APRIL/MAY

Texas Flying Legends' P-47 Update

by Chuck Cravens

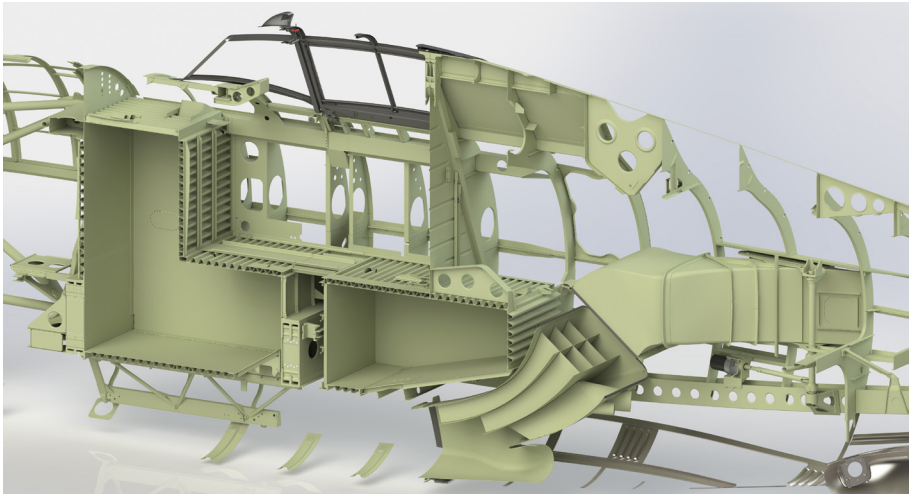
AIRCORPS AVIATION

The left side main tank bay shows in the foreground of the fuselage structure with the auxiliary tank bay behind.

Update

This month work continued on the tank bay and pilot floor areas we reported on in last month's update. They are complicated and time-consuming parts of the P-47 fuselage, in large part because of the multiple corrugated parts that must be formed.

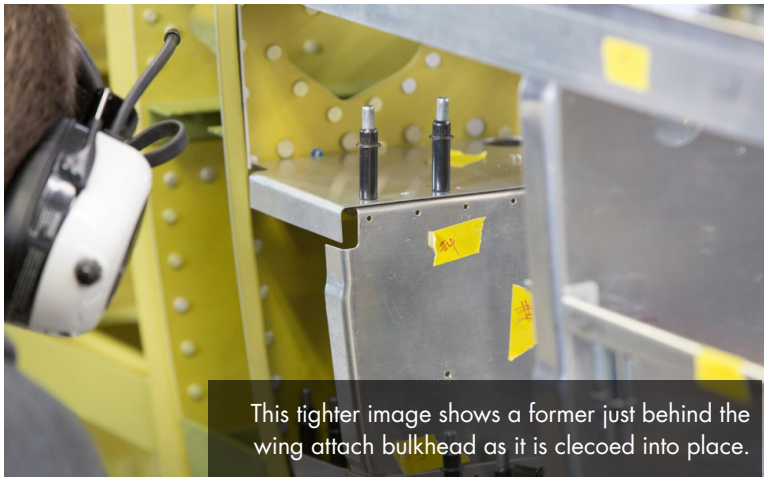
The work involves fitting, trimming, and trial assembly. Once the structure has been initially put together with clecos and everything is correct, much of it has to be disassembled and sent to paint for a zinc chromate coating.



One of Rob McCune's fine renderings gives us an idea of the spatial relationship between the tank bays and cockpit areas. The larger forward space is the main tank bay, the aft, smaller one, is the auxiliary tank bay.

Fuselage Structure

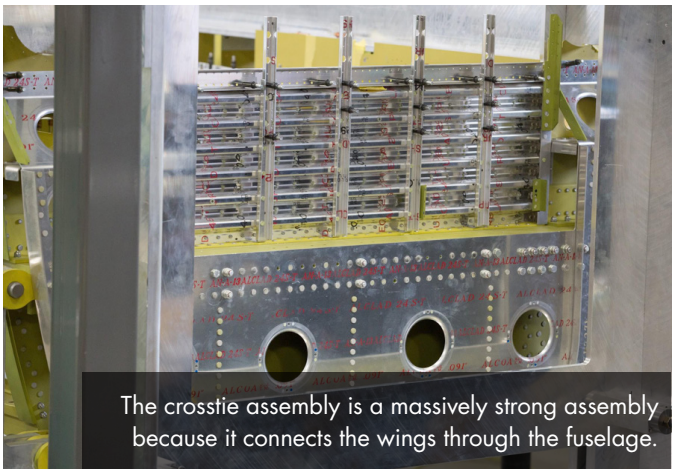
Aaron trims a small part that will be added to the basic fuselage structure.



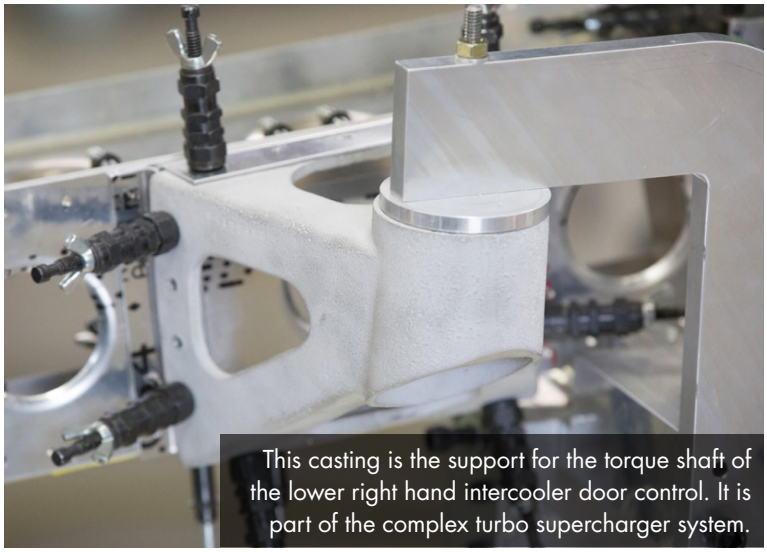
This tighter image shows a former just behind the wing attach bulkhead as it is clecoed into place.

Here we have the fuel filler housing for the auxiliary tank.

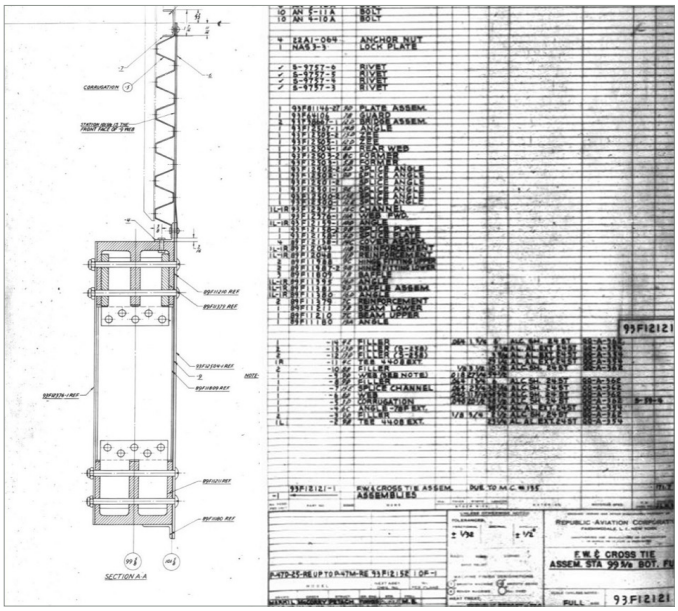
Aaron fits a relief valve bracket to the lower fuselage frame.



The crosstie assembly is a massively strong assembly because it connects the wings through the fuselage.

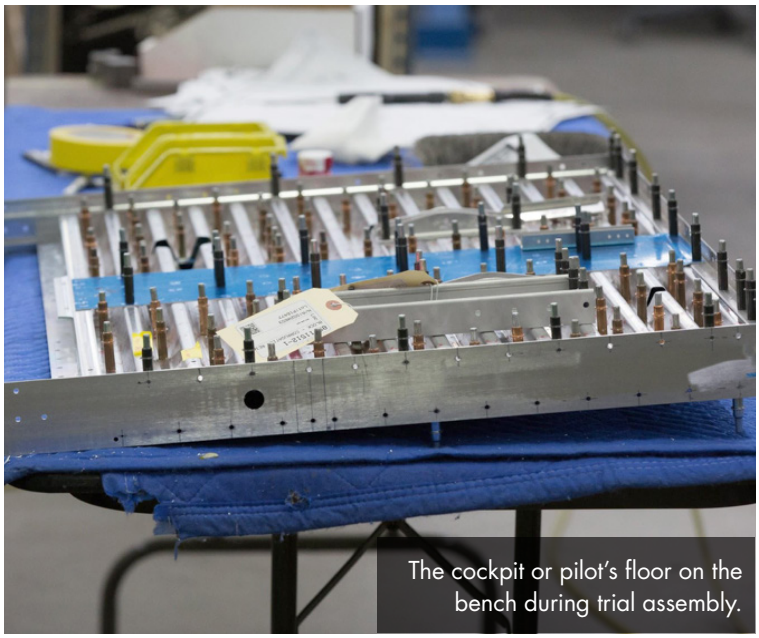


This casting is the support for the torque shaft of the lower right hand intercooler door control. It is part of the complex turbo supercharger system.

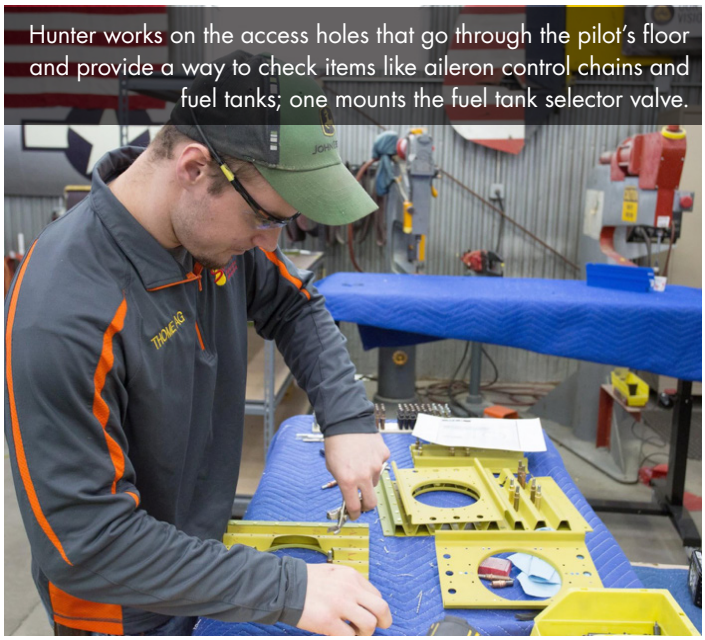


This cropped engineering drawing shows the crosstie assembly in cross-section.

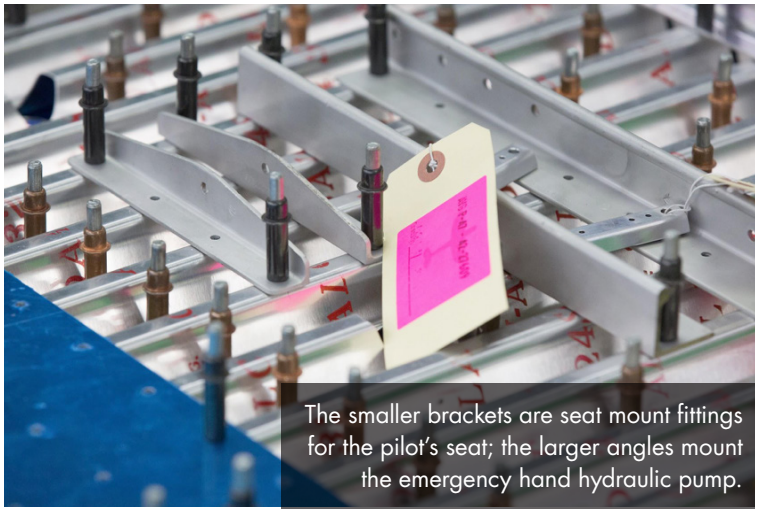
Pilot's Floor



The cockpit or pilot's floor on the bench during trial assembly.

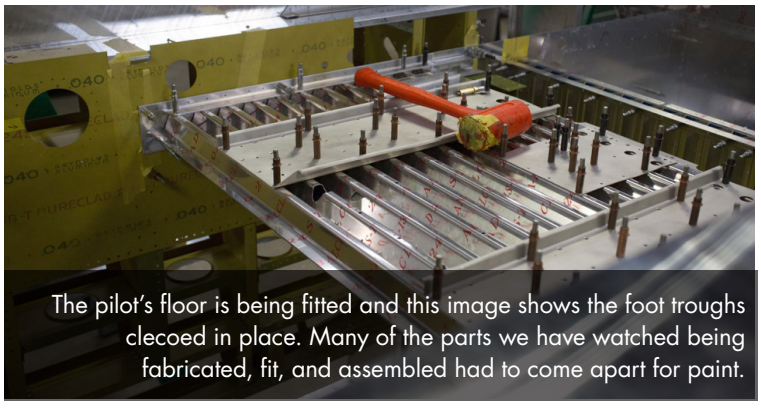


Hunter works on the access holes that go through the pilot's floor and provide a way to check items like aileron control chains and fuel tanks; one mounts the fuel tank selector valve.



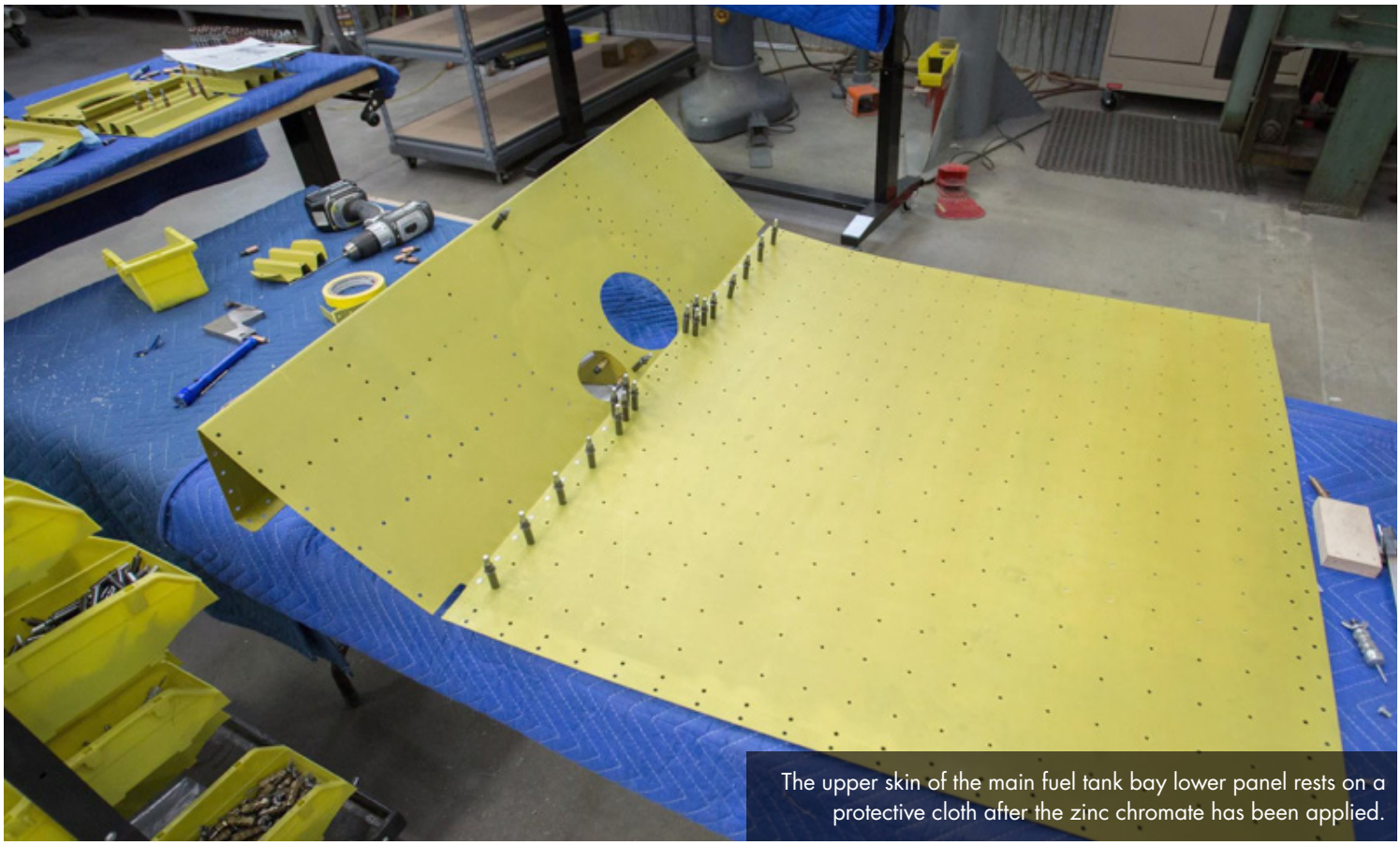
The smaller brackets are seat mount fittings for the pilot's seat; the larger angles mount the emergency hand hydraulic pump.

Even these small panels have corrugations to stiffen them.



The pilot's floor is being fitted and this image shows the foot troughs clecoed in place. Many of the parts we have watched being fabricated, fit, and assembled had to come apart for paint.

Main Fuel Tank Bay

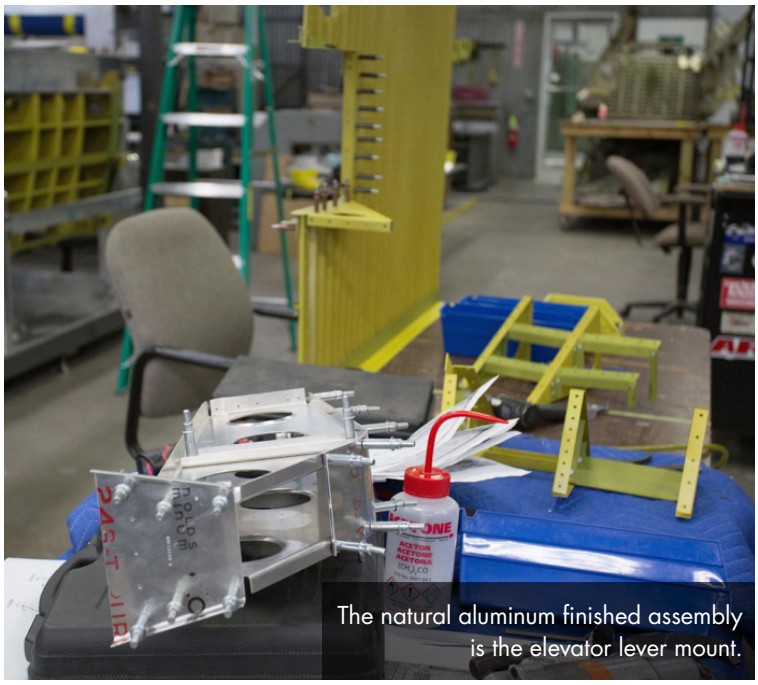


The upper skin of the main fuel tank bay lower panel rests on a protective cloth after the zinc chromate has been applied.

This piece will have round head rivets and will be covered with a liner to protect the rubber self-sealing tank in a couple ways. It helps with chafing wear, but it also has an interesting name that leads to its other function: it is called anti-flowering covering. The flowering it refers to is the petal-shaped metal fingers surrounding shell hole damage. Those metal shards are sharp, of course, and would damage or even puncture the tank. The liner resists the "petals" coming in contact with the tank itself.

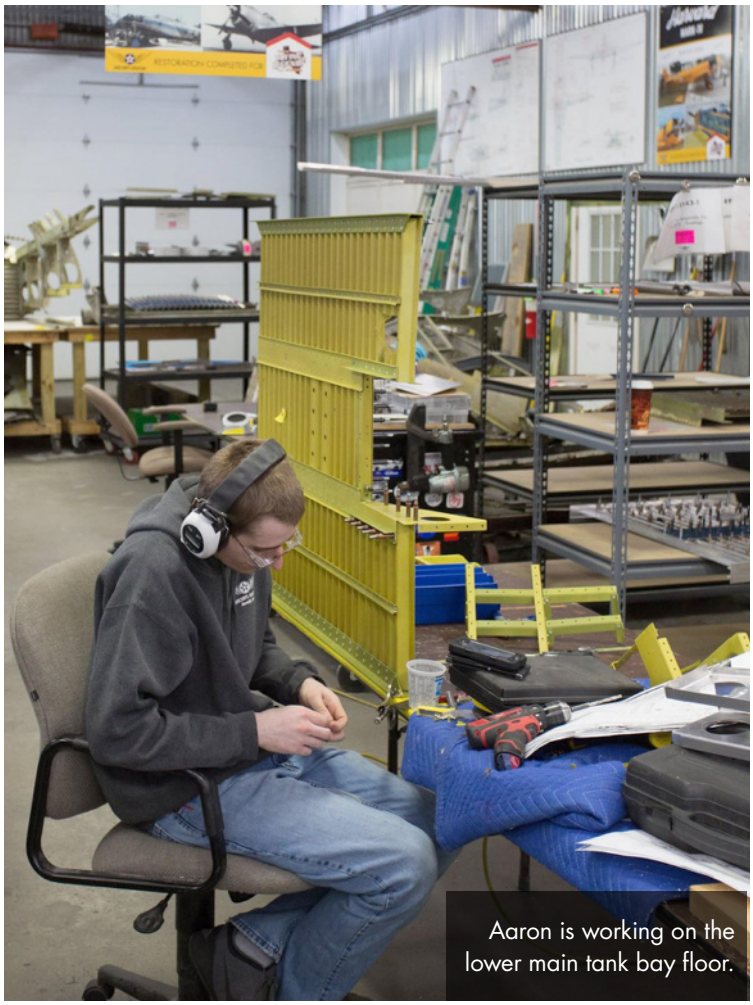
The anti-flowering tank bay liner was made by Firestone Tire and Rubber and is described in engineering drawings as having been constructed of "2 Ply Plasite". Plasite was an early low-pressure laminate form of fiberglass.

This is the bottom side of the main fuel tank bay lower panel.



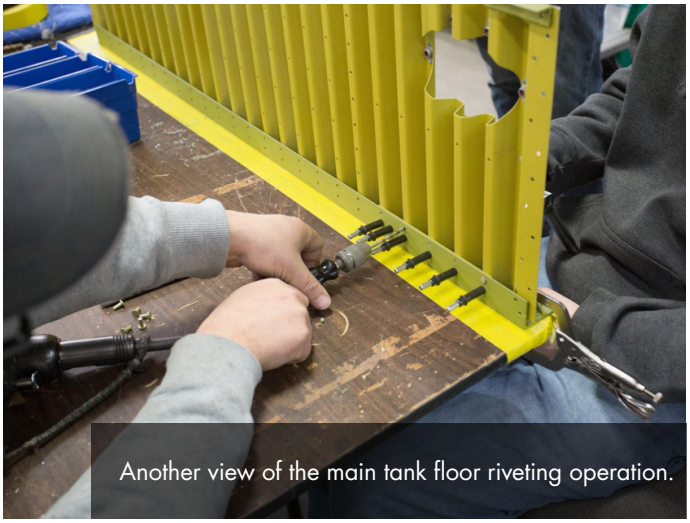
The natural aluminum finished assembly is the elevator lever mount.

Aaron and Robb shooting rivets on the main tank floor assembly.



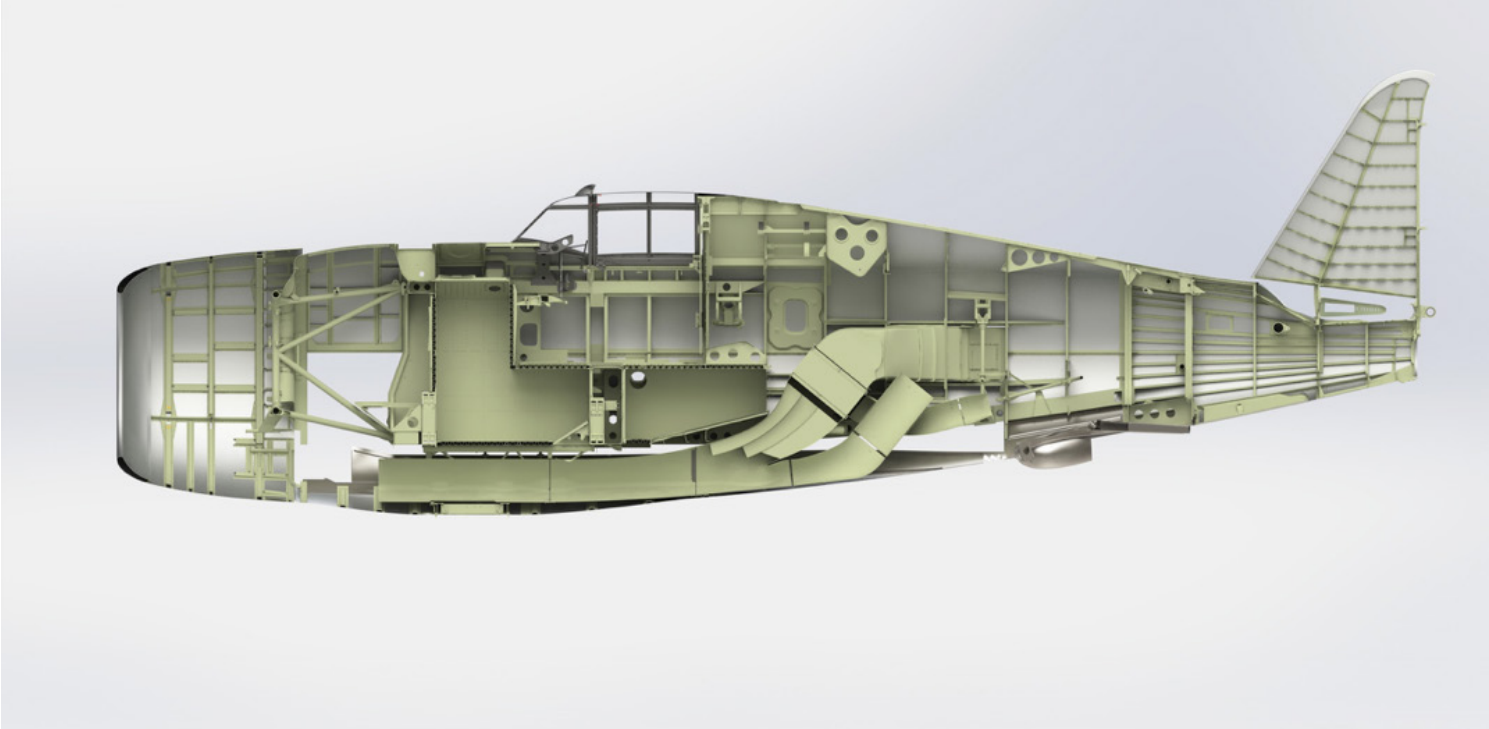
Aaron is working on the lower main tank bay floor.

Here is another angle as they shoot rivets.



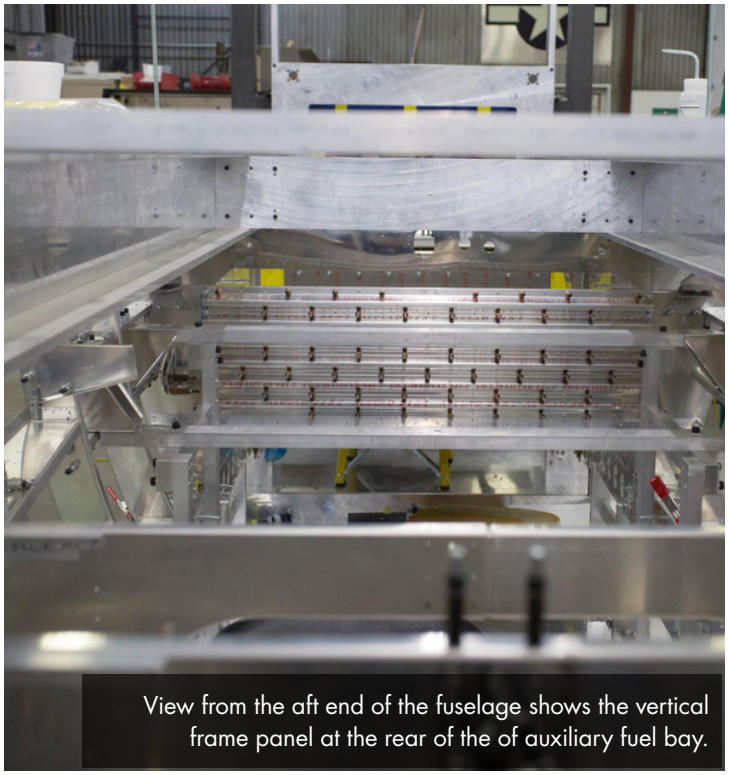
Another view of the main tank floor riveting operation.

Auxiliary Tank Bay

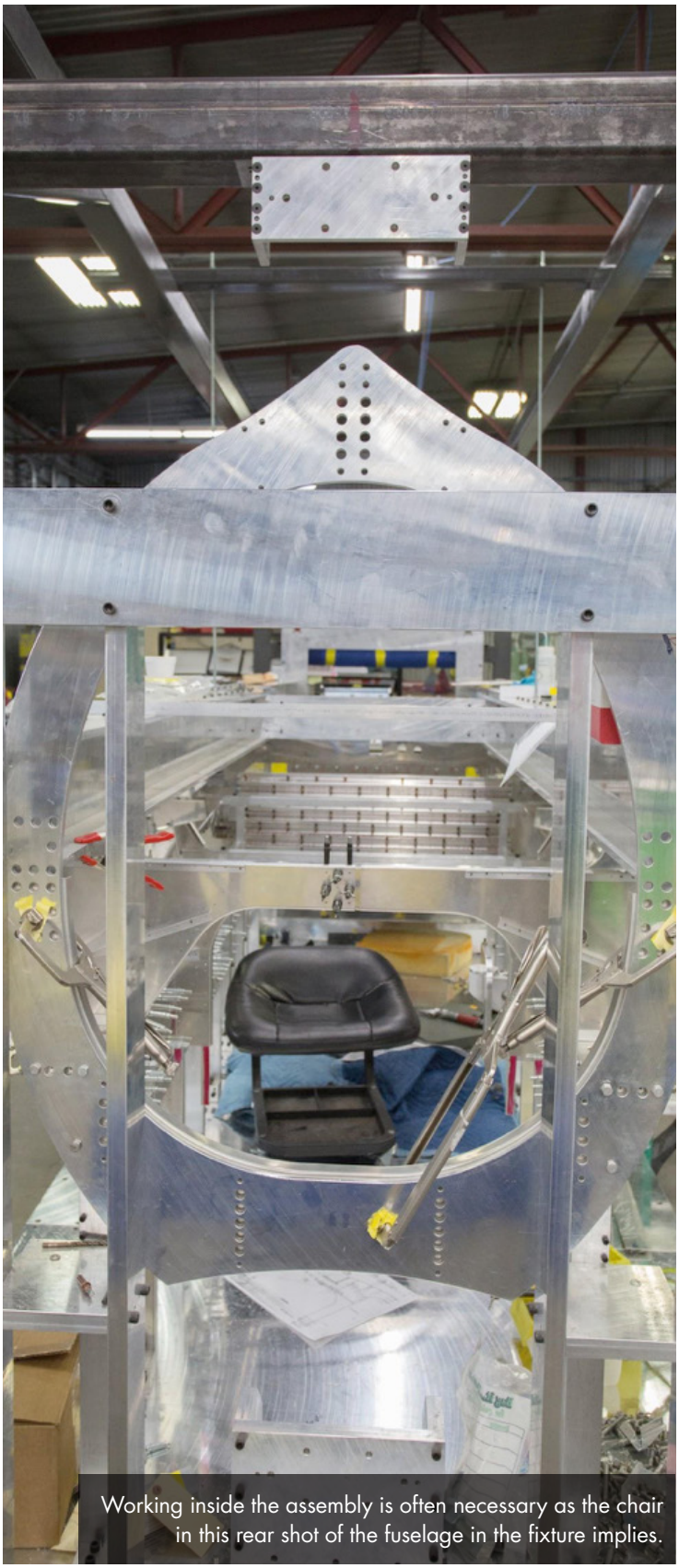


Another of Rob McCune's CAD renderings shows the auxiliary tank bay directly under the rear of the cockpit floor.

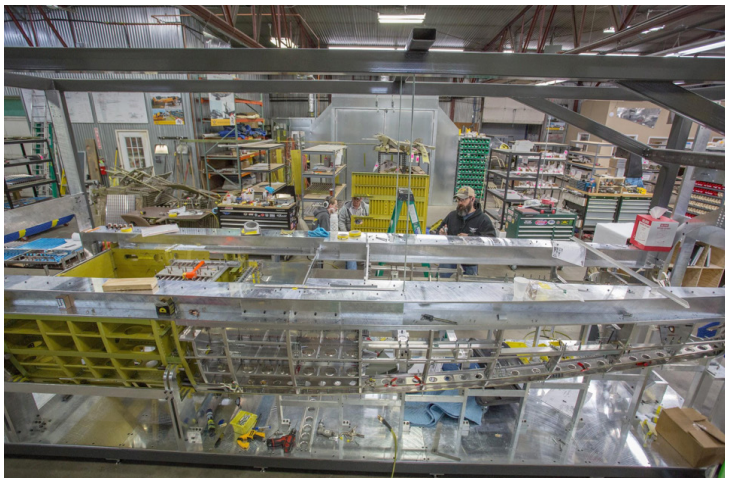
The lower auxiliary fuel tank bay panel was clecoed together during the fitting process.



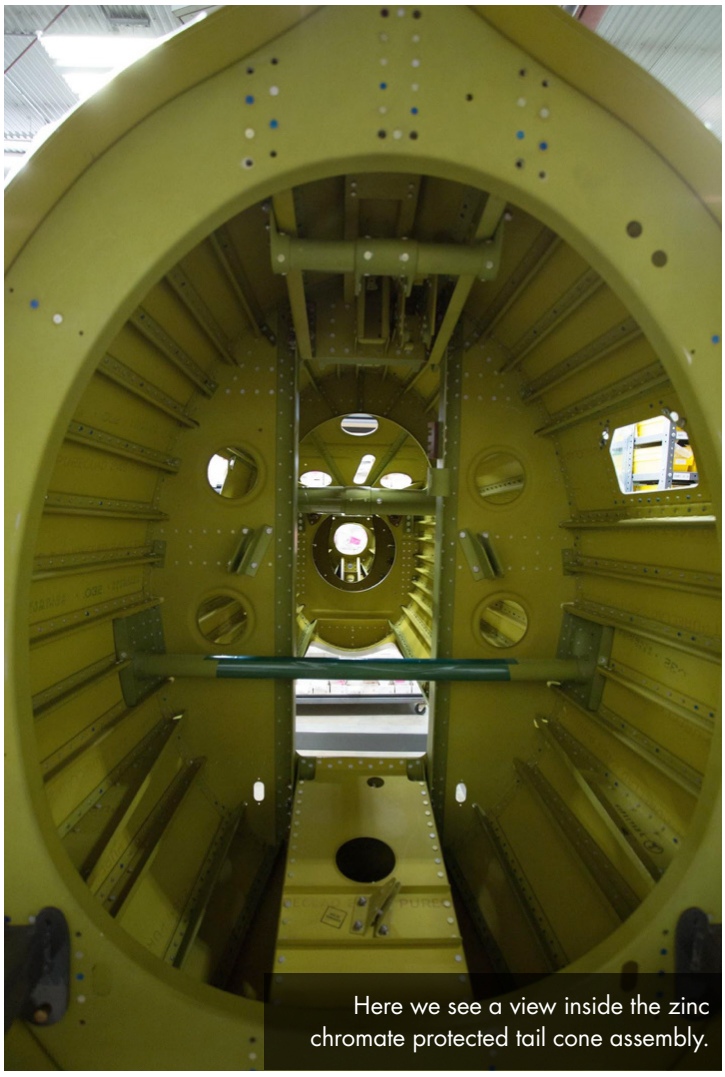
View from the aft end of the fuselage shows the vertical frame panel at the rear of the of auxiliary fuel bay.



Working inside the assembly is often necessary as the chair in this rear shot of the fuselage in the fixture implies.



In this overhead view of the left side of the fuselage framework, progress on final assembly of the lower fuselage is nearing the point where skin sections can be cut and fitted.



Here we see a view inside the zinc chromate protected tail cone assembly.

As the fuselage work proceeds, we are also working on restoring the landing gear.

Here is a closer view of some of the main gear forgings that are being inspected.

Aaron Prince

This month we profile Aaron Prince, who appears in the updates frequently. Aaron hails from Geigertown, PA, which is about an hour west of Philadelphia.

Aaron earned his A+P license at Pennsylvania College of Technology and comes to us from Mark Dinest's MD Aero, where he also was restoring warbirds. There he worked on Ron Fagen's award winning SNJ.

Aaron works on all facets of our restorations but he specializes in wiring and electronics installation.