

Embry-Riddle Senior Takes Over
**T-34 Family
Tradition**

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PHOTOS BY PAUL BOWEN

Scott Yoak (WB #551641) represents an anomaly in the warbirds field. In a community virtually dominated by gray-haired gentlemen, the 20-year-old Embry-Riddle Aeronautical University junior who owns and flies a Beechcraft T-34 Mentor is nearly always the youngest pilot at any warbird fly-by briefing that he attends. But after looking at his background, it's easy to accept that Scott is as comfortable in the T-34 as in his college Cessna 172 trainers. Knowing the background of his father, Bill Yoak, who restored the T-34, it's also easy to understand why Scott's Mentor won Best T-34 at EAA AirVenture Oshkosh 2004.

Growing Up in the Business

If you've needed any type of specialty metalforming work done on T-34s, P-51s, or other warbirds, then the name Aerospace Specialties is probably familiar. Although you won't find its phone number in the telephone book or even on the Internet, the Lewisburg, West Virginia, shop and its owner, Bill Yoak (Scott's dad), have been known for compound forming of exotic aircraft skins for several decades.

Born in West Virginia, Bill found himself living on the West Coast early in life. Obtaining employment as a sheet metal worker for Lockheed, Bill learned to form skins for such exotic aircraft as the YF-12 and SR-71, while also moonlighting as an air race pilot in the mid-1960s. "I flew *Miss America* for Howie Keefe when he owned it," Bill said. "At one time I was the youngest guy flying a P-51."

Later, Bill moved to Van Nuys and worked for Dick Martin in his Carlsbad, California, shop, restoring P-38 Lightning and P-39 Airacobra air racers. He started his own business, initially called The Metal Cage, in Carlsbad in the late 1970s, providing metal forming and other restoration services for various warbirds. Having joined the Screen Ac-



tors' Guild while in Van Nuys, Bill flew as a Corsair stunt pilot in the *Baa Baa Black Sheep* television series and other movies while also building and restoring helicopters and fixed-wing aircraft for myriad Hollywood productions, including *Blue Thunder* and *Rambo III*. The business grew rapidly, employing more than a dozen people under the name Aerospace Specialties before Bill, married now to his second wife, decided to leave the glamour of California for a simpler life in his native West Virginia in 1994.

"When Scott was nine-years-old, I was living in the fast lane," Bill said. "I'm a Type A personality, and I was really working hard in the movie industry and running a business as well. My wife and I decided that we wanted to raise Scott in a more wholesome environment, so we moved to West Virginia."

Having closed his thriving business and living far away from the action in Hollywood, Bill found the time to get involved with Scott's success in Boy Scouting, supporting him through Eagle Scout, and to coach his baseball team. But Bill's Type A personality didn't stop there—he founded Appalachian Youth Baseball, a non-profit organization that repairs baseball fields and finds sponsors for youth teams to "keep the kids on the fields and out of the malls," as Bill puts it.

But old habits die hard, and Bill resurrected Aerospace Specialties in a hangar at Greenbrier Valley Air-

port (LWB) in Lewisburg, but this time only as a one-man shop specializing in warbird metalwork. In addition to housing client projects, the hangar also housed Bill's Beechcraft Bonanza, T-6 Texan, and the T-34 that is the subject of this article. Although Scott got his first whiff of 100LL avgas in California, in West Virginia he had the opportunity to be figuratively drenched in it by spending countless hours at his dad's shop.

"I was always the ramp rat, the airport kid," Scott said during an interview at EAA AirVenture. "People would regularly snatch me up and put me in the back seat of almost any aircraft. That's how I got my start."

As could be expected from an "airport kid" whose warbird pilot father owned or had access to a number of aircraft, Scott began the transition from the back seat to the front seat at a relatively early age, taking lessons in a local FBO's Cessna 172 and earning his private pilot certificate at age 17. However, even before finishing his private pilot training, Scott found himself flying front seat in the T-34.

"Up until then, I was always in the back seat of T-34s, T-28s and P-51s," Scott said. "My father thought it would be a good idea, since I was going along fairly quickly in my training, to get some complex time. The first flight was a little shaky, but now I have almost as many hours in the T-34 as in the Cessna 172."



Having just finished his junior year, Scott has already accumulated more than 700 hours total time, significantly more flight time than that of the average Embry-Riddle senior at graduation. Of course, having his own airplane helps.

A T-34 Comes Home

The T-34 that Scott calls his own began its career at Naval Air Station (NAS) Pensacola, serving in training and transport roles from 1956 to 1959. In 1963, the T-34 with Bureau number 144000 crossed the Atlantic Ocean to reside at its new home with the Portuguese air force to participate in a T-34 evaluation program. Before the program terminated in 1971, the Portuguese air force put 438 hours on 144000, bringing the airframe's flight time to approximately 1,200 hours.

Although the Portuguese abandoned their T-34 program in the

early 1970s, they did not immediately shed the aircraft from their inventory. Instead, air force personnel disassembled and crated the aircraft for long-term storage.

"The engine on this aircraft ate itself early in the program, so the Portuguese parked it and cannibalized usable engine and propeller parts," Bill said. "Then they took the wings off and put it in storage."

Bill gives the credit to finding the T-34s to warbird owner and enthusiast Dave Clinton, who began inquiries as to the sale of 144000 and two other T-34's left from the evaluation program in 1980. After 11 years of political finagling, a deal involving a V-tail Bonanza and an undisclosed amount of cash allowed the Americans to take possession of the Mentors in late 1991. Bill and his family were still in California at the time, and Bill took one

of his shop foremen to Portugal for five weeks to prepare the three aircraft for shipment. What became Bill's T-34 was "sitting on its belly in a hangar, with its wings and stabilizers leaning up against it. It had been kicked around and had a lot of what we know as hangar rash."

In addition to spending a significant amount of time and money preparing the aircraft for shipment, Bill also added approximately \$25,000 to the pool of money used to buy the three aircraft. His reward for the time spent was that he was able to pick out the lowest-time T-34 for himself; the other two aircraft went to Dan Blackwell and Don Alderson.

"I knew that when I bought the airplane it would be the lowest time T-34 in the world," Bill said. "Dan Blackwell's is the next one, and I think it's up now over 2,000 hours. [Bureau No. 144000] now stands at 1,335 hours based on our last trip from Lakeland. And it's got under 1,400 hours on it. That's total time, including Navy, Portuguese, and Yoak pilots."

But the lowest-time T-34 in the world had quite a way to go before it could log that next hour. Drawing on experience from restoring two previous T-34s and forming the compound skins for other T-34s in the community, Bill and other Aerospace Specialties employees completely re-skinned 144000. They also built new stabilizers, canopies, and cowlings and rebuilt everything from the firewall forward. Bill purchased the rights to use Char-



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lie Nogle's Supplemental Type Certificate (STC) to install the larger 285-hp Continental IO-520BB and a three-bladed prop.

"The aircraft is approximately 80 percent new," Scott said. "The only things left from the original aircraft are the longerons. The engine, main fuselage, and all fuselage and wing skins went to zero time."

After approximately two years of restoration, the Yoak's T-34 flew its first non-governmental flight in the United States in 1994 with Bill at the helm. Nine-year-old Scott didn't get to fly in it for quite a while after that first flight, and soon after Bill was engaged in moving his family across the country to West Virginia.

Conquering the Stigma

Busy with restoration work, family activities, and flying other aircraft, Bill put only about 100 hours on the Mentor by 2000. But that doesn't mean he doesn't enjoy flying it.

"I'm very fond of T-34s," Bill said. "I think the T-34 is one of the neatest trainers built. Anybody can fly one. You go with a simple little tow-bar, pull it out of the hangar, put 14 gallons an hour in it, go fly, have a good time. And it will do anything a P-51 will do, except turn aviation fuel into thunder at 400 miles per hour."

With so little flight time on the T-34, Bill considered selling the Mentor until young Scott began expressing an interest in flying. Allowing Scott, who eventually saved enough money to purchase the air-

plane from his father, access to the airplane was the main reason the Yoaks kept the aircraft. However, the aircraft's value served as another underlying reason to keep 144000. Though Bill had meticulously restored the aircraft and enhanced its performance with the

larger engine, he didn't think he could sell the aircraft for what it was truly worth, especially with the stigma cast upon T-34s by high-profile wing separation accidents and the resulting FAA Airworthiness Directives. "The wing failure issue is blown out of proportion," Bill said. "The airplanes are safe."

The Yoak's T-34 does not need to comply with the newest of the ADs due to its low flight time, although it will require an inspection when the aircraft reaches 3,800 hours. To satisfy the older AD, Bill hired Tim Roehl at GAMI to perform its alternate means of compliance (AMOC) on the aircraft wingspars during restoration, even though the wingspars were "new" parts included in the initial aircraft purchase from the Portuguese.

The T-34's unusual paint scheme partly stemmed from a Corvette Bill once owned. When trying to decide what paint scheme to use, Bill came across an illustration of a paint scheme used by a particular rangemaster at Naval Air Station (NAS) Fallon in the 1950s. However, there are two differences between the original airplane and 144000's current paint scheme. The first is the color of the horizontal stripe—a metallic blue that closely resembles the paint color of the aforementioned Corvette instead of the traditional Navy blue. The second is the use of an eagle on the sunburst.

"The original had a seagull," Scott said. "We had to do away with that because it looked kind of goofy. There's at least one other T-34

with this scheme, except that the invasion stripes run up and down rather than diagonally. In the service, there was only one aircraft with this paint scheme, but in the civilian world people started copying it because it's pretty cool."

The paint scheme is not the only cosmetic change. Bill also wanted to give the T-34's scheme some durability, so he powdercoated all surfaces routinely touched by human hands, including handles and cockpit trim. Bill said his team experimented with matching the powdercoating pigments to the paint colors for months before getting an exact match.

"Powdercoating is virtually bullet-proof," Bill said. "It won't scratch and it's very durable. There are a lot of hidden things you can't really appreciate about what we did to that aircraft."

The judges at EAA AirVenture Oshkosh 2004 must have appreciated the efforts of Bill and his original team at Aerospace Specialties. Ten years after the aircraft's first flight after restoration and during its first trip to the hallowed Wisconsin grounds, the warbirds judges awarded 144000 the Best T-34 Award, and Aerospace Specialties the Silver Wrench Award. Several factors likely contributed to winning this award, including the meticulous care with which the aircraft was originally restored, the relatively little flight time incurred by the aircraft since restoration (approximately 200 hours over 10 years), and the completeness of the aircraft documentation.

"The history of this aircraft is trackable from the day it was taken out of the hangar for its first test flight," Bill said. "Everything that's ever happened to this aircraft is logged, every hour and every landing. I'm an A&P and an IA, and I know what records mean." The Yoak's documentation includes the original transfer document from the Beechcraft factory to the Navy, Bureau logbooks, and the Portuguese logbooks.

