

V-Tail Bonanza

by Matthew McDaniel



Uhre's Bonanza showing off its unique winglets and extended tailcone.



The V-Tail's panel may seem antiquated by Cirrus standards, but it has a WAAS GPS, a fully coupled A/P, and XM weather capabilities.

Author's Note: With the second installment of this series, we continue to introduce Cirrus Pilot readers to some of the many COPA members who own and fly multiple aircraft. If you know a COPA member who owns/flyes multiple aircraft types and wish them to be considered for inclusion in this series, please drop me an email at: matt@progaviation.com.

It was 1969 and the draft board was on the other end of the phone line. They'd called to say his draft number was now 20 and to plan on going to Vietnam as an Army enlisted soldier. Craig Uhre had grown up hearing stories about flying from his two uncles who had flown and instructed during World War II. Maybe that made military aviation seem glamorous. Then again, nearly any alternative seemed glamorous in comparison to being an infantryman in Southeast Asia, so Craig beat the draft board to the punch and was soon in Pensacola, Fla. at Naval Officer Candidate School. Eventually he was trained as a navigator and traveled the globe in Lockheed P-3 Orions.

While Craig had started civilian pilot training during his early Navy days, it wasn't until he was stationed in Hawaii that he was able to finish his private pilot training. It was there he finished his solo cross-country flights, using the abbreviated method approved for Hawaiian aviators who could not meet the distance requirements of the mainland. Flying to two islands, using mainly pilotage, was a no-brainer compared to using celestial navigation to keep his P-3 on course during 13-hour oceanic missions. After leaving active duty, Craig completed his instrument rating and commercial certificate using the GI Bill. He flew for business for a short period, but soon family became a priority and he took a 15-year hiatus from flying. During those years, Mr. Uhre became owner of a heavy duty truck dealership, based in Rapid City, S.D. (RAP), specializing in tractors, trailers, parts

and service. A partner in this business, Dennis Kauer, owned a Piper Comanche and enticed Craig to buy into the airplane. Soon after, the plane became a business asset and they began flying to and from their two stores, as well as using it to attend tradeshow.

It was during a return flight to RAP, crossing the mountains from the west in the dark of night that they decided a second engine might be prudent if they wanted to continue these sorts of business trips. They upgraded to a Piper Seneca II and Craig earned his multi-engine rating.

In March 2003, he and three partners took delivery of one of the very first PFD-equipped SR22s, which they have now flown nearly 1,800 hours. By 2006, Craig had decided the Seneca was too expensive to operate and maintain, and sold it. It wasn't long, however, before Denny was considering another airplane, and was again asking Craig to be a co-owner. Enter the V-Tail Bonanza.

Beechcraft first flew the Bonanza in December 1945 and it entered production in March 1947. It was a radical departure from the predominately high-wing, fixed-gear, tail dragger designs of the time (especially its primary early competitor, the radial-engine Cessna 195). The unique V-tail configuration was primarily a matter of practicality. It was a third lighter than a standard tail, and both tail feathers were identical. Thus, production was easier and cheaper. Over the years, however, many V-tails experienced structural failures related to weaknesses within the tail. An independent study determined that

Data Chart – 1965 S35 Bonanza (V-Tail)

	ORIGINAL CONFIGURATION	CURRENT CONFIGURATION
Engine	Continental IO-520B 285hp @ 2700 RPM	Continental IO-520B 285hp @ 2700 RPM
Propeller	2-Blade, Constant-Speed	Hartzell 3-Blade, C.S.
Seats	4	4 +2 baggage area jump seats
Wingspan	33 feet, 5½ inches	34 feet w/ winglets
Length	26 feet, 4⅝ inches	26 feet, 9 inches w/ longer tailcone
Height	6 feet, 6½ inches	6 feet, 6½ inches
Wing Area	181 sq. ft.	181 sq. ft.
Max Gross Weight	3,300 lbs.	3,300 lbs.
Wing Loading (1g)	18.23 lbs./sq. ft.	18.23 lbs./sq. ft.
Power Loading (@MGW)	11.58 lbs./hp	11.58 lbs./hp
Baggage Capacity	270 lbs.	270 lbs.
Fuel Capacity (usable)	80 gal. w/ factory aux fuel	80 gal. w/ factory aux fuel
Wheels/Tires	7:00 2 6 (Mains) 5:00 2 5 (Nose)	7:00 2 6 (Mains) 5:00 2 5 (Nose)
Landing Gear	Retractable Tricycle	Retractable Tricycle
Cockpit Flight Controls	Single Throw-Over Yoke	Dual Yokes
Stall in Landing Config (Vso)	62	60
Stall – Clean (Vs)	73	70
Rotation (Vr)	80	80
Best Angle of Climb (Vx)	94	94
Best Rate of Climb (Vy)	111	111
Typical Climb	120	115
Cruise Climb	130	135
Economy Cruise	186	190
Max Cruise	212	215
Max Normal Operating (Vno)	190	190
Never Exceed (Vne)	225	225
Flaps Extended (Vfe)	130	130
Landing Gear Operating (Vlo)	165	165
Maneuvering Speed (Va-MGW)	152	152
Final Approach (Vref)-Clean	100	100
Final Approach (Vref)-Dirty	90	90

All Speeds in mph. Some speeds based on best available data or approximations due to lack of specific info in original 1965 aircraft manual.

Major Differences between original and current configurations shown in blue.

the V-tails had 24 times the fatal in-flight failure rate of the straight-tailed Debonair (introduced in 1959 and later renamed the Bonanza 33). Strengthening modifications and ADs were developed and issued; most V-Tails flying today have the modifications installed and continue to operate safely, proving the design itself to be fundamentally sound.



Craig Uhre (left) and Denny Hauer with their 1965 S35 Bonanza.

The family of V-Tail Bonanza models became one of aviation's greatest success stories, remaining in continuous production for 35 years from 1947-1982! Over 6,000 of them are still flying today. The Bonanza model line (excluding the Twin Bonanza) has been in continuous production since 1947, with nearly 18,000 built to date; the G36 is the current production version.

Justified or not, nearly every successful aircraft design develops a reputation which usually becomes fodder for heated hangar debates. Coincidentally, both the SR22 and the Bonanza developed early reputations for being “too hot” and for attracting buyers too inexperienced to handle their “unique” handling qualities. The V-Tail became known as the “fork-tailed doctor killer” and two generations later some began referring to the SR22 by similar monikers. Fortunately, Craig is not a doctor! Of course, both reputations were unfounded and arose more from poor (or no) pilot training than from aircraft design flaws. Once training regiments were more well-defined, both of these excellent aircraft became the gold standard within their respective categories. Craig now proudly owns a copy of each.

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Several factors went into Mr. Uhre's decision to buy into another airplane, while still maintaining his one-fourth share of the SR22. Craig's partnership with Denny in business and aircraft ownership had always been good, so there was no reason not to co-own another aircraft with him. Plus, Denny knew of just the airplane. A local pilot acquaintance had owned an S35 Bonanza for over 20 years and had maintained it meticulously, installing many upgrades and modifications over the years. But he was getting older and flying it less, and had asked Denny many times if he wanted to buy it. He wanted it to have a good home and to be flown and appreciated in the same manner he'd done for over two decades. Craig and Denny looked it over closely and liked what they saw. When they recruited a third partner, the finances seemed more realistic. They decided if they were going to go through with buying another airplane, they'd own it personally this time around, rather than through their business, although Craig still uses both aircraft for business-related flights on a regular basis.

This particular 1965 S-model Bonanza (S35) has some interesting and unique modifications. It sports a one-off pair of winglets designed by a NASA engineer and installed via a field-approval. The Smith cowling has reduced-drag air inlets, an additional landing light and a pilot-adjustable ram-air door which can be used to boost manifold

pressure one-to-two inches for increased climb and cruise performance. All the tail ADs, modifications and reinforcements have been installed. The paint and interior condition defy their 1980's vintage, and the new one-half-inch-thick, one-piece windshield and one-fourth-inch-thick side windows offer a clear view outside. An extended tailcone and a full set of gap-seals help reduce drag. The S35 was the first Bonanza to incorporate the third side window, giving it a longer, sleeker look. Many earlier models have retrofitted those windows to achieve the same "modern Bonanza" look, but on this plane, they're original. The recently updated panel highlights an S-TEC Autopilot with altitude-preselect and GPSS, which is fed WAAS data from a new GNS-430W. XM weather is displayed on a panel-mounted Garmin 396.

On Halloween day, I had the opportunity to fly Craig's S35. His partner, Denny, needed a BFR and introductory training for WAAS and autopilot operations and Craig rode along in the back. The experience was enjoyable, surprising, and retro! I've flown several models of the V-Tail Bonanza over the years. They all displayed the classic yaw-wiggle the type is known for. Contrary to popular belief, this tendency is not the fault of its V-tail

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design. It's primarily attributed to the aircraft's short-coupled stature. While the Debonair displays this same tail-wagging, the longer-fuselage Bonanzas do not. This bit of previous experience is what led me to the first surprise of the day; this Bonanza's unique winglets *really do* increase its yaw stability. They likely improve lateral stability some too, as I had previously noted some tendency towards lateral divergence in other V-tails, but not this one. The airplane was rock stable in 60-degree bank turns, and totally predictable in stalls and slow flight. Pattern work contained no surprises and instrument approaches displayed the stable platform that Beechcraft products are known for. Of course, this aircraft is slightly faster than original, with typical cruise speeds of nearly 200 mph (170 kts). I was struck by one major aspect of operating this 1960's vintage complex aircraft versus a Cirrus; the pilot's workload is exponentially higher during non-cruise flight. All the engine controls are somewhat inconveniently located below the bulky center-mounted, dual-yoke crossbar. Plus, there are a lot of them to manage. In Cirrus aircraft, we've become accustomed to the ease of managing only a throttle and mixture. In this S35, the pilot manages the throttle, prop, mixture, cowl flaps, engine ram-air, and landing gear. It can get busy, to say the least.

While all three of the Bonanza partners enjoy the airplane, there are questions about whether to keep it long-term. On the one hand, it is a truly unique example of the type, and they've invested a lot into the new avionics. It also has a recently overhauled engine and prop. But, Craig has the Cirrus and Denny now has access to a C-180 based at the turf runway on his South Dakota ranch, so it becomes a question of *need* versus *want*. They have no immediate plans to sell, but the topic is open for discussion. If the price and timing are right, maybe *you* could be the next owner of this custom-classic! **COPIA**

About The Author: *Matthew McDaniel is a Master & Gold Seal CFII, ATP, MEI, AGI, IGI and CSIP. In 19 years of flying, he has logged over 10,000 hours of total time and more than 4,000 hours of instruction-given. As owner of Progressive Aviation Services, LLC (www.progaviation.com), he has specialized in Cirrus instruction since 2001. He's also an airline pilot, currently flying the Boeing 717 and holds four turbine aircraft type-ratings. Matt can be reached at: matt@progaviation.com or (414) 339-4990.*

Craig Uhre

PERSONAL DATA

Age: 61

Born: Mitchell, S.D.

Living: Blackhawk, S.D.

Status: Married to Joan for 28 years. Five children, including three adopted, and foster parented 52 kids!

Education & Training:

- College – Iowa State University – B.S. Architectural Admin., 1966-1970
- Naval Officer Candidate School and Aviation Training – Pensacola, Fla., 1970
- Naval Navigation School – Corpus Christi, Texas, 1971
- Anti-Submarine Warfare and P-3 Orion Training – Mt. View, Calif., 1971
- Three-year Tour with VP-60 – Barbers Pt., Hawaii, 1972-1975
- Real Estate Sales License – Bellevue, Wash., 1975
- Retired as a Commander, U.S. Navy Reserves, 1990

Occupation: Owner of Eddie's Truck Sales (Freightliner, Western Star and Sterling Dealer with 50 Employees) located in Rapid City and Ft. Pierre, S.D.

Hobbies: Flying, Hiking, Snow skiing, Tennis, Hunting

AVIATION DATA

Earliest Aviation Memory: Listening to my uncles' World War II flying stories.

First Flight: In a Navy T-1A jet trainer in Basic Aviation Training. I became sick pulling G's!

Mentors: Dennis Kauer (1990s) for getting me back into flying after a 15-year hiatus. David Schwietert (2000s) for getting me into the SR22 partnership.

First solo: C-152, Corpus Christi, Texas (July 1971).

Initial Training: C-172, NAS Moffett Field, Calif. and NAS Barbers Pt., Hawaii (1971-72).

Private Certificate: November 1973.

Instrument Rating & Commercial Cert. Training:

Piper PA-28R-201T Turbo Arrow, Joplin, Mo. (1979).

Multi-Engine Rating: Piper PA-34 Seneca II, Rapid City, S.D (1999).

Aircraft Owned: 1959 Piper PA-24 Comanche 180 with one co-owner (1992-98), 1979 Piper Seneca II with same co-owner (1998-2006), 2003 Cirrus SR22 G1 (PFD) with three co-owners (2003-Present), 1965 Beechcraft S35 Bonanza with two co-owners (2007-Present).

Proudest accomplishments in aviation:

- Being a P-3 Mission Commander in charge of Flight Crews of 10-12 Naval personnel
- Multi-Engine Rating

All-time favorite flight: A family vacation flight to the East Coast in the Seneca. Left Rapid City for Janesville, Wis. to refuel, crossed Lake Michigan (pucker factor) to Niagara Falls, and then on to Boston and Martha's Vineyard. Departing there the morning after JFK Jr. went missing, flew direct to Fredericksburg, Va. via the Shark Route east of New York City (bigger pucker factor!), then back home to western South Dakota.

Total Time:

- 4,100 hours as Navy P-3 Flight Crew
- 1,150 hours Civilian