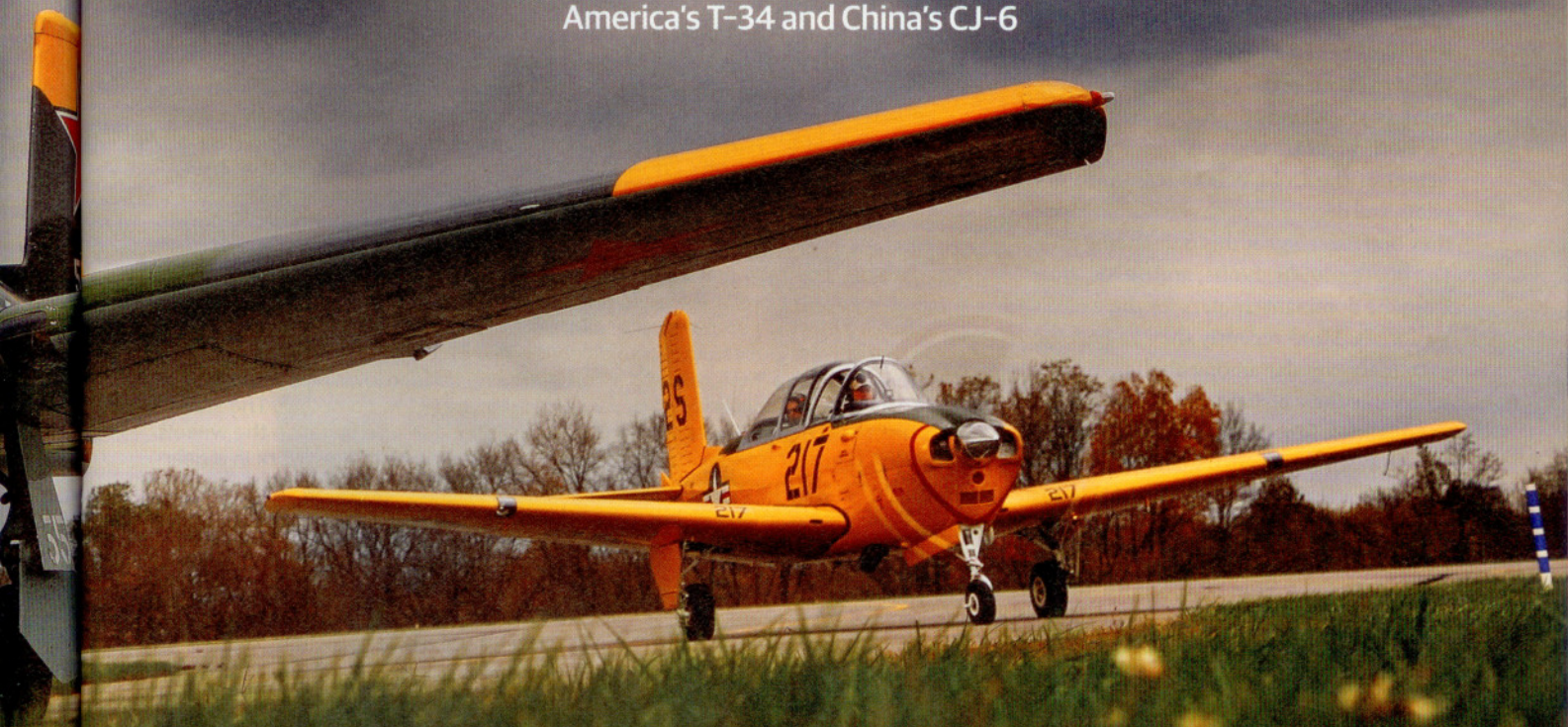




VIDEO EXTRA
Fly along in our third
"Fly Off" competition.

East/West Fly Off

America's T-34 and China's CJ-6



THE BEECH T-34 AND NANCHANG CJ-6 were built at the same time for the same purpose—military flight training—yet the two airplanes are a study in contrasts.

BY DAVE HIRSCHMAN | PHOTOGRAPHY BY CHRIS ROSE

The T-34 Mentor is proportional, refined, and elegantly crafted. From the perfectly clear Plexiglas to the gleaming stainless-steel canopy frames, and tight fit of the landing gear doors, it projects a durable and timeless sense of quality and grace.

It's smart, honest, and exudes a quiet Midwestern pride—just as you'd expect from Beechcraft, which was building Bonanzas and Barons at the same Wichita factory on parallel assembly lines.

The CJ-6, on the other hand, is bathed in a sooty film of oil tossed aside continuously from its throaty radial engine. It thrashes about noisily and awkwardly on the ground, moaning and bending each time pneumatic brakes are applied to its trailing-link landing gear.

Its disproportionately long legs, monstrous wing dihedral, and thick metal skin held together by an overly generous quantity of rivets make the CJ-6 look cartoonish: think Pig Pen meets Brutus.

Both aircraft were produced at the height of the Cold War to train military pilots, and despite their obvious differences, they both excelled at this demanding task. During the 1950s, 1960s, and 1970s, they were the dominant trainers for the world's air forces. More recently they've become extremely popular among civilian owners who value their history, durability, and flying qualities. More than 400 T-34s are on the FAA's aircraft registry, and there are a roughly equal amount of CJ-6s and Yak-52s (the Russian version based, like the CJ-6, on the Yak-18).

T-34B owner/pilot Billy "Smitty" Smith and CJ-6 owner/pilot Rich Romaine agreed to fly wing-tip-to-wing-tip to see how their airplanes compare. Their two airframes seemed particularly well matched since both are equipped with 285-horsepower engines—a six-cylinder Continental IO-520

in the T-34 and a nine-cylinder Housai HS-6A in the CJ-6.

AOPA Editor in Chief Tom Haines (a Bonanza A36 owner/pilot) joined Smitty in the T-34 while I flew with Romaine at Frederick Municipal Airport in Maryland.

FLY OFF. A stiff, 20-knot northwest wind was blowing right down the centerline of Runway 30 when the two subject airplanes followed the Bonanza A36 photo ship into the air. The T-34 was off the ground in about 800 feet and the CJ-6 ground run was virtually identical using normal take-off techniques.

The T-34 is normally aspirated and the CJ-6 has a small supercharger, so you might expect the CJ-6 to have an advantage at high altitude, but it doesn't. The T-34

with nearly full fuel tanks (50 gallon capacity) and two people aboard easily matched the Continental IO-550-powered Bonanza (with three people aboard) during the climb, while the CJ-6 at full power (and full fuel tanks) fell back slightly. Once level at 10,500 feet, the first order of business is an aerial drag race. With the T-34 and CJ-6 in a line-abreast formation, both airplanes go to full power. They stay together for about five seconds, but then the T-34 begins to claw ahead, and the speed difference becomes greater as the T-34 pulls away. The T-34 tops out at 160 KIAS (or 192 KTAS) while the CJ-6 reaches 138 KIAS (or 165 KTAS).

We rejoin to compare rates of climb at V_Y and full power. At 10,000 feet, the T-34 shows a higher rate of climb. The difference is hard to quantify (the CJ-6 VSI shows

"Quantity has a quality all its own"

The T-34 is superior to the CJ-6 only when evaluated through western eyes. If you fly from a gravel runway, or an icy or muddy one—as they do in the former Eastern Bloc, the long legs and spongy, trailing-link landing gear on a CJ-6 might look pretty good. And if you fly in a climate so cold that batteries go dead in airplanes left outside overnight, and thin hydraulic lines freeze and crack, the pneumatic system that starts the engine and operates the brakes, flaps, and gear retraction system on a CJH-6 is ingenious.

Sure, the T-34 has a superior fit and finish, and its gear doors fit snugly and lay flush against the belly of the aircraft in flight. But for primary flight training in which some number of gear-up landings is inevitable, the CJ-6 and especially its close cousin, the Yakovlev Yak-52, recognize this reality. A gear-up landing in a T-34 requires a complete engine teardown and inspection. It costs tens of thousands of dollars and takes weeks to complete. The same mistake in a Yak-52 causes almost no airframe damage because the wheels don't fully retract—and they continue to turn and the brakes work in a gear-up landing. When the startled student comes to a stop, no special equipment is required to raise the airplane off the ground. As soon as the broken wood-core propeller is replaced, the airplane is ready to fly again.

The CJ-6 and Yak-52 also allow the instructor pilot in the back seat to fail instruments and entire systems in the front cockpit at will. Instead of simulating electrical, static, and/or instrument failures, the instructor can shut down (and restart) the front cockpit systems with the flick of a switch.

The CJ-6 has so many rivets it makes you wonder whether The People's Rivet Factory was having a clearance sale. The fact that they're so overbuilt and required so much labor provides peace of mind to those pulling Gs in them now. That inherent strength makes the CJ-6 (and especially the Yak-52) a robust aerobatic performer.

Westerners harp on the lack of fuel and short range of Eastern Bloc trainers. But it isn't a shortcoming so much as a diabolical design feature. The Nanchang engineers didn't want flight students defecting in their airplanes, so they intentionally limited aircraft range to keep them from hopping across international borders. Now that the Berlin Wall has been relegated to the ash heap of history, we in the West can finally appreciate these fine aircraft. And the fact there are so many on the FAA registry speaks volumes.

"Quantity has a quality all its own" is a statement widely attributed to Josef Stalin, the former Soviet dictator. But even he would be surprised that so many former Russian and Chinese military trainers today are owned and flown by capitalists.

—Dave Hirschman

WINNERS

Top Speed: T-34

Rate of Climb: T-34

Stall Speed (Clean): CJ-6

Stall Speed (Dirty): Draw

Roll Rate: Draw

Takeoff/Landing Distance: Draw

Fly Off pits similar airframes against each other in wing-tip-to-wing-tip contests designed to reveal real-world performance differences—and *AOPA Pilot* editors share the findings, and their opinions about the merits of each design. Let us know which airplane matchups you'd like to see in future Fly Offs, and we'll bring you the results in *AOPA Pilot* and videos on *AOPA Live This Week*.



meters per minute) but I estimate the T-34 climbs about 200 feet per minute faster at this altitude. Advantage T-34.

We level at 11,500 feet to compare stall speeds and slowly bring engine power to idle. With the landing gear and flaps up, the T-34's nose drops just as airflow over the CJ-6's wings begins to buffet (at 115 kilometers per hour IAS or 62 knots). The difference in stall speeds is slim, but the CJ-6 wins fair and square. Advantage CJ-6.

To compare dirty stall speeds (V_{so}) we lower the gear and flaps in both airplanes, holding a line-abreast formation and gradually reduce engine power to idle. The T-34 drops full flaps and the CJ-6—which has a two-position (up or down), pneumatically controlled, split flap on its center section—puts the flaps in the down position. In level flight at idle power, the two airplanes stall simultaneously at 58 KIAS. Draw.

We compare roll rates using full aileron deflection and coordinated rudder at cruise speed, and both the T-34 and CJ-6 roll about 90 degrees per second. Draw.

"WORTH IT." The T-34 reflects the west's emphasis on quality, craftsmanship, individuality (T-34 seats move up and down as well as fore and aft) and exquisite control harmony. The CJ-6 shows the east's focus on ruggedness, mechanical durability, conformity (the seat doesn't adjust at all), and the necessity of operating in austere conditions.

The T-34B enjoys advantages in speed, climb rate, comfort, visibility, baggage capacity, and handling qualities. The CJ-6 is tough, simple, and virtually unbreakable. Most T-34s are registered as FAA Standard aircraft in Aerobatic or

A no-contest contest

Flash back to 1955 or so and put a Beech T-34 Mentor next to a Nanchang CJ-6—Yak—whatever you want to call it, and you could pretty well predict who was going to win the Cold War. Hey, Ronald Reagan, who needs the "Star Wars" Strategic Defense Initiative to scare the Communists into submission when you have this match-up?

Just as the Bonanza, upon which the T-34 is based, looked like something from the future compared to the Cessna 195—Cessna's comparative "new" offering at the time, the T-34 outpaces the CJ-6 in every way—performance, training capabilities for next step up the performance ladder, and certainly looks. Dave Hirschman tries to make a silk purse from the CJ-6's sow's ear by pointing out the East Bloc airplane's "simple" (prehistoric) systems and ruggedness. As it turns out the T-34, like the Bonanza, is an amazingly rugged airplane in its own right with proven reliable systems, just fine for rough strips, but really, when training to fly high-performance airplanes—the role for these airplanes—how often will you be faced with such fields anyhow? When's the last time you had your F-16 on a grass strip?

Billy "Smitty" Smith's stunning T-34 is primo example of the breed. Fully restored to reflect what it looked like when the Navy took delivery in 1955—right down to the placards—the Mentor is stunningly handsome and rugged. Smith did give a nod to some modern avionics and, of course, knocked out the original Continental O-470 for an IO-520-BB and a three-blade prop, which allows the airplane to meet its full potential.

The much-hyped wing spar airworthiness directive is just a footnote in the model's long and glorious history of training military pilots for 50 years. The piston and turbine variants continue in that role in many parts of the world. As it approaches its sixtieth birthday, Smith's airplane lives a pampered life at Baltimore-Washington International Airport where its owner picks it up after stepping out of the left seat of an Airbus for a major airline.

"It's a warbird you can own and operate on a Bonanza budget versus a T-28 or T-6 that cost a lot to operate," Smith reflects.

Indeed, the T-34 is a slice of Americana that reflects the nation's post-war dominance in aviation—and one that does so with a flair for wonderful handling and good looks.

—Thomas B. Haines

Utility categories while CJ-6s and Yaks fall under the "Experimental Exhibition" category. A top-of-the-line T-34B can fetch \$200,000 while flying CJ-6s in the United States typically range from \$60,000 to \$140,000.

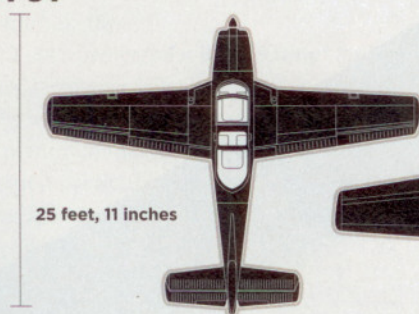
Smitty, the T-34 owner and pilot, flew U.S. Army helicopters and U.S. Air Force A-10 attack jets, and flies formation with friends in T-34s as well as CJ-6s and

Yak-52s. Romaine is a U.S. Navy veteran and former EA-6B Prowler flight officer.

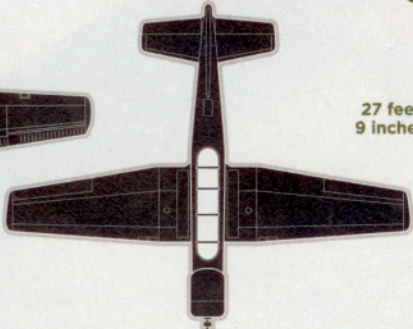
"The CJs and Yaks are wonderful for the T-34 community because they give us more people and more complementary airplanes to fly formation with," Smitty said. "We may have to slow down to accommodate them, but so what? They're worth it." **AOPA**

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T-34



CJ-6



T-34

32-foot, 10-inch wingspan

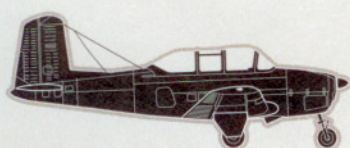


CJ-6

33-foot, 6-inch wingspan



9 feet, 7 inches



10 feet, 8 inches



SPEC SHEET

T-34

Seats | **2**
Empty weight | **2,254 lbs**
Max gross weight | **2,985 lbs**
Power | **285 hp**
Range | **545 nm**

CJ-6

Seats | **2**
Empty weight | **2,414 lbs**
Max gross weight | **3,086 lbs**
Power | **285 hp**
Range | **372 nm**

