



Oct/Nov 2022

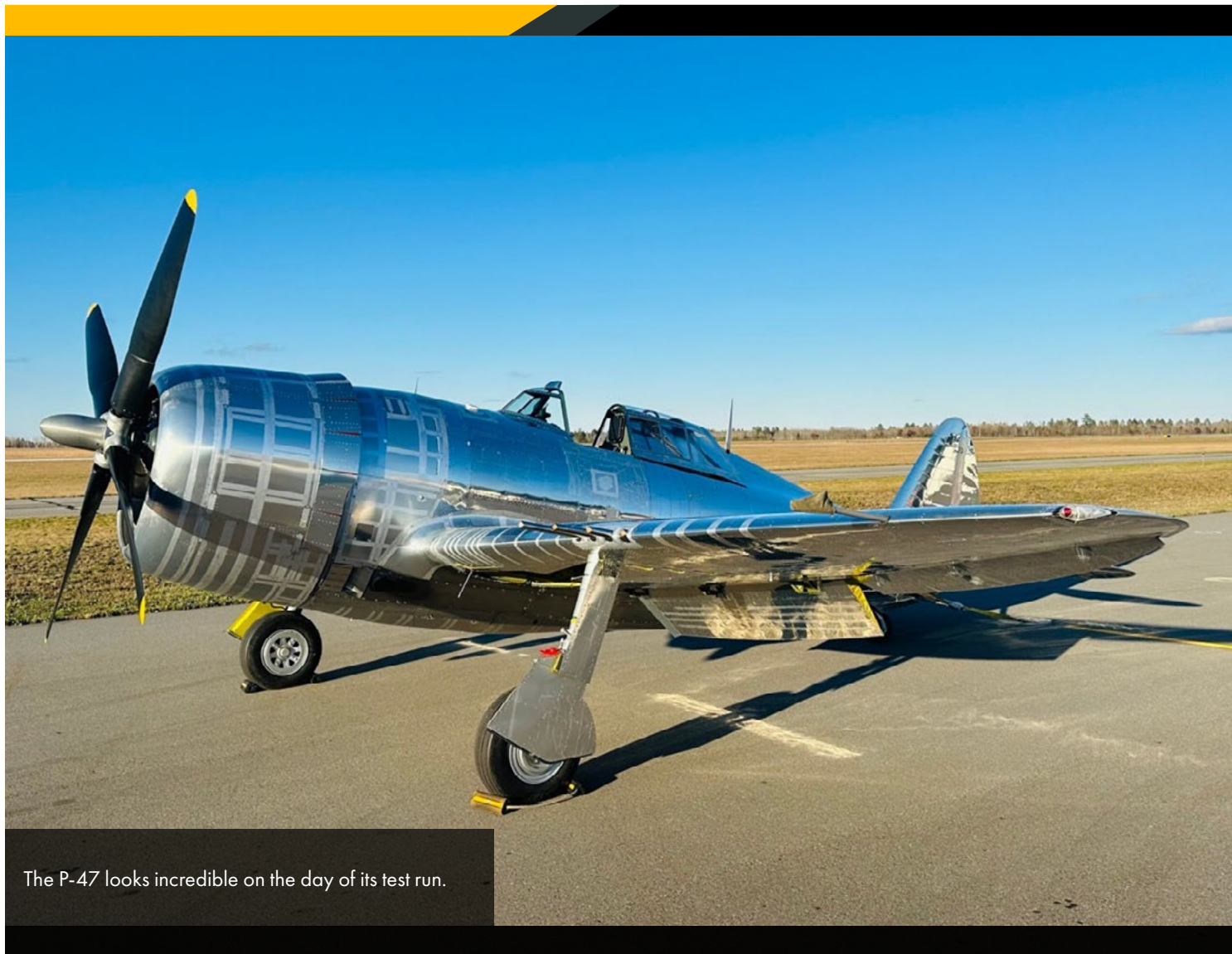
# OCTOBER/NOVEMBER

Dakota Territory Air Museum's P-47 Update

by Chuck Cravens



AIRCORPS AVIATION



The P-47 looks incredible on the day of its test run.



[www.dakotaterritoryairmuseum.com](http://www.dakotaterritoryairmuseum.com)



The R-2800 comes to life after 78 years.

The major news this month was the first engine run for our P-47 restoration. Finishing the details leading up to this milestone was the major task in late October.

Here is a link to a video of the test run, both before and after the cowling was installed: [https://www.youtube.com/watch?app=desktop&v=K7ZZqaSQz5s&feature=emb\\_rel\\_end&fbclid=IwAR0YqX23NP7ZEw87bk4hVgCK3P6icSXRWX2XCj474pfy0KLIO30r3GhDPs](https://www.youtube.com/watch?app=desktop&v=K7ZZqaSQz5s&feature=emb_rel_end&fbclid=IwAR0YqX23NP7ZEw87bk4hVgCK3P6icSXRWX2XCj474pfy0KLIO30r3GhDPs)

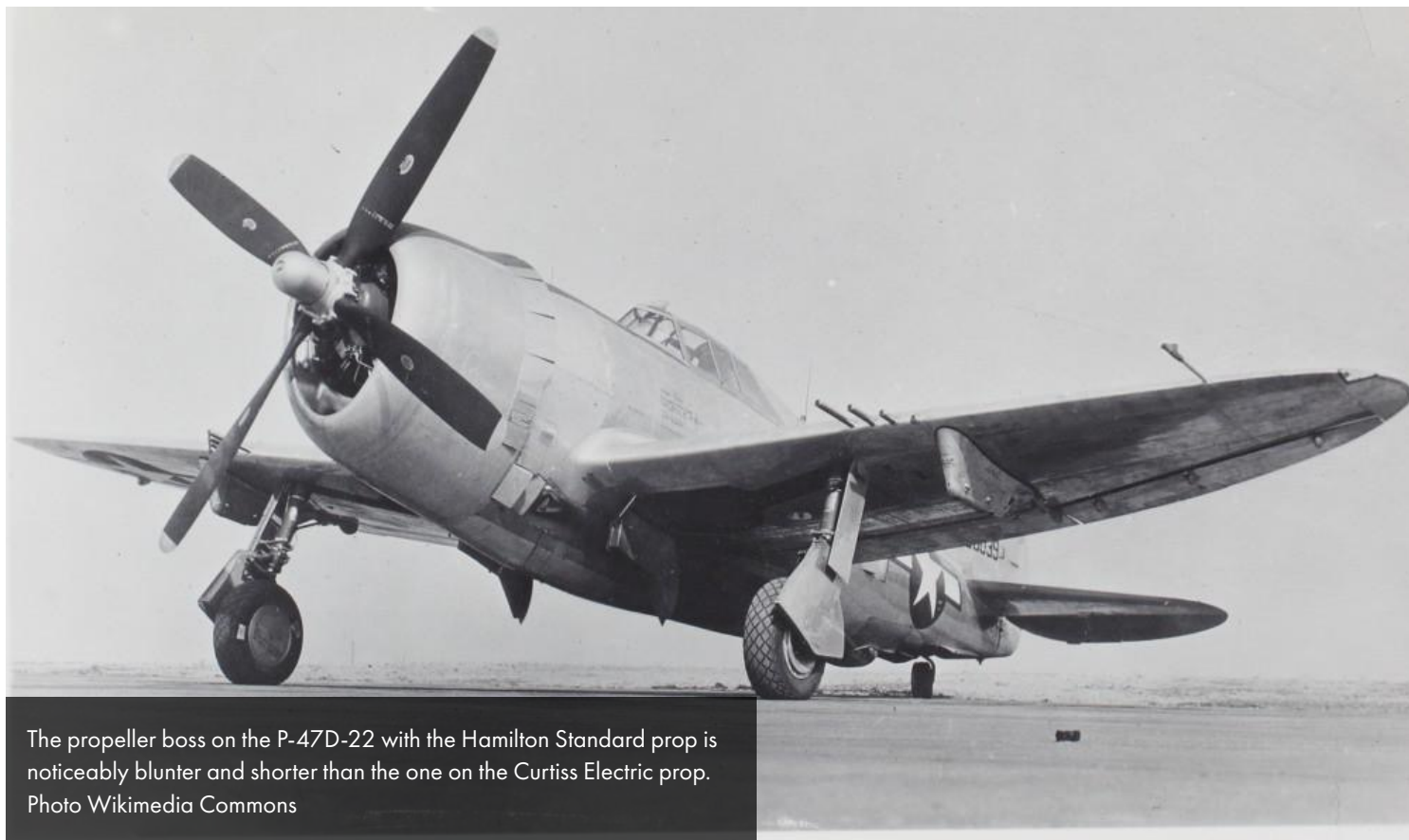




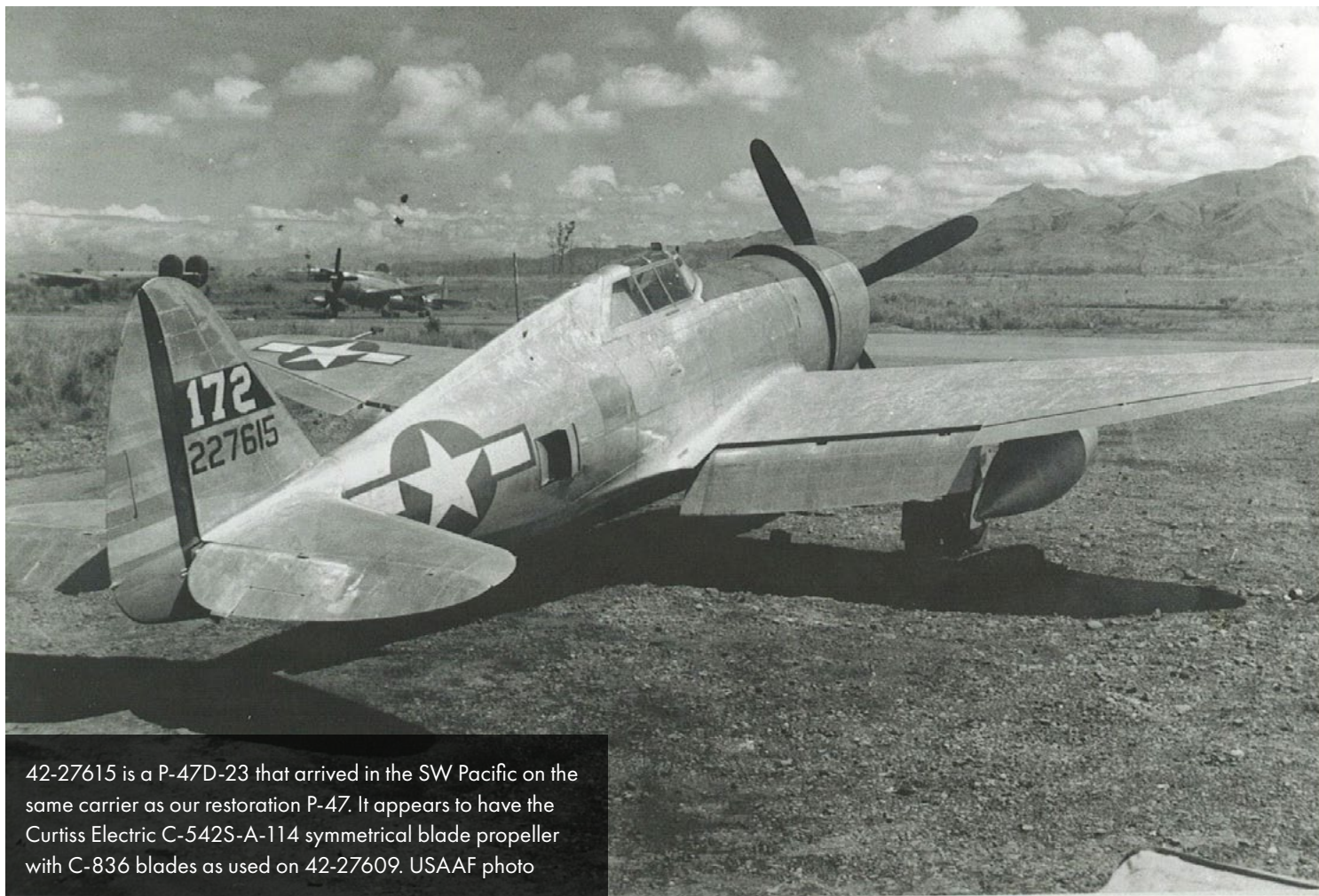
## D-23 Changes

The P-47D-23 was the last of the Razorback Thunderbolts.

The Evansville P-47D-23 and its Farmingdale-built equivalent, the P-47D-22, incorporated several changes. The most visible difference was that both new versions had 13-foot diameter, wide blade props. The D-22 used a Hamilton Standard Hydromatic 24E50-65 and the D-23's prop was a Curtiss Electric C542S. Both symmetrical and asymmetrical blade shapes were used on the Curtiss Electric props.



The propeller boss on the P-47D-22 with the Hamilton Standard prop is noticeably blunter and shorter than the one on the Curtiss Electric prop.  
Photo Wikimedia Commons



42-27615 is a P-47D-23 that arrived in the SW Pacific on the same carrier as our restoration P-47. It appears to have the Curtiss Electric C-542S-A-114 symmetrical blade propeller with C-836 blades as used on 42-27609. USAAF photo

The new 13-foot, wide-blade props were designed to take full advantage of the increased power available with water injection. However, they had the disadvantage of leaving only about 6 inches of ground clearance on landings and take-offs.

The P-47's rate of climb wasn't an initial strong point in its performance envelope, so the 400 feet per minute gained with the new wider blade props was a definite improvement.



Another important improvement to the D-23 was the addition of a bulletproof windshield and jettisonable cockpit enclosure. Pulling a ring on the right forward edge of the canopy pushed the cockpit enclosure back far enough to be caught by the slipstream and blow off the Thunderbolt. Fuel capacity was also increased.





## Propeller

The Curtiss Electric symmetrical, wide-bladed propeller arrived and was installed this month.







Some P-47D-23s had asymmetrical prop blades, and others like 42-27609 had symmetrically shaped C-836 blades which are seen here.





This side view clearly shows the distinctive longer, more tapered hub of the Curtiss Electric prop.



Here is a close-up of the hub of the 13'-1" Curtiss Electric symmetrical, cuffed wide-bladed prop

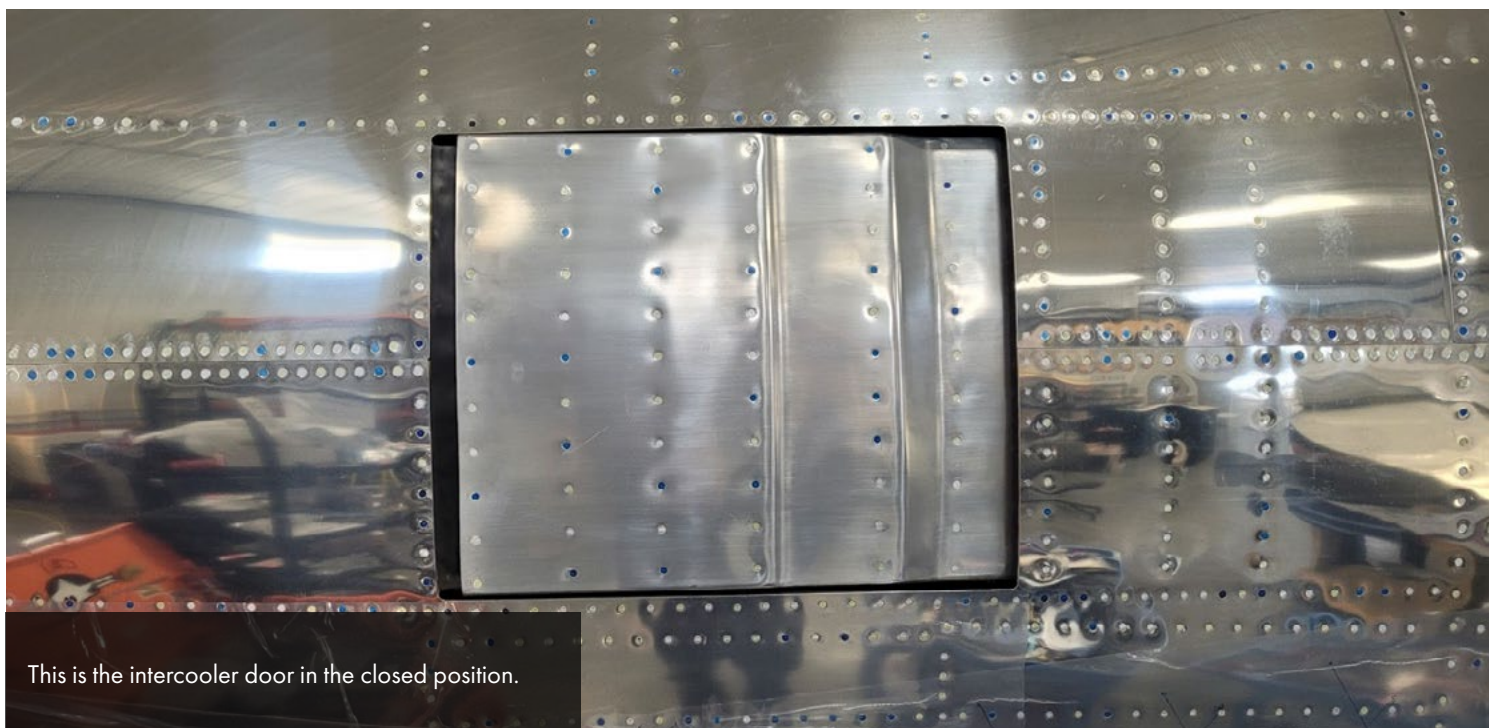




This is a close-up showing the shape of one of the Curtiss Electric propeller blades.

## Fuselage

This month's fuselage work involved finishing the connections to the turbosupercharger and preparing the engine and accessories for the first start-up.



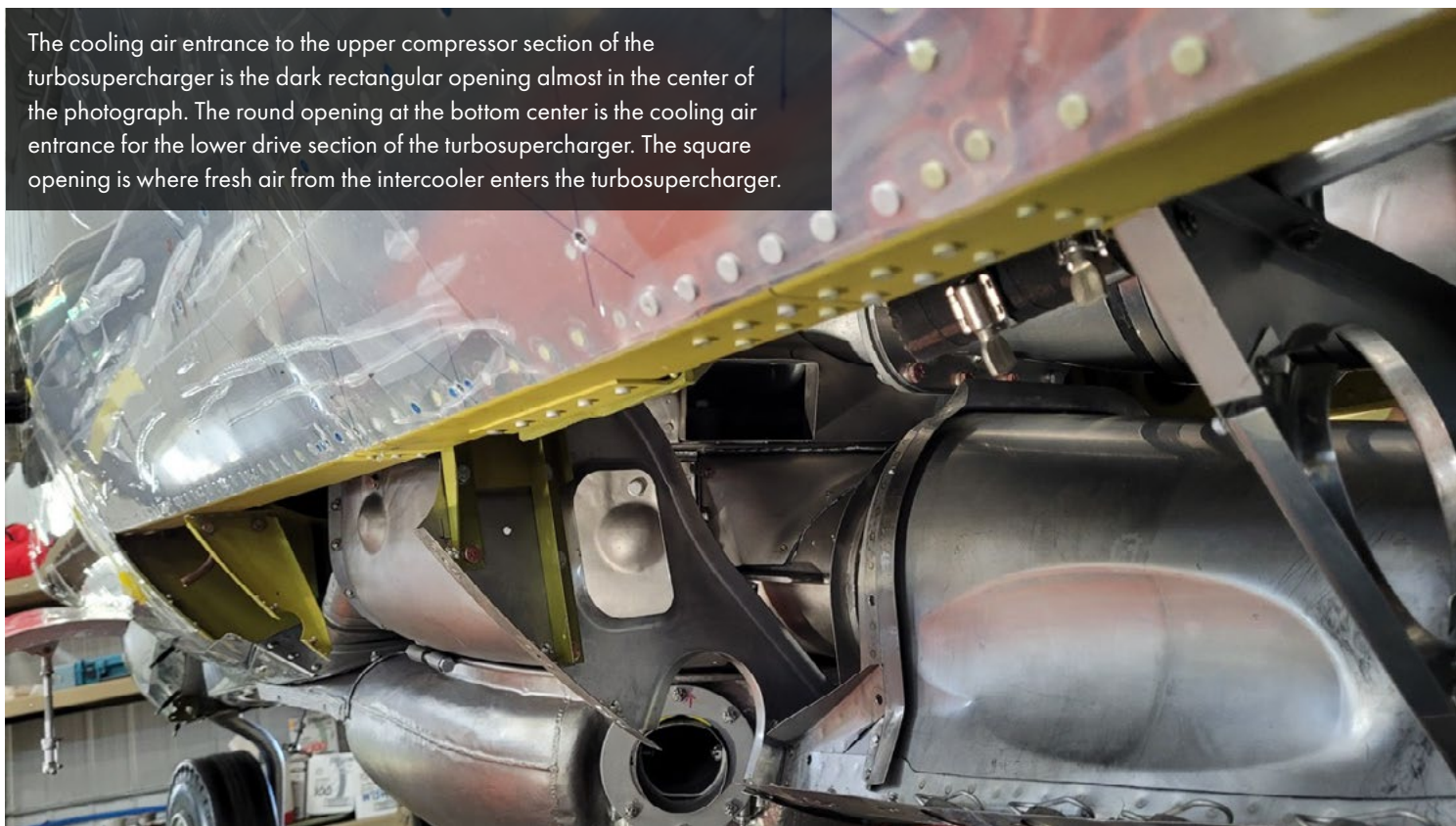
This is the intercooler door in the closed position.





The circular duct that ends abruptly in the top center area of the photo brings cooling air from the intercooler to the upper compressor on the top half of the turbosupercharger. The rear section of the exhaust ducting is the lower tube in the picture.

The cooling air entrance to the upper compressor section of the turbosupercharger is the dark rectangular opening almost in the center of the photograph. The round opening at the bottom center is the cooling air entrance for the lower drive section of the turbosupercharger. The square opening is where fresh air from the intercooler enters the turbosupercharger.





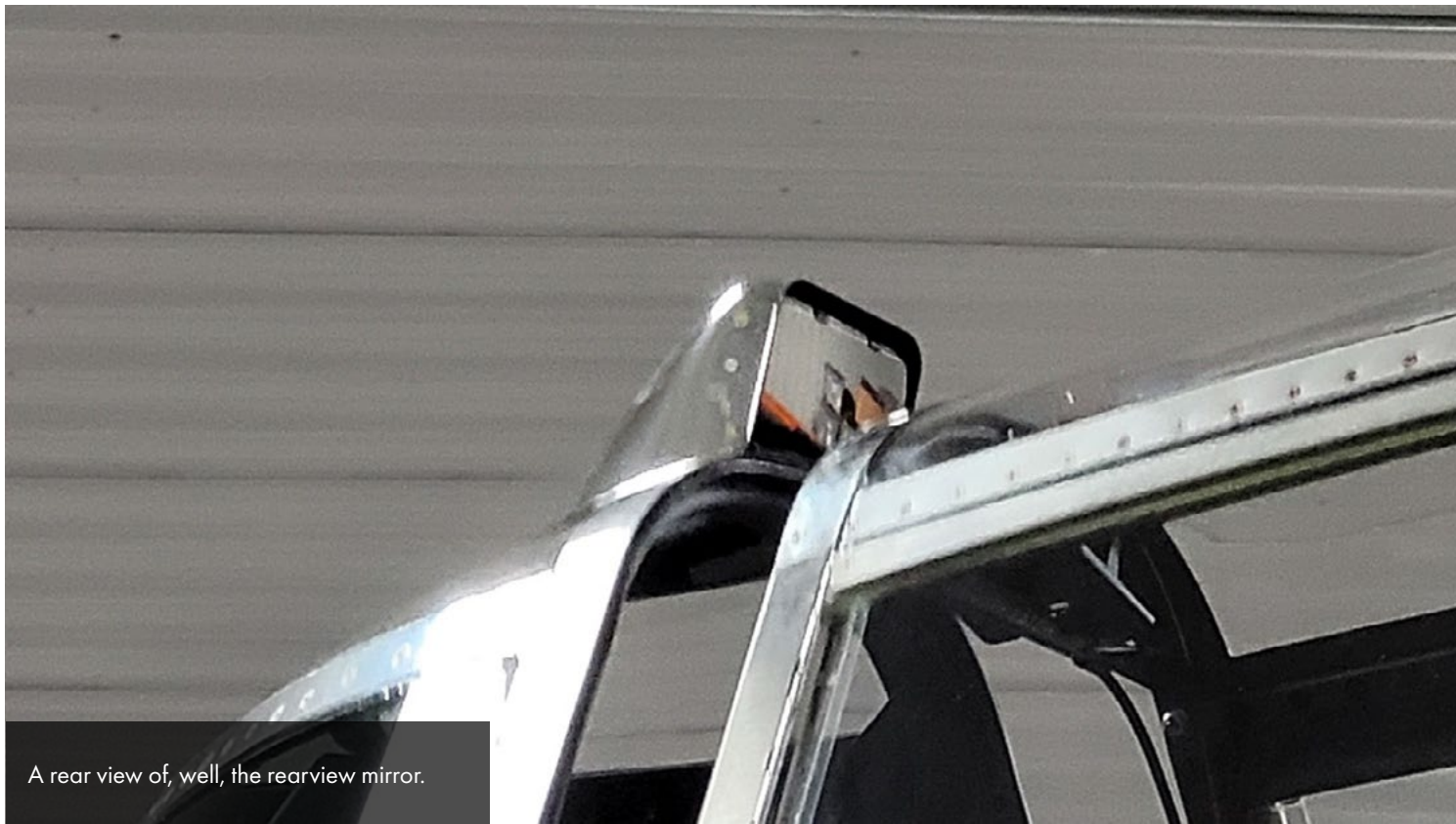


In this image, the cooling air ducting has been connected to the turbosupercharger.

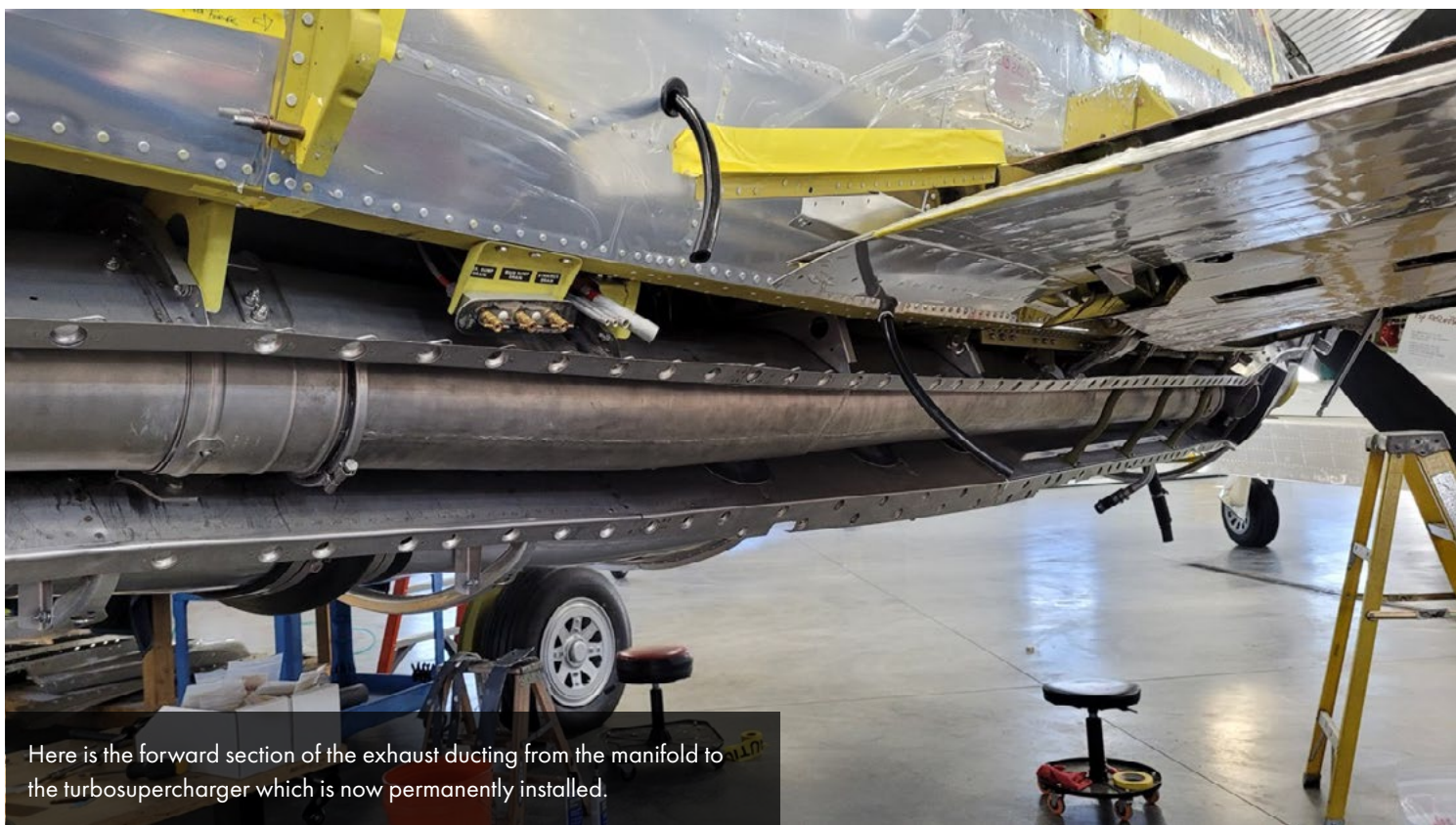


The rearview mirror has been completed and installed.





A rear view of, well, the rearview mirror.



Here is the forward section of the exhaust ducting from the manifold to the turbosupercharger which is now permanently installed.





Mark primes the turbosupercharger by spinning the bucket wheel with compressed air.



Aaron checks the turbosupercharger rpm gauge for an rpm reading.





Mark and Aaron fuel the P-47 before the engine test run.

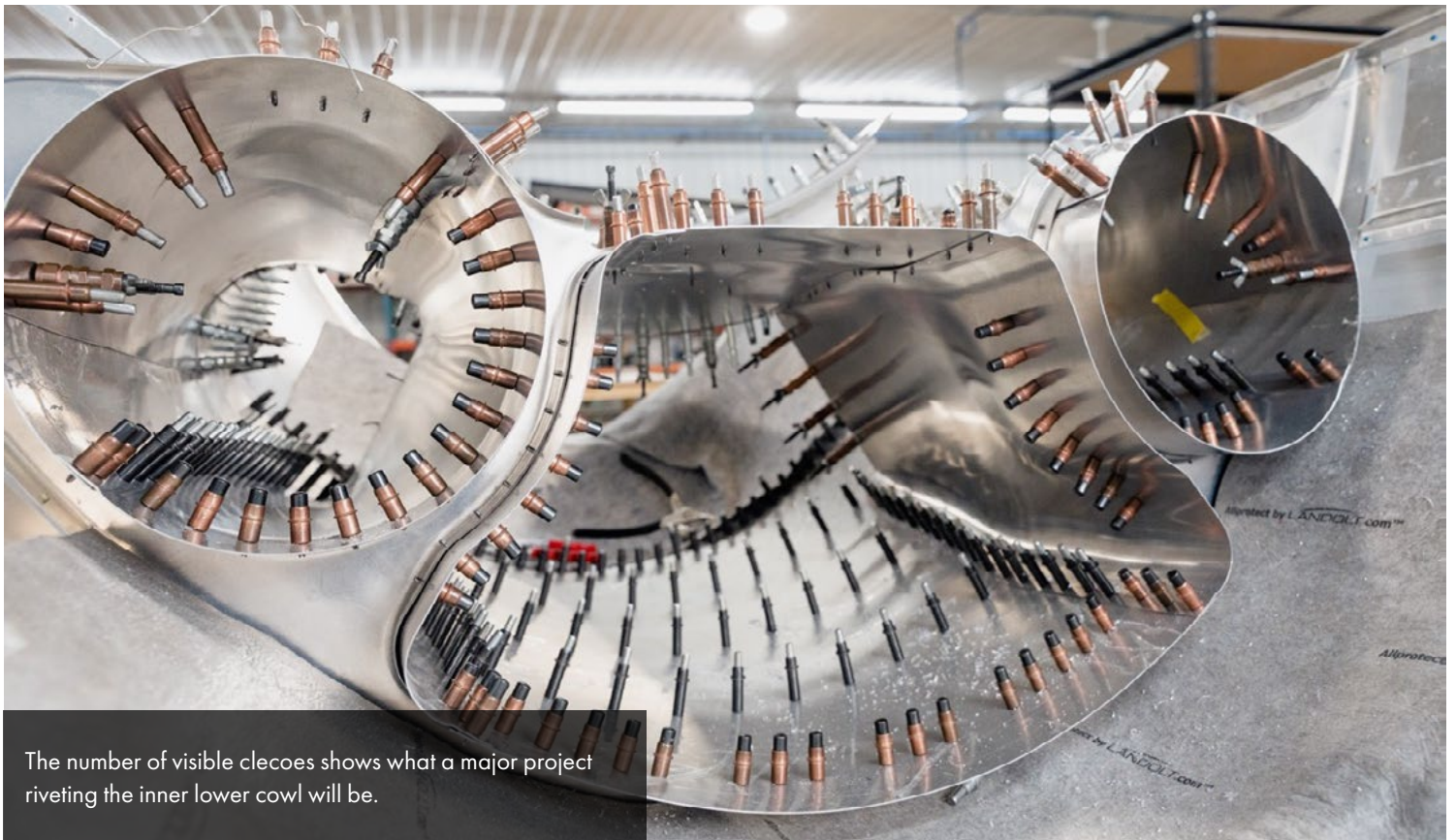
## Cowl

The cowl was finished this month and mounted to the Thunderbolt.

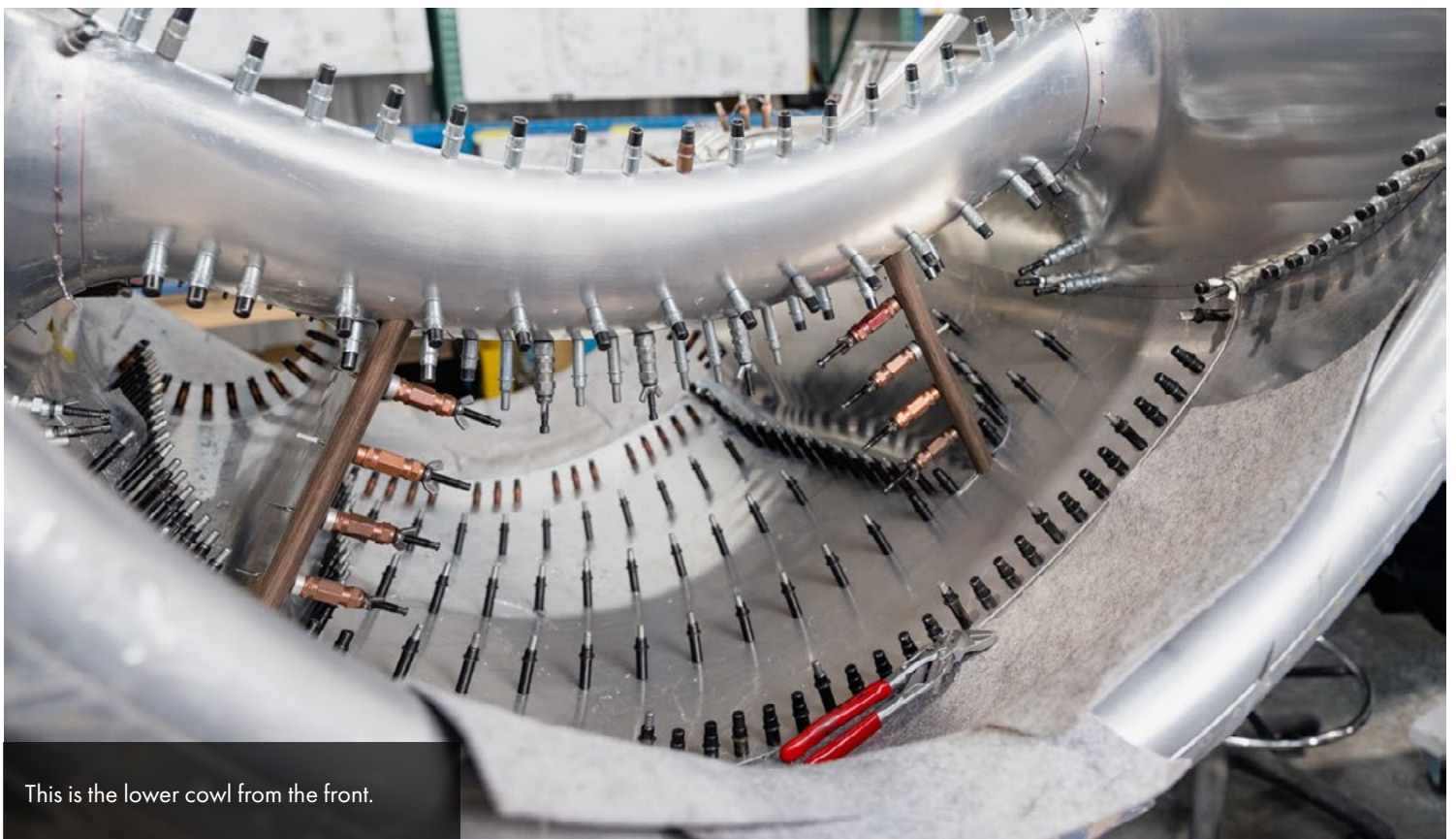


The lower cowl section awaits the final riveting operation.





The number of visible clecoes shows what a major project riveting the inner lower cowl will be.



This is the lower cowl from the front.





The finished cowl is ready for transport to the airport hangar.





The cowl is in place, adding one of the most identifiable features of the P-47.



Another angle shows the cowl installed.



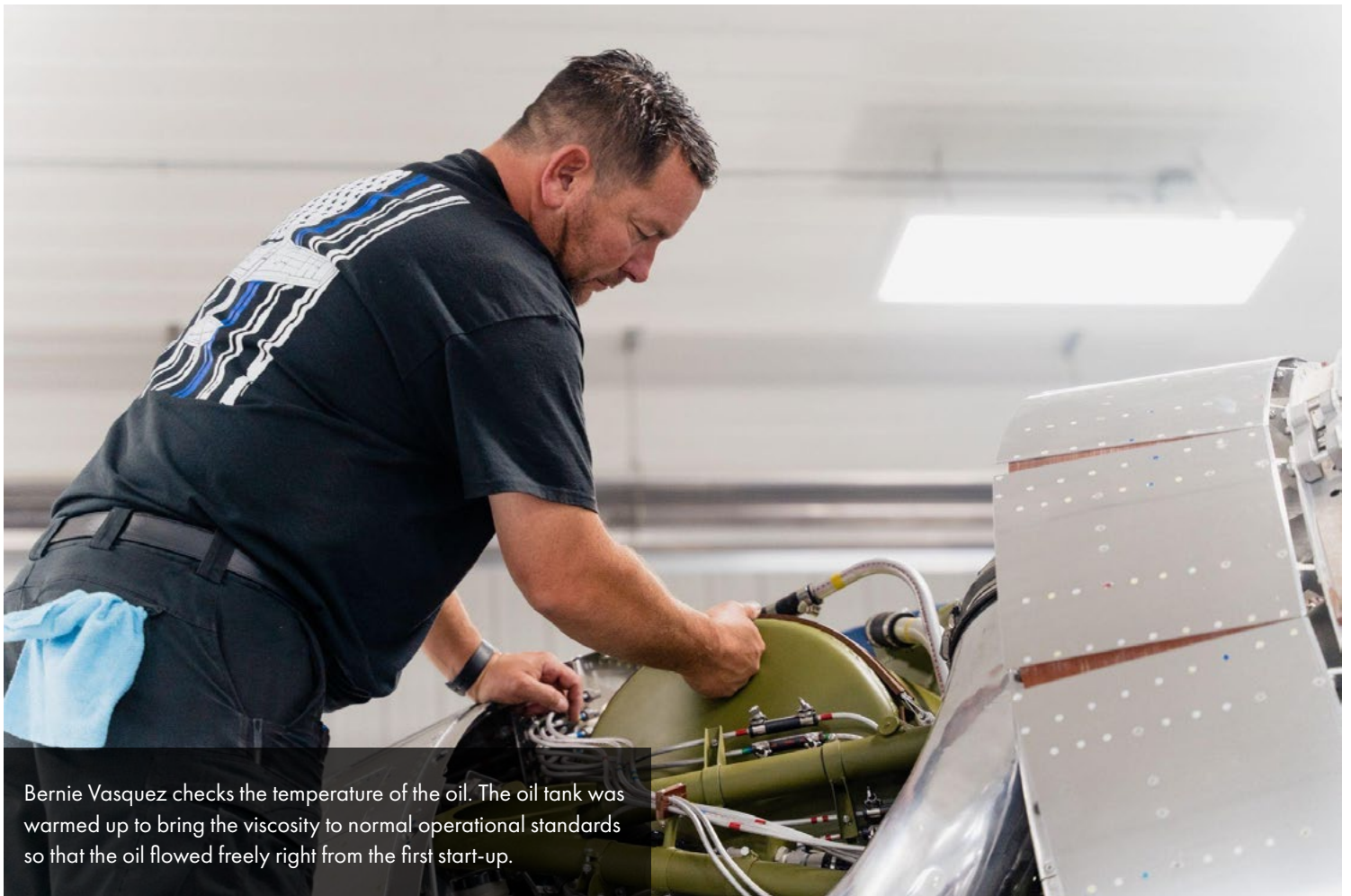


## Test Run Day

It is always a very exciting day when a restored warbird's engine is run for the first time. The P-47's test run was no exception, in fact, it was perhaps even more exciting than usual; considering the number of years and level of effort put into getting this unique warbird ready for this memorable day.

Aaron Prince expressed the feeling when he said:

"It was a huge relief to see an airplane that I have been working on almost nonstop, run with very minor issues. It was also a surreal experience seeing the P-47 run for the first time in seventy-eight years knowing the last time it ran was in New Guinea by guys my age in hostile conditions. It was also nice to share the experience with the whole team, without which this would not have been possible."



Bernie Vasquez checks the temperature of the oil. The oil tank was warmed up to bring the viscosity to normal operational standards so that the oil flowed freely right from the first start-up.

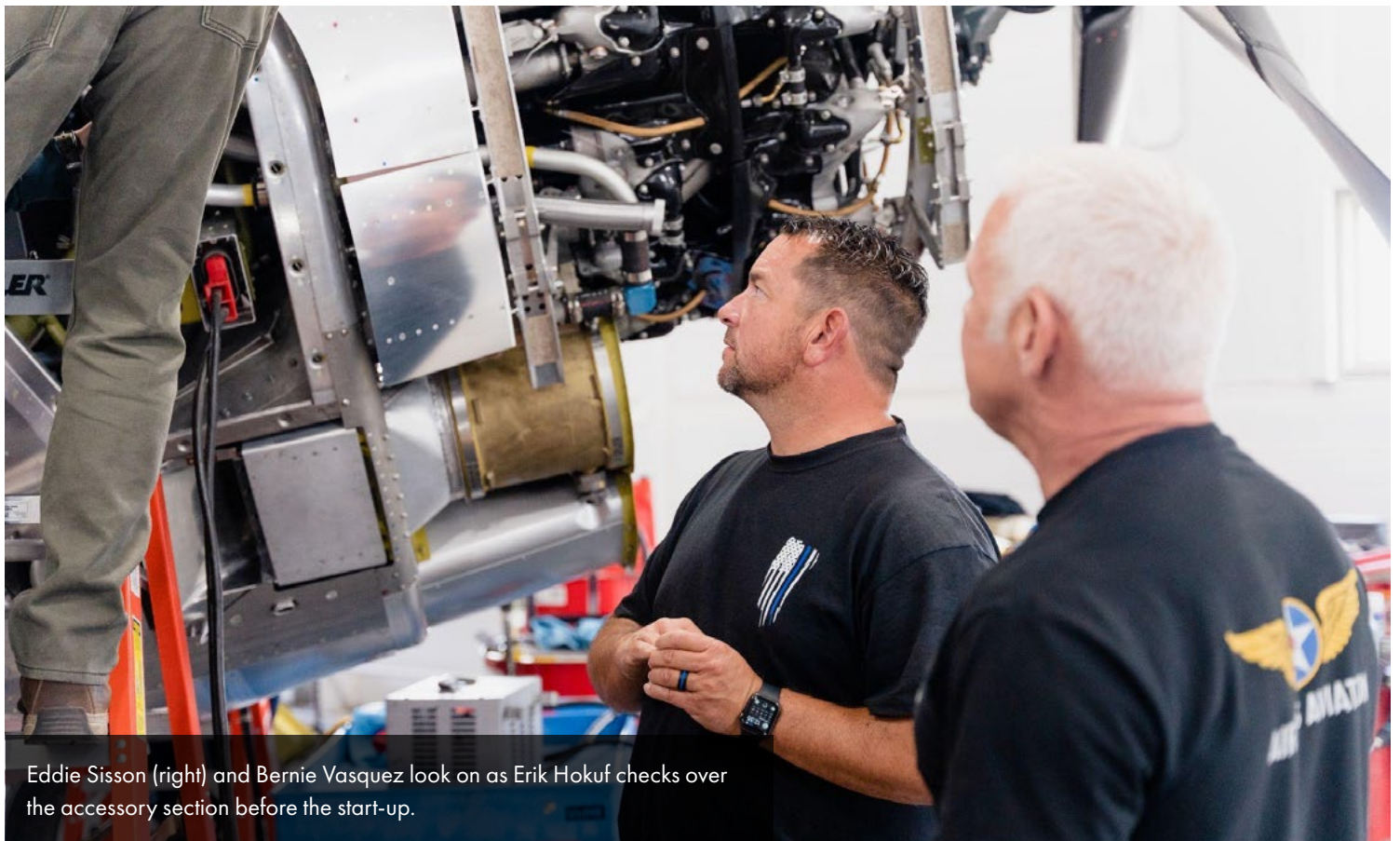


Warren Pietsch surveys the cockpit as preparations for the start-up continue.

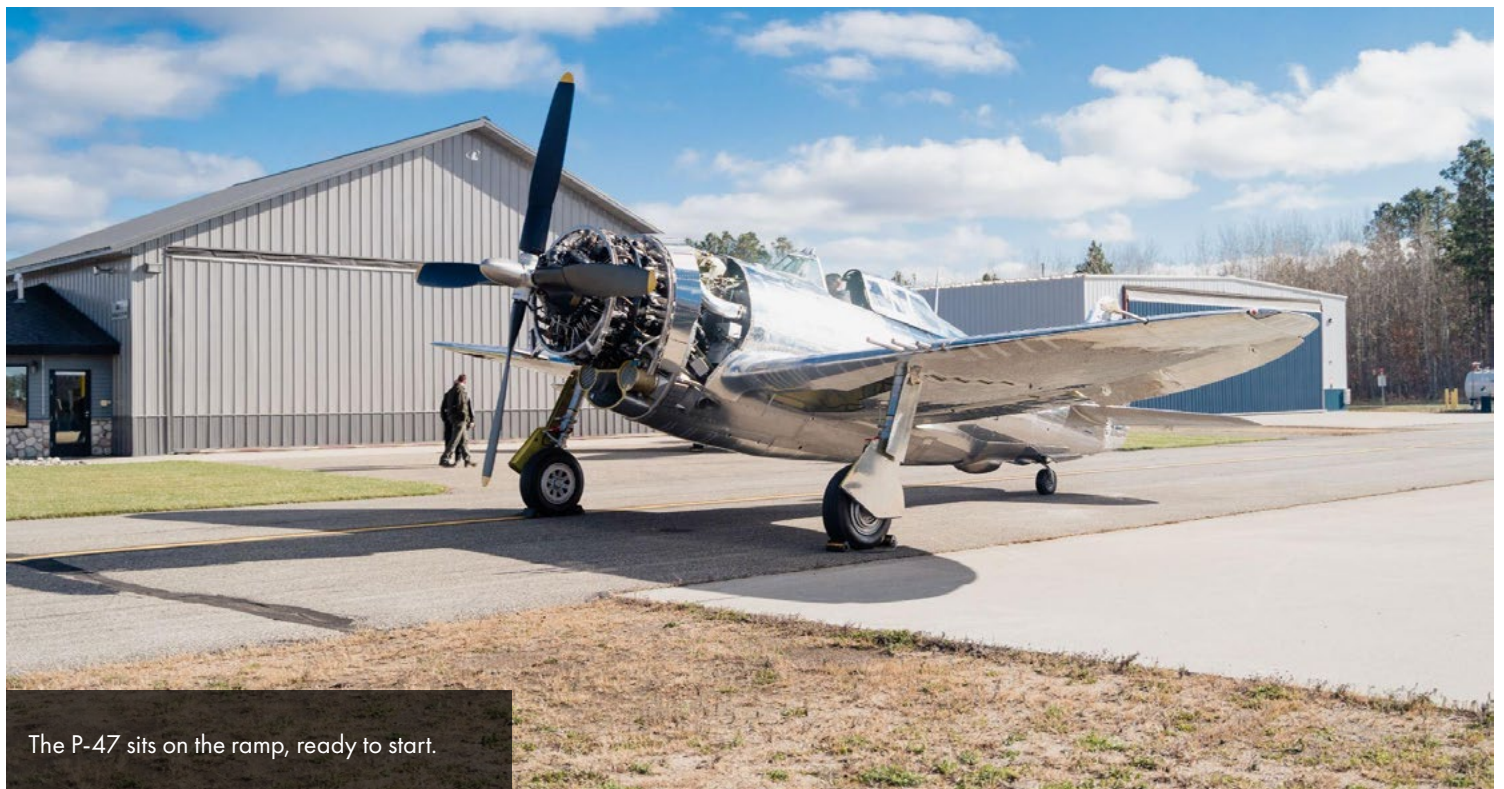


Every detail is checked and rechecked before bringing the R-2800 to life.





Eddie Sisson (right) and Bernie Vasquez look on as Erik Hokuf checks over the accessory section before the start-up.



The P-47 sits on the ramp, ready to start.





AirCorps Aviation employees gathered to witness the machine they've worked on come to life.

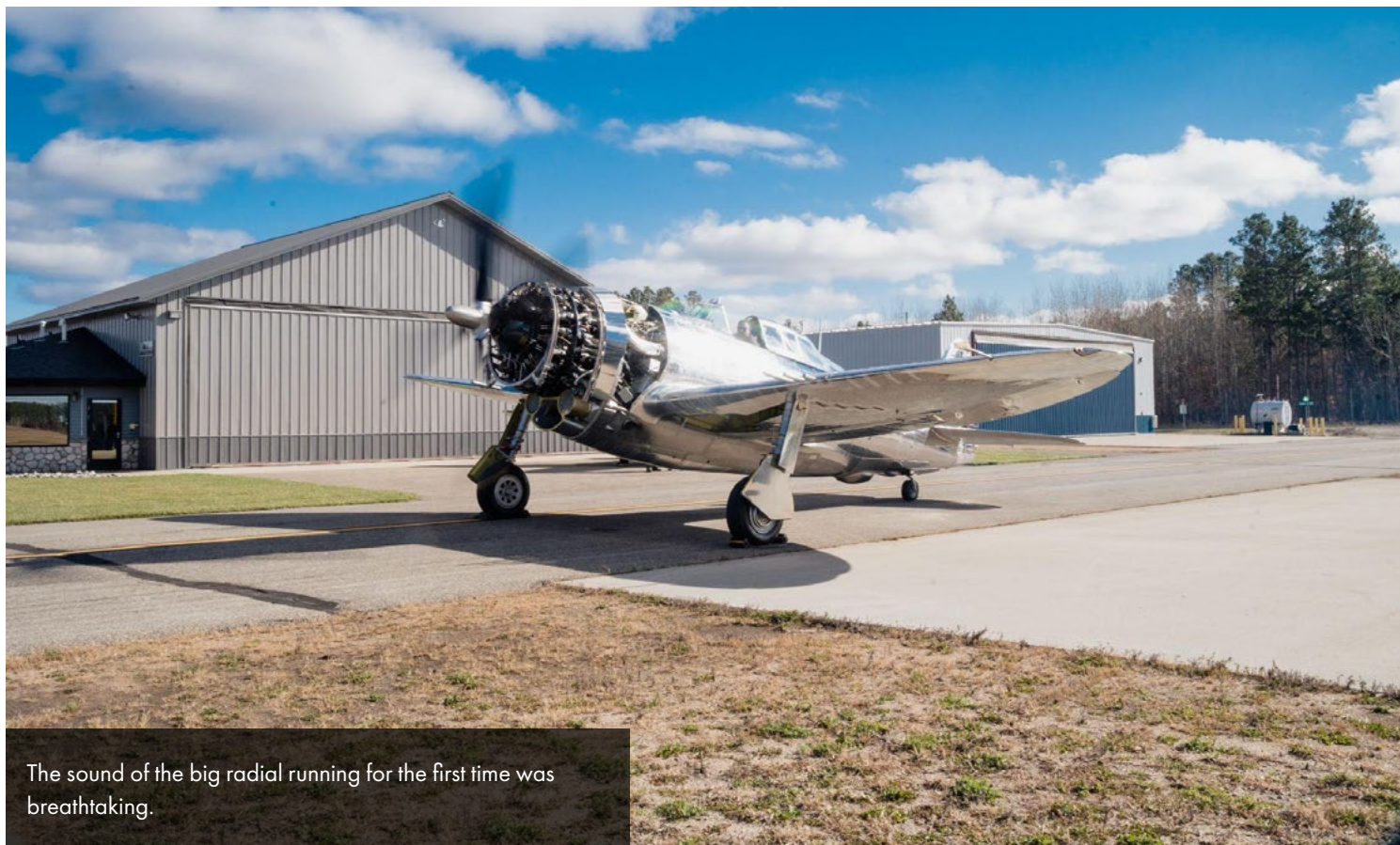


Bernie is in the cockpit ready to start the R-2800.



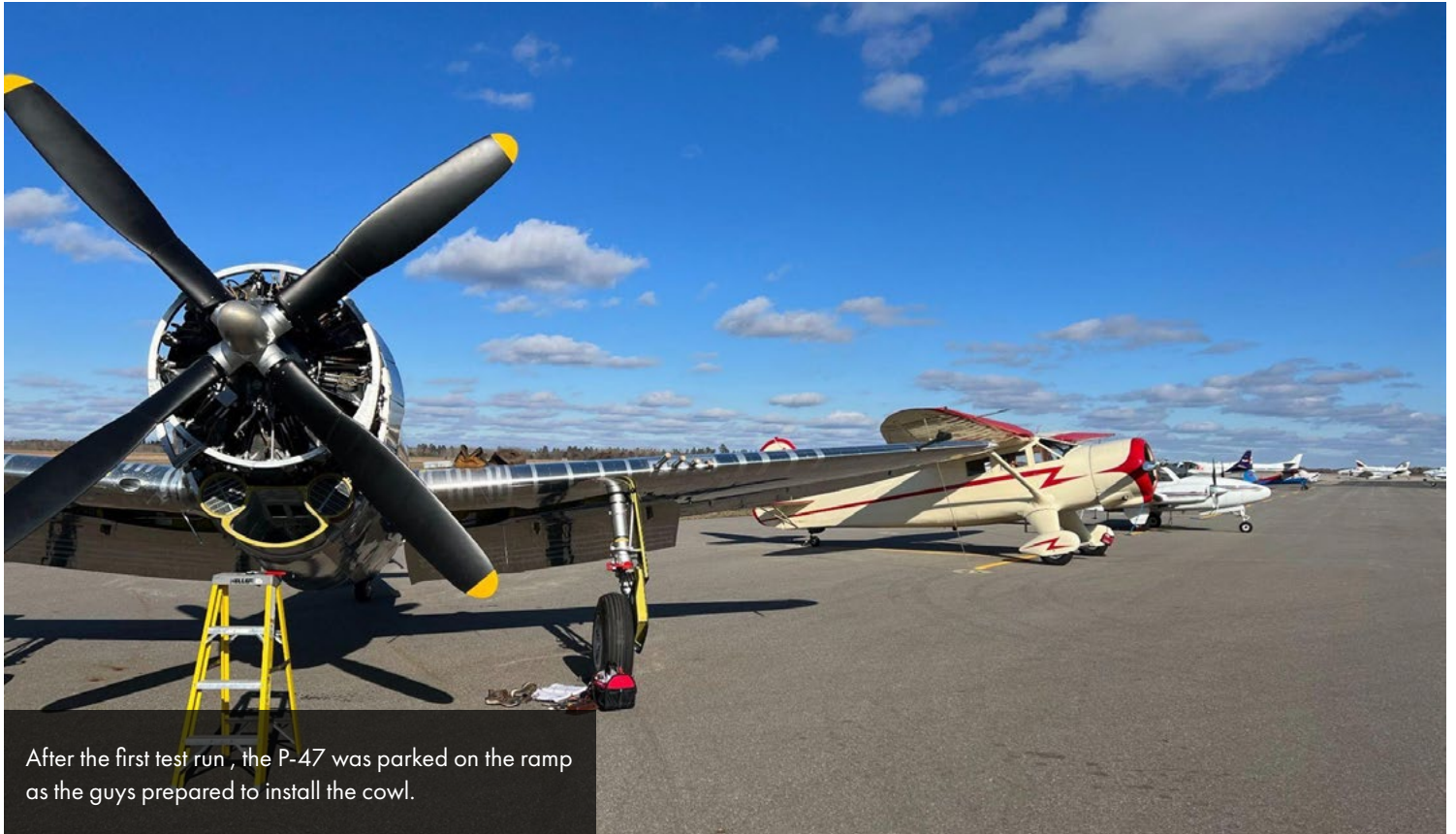


It runs!



The sound of the big radial running for the first time was breathtaking.





After the first test run , the P-47 was parked on the ramp as the guys prepared to install the cowl.



Check the link from page one to witness the Thunderbolt running with the cowl in place.





## A Very Special Part That Was Included in the P-47 Restoration.



Artist rendering of Gow Job, First Lieutenant Loren Hinz's Thunderbolt, by Gaetan Marie

Many thanks to Hans Wronka, who wrote this section. Hans spearheaded a 12-year search that culminated in the recovery of parts of the wreck of his grandfather's P-47 from its resting place beneath a field in Italy:

*"On October 26, 2022, a beautiful symbol of American ingenuity, tenacious drive, and steadfast ethic came to life again with its first engine start. This P-47 Thunderbolt is an example of the great and incredibly important things Americans can achieve when they are united in purpose and resolve when faced with existential threats to world peace built on hatred, evil, violence, and murder. Together as a society committed to working together, our ancestors began building the Arsenal of Democracy more than 80 years ago. With that Arsenal, the United States of America led the way in defeating evil and restoring peace and order over much of the world.*

*On a July day in 2016, I stood in a farm field near Bologna, Italy alongside three generations of my family. We were cleaning dirt off pieces of metal, glass, rubber, and other material that was being excavated from beneath the earth's surface. The material had not seen the light of day since April 21, 1945, when a pilot, my grandfather, 1st LT. Loren Hintz was shot down in his P-47 Thunderbolt while on a combat mission during the final days of World War 2 in Europe.*



1st Lt. Loren E. Hintz of Charles City, Iowa

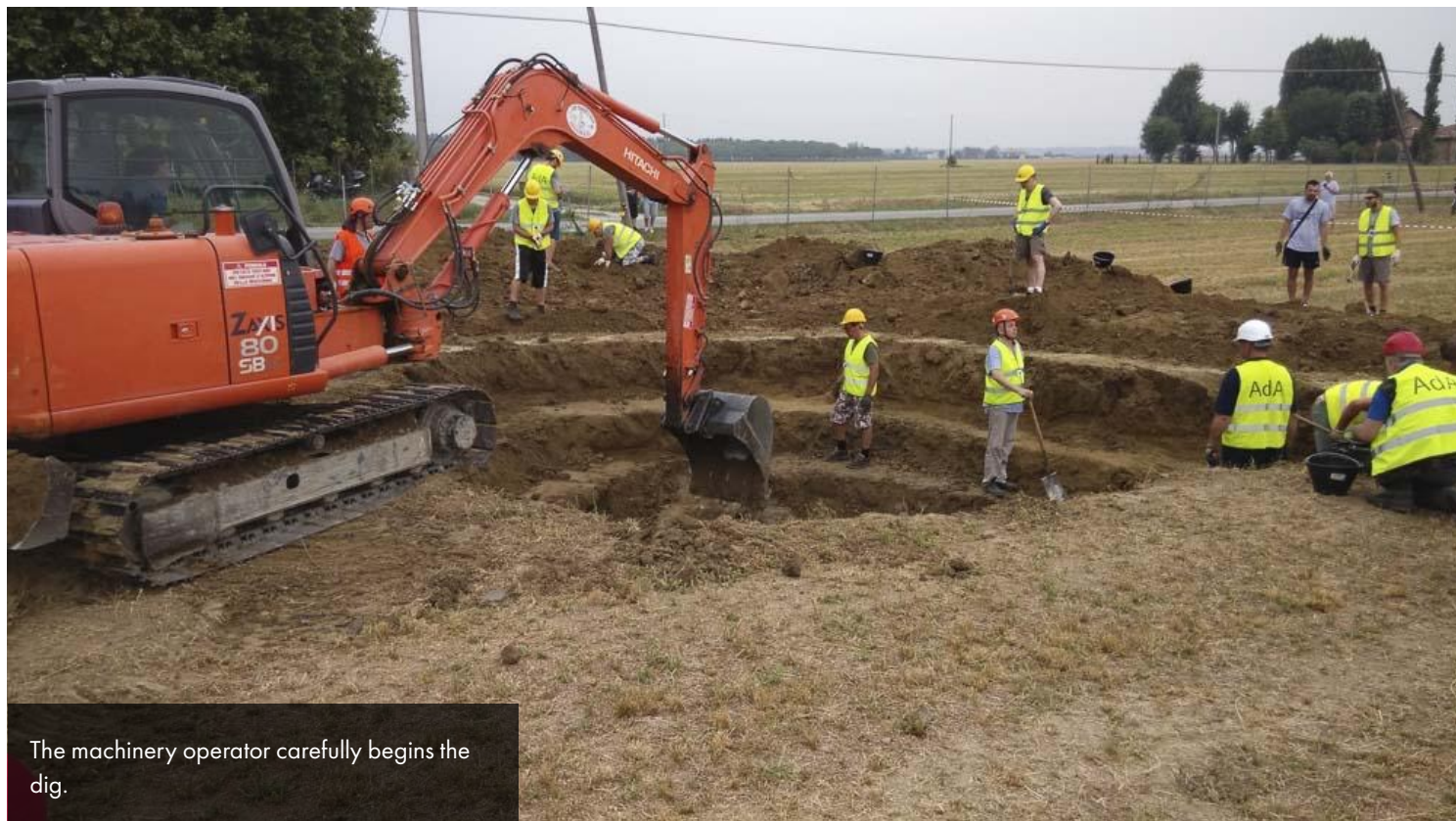


Aerial view of the excavation site, the Serraglio estate.





*At the time of the excavation, however, many questions remained unanswered including if we were even digging at a crash site and if we were, was this site where my grandfather made the ultimate sacrifice? Years of research and numerous serendipitous discoveries and encounters with key individuals indicated we were on the right track, but we were quite literally digging into the unknown.*



The machinery operator carefully begins the dig.

*At one point early in the day, my friend Eric Trueblood from AirCorps Aviation, who had joined us in Italy for the excavation, showed us a recovered piece of wreckage with a complete part number. Within seconds he was able to pull up a specific drawing from AirCorps Library on his phone. The drawing detailed exactly what the part was (the tail wheel uplock lever assembly) and confirmed that it was from a P-47 of the correct model type and dash block for the serial number of Loren's Thunderbolt.*

*In some ways, I was caught off guard by such a definitive discovery. I simply had not given a lot of thought as to what finding anything other than an aircraft data plate or serial number from a machine gun would mean in terms of verification of what we were in search of.*



One of the .50 caliber M2 machine guns recovered in the excavation.

*The July day seemed to last forever. I recall wandering around the growing excavation with a surrealistic feeling as if I were in a dream. I was seeing everything unfold, but it also felt like I was removed from reality with a sense of being back in time when Loren was still alive, as if he would show up to see what everyone was doing.*

*The clattering of excavating equipment and excited and animated conversations in Italian going on all around me would snap me back to reality. Nonetheless, I continually had to keep telling myself that I was not in a dream and that it was good the day was lasting forever. I held airplane parts and wondered what they were, where they came from, who had last touched them, what assembly worker installed them, who the WASP pilot was that delivered the plane to a facility for shipment overseas, and so on.*

*Before sunset, four generations of my family were together in spirit and person. My mom was the first to hold her father's dog tags after they were cleaned and gently handed to her.*





The discovery of Loren Hintz's dog tags during the excavation was a truly emotional moment.

*She would do the same holding his bones before gently placing them in a small casket that had been provided by the local authorities. We stood around together as a family, hugging frequently, sharing some tears, and also thinking about the man Loren Hintz was and the family, especially his wife and children, whom he would not live to see. We took comfort in knowing he had lived a life of adventure, love, and happiness well before the war. Loren was also committed to defending freedom and defeating evil. He lived with no regrets.*

*In 2019 my family returned to Italy to inter Loren's remains with full military honors at the American Battle Monuments Cemetery near Florence. Buried on one side of his grave was a black soldier from the 92nd Infantry Division known as the Buffalo Soldiers, on the other side lay a member of the 10th Mountain Division.*







About a year after the excavation, my family was fortunate to be able to arrange shipment of some of the P-47 wreckage back to the States for an exhibit that shares the story of Finding Loren and honoring his service and sacrifice. My friend Jordan Deters from the Commemorative Air Force Minnesota Wing and our adolescent sons were the first to uncrate the parts and pore over each one. Each part had been meticulously cleaned and conditioned for preservation. Many of them were easy to identify including the carburetor, a good-sized piece of firewall, the R-2800 engine, and so on. There were numerous handheld parts that were less distinctive that had not been cleaned in the field during the excavation, which meant we were seeing them for the first time.

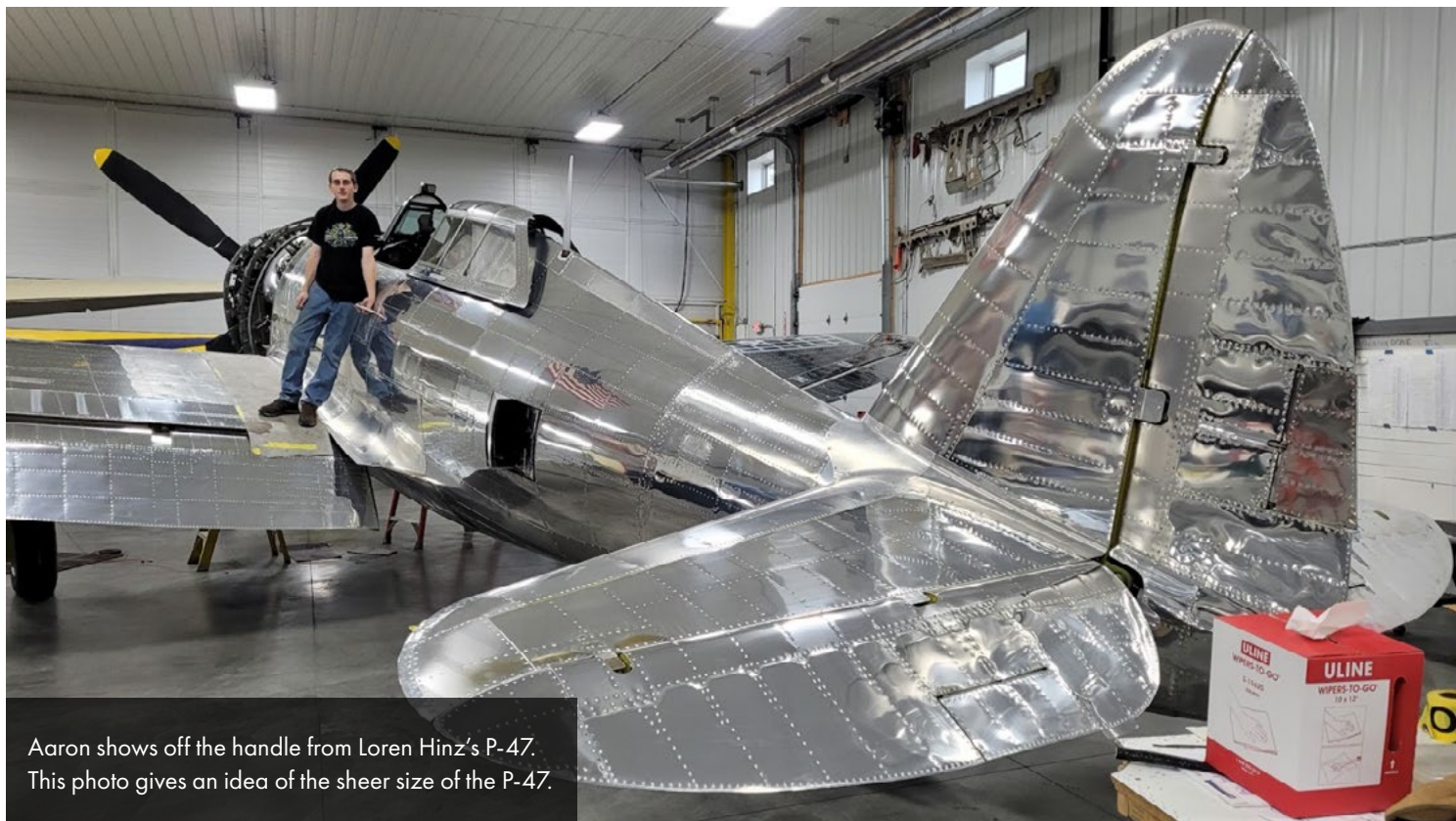


This is the handle from Gow Job, Loren Hinz's P-47.

Many of the Italians who had been so instrumental in supporting the Finding Loren project visited us in 2017. A highlight was introducing them during numerous public interest engagement sessions and presentations that were hosted by various organizations. At one such event at the Commemorative Air Force, a group of us were looking through some of the smaller less distinctive parts. I picked up a small aluminum part and asked one of the Italians who had been involved in cleaning and inventorying every single part of the wreckage that was recovered and asked him what it was. His response was immediate; "Ah, this is a very special part. It is the handle from the fuselage". He explained exactly what the part was and where it was located. He even pointed out the small patch of olive drab paint on what was the exterior side of the handle indicating that Loren's plane was painted as opposed to operating with a bare aluminum finish. Without a doubt, my grandfather Loren would have grasped that handle as he climbed aboard his ship. The feeling of touching an actual part that Loren had to have touched has carried special meaning with me ever since.



*Eric Trueblood and I have stayed in touch throughout the impressive restoration of the P-47 Razorback at AirCorps. Over the last few years, we talked about how or if the possibility existed for incorporating some part from Loren's plane into the P-47 that is here and alive again today. After considering options, we quickly agreed that this handle would be a fitting and functional part to include in the restoration. On behalf of my family, we are extremely grateful and honored that a part of Loren's plane will once again take flight. Loren's spirit and the spirit of those from the Greatest Generation are very much alive and will continue flying high for many years to come. Above all, the symbolic meaning behind this is incredibly moving."*

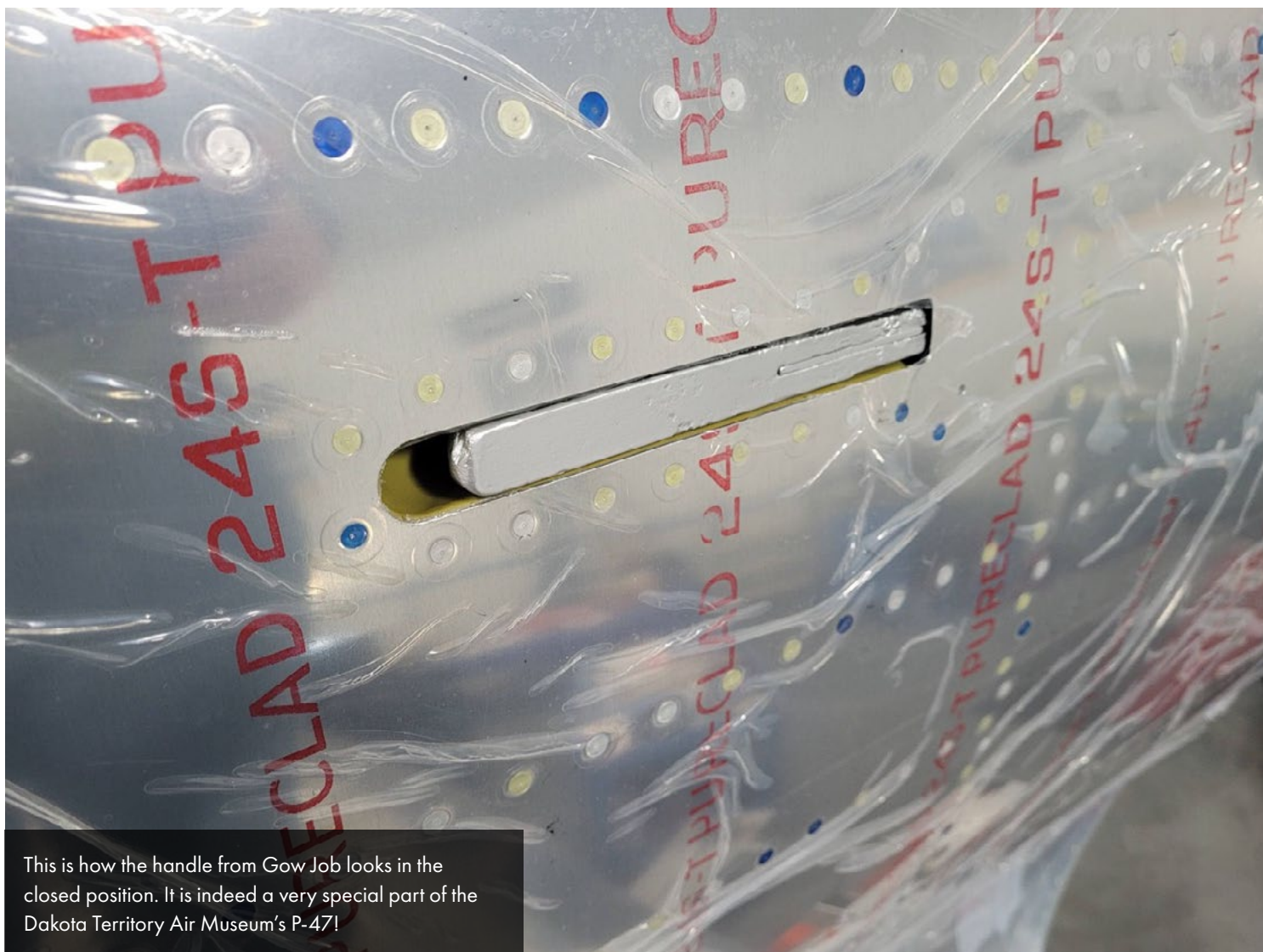


Aaron shows off the handle from Loren Hinz's P-47. This photo gives an idea of the sheer size of the P-47.





A closer shot of Aaron and the handle Loren Hintz almost certainly used to get to the cockpit for his final mission 77 years ago.



This is how the handle from Gow Job looks in the closed position. It is indeed a very special part of the Dakota Territory Air Museum's P-47!