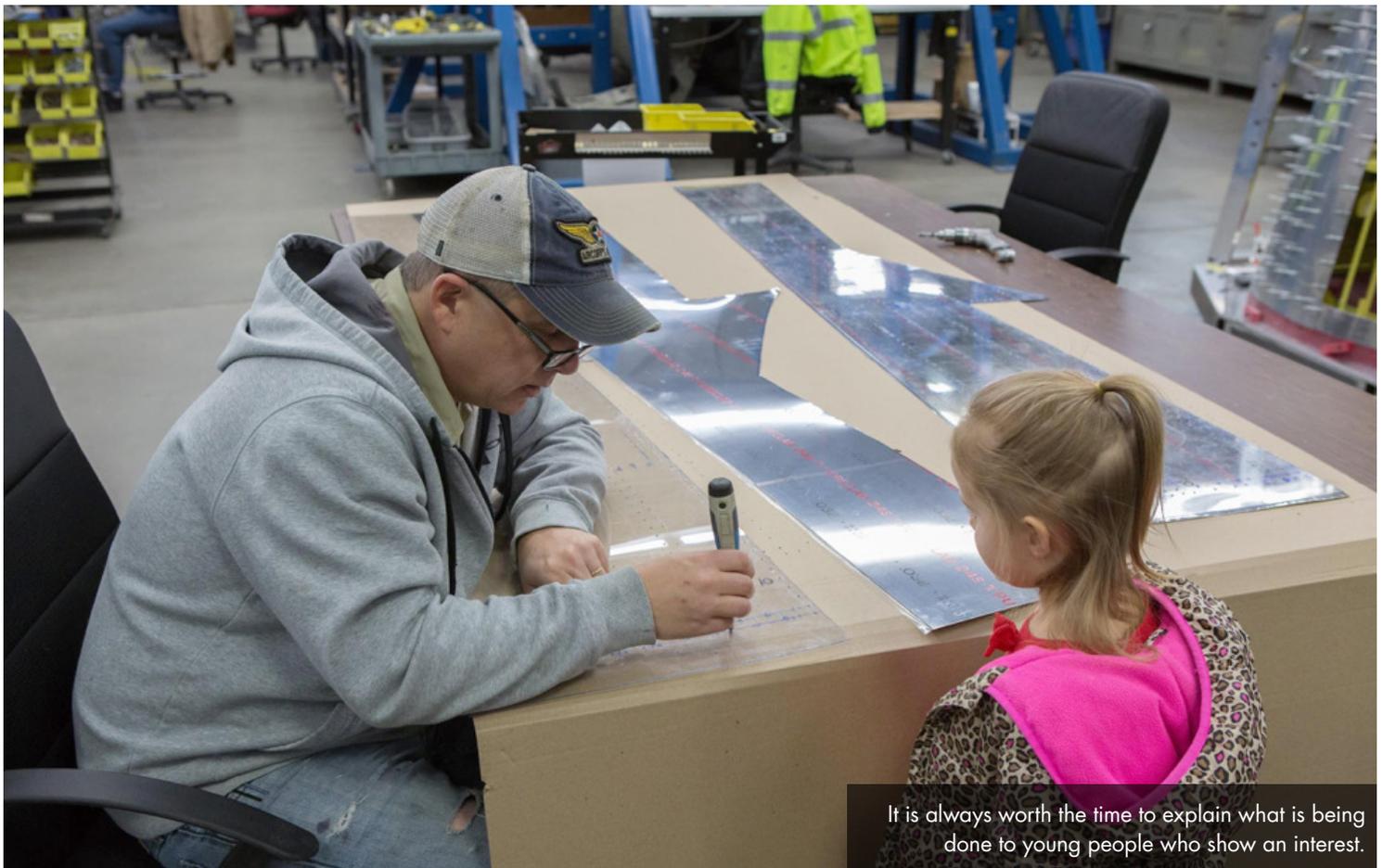




Robb cuts the skin panel from aluminum stock.



A closeup of Robb using shears to cut.



It is always worth the time to explain what is being done to young people who show an interest.



Some of the smaller skin pieces hang ready for their coat of zinc chromate on the interior side. The largest one is the inner skin for the supercharger exhaust exit duct.



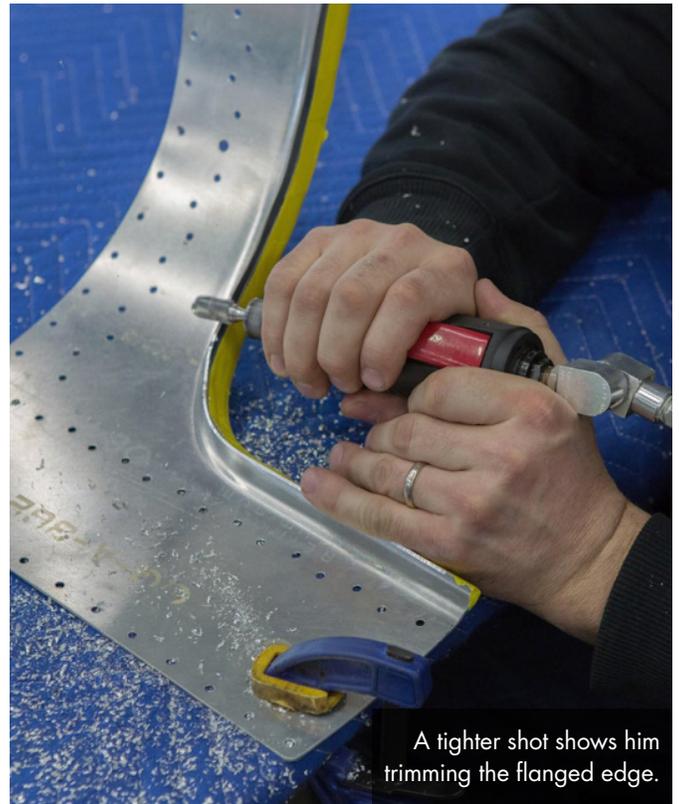
Sometimes bucking rivets requires actually getting inside the tail cone as Aaron Prince is demonstrating.



This shot shows the resulting aluminum skin after the entire template, cutting, and cleco fitting process has been completed.



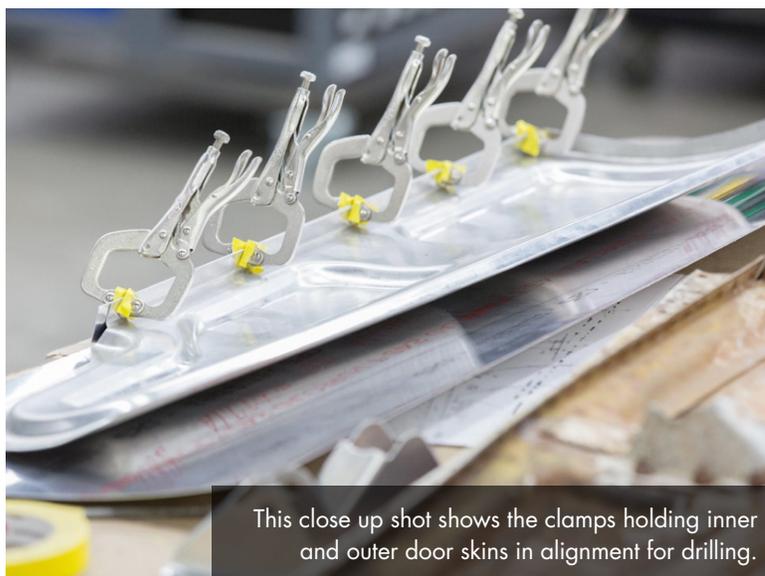
Randy works on skin for the rear of the tail wheel opening.



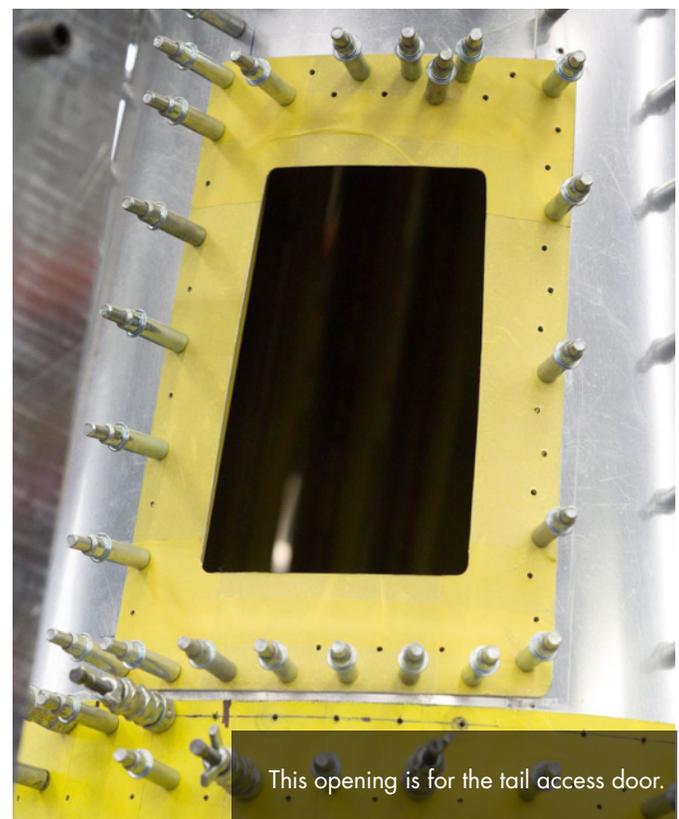
A tighter shot shows him trimming the flanged edge.



An original tail wheel gear door lies on the bench, it's useful as a pattern as Robb produces the new one.



This close up shot shows the clamps holding inner and outer door skins in alignment for drilling.



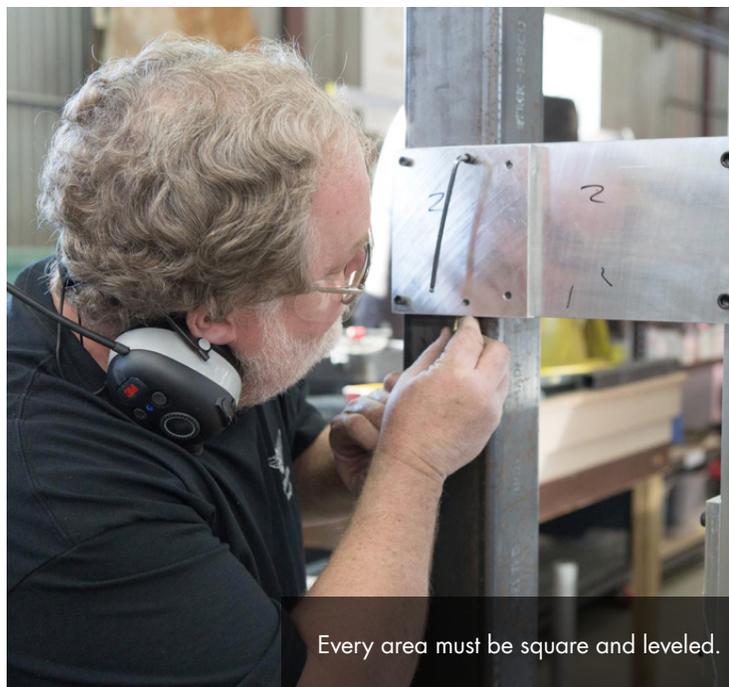
This opening is for the tail access door.



Forward Fuselage



Steve checks the fixture for the forward fuselage for squareness and plumb.



Every area must be square and leveled.



Here he is shimming the fixture for final alignment.