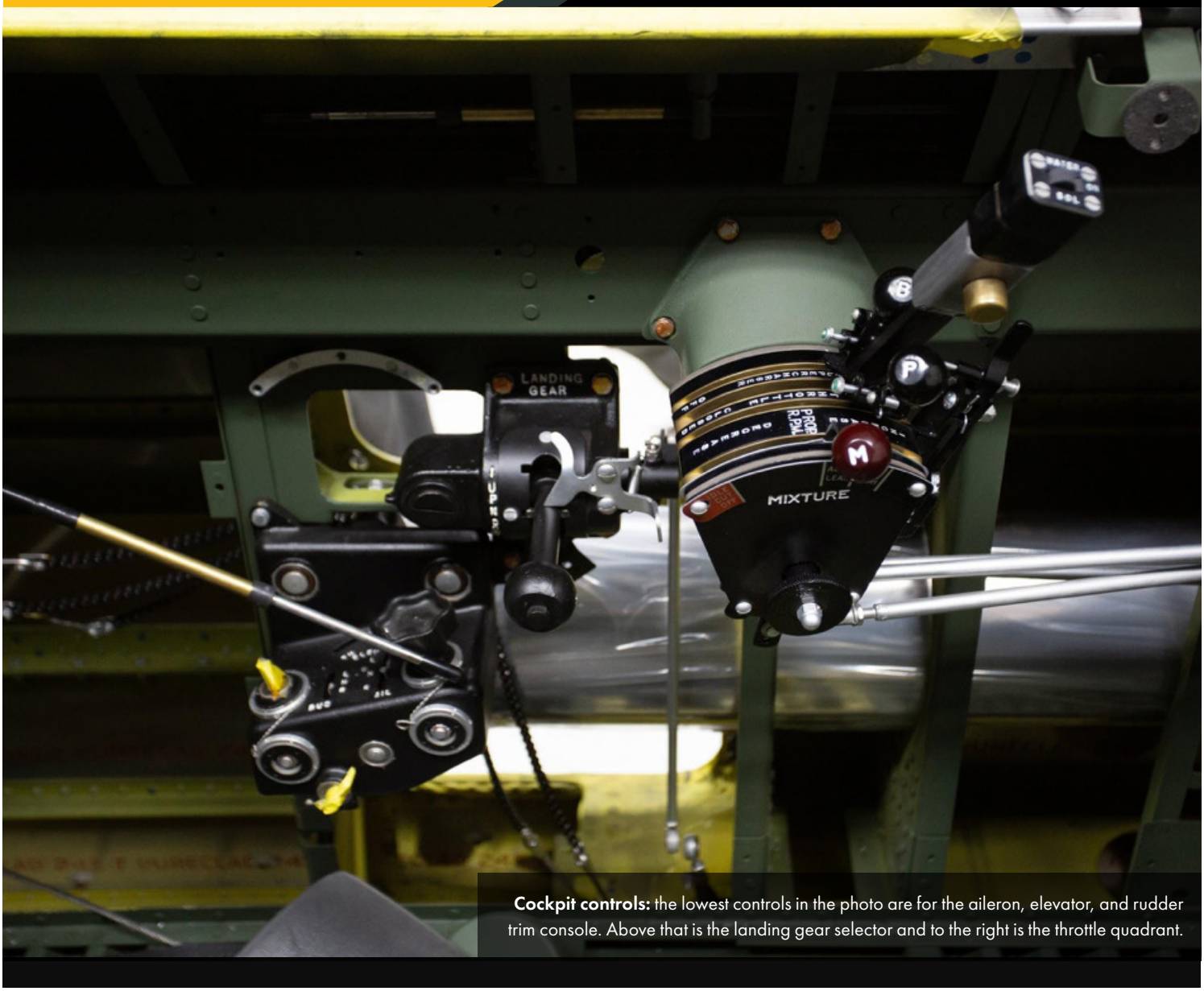
DEC/JAN

Dakota Territory Air Museum's P-47 Update

by Chuck Cravens

AIRCORPS AVIATION



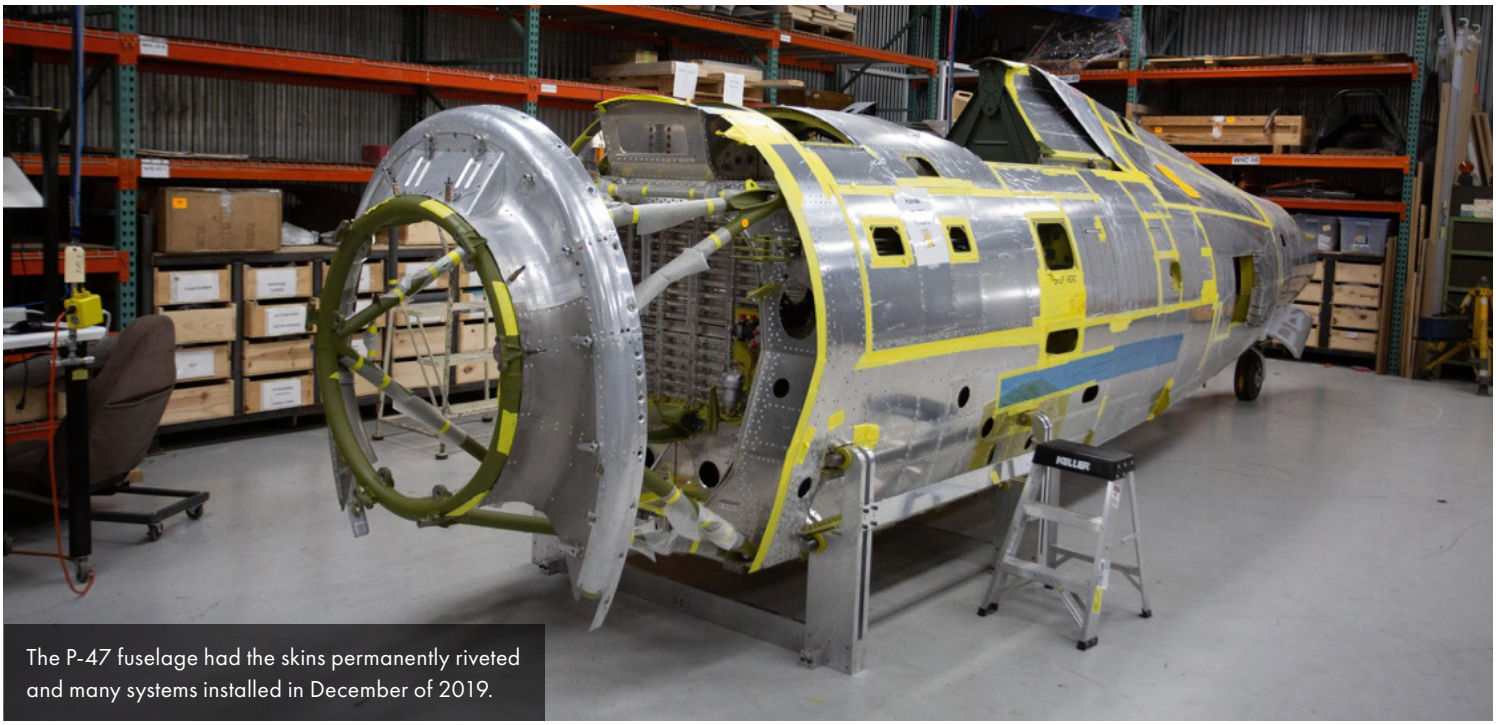
Cockpit controls: the lowest controls in the photo are for the aileron, elevator, and rudder trim console. Above that is the landing gear selector and to the right is the throttle quadrant.

DAKOTA TERRITORY AIR MUSEUM

Update

As 2020 begins, the P-47 restoration work continues with systems installation and parts fabrication. The main concentration continues to be the wing assemblies. At this time last year, the fuselage skins were clecoed on for fitting and the wing fixtures were standing empty.

The skins were clecoed for fitting on the P-47 fuselage in January of 2019.



The P-47 fuselage had the skins permanently riveted and many systems installed in December of 2019.

Much of the wing structure has been assembled for fitting as we start the new year.

Parts

These are pressed wing gussets that fit between spar 1 and various ribs.

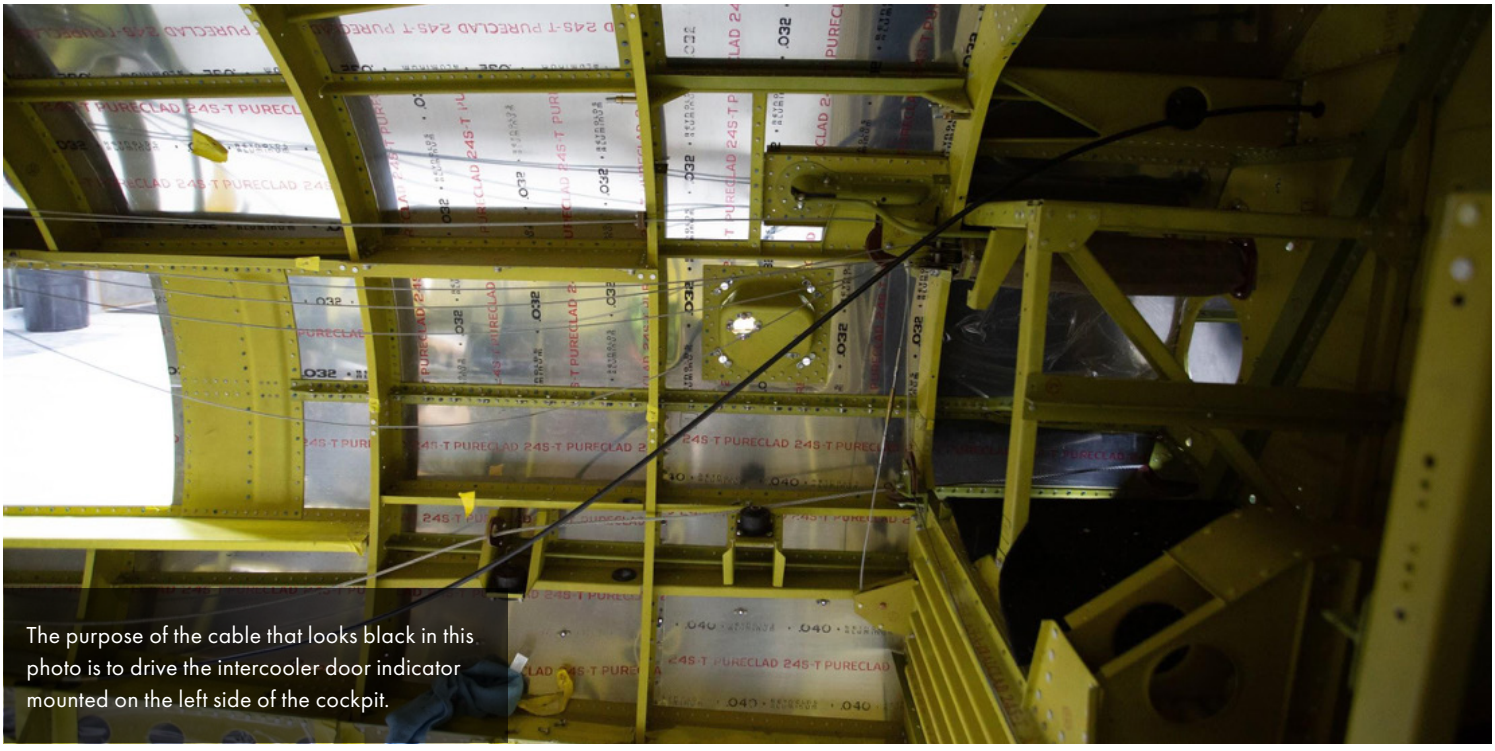
These landing gear downlock operating mechanism parts have been machined in the fabrication shop.

Steve is drilling the landing gear downlock spring retainer.

Systems

The P-47 is a complex fighter for its time. Systems for controlling the trim, turbosupercharger, intercooler, normal flight controls, and engine are just a few of the challenging parts needed for this restoration.

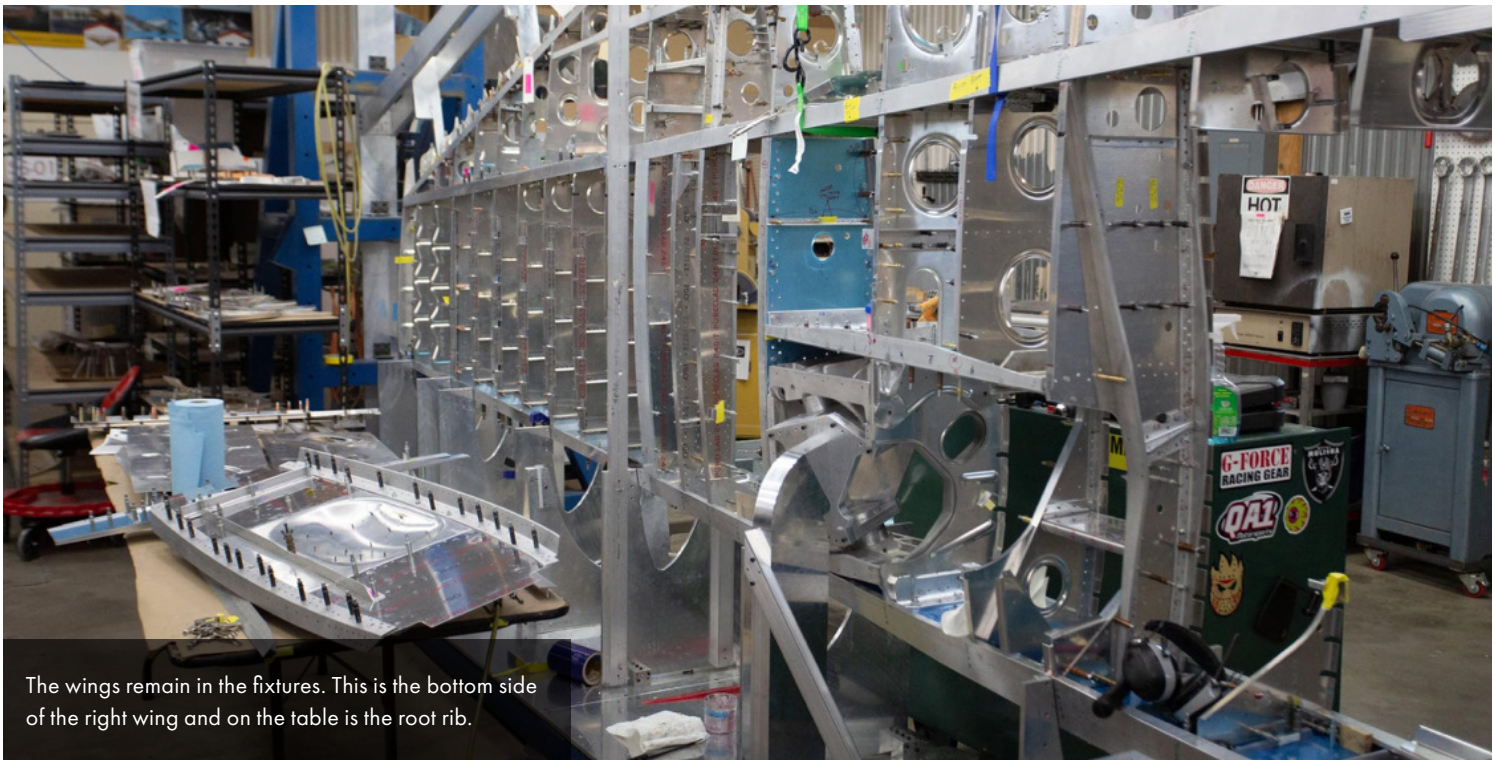
The rods on the left center of the image are part of the landing gear uplock linkage, the chains connected to cables make up the aileron trim linkage.



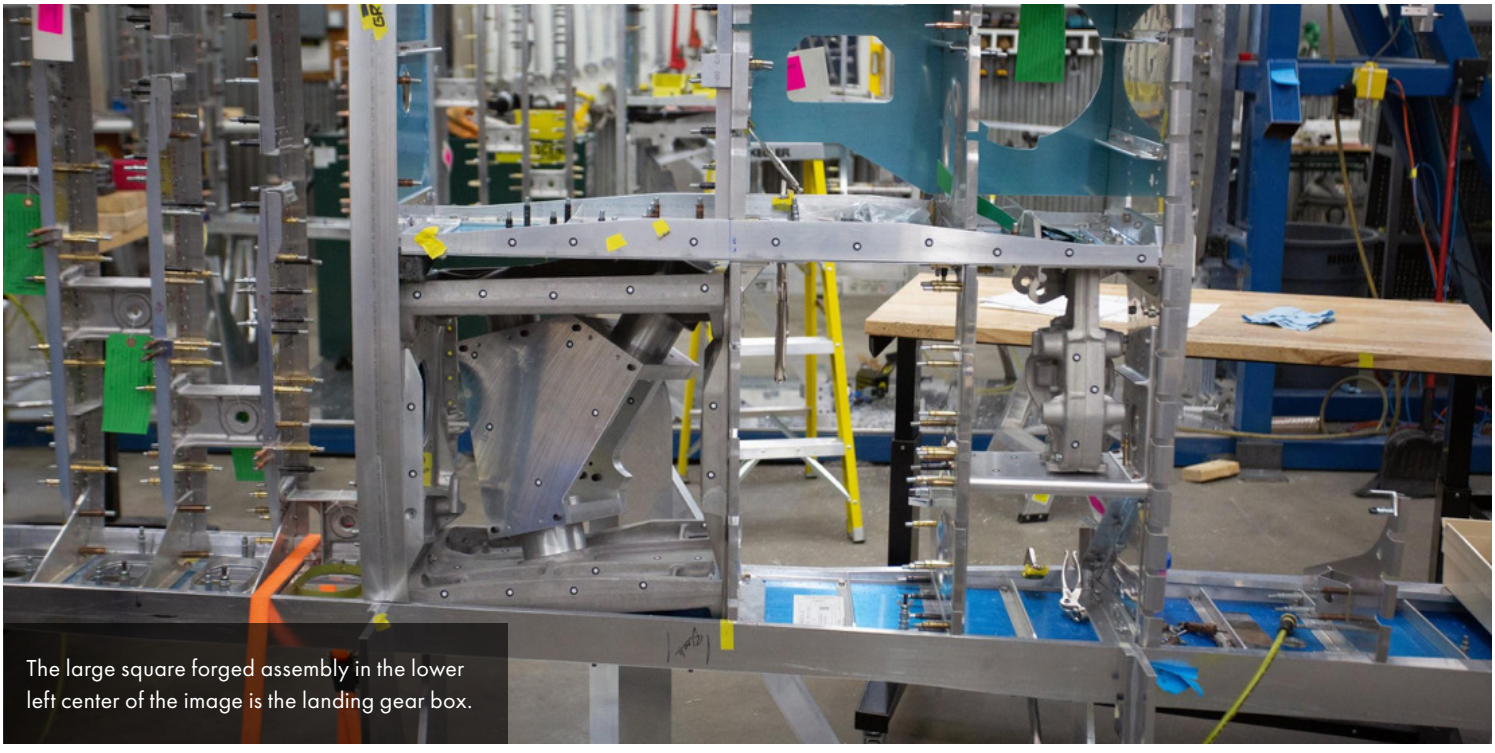
The purpose of the cable that looks black in this photo is to drive the intercooler door indicator mounted on the left side of the cockpit.

Wing Structure

More and more parts of the wing structure are fitted. The gun bays, landing gear actuators, and ammo bays are being assembled for proper fit this month.

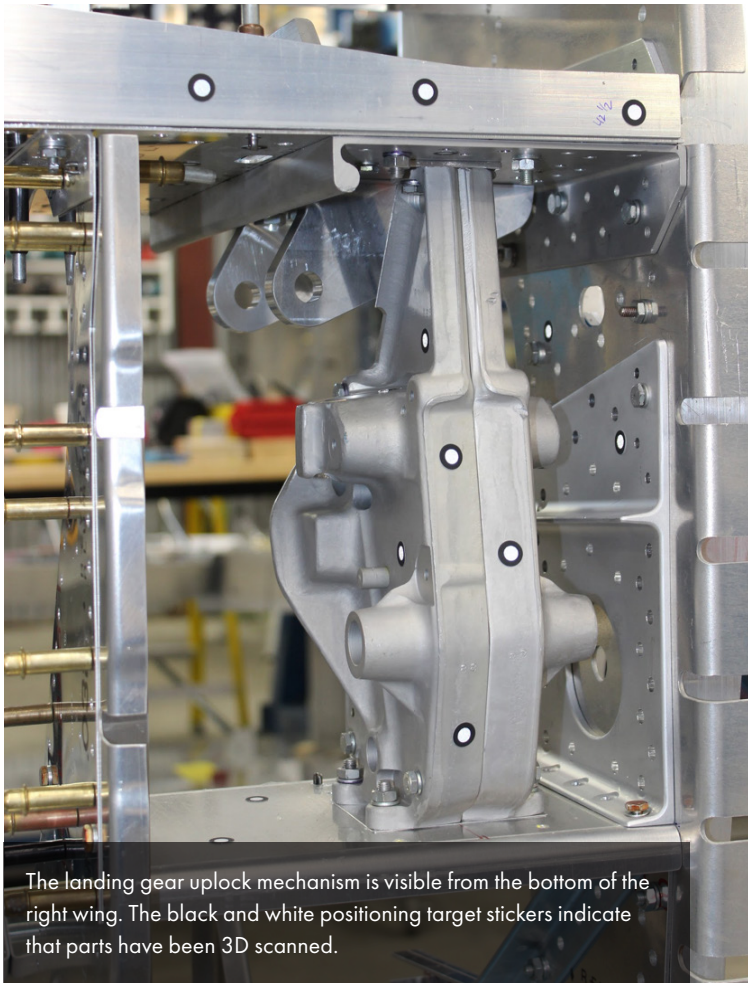


The wings remain in the fixtures. This is the bottom side of the right wing and on the table is the root rib.



The large square forged assembly in the lower left center of the image is the landing gear box.

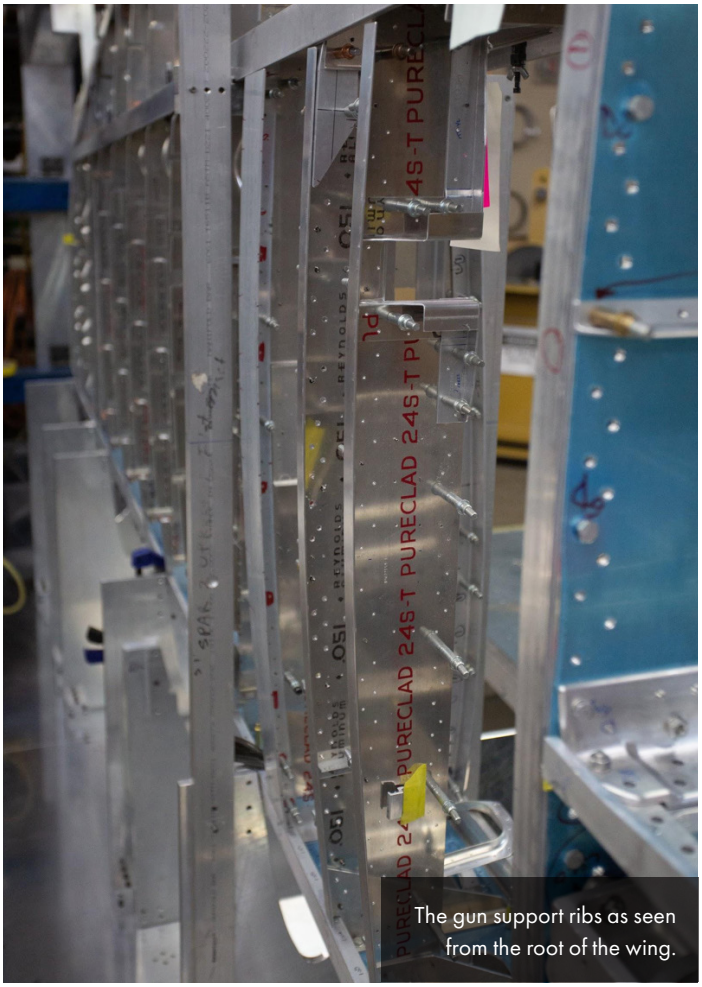
Here is a detailed shot of the landing gear box and the attachment to the fixture.



The landing gear uplock mechanism is visible from the bottom of the right wing. The black and white positioning target stickers indicate that parts have been 3D scanned.

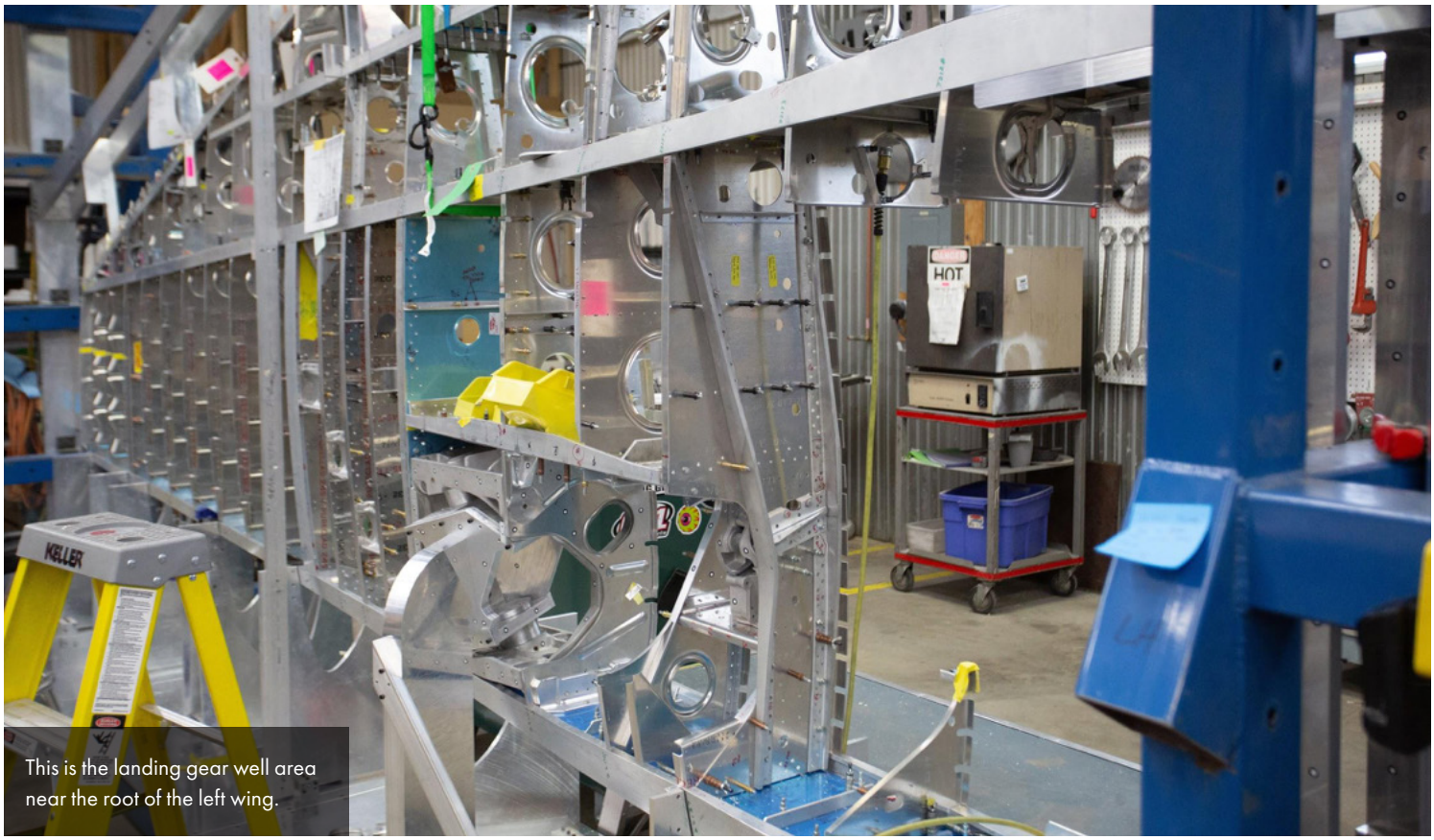
The uplock mechanism is viewed from the top side of the wing here.

The bottom of the gun support ribs have the four forward gun mount forgings attached.

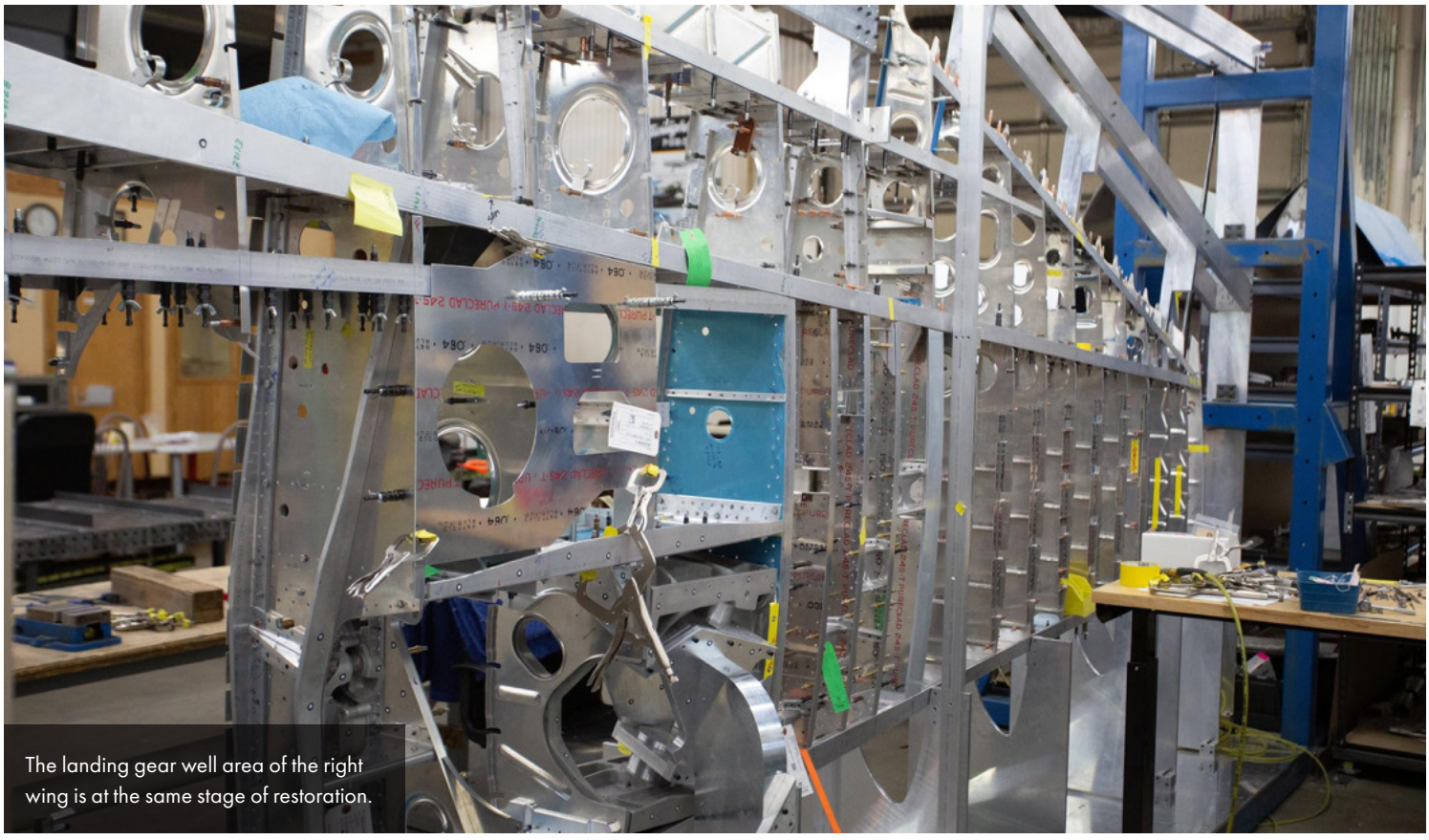


The gun support ribs as seen from the root of the wing.

A closer view of the gun mount forgings shows how solidly constructed they are to stand up to the recoil of the .50 caliber M2 machine guns.



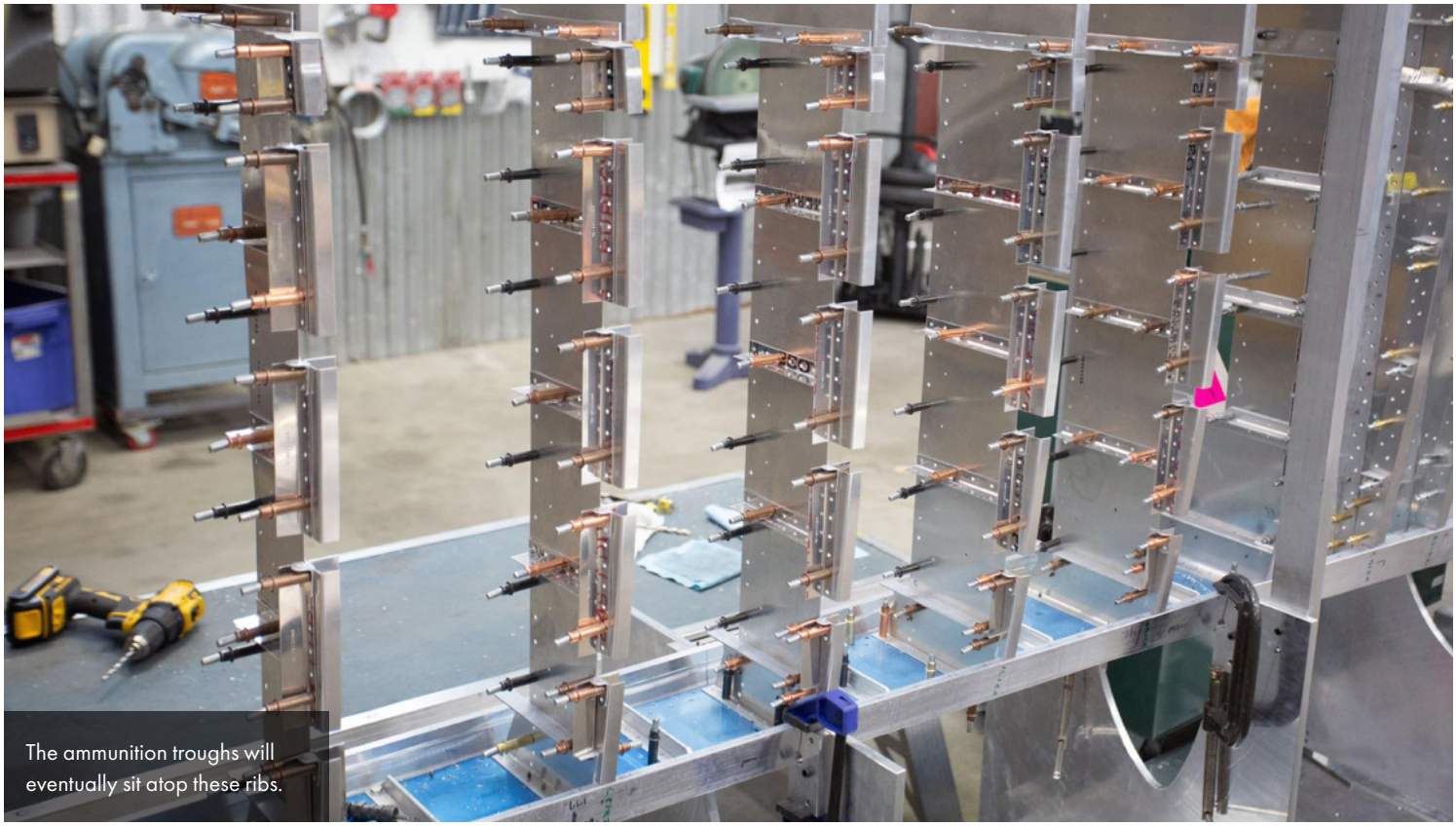
This is the landing gear well area near the root of the left wing.



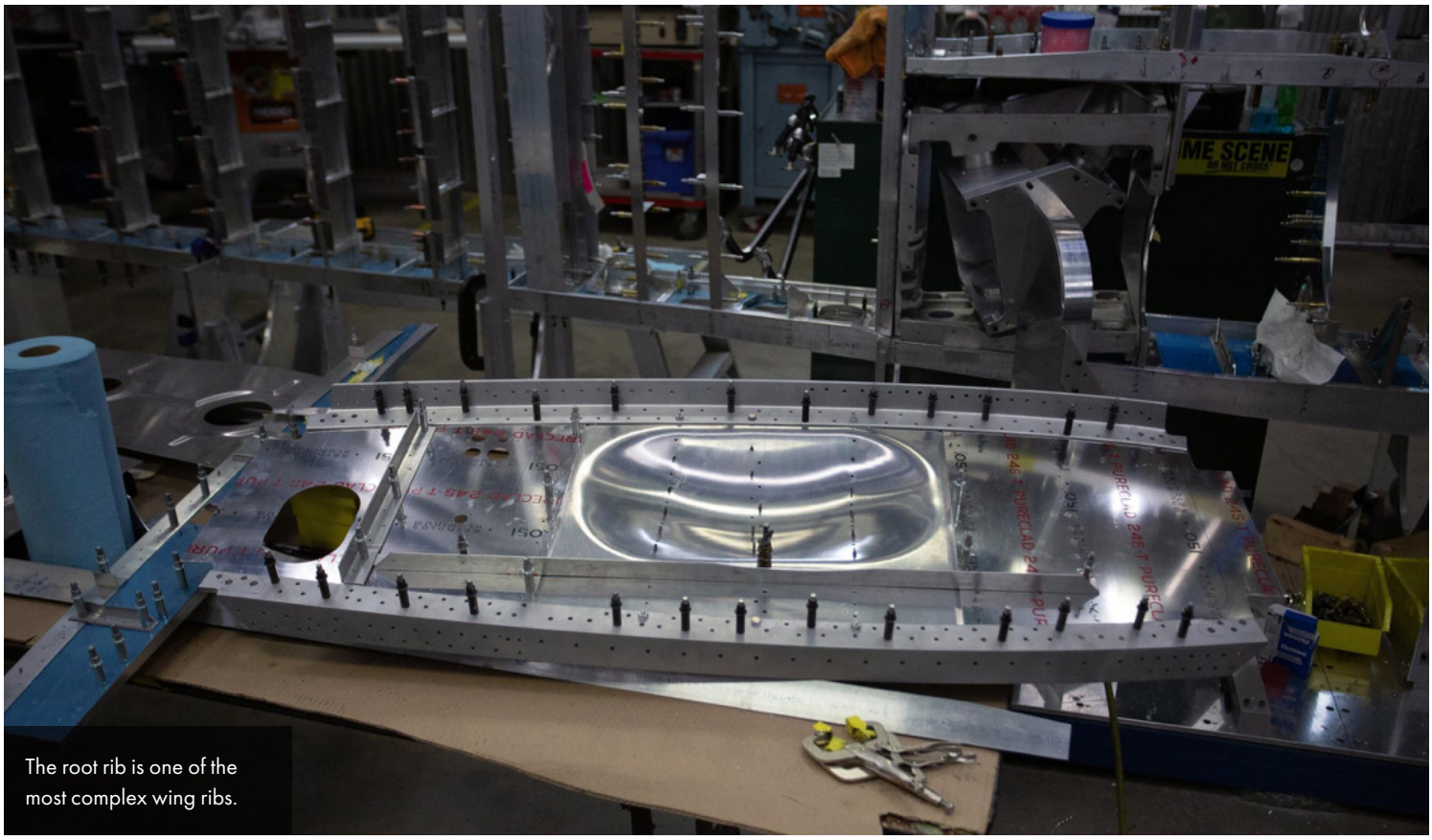
The landing gear well area of the right wing is at the same stage of restoration.

The root rib is closest to the blue fixture on the right of the photo.

Both wings in their fixtures are visible in this shot.



The ammunition troughs will eventually sit atop these ribs.



The root rib is one of the most complex wing ribs.

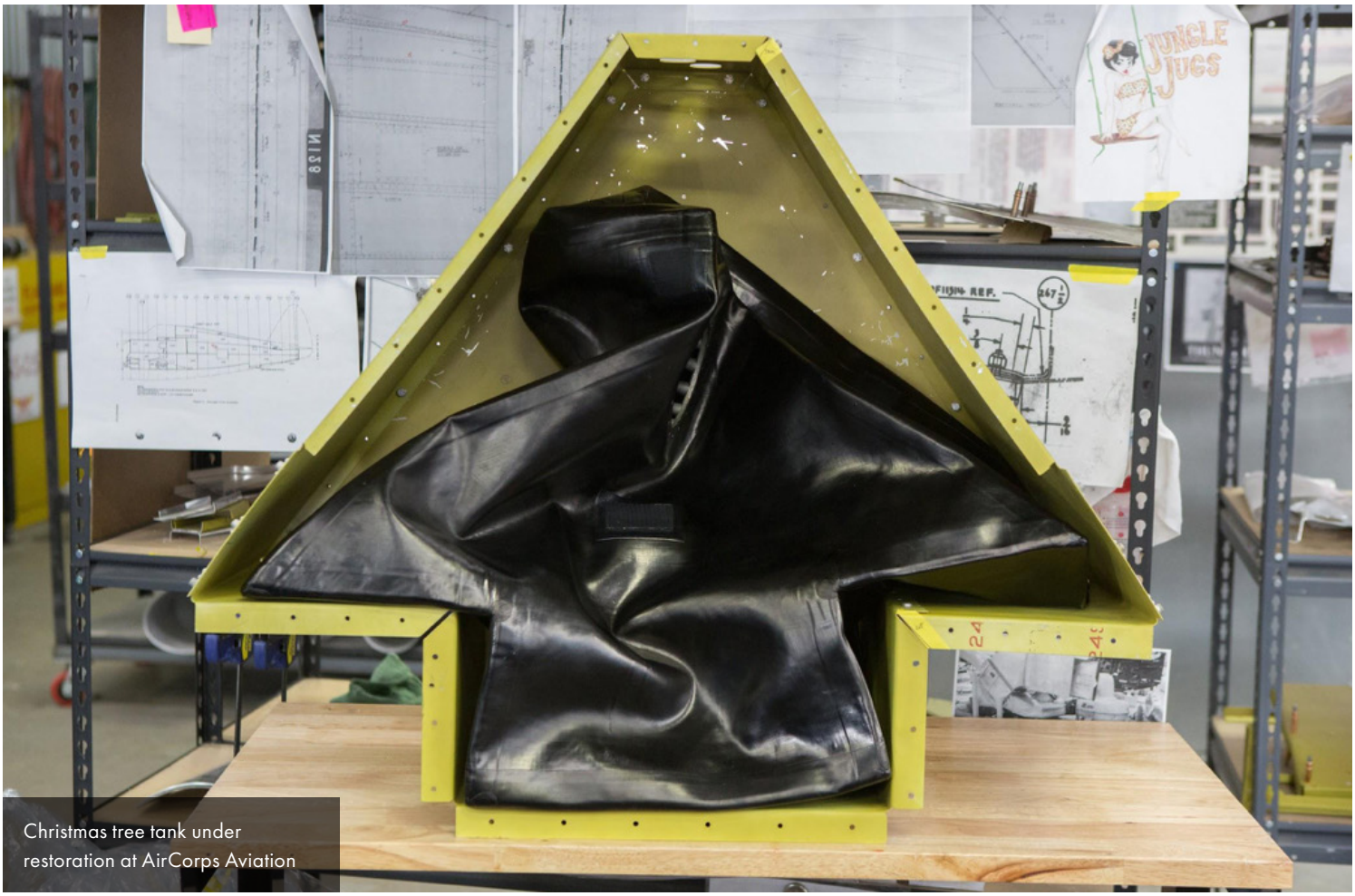
Now that the root rib is in place, it is easy to see that the function of the bulged area is to provide tire clearance when the gear is retracted.

The Quest for Range

The early P-47D models had a published range of 640 miles without external fuel.

When the 5th Air Force obtained P-47s, General Kenney went to work on increasing the range of the new fighter. Fifth Air Force engineers worked on a design for a large drop tank. The eventual product was a large tank, flat on the top and bottom, that held an additional 200 gallons.

The new 200 gallon tank was built in Brisbane in August 1943 and was fitted with electric booster pumps. Supplementing the 310 gallon internal capacity, it added about 400 miles to the range figure, enabling the P-47s to reach Japanese targets that the P-40s couldn't.



Christmas tree tank under restoration at AirCorps Aviation

Another interesting attempt at extending the combat radius of the Thunderbolt was to install a 42 gallon tank behind the pilot in the turtledeck. The razorback configuration of that area of the fuselage dictated a tank that tapered toward the top resembling a Christmas tree.

Dakota Territory Air Museum's P-47 still had the Christmas tree tank installed.

The use of these tanks was short lived because it was found that they presented a fire danger.

It was rumored that General Kenney tested this hazard by firing a tracer round into the Christmas tree tank of a scrapped P-47, which resulted in an explosion.

The fire hazard resulted in orders to remove these tanks, issued in July of 1944. 42-27609 arrived at Townsville, Australia on May 8, 1944. Since this P-47D-23 still retains the tank, it had to have been readied for combat before July of 1944.

In 1977, 42-27609 was photographed in the yard of a teacherage in Popondetta, Papua/New Guinea. The Christmas tree tank is visible with a large hole through it. *Robert Stitt photograph*