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Enduring Efficiency

PIPER'S TWIN COMANCHE

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Seth Lockard's Twin Comanche.
 Photo courtesy of Wil Easterwood.

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Some Things Change, Some Stay the Same

As we close out the first quarter of 2026 and adjust our outlook for the rest of the year, with so many unknowns, it's comforting to have the consistency of in-depth knowledge imparted by T&T's diverse cadre of writers. This month, Grant Boyd profiles one of general aviation's most well-known advocates. Matt McDaniel provides a deep dive into the world of Piper's high-performance light twins from yesteryear. And Lawrence Searcy takes us along a flight that proves the importance of safety in the cockpit.

Mark Baker has been synonymous with AOPA for years. From 2013 through the end of 2024, his mission at the association included protecting our general aviation freedoms in the United States, advocating for and expanding BasicMed, lowering the cost of ADS-B regulatory adherence, and raising money for the "You Can Fly" program promoting general aviation. When asked about his next mission, he said, "I'm going to fly a lot more. [It's] hard to believe, but I am. Actually, my number one objective is to do something I should have done when I was in my 20s—get my flight instructor certificate."

When we think of Piper's light four-place piston aircraft, the word speed demon doesn't often come to mind. However, back in the 1960s and early 70s, that's exactly what the (then) Lock Haven, PA, company was known for, especially regarding its PA-24 and PA-30 Comanche and Twin Comanche lines. The PA-24s were much less expensive than Beech's J35 or Mooney's M20 speedsters. Competitors to the PA-30 Twin Comanche included the more expensive and less efficient Beech Travel Air and Cessna's 310. The Beech and Cessna were faster but vastly thirstier. Matt McDaniel details the rise and fall of Piper's Comanches, while Wil Easterwood's photos give us some of the most beautiful air-to-air images of the light twin.

Aviators talk a lot about proficiency. Lawrence Searcy describes the personal pitfalls he has experienced and the simple ways in which we can all avoid them.

There might be a great deal of unknowns these days, but there are also many things that don't change much: great leaders in aviation, great airplanes, and safety in the cockpit. 

A handwritten signature in black ink that reads "Lance Phillips". The signature is fluid and cursive.

lance@twinandturbine.com






“

Only five years after Piper's PA-24 Comanche had entered production, it was already beloved by owners and pilots alike.

Enduring Efficiency: Piper's Twin Comanche

by **Matt McDaniel**

PHOTOS COURTESY OF WIL EASTERWOOD AND MATT MCDANIEL



In fairness, I'd been warned. Both the owner/instructor seated to my right and the back seat passenger (also a CFI) had cautioned me about pitch sensitivity. It wasn't that I didn't believe them, or that I hadn't made a mental note of it either. Yet, the authority of the big stabilator about 20 feet behind me still injected me with a dose of humility.

With the lower red line speed (V_{mc}) of 90 MPH past and blue line speed (V_{yse}) of 105 MPH quickly approaching, the little twin was light on its gear and clearly anxious to launch. A slight pull on the yoke broke it free from Lebanon Municipal's (M54) Runway 19, outside of Nashville, TN. The next ten seconds were likely a comical display for any ground-based observers, as I oscillated around the pitch axis searching for equilibrium throughout the gear retraction cycle. Almost in stereo, my two fellow instructors on board laughed audibly and said, "We told you so!"

Double The Love

Only five years after Piper's PA-24 Comanche had entered production, it was already beloved by owners and pilots alike. It had developed past its original 180 hp model and was, by then, available with 250 hp. That model competed nicely against Beechcraft's mature V-tail Bonanza models. While the PA-24-250 cruised about 20 MPH slower than a J35 Bonanza, it also sold for 25-30% less (depending on optional features). That substantially more economical price tag was enough to drive steady sales. All the Comanche line seemed to lack was multi-engine redundancy.

Piper also had two twins in production; the Apache and the Aztec (both designated PA-23). The 160 hp Apache G & H models had just been superseded by the Apache 235 (which not only came with a big horsepower boost, but also an additional fifth seat). The Aztec line had just introduced the long-nosed, and 6-seat, B-model. Both were solid aircraft, selling relatively well. Neither, however, were speed demons, nor particularly fuel efficient.

Concurrently, soon-to-be-famed designer Ed Swearingen was busy developing and installing various modifications to a variety of certified aircraft, including the PA-24



Comanche. With Piper's encouragement, his San Antonio company completed and flew a modified Comanche, fitted with twin, fuel-injected, 160 hp Lycoming IO-320 engines. By early 1962, Piper had decided to further develop that design as a possible replacement for the Apache line. They built a prototype at their Lock Haven, PA facility, first flying it in Nov. 1962. Designated "PA-30," it was given the decidedly uninspired, yet undeniably accurate name, "Twin Comanche."

Things moved fast in that era, and Piper achieved FAA certification within three months. Two months

hence, in April 1963, the first production model was completed (only two years after Swearingen's proof of concept twin-engine Comanche had first flown). By mid-1963, deliveries of the original PA-30-160 Twin Comanche were underway. Soon, the B-model incorporated third fuselage side windows and optional 5th and 6th seats (sacrificing most of the baggage area to do so). By late 1965, B-models were being delivered with a choice of normally aspirated or turbo-normalized IO-320 engines (both still rated at 160 hp). In Nov. 1968, the first Twin Comanche C was delivered, featuring many



interior and exterior refinements contributing to a slight improvement in cruise speed and a more ergonomic cockpit and cabin space.

Calendar year 1969 proved the busiest of all for the Twin Comanche. A variety of improvements were flight tested, the most significant of which was changing the right engine to a LIO-320, which spun the prop opposite of a standard IO-320. Of course, this improvement created a counter-rotating (C/R) twin design, eliminating the critical engine. Initially, this was referred to as the D-model, but Piper soon decided to redesignate this model the PA-39. The first production PA-39 was completed at the end of 1969.

A Flood of Emotion

On June 18, 1972, Tropical Storm Agnes was upgraded to Hurricane Agnes as it moved northward across the Gulf of Mexico. It made landfall near Panama City, FL, as a Category 1 storm, with 85 MPH winds. It weakened rapidly, crossing Georgia as a tropical depression. Over North Carolina, it resumed tropical storm strength. By June 22nd, it was over the Atlantic and curving northward along the U.S. eastern seaboard, making landfall again near New York City. It morphed into an extratropical cyclone, moving slowly while spinning massive bands of rain far out from its low-pressure center. Damage was heavy across the eastern states. Nearly all of Pennsylvania experienced over seven inches of rain, with central PA receiving over ten inches. Some parts of the state were deluged with over 19 inches of precipitation. Rivers surged, and over 100,000 residents were forced to evacuate their homes while the rains were still falling. Before the clouds cleared, over 220,000 Pennsylvanians were homeless, and 50 were dead. The highest toll taken on any state. At the time, it was the most damaging and most expensive hurricane in U.S. history. To this day, Agnes is listed as the wettest tropical cyclone to ever impact Pennsylvania.

Directly under some of the heaviest rain swaths was Piper's historic Lock Haven factory. The Susquehanna River flowed immediately past the

factory and what is now the William T. Piper Memorial Airport (LVH). Its waters reached record depths, leaving some buildings under as much as 13 feet of water. The Piper factory was heavily damaged, dozens of aircraft were obliterated or washed away, and a variety of production tooling was destroyed. Included in the heavy losses were important tooling and dies for building Comanches and Twin Comanches. Difficult decisions would have to be made.

economics. Firstly, there would have been the cost of retooling for PA-24 & PA-39 production. Such costs would be difficult to recoup when the designs in question were already dated. The market for the aircraft had already been largely saturated, and post-flood sales numbers would likely have never been high enough to achieve profitability. Additionally, Piper's single-engine PA-28 and PA-32 lines incorporated a wide variety of models and capabilities. They were far simpler designs



Matt McDaniel (left) and Seth Lockard (right)

Theories regarding Piper's decision are numerous. Reactions to the announcement that Comanche and Twin Comanche production would come to an end were emotional. After all, the "Twinkie" (a lighthearted nickname often attached to the Twin Comanche) hadn't even been in production for a full decade yet. The single-engine Comanche design had matured into a 260 hp model and a fire-breathing 400 hp version, powered by a Lycoming IO-720. All Comanches had devoted fans who insisted the designs were too good to end so soon. Owners, of course, were concerned about future factory support and maintainability.

In the end, Piper's unpopular decision was likely just a matter of

than the PA-24 and were exponentially easier and cheaper to mass-produce.

Piper had also just recently put their PA-34 Seneca into production. The Seneca was essentially a twin-engine PA-32 (Cherokee Six / Lance) and thus incorporated the same simplified design and production advantages as the PA-28 and PA-32 lines. While not as economical to operate as a Twin Comanche, the Seneca had a larger fuselage, capable of seating 6 without sacrificing most of its baggage space to do so.

Finally, Piper's Vero Beach, FL, facility was up and running and able to continue production after the Lock Haven flood. There, production of the models that would fill the

gaps left by the loss of the Comanche and Twin Comanche could be spooled up at minimal cost. Conversely, the Lock Haven facility would have to be extensively repaired to restart production. Forced to play the hand they were dealt, Piper could ill-afford to allow PA-24 and PA-39 production to go forward to a more natural conclusion. Although popular opinion is that Piper had already decided to terminate Comanche series production anyway, and that the flood simply accelerated their plans.

Between 1963 and 1969, Piper pushed right around 2,000 PA-30s out the factory doors in Lock Haven. In Dec. of 1969, PA-39 production replaced the PA-30. Only a bit north of 150 of the counter-rotating PA-39s were completed before the famous flood in 1972 scuttled production forever.

In Their Heyday

Before the flood, the Twin Comanche had weathered other storms. Its performance and economics (both in acquisition and operating costs) were attractive. Its fuel burn versus speed

bested anything in the category at the time. Lycoming's O-320 engine family was both long-lived and common, numbering into the tens of thousands across the many aircraft types that utilized them. Thus, engine maintenance costs were also appealing. The diminutive size of the PA-30 was of little concern to multi-engine students and instructors, who weren't hauling families or cargo. Plus, as a replacement for the Apache, it was a huge jump forward in performance and ramp appeal. Soon enough, storm clouds gathered around the TwinCom anyway.

Almost as soon as it was introduced, the PA-30 inserted itself into the multi-engine training market. Like its single-engine sibling, it had a laminar flow airfoil that is great for low-drag and high-speed, but not quite as forgiving in the low-speed regime. It soon racked up an unusually high accident rate attributed to loss-of-control accidents, usually during low-speed one-engine-inoperative (OEI) operations. All this in the era when multi-engine students were rou-

tinely asked to do OEI stalls, slow flight, drag demos, and Vmc demos at low altitudes (where asymmetric thrust effects are greatest). Instructors were also not yet required to hold a specific Multi-Engine Instructor (MEI) rating on their Flight Instructor Certificate.

The FAA and NASA put the Twin Comanche through a re-evaluation, and no deficiencies were found. Out of an abundance of caution, the red radial speed (Vmc) was raised from 80 to 90 MPH, and the airspeed indicator marking was adjusted accordingly. Yet, no changes were made to the aircraft design. In the late 1960s, the FAA revised its rules for multi-engine training and checkrides. Higher OEI altitude safety margins and other changes were introduced. Additionally, in this time frame, the Multi-Engine Instructor (MEI) Rating was implemented as a separate and required rating for CFIs to teach in multi-engine aircraft. So, it's likely no coincidence that by the early 1970s, accident rates had dropped. Nonetheless, it took the better part of 30 years for the Twin Comanche to shake off



Fuel selectors and strainer



Circuit breakers recessed into the floor

the stigma of being “dangerous” at low speeds. In 1997, AOPA’s Air Safety Foundation published findings, attributing the PA-30’s early high accident rate to required high-risk maneuvers being conducted at insufficient altitudes, combined with so many Twin-Coms active in the training fleet at the time, often commanded by under-qualified instructors.

Spanning Generations

Seth Lockard grew up watching airplanes flying over his house, to/from

the nearby Taylorsville, IL airport (TAZ). At 12, he scored a Young Eagles flight and was hooked immediately. In 2007, at age 17, he took his first lesson in an ultralight. He earned his Private Pilot Certificate in 2009, in a Piper Warrior. From a teenager, he’s owned a series of aircraft. Initially, they were antique and/or experimental taildraggers, before earning his Complex and High Performance endorsements in a Comanche 250. In 2013, Seth became a registered nurse and moved to Lebanon, TN.

Twin Comanche N43B Data [Table 1]

Wing Span/Area	36.0 feet / 198 feet ²
Length	25.2 feet
Height	8.2 feet
Cabin Dimensions	Width: 45.0” Length: 9.0’ Height: 47.0”
Baggage Area	20 cubic feet
Empty Weight	2,260 lbs.
Max. Gross Weight	3,600 lbs.
Useful Load	1,340 lbs.
Fuel Capacity	90 Gallons (540 lbs.), 84 Usable All fuel was listed as usable in the early PA-30, but 84 usable is commonly used by experienced owners. [15 Gal tip tanks introduced on later models, bringing total capacity to 120 gallons.]
Fuel System	30 Gal. Per Inboard Wing Tank 15 Gal. Per Outboard Wing Tank Right Tanks Feeds Right Engine Left Tanks Feeds Left Engine Crossfeed Available for Emergencies
Electrical System	12 Volts 1 x Battery (35 Amp) 2 x Alternators (both upgraded from factory 50 Amp Generators to STCed 70 Amp Alternators)
Avionics System	King KMA-24 Audio Panel Lynx 9000 Transponder / ADS-B Garmin GNC-355 GPS/NAV/COM King KX-155 NAV/COM Garmin Aera 660 GPS (Panel Mounted) Garmin GI-275 CDI/MFD S-TEC 50 Autopilot

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Two years later, he bought his first Comanche (a 180) to pursue his instrument rating. Within the next few years, he would also earn his Commercial, CFI, and CFII in that plane. Soon after, he added multi-engine privileges in a Beech Duchess and an MEI in a Piper Aztec.

Despite a strong desire to own a twin, he couldn't really justify it. That is, until his Comanche 180's engine failed on takeoff. While the resulting emergency landing on a golf course was successful with no injuries, insurance wrote off the plane. In 2020, after test flying several Twin Comanches and being impressed with their performance and economy, he purchased N43B, a 1963 model.

Along the way, Seth transitioned from student to teacher and used his free time to flight instruct. He provided hundreds of hours of dual-given, including a beautiful full-circle moment where he provided a Comanche 250 check-out to the Young Eagles pilot who'd given him that first airplane ride. Soon convinced the time had come to leave nursing behind and pursue aviation as his primary career, Seth entered the airline world in 2021, flying the E-170/190 series for a regional carrier. A year later, he moved to a national airline on the Airbus A320 family. In 2025, he reached the Captain seat on that aircraft.

Like its owner, N43B has had its own journey. Built as Serial #30-226, it was completed at the very end of the first year of production, 60 years to the day after the Wright Brothers' first successful powered flight at Kitty Hawk. In the six-plus decades since, it has cycled through many owners, and a few N-numbers, as both a personal pleasure machine and a workhorse survey plane. As an original, A-model Twin Comanche, it had remained mostly stock. Now living in its retirement years, it's far from being put out to pasture, thanks to its decades-younger owner. Seth has upgraded most of the avionics and gotten them to interface well with the existing S-Tec 50 autopilot. Wanting to ensure it would be a safe and comfortable cross-country platform, he had all fuel and oil hoses

replaced and had the seats redone. Both plane and owner are still dedicated to the TwinCom's most common early mission: molding future multi-engine pilots. Under Lockard's tutelage, N43B is still put through its paces by novice hands, learning the ways of twins (or how to teach in them).

Just a Taste of Twinkie

Before flying N43B in Jan. 2026, I had zero time in a Twin Comanche and only one opportunity to fly a Comanche (and 260 hp 260B model). So, we took our time doing a thorough preflight and cockpit familiarization. The original PA-30s have some cumbersome features that it's good to be aware of in advance. Circuit breakers are below the throttle quadrant, recessed into the floor (see page 12). A protective door covers them. Fortunately, they were moved up into a more accessible sub-panel in subsequent models. Also on the floor, below another door, are the fuel sump handles (see page 12). All tanks drain into a single sump exit on the belly. While the central location might be convenient, having to put a catch basin or a second crewmember under the aircraft to collect the sample is certainly less so. Careful inspection of the nose gear is warranted, as its turn limits are fairly low and unfamiliar

Twin Comanche N43B V-Speeds [Table 2] All Speed In MPH Indicated Airspeed, Unless Noted

Rotation (Vr)	90
Best Angle of Climb (Vx)	90
Best Rate of Climb (Vy)	110
Best Rate of Climb, Single-Engine (Vyse)	105
Min. Control, Single-Engine (Vmc)	90
Maneuvering (Va) @MGW	162
Normal Cruise (Vnc)	190 True
Never Exceed (Vne)	230
Max. Landing Gear Operation (Vlo)	150
Max. Landing Gear Extended (Vle)	150
Max. Flap Extension (Vfe)	125
Landing Reference (Vref – Final)	95
Clean Stall (Vs)	76
Stall in Landing Configuration (Vso)	69

line personnel have damaged many by exceeding those limits. During taxi, the nosewheel is correspondingly sensitive to pedal steering inputs (easily overcome with a bit of practice).

Runup and preflight checks are conventional with no surprises. Aside from the pitch sensitivity mentioned

earlier, so is takeoff. In climb, one adapts to the effective stabilator and learns to trim it precisely to help minimize chasing pitch. Like all Pipers of this generation, trim is controlled via an overhead crank. Fortunately for me, I've flown vintage Pipers often enough to have a feel for this trim



Seth Lockard (left) and Matt McDaniel (right)

system. For those who don't, you're almost guaranteed to turn it the wrong way initially. Pitch feedback will quickly encourage you to reverse inappropriate input.

After level off, I wanted to see real cruise numbers for this early, unmodified, normally aspirated bird. The verdict: A GPS-verified 170 KTAS (196 MPH) at 24.5-squared, burning a total of 17 GPH, at 5,500' MSL. Pretty impressive economy for a 63-year-old light twin! On the slower side, normal maneuvers are all quite, well, normal. Steep turns and slow flight look and feel like they would in a similar size/weight single. The pitch is still sensitive, but you're used to it by this point. In contrast, roll always retains a heavier feel than pitch. Yaw is neither sensitive nor heavy; a characteristic that is ideal for OEI operations.

Soon enough, that's right where we were, with Seth walking me through drag and Vmc demos with the critical left engine set to zero-thrust to

simulate a secured engine and feathered prop. The Vmc demo proved anticlimactic. In spite of having three adults on board and being less than 500 pounds below max gross weight, the aircraft remained controllable to a speed below the designated Vmc. In fact, by the time the aircraft actually began to yaw towards the dead engine, with full opposite rudder applied, it was also hinting at an impending stall. A quick reduction in power on the operating engine, combined with a definitive pitch reduction, quickly brought 43B right back under full pilot control.

As any pilot of light or cabin-class twins knows, understanding the drag formulas of your aircraft is critical to ensuring a safe outcome after an engine failure. Few light twins are capable of sustained flight with OEI in anything other than a clean (or nearly clean) configuration. Properly managed, an OEI scenario results in stabilized flight at something very

close to best rate of climb speed, single engine (Vyse). If the scenario began at a higher altitude, drifting down to the single-engine service ceiling occurs before level flight can be attained (drift down is typically -150 FPM). Once additional drag is introduced, all bets are off.

On this day, in #30-226, a stable OEI cruise was easy enough to achieve in clean configuration, slightly above Vyse. With zero thrust on the failed engine, a climb of about 250 FPM could be achieved at Vyse (105 IAS). With flaps at 10°, maintaining altitude was possible, but only if speed was held precisely at Vyse (so that first notch of flaps equated to -250 FPM). Gear extension forced a 500 FPM descent to maintain Vyse (net performance loss, -750 FPM). Finally, flaps 20° subtracted another 100 FPM, while full flaps pushes the sink rate above 1,000 FPM! In a real situation, delaying gear extension until landing is assured would likely be necessary,

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as would choosing to land with partial flaps. The drag demo is not just a checkride maneuver. Knowing your twin's numbers could make all the difference in a real-world OEI event.

One pleasant surprise was that throughout all the OEI maneuvers, the PA-30's required rudder forces were never overwhelming or exhausting. Of course, in a real OEI situation, you'd trim the rudder to neutral both to prevent pilot fatigue and to maintain the desired flight path when distracted by other piloting tasks. In learning the aircraft, however, I wanted to feel what was truly required in yaw force with OEI and was surprised to find it manageable, for long duration, via muscle alone. Obviously, this is attributed to the fairly low horsepower of Twin Comanche engines, combined with more than adequate vertical stabilizer and rudder area.

The Twinkie's Preservatives

Like the classic snack food, the Twin Comanche seems to have also

been injected with an abundance of preservatives. The PA-30 & 39 have retained a cult-like following in their post-production years. Parts availability remains adequate and, in fact, better than for many aircraft mass-produced in the same era. Multiple companies have certified a wide variety of drag reduction and speed enhancement modifications for the sporty little twins, many of which are still available for purchase and installation today. The turbo-normalized models can routinely exceed 200 Knots (230 MPH) TAS at altitude, even in fairly stock condition, on 17-18 GPH (total, both engines). With several cumulative speed mods applied, any model can best their POH numbers by 20 MPH or more, flown high or low. Zinc chromate was liberally applied at the factory before major components were joined, which has kept the fleet well protected against corrosion. Airworthiness Directives stabilized years ago, and,

properly maintained, Twin Comanches continue to age well and soldier on. Within their niche, they remain a favorite for owner/pilots who want multi-engine redundancy, yet prioritize efficiency above all else. **T&T**

Matthew McDaniel is a Master & Gold Seal CFII, ATP, MEI, AGI, & IGI and Platinum CSIP. In 34 years of flying, he has logged nearly 22,000 hours total and over 5,900 hours of instruction given. As owner of Progressive Aviation Services, LLC (www.progaviation.com), he has specialized in Technically Advanced Aircraft and Glass Cockpit instruction since 2001. McDaniel is also a Boeing 737-series Captain for an international airline, holds eight turbine aircraft type ratings, and has flown over 135 aircraft types. Matt is one of less than 15 instructors worldwide to have earned the Master CFI designation for 11 consecutive two-year terms. He can be reached at matt@progaviation.com or 414-339-4990.



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