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WARBIRDS

MAY/JUNE 2022

- B-17 Caretakers
- Canadian Stallion

Hellcat

THE DEVIL'S DARLING

CONTENTS

MAY/JUNE 2022
VOLUME 45, NUMBER 3

» FEATURES:

PHOTOGRAPHY BY CONNOR MADISON

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» BACK COVER:
Scott Slocum catches the Canadian Mustang right after its post-restoration flight.

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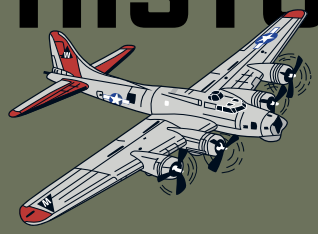
CARETAKERS OF HISTORY



GETTING THE EAA B-17 BACK INTO THE AIR

BY TOM EWING

THE COMMON BOND BETWEEN each and every EAA member is the shared passion for flight. For us, aviation is not just a mode of transportation, it is a lifestyle. It matters very little whether our particular interest is with homebuilt, vintage, aerobatic, or warbird aircraft — or even the everyday Cessna or Piper. We share a common desire to preserve the past, guard the present, and protect the fragile future of noncommercial aviation. Countless stories highlight the extraordinary lengths to which EAA members will go to further this cause. This is the remarkable story of one such group of EAA members and aviation enthusiasts who came together in Punta Gorda, Florida, to save one of the most important living pieces of aviation history.

PHOTOGRAPHY BY **CONNOR MADISON**

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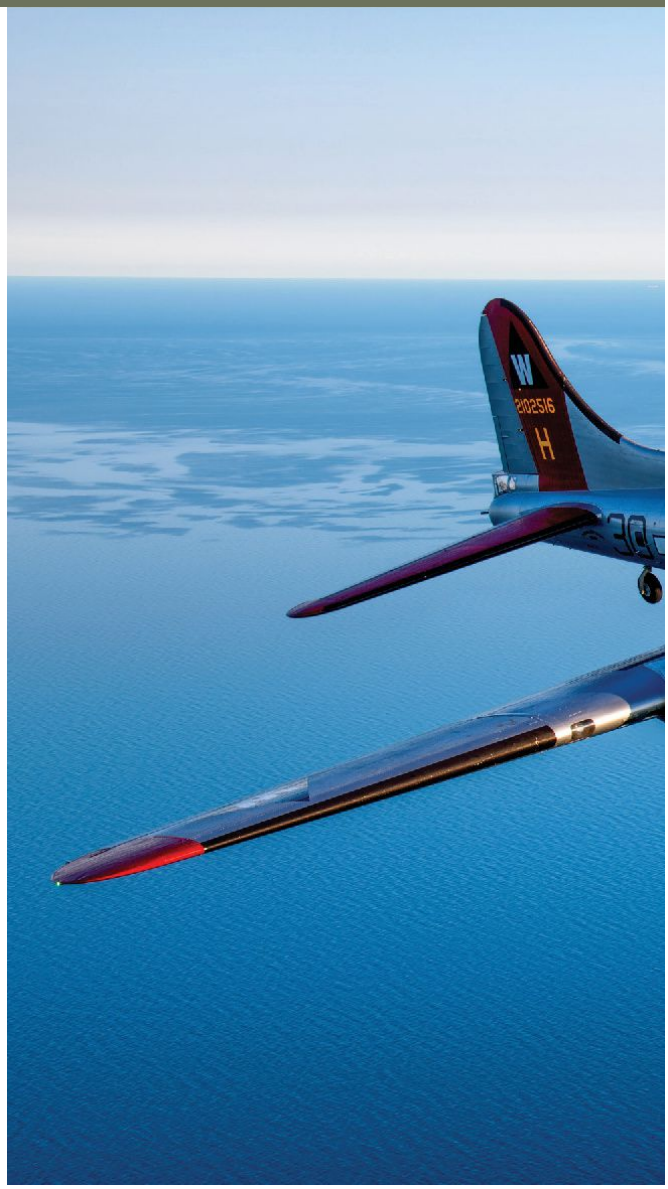
THE AIRPLANE

Few airplanes are as iconic and recognizable as the Boeing B-17. The design is beautiful, and the sound is unmistakable. To see one in person is truly awe-inspiring. This feeling never leaves you, even if you fly the B-17 on a regular basis. It's easy to understand why a young Seattle newspaper reporter, seeing the B-17 prototype for thefirst time during its public debut in 1935, dubbed it the Flying Fortress. The moniker became so popular that it continued through future generations of Boeing bombers with the B-29 Superfortress and the B-52 Stratofortress. It's easy to understand why the B-17 Flying Fortress is still regarded as one of the most legendary aircraft ever to take to the skies.

A total of 12,731 examples of this extraordinary bomber were produced, and the vast majority of them were built in a period of only three and a half years. To put this number in perspective, consider that the commercial jet airliner produced in greater numbers than any other in the entire history of the jet age is the Boeing 737. Only 10,700 Boeing 737s have *ever* been produced, and that's happened over a span of 54 years.

The B-17 was used primarily in the European theater as a high-altitude daylight strategic bomber during World War II. The B-17's primary mission was to destroy industrial and military targets that supported the Axis powers' war effort. It was initially thought that the extensive defensive armament on the B-17 would be sufficient to protect the aircraft and crew from attacking enemy aircraft. However, the threats to high-altitude heavy bombers proved to be much more formidable than originally expected. Losses of U.S. bombers were alarmingly high, especially during the early months of the bombing campaign. In all, 4,735 B-17s were lost in combat during WWII, each with 10 men onboard. A similar number of B-17s were lost in training and noncombat operations. It's truly sobering to understand the danger faced by every WWII bomber crew member. Even with production numbers as incredibly high as they were, B-17s were being lost so rapidly that the U.S. Army Air Forces inventory never exceeded 4,600. By the end of WWII, fewer than 3,700 B-17s remained in the U.S. Army Air Forces' inventory. Many of these war-weary B-17s had given their all and were simply scrapped in place. Others were returned to the U.S. to languish in desert storage. With the world now safe from tyranny, their job was done.



Aluminum Overcast, EAA's B-17 Flying Fortress

Statistics as shocking as this are not unique to B-17 bombers during WWII. The industrial and military effort required to protect our freedom was the greatest in the history of humanity. The sacrifice in human life necessary to protect our freedom was immense. Time passes, and it becomes easier to forget that by the time the United States entered WWII, almost all of Europe had already fallen to the Nazi onslaught. It becomes easier to forget that less than one year after the attack on Pearl Harbor, much of the Pacific and Far East had fallen victim to the Japanese Empire. It becomes easier to forget that 3 percent of the entire Earth's population died as a result of WWII. If not for the sacrifice of "the greatest generation," we'd likely be living in a very different world today.

PHOTOGRAPHY BY CHRISTINA BASKEN AND CONNOR MADISON

Currently, only 46 intact B-17 Flying Fortress airframes remain in existence. Of the remaining B-17s, only nine are considered airworthy. Even fewer actually fly regularly and are approved to offer living history flights to the public. B-17s are far rarer than P-51s, Corsairs, and almost any other WWII aircraft.

One of the most recognizable of these remaining B-17s is EAA's *Aluminum Overcast*.

THE MISSION

Stories of WWII veterans returning home from war often follow a common theme. These veterans did not consider themselves heroes. They did not glamorize war as an exciting adventure. They only wanted to put the tragedy of WWII in the rearview mirror and get on with their lives. Their uniforms and medals were placed in boxes and stored away in closets. In many cases, their personal stories of heroism were never passed down to their children and grandchildren. These WWII veterans were heroes, and their stories need to be told.

EAA has owned *Aluminum Overcast* for more than 40 years. During that time, the organization has had the honor of flying countless veterans, including bomber crew members who flew the B-17 during WWII. EAA has brought this B-17 flight experience to countless children, grandchildren, and family members of these heroic WWII veterans. It has flown the ashes of WWII veterans and the flags that draped the caskets of others. It has brought this history to schoolchildren who otherwise may have never understood the sacrifice of this generation. It has brought the story of the greatest generation to the public throughout the country in order to keep this history alive. Those of us who crew *Aluminum Overcast* are volunteers, and we consider ourselves caretakers of this very important history.

EAA volunteer pilots Tom Ewing and Neil Morrison arriving in Punta Gorda.

THE TOUR RESUMES

As with many EAA events and activities, the *Aluminum Overcast* B-17 tour was put on hold during the pandemic. For many months, *Aluminum Overcast* remained tucked away in the Weeks Hangar in Oshkosh. Finally, in March 2021, it was time for the tour to resume. *Aluminum Overcast* was flown to Lawrenceville, Georgia, for its first tour stop of the new season. Other than a minor disagreement with a large bird over which of the two would occupy the same airspace, all went well with the Lawrenceville tour stop. Then it was on to Lake City, Florida. After an uneventful tour stop, *Aluminum Overcast* was flown to Lakeland, Florida, where annual B-17 training would occur for the EAA volunteer B-17 pilots and mechanics. *Aluminum Overcast* performed flawlessly throughout the weeklong training event.

Once training was complete, EAA pilots Neil Morrison and I flew *Aluminum Overcast* to the next scheduled tour stop in Punta Gorda, Florida. EAA Chapter 565, our B-17 tour sponsor in Punta Gorda, can also claim bragging rights when it comes to some very interesting WWII history. The Army Corps of Engineers built Punta Gorda Army Airfield on the site of the current airport in 1941 as a P-40 training base. The airfield remained active until the end of WWII. Three decades after the war ended, one of the few reminders that this was once an air base was an abandoned concrete bullet trap used for sighting in aircraft machine guns. Its concrete walls were 14 inches thick and the interior was filled with sand in order to contain the bullets. The founding members of EAA Chapter 565 acquired the structure in the late 1970s and transformed it into the permanent chapter home still in use today.

The Punta Gorda tour stop was certainly shaping up to be a very successful event. The weather forecast was great, and quite a few B-17 flights were planned over the course of the weekend. The only task remaining was to wrap up some routine maintenance before tour flights started the following morning.

Punta Gorda Army Airfield bullet trap before and after its transformation into the EAA Chapter 565 headquarters.

B-17 MAINTENANCE

The historical significance of *Aluminum Overcast* is well understood by all those involved in this program, and that is reflected in the comprehensive maintenance this aircraft receives. There are two pilots, two TAMOs (touring aircraft maintenance officers), two tour coordinators, and two vans containing tools, parts, and support equipment at each B-17 tour stop. Electronic engine analyzer data from all four Wright Cyclone engines is downloaded after each day of flying and is then uploaded to SavvyAnalysis. From there, it is electronically screened for any unusual indications. The engine analyzer data is also monitored each day by no less than two sets of eyes. It is safe to say that very little, from an engine maintenance standpoint, can slip through the cracks. Routine engine and airframe maintenance for *Aluminum Overcast* includes daily inspections, comprehensive 30-flight-hour inspections that are performed while on tour, and 120-flight-hour inspections that are performed at the maintenance base.

PHOTOGRAPHY BY CHRISTINA BASKEN AND TOM EWING

Tim Bourgoine is a well-known and respected name within the B-17 community. He has been maintaining B-17s for many years and is one of the lead TAMOs for *Aluminum Overcast*. We were fortunate to have Tim with us during our tour stop in Punta Gorda. It was during his routine inspection that areas in the wing fittings were discovered that appeared to show signs of fatigue. Problems in these particular areas are not new to B-17s. An airworthiness directive applicable to all B-17s was issued in 2001 that requires dye penetrant and visual inspections in specific areas of the wing fittings. EAA has always maintained compliance with this AD. Any defects found in these areas during inspection require the affected materials to be replaced. This is a complex procedure, and it's precisely the daunting task we faced.

The fact that this specific problem was discovered during routine maintenance is validation of the success of the EAA maintenance program. Similarly, the fact that EAA maintenance takes a very conservative approach toward operating the B-17 validates the success of the EAA safety program. In this case, the decision was made to cancel the Punta Gorda tour stop flights. This approach is necessary for EAA to adhere to its very high safety standards.

THE RECOVERY

I think I'm pretty safe in saying that John Hopkins, EAA's director of maintenance, is one of the most knowledgeable and talented warbird techs in the industry. If there is a problem with a warbird, he's the guy you want on your side. After the problem was identified, John caught the next flight to Punta Gorda. John's inspection confirmed the initial diagnosis. *Aluminum Overcast* was grounded.

We were now faced with a serious logistical problem. With *Aluminum Overcast* 1,500 miles away from the maintenance base in Oshkosh, and with inadequate facilities and support to perform the repairs, we were faced with what seemed like a nearly insurmountable task. To make matters worse, we were six short weeks away from the beginning of hurricane season, and the *Aluminum Overcast* was stuck in a location where corrosive salt air could permeate every part of its 76-year-old fuselage. The thought certainly crossed my mind that *Aluminum Overcast*'s future was in serious jeopardy.

In addition, AirVenture 2021 was only three months away. John's maintenance staff in Oshkosh was already on a very tight schedule and was rushing to have everything ready to go in time for the event. The cancellation of AirVenture 2020 due to the pandemic was quite a blow to EAA. Jeopardizing the success of AirVenture 2021 by redirecting resources was not an option. This problem could not have come at a worse time.

DEDICATED AND TALENTED VOLUNTEERS

There is a camaraderie among the members of EAA Chapter 565, the warbirds community, the airport authority, and the maintenance crews at Punta Gorda Airport that I have rarely witnessed at any other airport. Once EAA chose to cancel any further flights of *Aluminum Overcast*, it would have been easy for the folks at Punta Gorda Airport to close the door, turn off the lights, and leave the aircraft's fate in the hands of others. But that's not how they roll. After the problem was identified, it was all hands on deck.

The first hurdle we faced was finding shelter for the B-17. This was not going to be a quick repair, and it would be all but impossible to accomplish without a hangar. We were certainly not optimistic. After all, what's the chance of finding an available hangar large enough to accommodate the 104-foot wingspan of a B-17 in Punta Gorda? This is where the story gets really interesting!

The entire first flight of the Punta Gorda B-17 tour stop was reserved by Chuck Bushman, the founder and CEO of Arcadia Aerospace, for his employees and family.

Arcadia Aerospace provides high-tech specialized manufacturing and quality-control solutions for the aerospace industry. It was certainly a disappointment to Chuck that this special B-17 flight was canceled. When Chuck learned of the serious problem we faced, he invited us to his hangar. Arcadia Aerospace operates out of a 120-foot -wide hangar with an attached office building. In the rear half of the hangar are bays housing some impressive high-tech robotic equipment. In the front of the hangar was the most perfect vacant area for parking a wounded B-17. And did I forget to mention that the hangar is air-conditioned? Chuck generously offered the use of his hangar if we could find a way to squeeze the 104-foot wingspan through his 85-foot door opening. John Hopkins is no stranger to fitting large airplanes through small doorways. He was confident that it could be done.

Once we had the hangar lined up, John had to return to Oshkosh to continue preparations for AirVenture. The logistics of preparing the B-17 and moving it to the Arcadia Aerospace hangar were left to me and the trusted EAA chapter volunteers at Punta Gorda Airport.

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CHEAPEST PRICE IN TOWN

Larry McClure is the president of EAA Chapter 565 in Punta Gorda. He's also a man with many local connections, and with a drive and determination that endure until a job is done. Larry was exactly the right person at the right time for the job that lay ahead. His leadership skills, gained through decades as a Navy pilot and United Airlines captain, would be tested over and over in the coming days. The job ahead would require plenty of volunteers, a tug capable of moving a B-17, a plan for emptying nearly 1,200 gallons of fuel that was onboard the B-17, good weather, and a bit of luck.

With no shortage of willing EAA Chapter 565 members, the task of assembling volunteers would be the easiest challenge to overcome. Larry also asked United Airlines Capt. Jim Lyons if they could use his two portable fuel tanks. The next key participant Larry enlisted was Ron Mallard, the airport manager at Punta Gorda Airport. Ron is a warbirds enthusiast with a bit of experience as a B-25 crew member. The final key volunteer was Paul Crowley, owner of PSC Warbird Aviation. He had the one available tug that might stand a chance against a B-17.

Aluminum Overcast was towed from the EAA ramp to a remote staging area where defueling would begin the following morning. One would think that finding a home for 1,200 gallons of free avgas defueled from a B-17 would be a simple task. Not so much. This fuel can't simply be pumped into the normal airport fuel supply because of the contaminant-testing protocol. The first order of business was breaking the bad news to Ron that we were about to destroy his fuel sales at Punta Gorda Airport. With that task behind us, Larry worked to line up enough airplanes to take the fuel as fast as we could offload it from the B-17. Each of the two portable fuel tanks had a capacity of 200 gallons. While the B-17's fuel was being transferred into one portable tank, the other portable tank was being trailered around the airport, filling the tanks of any local airplane owners who showed up. All the while, fuel had to be transferred from wing to wing and tank to tank on the B-17 to move it to the proper location for defueling. It's complicated, but let's just say that I'm hoping the emphasis in next year's B-17 pilot recurrent training is on the fuel system! The defueling process started early in the morning and lasted until dusk.

MURPHY'S LAW

That evening was spent running computer models of tow paths and fuselage overlap angles that would be required to pivot the 104-foot B-17 wingspan through the 85-foot door and into the hangar. This might be a walk in the park for John Hopkins, but my computer model showed just inches to spare.

Early the next morning, Paul Crowley connected the tug to *Aluminum Overcast*'s tow bar and prepared for the short trip to the hangar. Before moving the plane, we walked the tow route to take one more look. We knew the final turns would be a challenge due to narrow taxiways with no fillet and an uphill slope. Then there was the final pivot turn into the hangar with little room for error. No time to waste — it was time to move the B-17.

Aluminum Overcast flight jackets being presented to volunteers.

At first, all went well and the tug handled the weight of the B-17 nicely. However, once we reached the area of tight turns, the tug struggled. The stop-and-go motion put a flexing force on the tow-bar cap that finally caused it to break. Yes, it was our *only* tow bar. The B-17 was stranded and now blocking the only taxiway a local flight school had for getting in or out. Fortunately, they were good sports. They were very patient while we explored our options.

Ron Mallard jumped in with a couple of possibilities, the first of which was a robotic tug that was rated for the weight of a B-17. We tried this, but the drive tracks would not grip the pavement in the spot where we were located. Ron then mentioned that there was an old rusted tow bar on the opposite side of the field that we could try. The adjustable coupler jackscrew on this tow bar was rusted, but we managed to render it usable with some penetrating oil and coaxing from a hammer. We were back in business. However, we quickly ran into the same problem. The tug simply didn't have the power to move the B-17 through the tight turn.

We were running out of options when Chuck Bushman mentioned that Arcadia Aerospace had a forklift and cargo straps that could be used to help the tug by pulling from the front tow points on the B-17. When it was suggested that the small forklift wheels may not get the necessary traction, Chuck said, "Then I'll get our second forklift." Are you kidding me? Is there any obstacle that the people of Punta Gorda Airport can't overcome? This is exactly what we needed to make the final uphill climb to the hangar ramp area. What remained was the final pivot turn to position *Aluminum Overcast* through the door and into the hangar. It took a couple of attempts to squeeze the B-17 into the hangar, but we were successful. Yes, my computer model was correct — there were only inches to spare. With *Aluminum Overcast* safely tucked away in the hangar, everyone could finally breathe a sigh of relief.

The repair work necessary to bring *Aluminum Overcast* back to flying status meant that we would be in the Arcadia Aerospace hangar for several months. Arcadia Aerospace frequently works with classified and proprietary aerospace parts; this requires a high level of security within its facility. EAA employees, contractors, and volunteers would not be able to simply come and go as they pleased. Ned Rose is an Arcadia Aerospace employee, EAA Chapter 565 member, experienced airplane builder, and a pilot who is quite impressive at the controls of his RV-7. Ned became our liaison to Arcadia Aerospace and has helped us immensely. He has put in countless hours with the maintenance team operating heavy equipment, helping to remove B-17 engines, and working side by side with them on many other tasks. In addition, Ned coordinated the volunteer work to build wooden cradles used to support the fuselage while wing work is underway. Without the valuable help of Ned and these incredible volunteers, much of what we are accomplishing would not be possible.

By now, you have clearly identified the pattern that followed us through the entire Punta Gorda tour stop. We faced what seemed like a relentless wave of obstacles. Each time, the volunteers at Punta Gorda Airport bulldozed their way through. They would not accept defeat. I don't know if any other place in the entire country, or perhaps even the world, could have come up with the facility, equipment, volunteers, ingenuity, and leadership required to accomplish this enormous task.

Throughout this entire process, Chuck Bushman and the employees of Arcadia Aerospace have been incredibly helpful. They have run their business with half the hangar space they previously had. They have tolerated the noise and disruption that is unavoidable when performing heavy maintenance. They have generously assisted with the multitude of tasks that go along with a project of this magnitude. The generosity of Chuck and Arcadia Aerospace is far beyond what we could have ever imagined. For all they have done, they have asked nothing in return.

One day, the last of the airworthy B-17 Flying Fortresses will be towed away from the flightline and into a museum for permanent static display. When that day comes, the only stories many people will ever know about the bravery and sacrifice of the WWII bomber crew members is what can be printed on a museum exhibit display sign. That will be a sad day indeed, but it won't come anytime soon. *Aluminum Overcast* will fly again and continue its mission, thanks in large part to Chuck Bushman, Arcadia Aerospace, EAA Chapter 565, and all the great volunteers who shared our dream of keeping this history alive. When you next see *Aluminum Overcast* fly, you will know that the spirit of Punta Gorda Airport flies with it.

PHOTOGRAPHY BY **CONNOR MADISON AND TOM EWING**