



Aviation Cadet Training

Following a World War II cadet through to a B-29 cockpit, Part 2

BY JEFF SKILES

IN PREPARATION for their service overseas, tens of thousands of Americans passed through military cadet training. They flew a variety of aircraft as manufacturers produced everything they could for the war effort. The venerable Stearman PT-17 is the most famous of these, but many other variants from Ryan, Fairchild, and the Naval Aircraft Factory filled out the ramp at air training bases around the country.



Arthur McElmurry

Some were sweet flying airplanes like the Fairchild, others were more difficult beasts like the Stearman. But all seasoned their charges as they passed their first evaluations on the long hard road to a combat cockpit.

Graduating from primary to basic trainers, cadets would hone their skills in faster, more complex aircraft before taking the big step to the cockpit of a single-engine AT-6 advanced trainer or multiengine trainer. I am following the progression of a U.S. Army Air Force cadet by flying the array of aircraft that make up the Commemorative Air Force's AirPower History Tour. The AirPower History Tour teaches the public about the background and training of the young airmen who served in World War II. We will also follow a real aviator, Arthur McElmurry, as he makes his way to the right seat of the most advanced American bomber of the 1940s.

PRIMARY TRAINING

New recruits could draw from a host of primary trainers (PTs). Navy cadets might find themselves in an N3N, Army students could be climbing in the cockpit of a Fairchild PT-19/23/26 or a Ryan PT-22.

The venerable Stearman was built in several variants. The Army called its aircraft the PT-13/17/18 depending on which powerplant was bolted to the front. The Navy versions were named the N2S. A high center of gravity and narrow gear could make the Stearman a handful on the ground, but the pretty biplane could transform into a lady once in the air. Later in the war, primary training was standardized for both the Army and Navy in Stearmans, gaining the aircraft lasting recognition as the first solo for many a WWII aviator.

The full-featured N3N had the distinction of being designed and built by the

United States government. The Naval Aircraft Factory was owned by the U.S. Navy and produced almost 1,000 of the biplane trainers. Its Wright R-760 engines were even built by the company on license.

The diminutive Ryan PT-22, powered by a Kinner 160-hp five-cylinder engine, was rumored to possess wicked stall characteristics, and indeed, only about 1,000 or so were produced.

The PT-19 series trainer's long snout conveyed an aristocratic air that masked an extraordinarily nice flying aircraft. Its wing loading was a little higher than some of the more traditional biplane trainers like the Stearman, and the feel in flight more closely approximated the advanced fighters and bombers the cadets were destined for.

Sherman Fairchild owned the Ranger line of engines in his far-flung aviation conglomerate, but the Ranger couldn't match the production of airframes flowing out the

Fairchild factory doors. To maintain production about 1,000 of the almost 6,400 Fairchild trainers built were mounted with the Continental radial, producing the blunt muzzle of the PT-23. From the firewall back, however, the PT-19 and PT-23 were identical.

The PT-26 was a PT-19 with an enclosed canopy and the larger 200-hp engine. Most were destined for Canada to train British Commonwealth flight crews.

My primary training was accomplished in a PT-23, which was a Fairchild with the Continental R-670 mill in front. The radial engine, however, does nothing to change the straightforward flying characteristics of the Fairchild. When you're flying a Fairchild, you know you're in one of the nicest flying taildraggers to ever have graced the skies.

The PT-23 has a spacious cockpit that gives excellent visibility on the ground and in the air. While forward visibility is better in the slim-nosed PT-19, you still have a more

than ample view for a taildragger. The Fairchild trainers make you feel as if you're sitting atop the airplane rather than in it with a commanding view of the countryside.

The prop spins and the engine catches. The smoke of a freshly started radial is transferred directly into the cockpit from the loping engine only a couple of feet ahead. As we taxi for the runway the widely spaced gear soaks up any uneven ground and the long wheelbase makes ground handling a breeze.

It's a Fairchild so the throttle goes forward, the tail comes up, and the wheels leave the turf as fast as you can read this sentence. The smell and heat of the engine so close ahead makes you think you're riding atop a living, breathing thing, and the well-balanced controls seem to convert thought to flight.

On landing the broad main gear and ample oleo struts tame any aberrant behavior while the Fairchild wing keeps flying until that soft gear caresses the earth.



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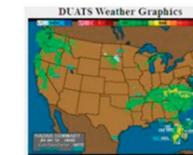
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Considering some of the more temperamental trainers that might have been assigned, a cadet who found himself in the cockpit of a PT-23 was indeed a fortunate man.

BASIC TRAINING

Upon graduating from primary training a cadet was assigned to basic training. Here he flew the more advanced Vultee BT-13 where the “BT” stood for basic trainer. The aircraft was named the Valiant by the Vultee Aircraft Inc., but airmen nicknamed it the “Vibrator.” This low-wing, fixed-gear aircraft had flaps, a controllable pitch propeller, and a Pratt & Whitney R-985 developing 450 hp. Once again due to a shortage of available engines, a variant designated the BT-15 was powered by the Wright R-975 engine. Almost 10,000 Vultee Vibrators were built, and most airmen to serve in WWII received an obligatory 70 hours in its cockpit.

In 10 weeks of basic training cadets learned night flying, navigation, radio communications, and formation flying. They also learned how to fly aerobatics, cross-country, and solely by reference to instruments.

Up until this point the flight instructors teaching the cadets had been civilians, but now military aviators would fly in the cockpit with trainees. The concept for airmen training during WWII was to incrementally add complexity to their environment. Airmen began with 10 hours in a Piper Cub or equivalent aircraft of another manufacturer. Students then amassed at least eight more hours in a primary trainer before being allowed to solo. Only after logging 65 hours in a primary trainer could they move to a basic trainer and gain 70 more. Then it was on to advanced training and transition training before shipping overseas. A lengthy but necessary ordeal to prepare our airmen for a shooting war, but also why our airmen were the best prepared of any in the conflict.

ART'S STORY

After completing six months of training to become an officer in the military, Arthur was sent to primary training just up the coast at Santa Maria, California. As Art tells it, “During our orientation we were told the average ‘washout’ rate was 30 percent in

primary, and some classes go as high as 60 percent—so getting through was no gimme.”

Art would be assigned to fly a Stearman PT-17 with a Continental R-670 radial engine. “It had a narrow landing gear, which made it tricky to land but was very stable in the air.”

A group of five students was assigned to one civilian instructor for this phase of training. Each cadet had to log 65 hours of flying time during the nine-week program.

“A cadet had to have at least eight hours of supervised flying before flying solo. Wednesday, September 22, was my red-letter day—the day that every cadet looks forward to. With buddies watching from the flight line, I took off solo, flew the pattern around the field, and landed. I use the word ‘landed’ rather loosely—on my landing the plane ‘ground-looped,’ or spun around.”

Considering some of the more temperamental trainers that might have been assigned, a cadet who found himself in the cockpit of a PT-23 was indeed a fortunate man.

Art’s instructor, Mr. Bell, walked up to the cockpit as he taxied in. “You’ll watch your drift next time,” was all he had to say.

Every step of the way a cadet was evaluated, and many didn’t make it.

“This was the time the ‘washing machine’ started. They decided who would continue in pilot training and who would be washed out.”

Those who didn’t make it might be assigned to bombardier or navigator training, but Art made it through.

“By Saturday, October 30, I finished primary training—passed all my ground school finals and check flights—another hurdle toward my wings.”

Then, after passing primary training, Art was asked to make a decision that would define the rest of his military career.

“We were asked to express our preference on the type of combat plane we wanted to fly. I requested heavy bombers. I thought having four engines and a crew to help each other in an emergency just made better sense.”

Art had completed primary training and had chosen his future. He was now assigned to basic training in Chico, California. It was here that he would meet up with the Vultee BT-13.

Art learned quickly, and even though the aircraft differed dramatically from the Stearman he had been flying, he soloed in short order.

“When we landed, the instructor taxied to the ramp and as he crawled out said, ‘You take off—you can kill yourself, but you are not going to kill me.’ Now this was a real confidence-builder.”

In basic cadets learned formation flying, how to maintain position on the wing of the lead plane, and if you were the leader, how to maintain a constant speed and make shallow turns.

“During one of the solo formation flying sessions, Cadet Arnold Nordale and Cadet Richard McLaughlin collided in midair, crashed, and were killed. Even though it was a somber, soul-searching time, training and classes went on except pausing for a brief memorial service. We did not realize it at the time, but this experience was as vital a part of our training as learning to fly. Overseas we would experience loss of a fellow flyer, not once, but time and time again.”

In WWII the rate of attrition didn’t just start when an airmen reached the foreign theater of operations. From 1942 to 1945, accidents in military aircraft still within the borders of the United States caused the deaths of 5,533 airmen, including 333 during primary training and 825 during basic training.

As the new year of 1944 dawned, Art completed basic training. He had 140 hours in his logbook, 10 in a Piper Cub, 65 hours in a Stearman PT-17, and 70 hours in a Vultee BT-13. For his next step, advanced training, he was assigned to multiengine training in Fort Sumner, New Mexico. Art had now been in continuous training for 10 months but had far more to go. *EAA*

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