

# T-34:

## The poor man's fighter

by F. B. BARTON / AOPA 384100

■ ■ The plane is below, scurrying along just above the treetops. It is angling away, and the pilot has not seen me. I make a quick scan for other planes and, seeing none, I concentrate on my target. I roll into a near-vertical bank and let the nose drop sharply down. I roll out directly on his tail, screaming down from above. He is in my sights and I let him have it.

He never knew what hit him.

It is all imaginary. He is an ordinary private pilot heading home from a sight-seeing flight with the wife and kids. I

pulled up and zoomed back to altitude before I got close enough to create a hazard. The game is a one-sided one. I always win.

You can play this game in your ordinary airplane, but it is not quite the same. Carpeting on the floor, fake wood-grain interiors, and curtains in the windows detract from the impression that you are Pappy Boyington sending another Zero to the bottom of the sea.

If you really want to fly for fun, join up with me and my T-34, and let's go hunt another enemy aircraft.

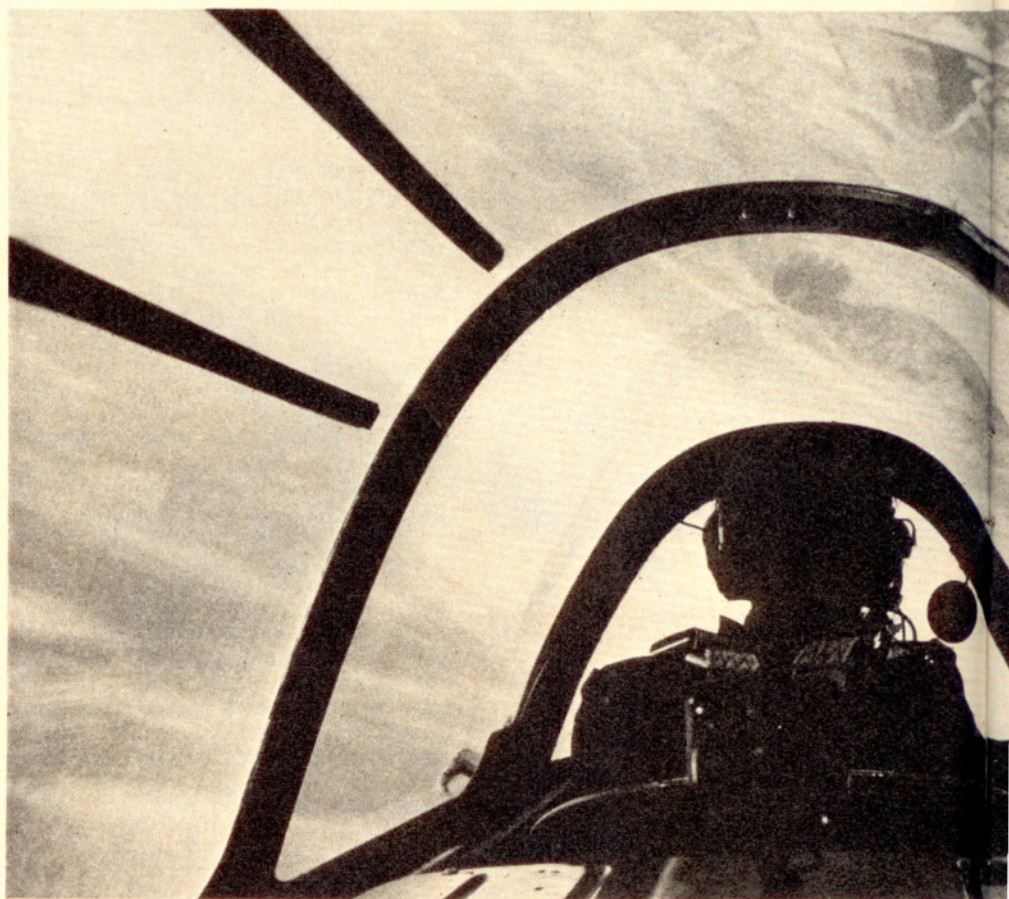
The T-34 isn't a fighter plane. It wasn't built until after World War II. It is a trainer—used by the Air Force

until 1961, and still used by the Navy—and it gives those of us who cannot afford a P-51 (or even a T-6) a chance to join in the make-believe.

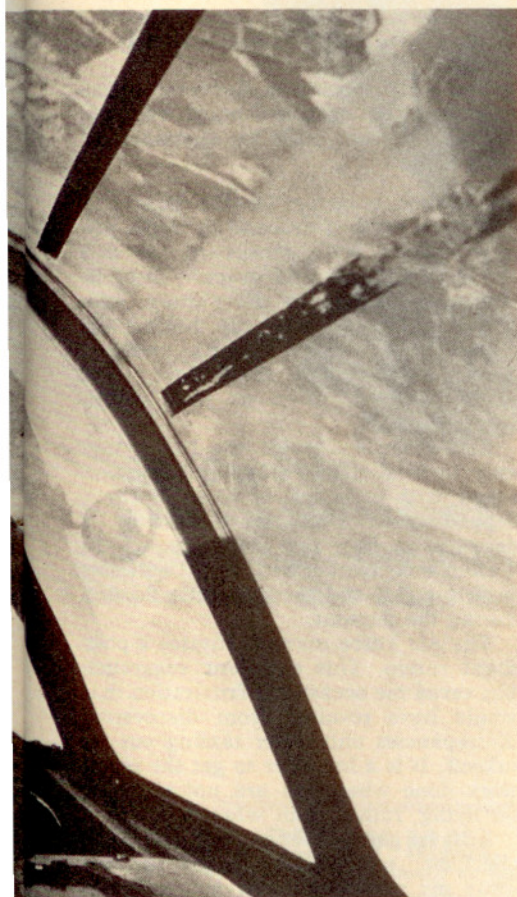
A friend of mine, after a ride in my plane, remarked, "It's impossible to fly it straight and level."

He wasn't referring to the T-34's stability, which is excellent, being aided by sensitive three-axis trim. The aircraft is typical Beechcraft—sturdy, solid, stable. Comparable to the earlier model Bonanza in power and performance, the T-34, otherwise known as the Beech Mentor, is a good cross-country airplane and an excellent instrument ship.

No, he was referring to the state of mind the T-34 engenders in its pilot. It







begs you to dive and loop and roll. With the canopy open and the wind tugging your hair out from under the earphones, you feel sensations of flight you have never experienced before.

Designed as a basic trainer, the T-34 was used to teach elementary flying techniques. It was also used for training in aerobatics, formation flight, and instrument flight. It is well suited for all these.

As an aerobatic trainer, the T-34 was flown through loops, rolls, and spins, dual and solo, by student pilots. Since they were far from perfect at these maneuvers, they needed a forgiving airplane that was built like a tank. In the T-34 they had it.

A surplus T-34 is hard to get. The military does not sell directly to the civilian market. Those aircraft that have reached civilian hands have gotten there through the CAP, or occasionally the Forest Service.

If you have ideas about buying a T-34, don't be in a hurry. It is going to take some time to find one. Prices vary greatly and seem to have little relationship to the condition of the plane.

The T-34 has basically a Bonanza fuselage, Travel Air wings and tail, and standard Beech gear. It is powered by a 225-hp Continental O-470-13—almost, but not quite, the same engine as in the early Bonanzas and the Cessna 182. This is a military version of the engine, and some parts for it must be gotten through military surplus. Most other parts are standard Beechcraft.

The engine will give you a cruise airspeed of 145 knots at 65% power, while burning 10.5 gallons per hour of 80-octane fuel. For the higher "acrobatic cruise" settings, expect fuel consumption of about 14 gph.

The greatest mechanical flaw seems to be the augments tube cooling system, which requires high airspeeds on hot days for sufficient cooling. The CAP removes the nosewheel gear doors, leaving a gaping hole that significantly reduces climb performance. On hot days, climb performance is poor indeed at airspeeds required to keep the temperatures within limits. Replace the gear doors and the change is remarkable. Climb performance on short-field takeoffs, using 75% flaps, is excellent. So is short-field landing performance.

The T-34 flies and feels much like the Bonanza, with the notable exception that the controls are much more sensitive. The first time you fly a T-34, you will overcontrol it. This is one good reason for obtaining a thorough checkout.

Another is that the cockpit layout bears no resemblance whatsoever to any civilian plane you will have flown. It is purely military—starkly practical, compact, totally utilitarian. You sit in the middle of everything. There is no waste space. Positions of controls and switches

will be unfamiliar. And you don't dare forget anything you will need—you can't get whatever it is out of a case carelessly tossed in the back seat.

Flying this plane takes more than casual preflight preparation, but it's worth it.

Come with me. I'll take you for a ride.

After a thorough preflight, I slide into the cockpit. There is a knack to it. I adjust the seat up a notch and back two. The parachute harness is bulky and uncomfortable. I pull the shoulder harness straps over the chute and slip the rings over the seatbelt. The seatbelt buckle closes with a solid click. I check the inertia reel lock, which stops the elastic play of the shoulder harness and grips the pilot firmly to the back of the seat. I am reminded that it will lock automatically with a 2-G decelerative force.

I place the headset over my ears, adjust the mike, and plug in the earphones and mike. If I were on a cross-country flight, I would wear my military-surplus helmet to which I can fasten the snug-fitting oxygen mask, attached to a diluter-demand regulator.

I am now strapped, snapped, buckled, and plugged into my airplane, and sitting there I feel cramped and uncomfortable and wonder how I can possibly fly. The cockpit becomes amazingly comfortable in flight, however, and while all unnecessary movement is restricted, I am left with complete freedom for all essential motion.

I am ready to do a cockpit check. Starting on the extreme left and working my way across the left console, left subpanel, main panel, right subpanel, and right console, I determine the condition or position of every control, switch, knob, and circuit breaker. All is well. I am ready to start up.

The battery switch snaps on and fed lights flash into brilliance; gyros whine into rotating motion; needles flick or creep into place; gear-position indicators proclaim that the wheels are down and locked.

I press another switch and the boost



pump kicks in with a throaty growl. The fuel-pressure needle marches over into the green arc. Forward with the mixture control; press the starter switch. A couple of revolutions of the prop, then turn on the magnetos. The engine roars into action.

Oil pressure is up, boost pump off; check fuel flow on the other tank. Turn on the inverter, which operates the heading and attitude indicators, and the high-pitched whir of the gyros is added to the rising level of sound emanating from the awakening machine. Turn on the radios; check on the electrical system. Everything is working well.

Before I can go, there are still more things to do. Exercise the prop; check the mags, controls, flaps, trim; set the flight instruments and radios. I leave the canopy open. I'll close it when I get up where the air is cooler.

While I await my turn for takeoff, I have time to take another look around this small space I'm getting to know so well. This plane has features I've never seen on civilian planes—wonderful, useful things, handy and well marked. Why aren't they on civilian planes? Because they would give the impression of vulnerability—of fragility—which might scare potential buyers away from buying, potential airplane drivers away from learning to fly.

Nonpilots look with dismay at signs saying Fire Access Door or Emergency Canopy Release Handle. The fact that the emergency features are there does not mean they are more likely to be necessary. It's like the chute. I have no intention of ever using it.

Vital switches have safety covers to prevent inadvertent operation. The control lock cannot be misplaced. Everything is within easy reach and sight. The transmitter and intercom switches are in the throttle. There are no cigarette lighters or ashtrays. The stick, with its slanted grip, feels so much more natural than a wheel. I feel perfectly at home in this cockpit. This is a pilot's airplane.

**W**heels up, trim set, turn out of traffic. The manual calls for full power and full high rpm for climb. Nice sharp, snappy rolls, precise rollouts, straight flight in between. No sloppy meanderings around the sky. Head up, flying by sight and sound and feel, looking for other planes.

I climb to an altitude of at least 5,000 feet agl to do aerobatics. The T-34 climbs to these altitudes easily and operates efficiently there. By the time I have reached an acceptable practice area, off airways, over open country, I will be at altitude and will have had time to set the craft up in "acrobatic

cruise." This is the configuration in which all aerobatic maneuvers except spins are done: full throttle, 2,400 rpm, rich mixture, boost pump on, heading indicator caged, and canopy closed. I snug down the shoulder harness and lock the inertia reel.

**I** am not a stunt pilot trying to show off. I do aerobatics for my own enjoyment. Long, lazy rolls; big, graceful loops; precise cloverleaves—these epitomize the freedom of flight. Nothing seems an unusual attitude any more. The sky is below me; the earth is poised momentarily above, before plunging down in a blur of green and brown. I am at home in a whirling, kaleidoscopic world where there is no up or down, where weight means nothing.

The simple wingover makes an excellent clearing turn. Visibility from this cockpit is tremendous. I have 360-degree vision out of the Plexiglas canopy. The cowlings slopes sharply away, giving excellent forward visibility, but causing pilots not familiar with it to fly in a nose-high attitude.

From the rear seat, more than halfway back in the airplane, the perspective is radically different. On flareout, from the back seat, almost total loss of ground visibility occurs. The front seat is far enough forward to provide excellent vision ahead of the wing. There is even a really useful rear-view mirror.

Wingovers are *not* a good maneuver to do with nonpilot passengers, since they include all the things that disturb people most about flight: steep banks, steep nose-up and nose-down pitch attitudes, and weightlessness.

After ascertaining that the area is clear, I pick a point on the horizon ahead, bring the nose up slightly above it, and execute an aileron roll. The roll is quick, and little airspeed is lost. I can string a series of these rolls together with very little altitude loss.

My airplane is a T-34A, the Air Force version. (The T-34B, used by the Navy, is not certificated for aerobatic flight by the FAA, but can be modified to receive such certification.)

My first attempt at a simple loop told me dramatically that this plane was going to be a lot different from the clipped-wing Cub I learned aerobatics in.

In the Cub, I hauled firmly back on the stick to enter a loop and held full elevator throughout, as the tiny kite-like craft seemed to strain with every ounce of power to pull itself over the top.

In the T-34, the same technique resulted in a high-air-speed stall with the nose pointed straight up.

The recovery was incredibly easy. A fraction of an inch of forward motion on the sensitive stick and the stall was broken. With what seemed like a huge excess of speed and power, I was able to continue the loop.

In a well-performed loop, elevator pressure is not heavy, and G-loading is well within comfortable limits. The pull-out can be varied depending upon what one plans to do next. Excessive back pressure can increase the G-loading to the "gray-out" stage, but a slight lessening of stick pressure relieves the G-forces and reverses the gray-out immediately.

When I fly solo, with the rear seat cushions removed and the baggage compartment empty, the plane teeters on the forward edge of its center-of-gravity limits. With a passenger in the rear seat, the CG is moved several inches back, and the plane is in nearly perfect aerodynamic balance. Aerobatic maneuvers are much easier with the rear seat occupied.

You can do many maneuvers, including snap and negative-G maneuvers, but the plane is not built for sustained inverted flight.

**I**t is time to return to the humdrum life on earth. I descend to traffic pattern altitude. With wheels up, this is a slippery airplane, and descent must be started miles out. In the pattern, with wheels down, I can stay behind the slowest airplane. The T-34 has excellent slow-flight handling. Half flaps allow better forward vision at slow traffic-pattern speeds.

Like other Beechcraft, the T-34 is very easy to land. I use a landing-approach speed, with full flaps, of 65 to 75 knots, depending on wind and turbulence. It depends on how the plane "feels." On a calm day, the control feel at 65 knots is very solid, and there is little floating during the flareout.

The Air Force manual advises a post-flight runup. This excellent suggestion has saved me occasional frustration that would have resulted from discovering discrepancies only after taxiing out for takeoff. It is a lot nicer to get the repair work done when you are not planning on flying, rather than when you are.

I have gone through my shutdown checklist, secured the plane, packed away my parachute, and departed with one last fond look at my plane. I have been totally immersed in the flying environment, employing all my skill to do a professional job. I have felt as if I were a part of the plane, and have come to know every nuance of its character. My every conscious effort has been bent toward getting the utmost performance from it.

I am driving down a wide, divided boulevard, cars passing on either side of me. I realize with a start that I am craning my neck from side to side, looking to see if my wings are clearing the other vehicles. I am still flying!

With all my checklists, my efforts at perfection, my complete involvement in my flying, I have forgotten one thing. I have forgotten to switch my mental gyros back to "Ground." □