Lipstick & Jet Fuel / Summer at the Iron Works / Phenom 100 Ownership

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Orcas Island, Washington.
Courtesy of Dwight Barton

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Editor's Briefing

by **Lance Phillips**

2024 and Beyond

"For the first time in more than a decade, the general aviation manufacturing industry has eclipsed 4,000 aircraft delivered. In addition to this strong showing, there are robust and growing order backlogs for all segments of aircraft." That is from Pete Bunce, the president and CEO of the General Aviation Manufacturers Association (GAMA). He goes on to forecast, "What our industry can accomplish in 2024 and beyond will be extraordinary."

GAMA's report shows the following: Airplane shipments in 2023, when compared to 2022, saw piston airplane deliveries increase 11.8% from the same reporting companies, with 1,682 units; turboprop airplane deliveries increase 9.6%, with 638 units; and business jet deliveries increase 2.5%, with 730 units. The value of airplane deliveries for 2023 was $23.4 billion, an increase of approximately 2.2%.

Our friends in Switzerland who make Pilatus aircraft contribute to the good news by reporting:

The 2023 financial year was marked by major successes for Pilatus. Thanks to high, unbroken demand, 148 aircraft were delivered despite the ongoing challenges of the operating environment. With total sales of 1.478 billion Swiss francs, operating income of 240 million Swiss francs and new orders worth 1.513 billion Swiss francs, Pilatus closed the past year with record results. Compared to 2022, which was already a very successful year, Pilatus achieved a ten percent increase in sales and added six percent to its operating income. The total number of aircraft deliveries is impressive, too: all in all, 47 PC-24s and 101 PC-12s were handed over to customers last year.

Stanley, ID, courtesy of the RAF

The PC-12's propeller manufacturer is also making headlines this month. Remember the news in January about Hartzell's new owner, Arcline Investment Management, raising parts prices across the board? Well, it looks like it's trying to provide its customers with relief by increasing warranty coverage.

The Hartzell Service Center's warranty on work performed at the FAA-certified repair station in Piqua, Ohio, is now two years or 2,000 flight hours, whichever occurs first, extended from one year or 1,000 flight hours, whichever occurred first. This significant extension reflects Hartzell's commitment to quality, performance and support, allowing customers to fly with added confidence.

"These improvements at the Hartzell Service Center give our customers extended warranty protection and additional inventory, leading to less flight downtime," said Scott Foster, director of the Hartzell Service Center. "We continually look for ways to add convenience and value for aircraft owners and operators."

In addition to Hartzell's warranty increase, it continues to support backcountry flying. "We are pleased to be able, once again, to extend this special offer to Recreational Aviation Foundation (RAF) supporters for the fourth consecutive year," said Hartzell president JJ Frigge. "In addition to providing these $1,000 discounts on backcountry props, we will contribute $250 directly to the RAF for each propeller sold as a result of this special offer. This is an example of our continuing support for the adventure of flight and the RAF's mission to preserve aviation access to the backcountry," he added.

These are just a few of the feel-good stories from across the general aviation spectrum. Spring training has started. And the trees in Texas have started blooming and sprouting new leaves. It's time to slide those hangar doors open and fire up the magnetos.

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Summer at the Iron Works

Photos and Story by
Peter Ruskay

N777PV on the ramp

Aviation is a cyclical business. Hiring droughts can suddenly become booms, and timing is a big factor in career advancement for those who wish to become professional pilots. Due to age demographics and the enormous retirement of older pilots, aspiring aviators are enjoying what could be the greatest hiring wave ever. Today, the hiring is so frenzied that the journey from student pilot to airline cockpit has never been shorter. Those who chanced into this cycle have won the career lottery.

In 1991, as a newly minted graduate of the Florida Institute of Technology, I wasn't as fortunate. The Gulf War began and ended that year, and airline hiring was almost nonexistent. The rest of the industry follows as airline hiring goes, and this logjam created a stagnant market. The result was that I had to beg, borrow and steal opportunities to gain experience and flight time.

From 1991 to 1995, I simultaneously worked as a flight instructor, a passenger, and a cargo pilot for two Part 135 companies and as a Chief Pilot and Check Airman flying Navajos, Aerostars, Cheyennes, and King Airs. When there was no scheduled flying, I worked line service for International Aviation at KHPN, fueling and towing business jets. None of these jobs were full-time or salaried. Armed with my period-correct pager, I juggled my schedule as the work came, and hustling was the only life I knew.

Every summer at KHPN, a magnificent bird would appear and base out of our FBO for the season. It was a vintage Grumman G-73T Mallard manufactured in 1949. Radial to PT6 conversion complete, she always drew attention when sitting on the ramp. The owner was a colorful and gregarious man who lived seasonally in New York and Florida. He was an avid fisherman who owned homes near his fishing boats

My front office

'Lux accommodations in the back

in Montauk (KMTP) and Walkers Cay (MYAW). For those unfamiliar, Montauk sits at Long Island's eastern tip, and Walkers Cay is a small island north of the Bahamas, about 100 nm from West Palm Beach, FL.

The owner was a particularly nervous flier. He would bring the New York Times and intently work at the crossword puzzle to distract himself during flight. Since most of his flights were conducted over water, he reasoned that he should own an amphibian on the chance that his aircraft would have to ditch. The owner employed an equally colorful character as his Chief Pilot, and each summer, a local First Officer was selected to fly with him. In the summer of 1995, I was chosen to fly right-seat on this classic machine.

The Grumman Aircraft Company was founded by Leroy Grumman and headquartered in Bethpage, NY. They designed some of the most successful World War II Navy combat aircraft, including the famous cats – the Wildcat and Hellcat, along with the Avenger dive bomber. Grumman was affectionately known as the Iron Works because their ruggedly built airframes would bring their crews back to the carrier, even after battle damage.

Before the war, Grumman had manufactured amphibians, starting with the J2F Duck, a single-engine biplane that saw widespread military service. The Duck fuselage was attached to a large center-mounted pontoon with smaller wing-mounted pontoons for stability. Grumman produced a total of 632 Ducks.

In the 1930s, some wealthy New Yorkers commissioned Grumman to design a twin-engine amphibian, which they could use to commute from their Long Island estates to Manhattan, conveniently landing in the city rivers. The result was the G-21 Goose, a 7,500-pound model with a 49-foot wingspan powered by twin 450-hp Pratt and Whitney Wasp radials. First flight was in 1937, and Grumman marketed the Goose as a flying boat that could carry two to four passengers in nautical comfort. As war broke out, the US Navy, Army Air Corps, Coast Guard, and Civil Air Patrol adopted the Goose in transport, reconnaissance, and rescue roles. Grumman built 345 G-21s.

Post-war, Grumman sought to re-enter the civilian market with a larger model that could accommodate 8-10 executive passengers. The G-73 Mallard first flew in

On approach in the islands

1946, and 59 were produced through 1951. The 13,000-pound beast featured a 66-foot wingspan powered by two 600-hp Pratt and Whitney R-1340 Wasp radial engines. It was the first Grumman amphibian to have a tricycle landing gear, and with a fuel capacity of 380 gallons, it had a range of 1,200 miles while cruising at 160 mph. The Mallard was designed for two types of customers: commercial air taxi and private-use operators. The stand-up cabin could accommodate a high-density airline layout or a luxurious, yacht-inspired interior with a galley and private lavatory. Grumman advertisements at that time depicted passengers in wood-paneled interiors, sitting on large seats and couches, traveling in style.

This particular Mallard had an unusual past before it was privately owned. It served as a utility aircraft for Freeport McMoRan, Incorporated. Freeport was founded in 1912 and is one of the world's largest mining companies. The company used this amphibian to survey difficult-to-reach areas in Indonesia and New Guinea for mining opportunities. In 1959, Freeport discovered a massive copper and gold deposit in New Guinea, which they developed into the Grasberg mine. To this day, Grasberg is the largest gold mine in the world.

After a hard life of transporting geologists, engineers and survey crews, she came back to the US and was acquired by my employer. The working interior was removed and replaced with something befitting the old Grumman ads. It had a double club configuration with six large seats, a four-place divan, a mid-cabin galley, and an enclosed aft lavatory. Frakes Aviation in Cleburne, Texas, developed a modification to replace the Wasp radials with the venerable Pratt and Whitney PT6A-34 turboprop rated at the same 600 hp. She got the engine conversion to become a G-73T and, with this upgrade, lived on as a well-cared-for lady. It was a fitting way to begin her second life.

Most of my trips were between KHPN and KMTP, a 30-minute flight over the Long Island Sound to the end of Long Island. The owner was known as a gracious entertainer, and we would shuttle his family and numerous friends back and forth to visit his home and fish on his boat.

Out of the hangar and chocked on the ramp, I would carefully climb on top of the wing and have line service pass me the Jet-A hose. The FBO would not let their fuelers on the wing of the Mallard, as it was a dangerously long fall to the ramp. With the galley stocked and preflight complete, our passengers would arrive, and we would get on our way.

The cockpit could get hot. Its automotive-like, roll-down windows gave us some relief as we brought those PT6s to life. In classic seaplane configuration, the power levers were on the overhead panel, above the glare shield. With a monkey-bar-style nudge, we'd get the old girl moving. The short wheelbase and stiff gear made taxiing a bit bumpy, so we kept it slow so our passengers didn't give us dirty looks. Since the flights were short, we didn't carry full fuel, which made takeoff and climb performance surprisingly brisk. Once level, we would settle into cruise as we winged across the Long Island Sound.

Montauk Airport has a short, uncontrolled 3,250-foot runway wedged between the marina and the dunes. Being

on the very end of Long Island and exposed to the open Atlantic Ocean, it was perpetually windy, and the wind direction was rarely down the runway. Designed to land into the wind on a water landing, the Mallard was a handful to land on a runway in a crosswind. The combination of the high wing, weather-vaning fuselage, and fat pontoons had me hanging on the power levers while working the infinity-shaped yoke throughout the approach, landing and rollout. Once we navigated this big bird onto the ramp, done for the day, it was off to the hotel.

Interestingly, the hotel was a private club adjacent to the marina where the owner kept his boat. We would each get a small bungalow on the stately grounds. This club could have been a setting in The Great Gatsby with eccentric, old-money members who had been frequenting the property for years. They would sip gin and tonics by the pool and engage in spirited croquet matches to pass their days away. The staff was from the iconic 21 Club in New York City. The 21 Club was only open during the work week, and on summer weekends, they would bring the chefs, servers, and bartenders to Montauk. There were no menus or bills – the servers would simply ask what you felt like having, and it would magically appear. For a young pilot accustomed to FBO vending machines, this was heady stuff, and I'll always have great memories of my time there. It was a unique and entertaining slice of life.

One afternoon, I heard someone climbing up the stairs while getting ready for a run to KHPN. I turned around to see Jimmy Buffett poking his head into the cabin and asking for a tour. He was as friendly and casual as his music, and we enjoyed talking about aviation and his love of Grumman amphibians. Jimmy recounted his ordeal the summer before when he crashed a Grumman Widgeon in Nantucket Harbor. He hit a rogue swell on takeoff, and the amphibian flipped upside down. Luckily, he swam out with only minor injuries, crediting his water egress training with the Blue Angels to save his life. Later, he would own and fly a Grumman Albatross, the follow-on to the Mallard with an impressive 98-foot wingspan and massive 1,475 hp Wright radials, which he aptly named Hemisphere Dancer.

Admirers and tours were common whenever we were working around the aircraft. Observing how excited both pilots and civilians would become when inspecting the Mallard up close was amusing. Sometimes, I felt more like a museum docent than a pilot, explaining its history and answering their many questions. In all my years of professional flying, I've never flown a plane that made so many people smile. It was a unique aircraft that had undeniable ramp appeal.

My only regret is that I didn't get to operate the Mallard on water as she was designed. Already 46 years old in 1995, saltwater operations were ruled out by the chief pilot and our maintenance department to avoid their corrosive effects. Although the owner had a lakeside home in the Adirondack Mountains north of KHPN, I didn't crew any trips that operated into the lake. The right side of the cockpit had rudder pegs that folded out of the way so a

Grumman's "Mad Men"-style advertising

crew member could go underneath the instrument panel to open a hatch on top of the nose. Pilots used this hatch to tend ropes or the anchor while floating. I'm sad that I didn't get to crawl through and cleat her off just once.

I flew about 120 hours that season and enjoyed every minute. My years of hustling paid off – a few months later, I started flying a Falcon 50 and have been a jet pilot ever since. The Mallard continued to fly with lucky new FOs for several more summers. In 2003, the owner passed away, and shortly after that, the Mallard was sold. I am happy to report that this lovely lady still flies today, nearly 75 years old, getting her tailfeathers wet in the lakes of California and Arizona - just as Leroy Grumman had intended. I hope the pilots who earn the privilege of flying her will hold that experience in their hearts as I do.

Long live the Iron Works! T&T

Peter Ruskay, CAM, *is a second-generation corporate pilot who holds ATP and FE certificates with five jet type-ratings. He has over 11,000 hours of flight experience and has spent the past 25 years flying long-range, large-cabin business jets in extensive international operations. Pete holds NBAA Certified Aviation Manager and NBAA Certified Safety Manager qualifications. He can be reached at* **airpedro@aol.com.**

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Embraer Owners Groups
EJOA and Phenom Pilots

by **Grant Boyd**

A panel discussion at the EJOA convention

Boosting the Embraer community, two organizations highlight and elevate the Phenom ownership journey: The Embraer Jet Operators Association (EJOA) and Phenom Pilots. EJOA seeks to improve the experience of owning and operating an Embraer Executive Jet aircraft. Similarly, the Phenom Pilots organization brings together like-minded individuals to share the joy of aviation and the experience of flying the Phenom 100 and 300 models.

Embraer Jet Operators Association

The Embraer Jet Operators Association, founded in 2010, is a 501(c)7 organization with over 400 members across the Phenom and Praetor model families. The leadership team consists of four directors, who collectively own two Phenom 100s, a Phenom 300, and a Praetor 500.

Jamie Rogers is the current executive director of EJOA, joining in September of 2023. As we talked, she provided additional details about the organization's goals and purpose.

"As your advocate, EJOA works with Embraer, its suppliers, and other industry leaders to influence the economics of ownership and operation in a positive way, to offer the resources and motivation to improve the safety of your operation, and to improve the efficiency and pleasure of owning and operating an Embraer Executive Jet."

One of the most notable ways the group benefits its membership is through its longstanding relationship with its namesake OEM. This relationship benefits both sides, allowing the manufacturer to have a sounding board to help drive positive change and owners of the aircraft to do the same.

"EJOA was founded to make the entirety of the ownership experience as positive as possible. They did this by providing information and communication directly with Embraer. One of the biggest strengths that the association has is our connection with Embraer, which enables us to help serve the membership," Rogers explained that "to be able to directly connect with the airframer with any questions, feedback about the aircraft, or things they would like to see is important."

There are four categories of membership, all of which are between $250 and $500 per membership ($125 per additional qualified representative). Owner members must own at least 25% of a qualifying aircraft directly or through other ownership structures. Corporate flight departments must have between one and five Embraer aircraft but cannot be charter companies. There are also 'Product and Service Providers' and 'Embraer Executive Jets Employees' membership options for individuals and organizations that support these aircraft. Additional details surrounding membership tiers and requirements can be found on EJOA's website (www.ejoa.aero).

Outside of a close relationship with Embraer, there are other distinct benefits that EJOA provides, including access to an online forum, contact information for vendors, and a directory of product and service providers. The association also maintains a robust owners and operators directory. Members get discounts from partner organizations that are a part of the organization. A highly anticipated benefit is the organization's annual conference, which will be held this year in Salt Lake City on May 17th and 18th.

Rogers provided an overview of this event, noting Embraer's involvement. The topics of the hosted sessions are all relevant to owner-operators of Embraer aircraft, including safety and other key concerns. "The EJOA conference will feature a superb keynote speaker as well as an excellent exhibition hall where attendees will have ample opportunities during breakfast, lunch, and breaks to visit with our sponsors and learn the latest information about their products and services. The day will continue with

A Phenom Pilots networking event

> "EJOA was founded to make the entirety of the ownership experience as positive as possible."
>
> — Jamie Rogers

educational, informative, and entertaining breakout sessions. The evening will conclude with a dinner reception with delicious cuisine from the talented Grand America Hotel chefs and an exhilarating live auction."

Phenom Pilots

Marcus Adolfsson (featured in Twin & Turbine's December 2022 issue) created the Phenom Pilots organization in 2020. Before ascending to the Phenom 300, he owned an Eclipse 500, for which he noted there was a highly passionate group of owners. Adolfsson hoped to replicate a group explicitly focused on owner-flown Phenoms.

Like many other formally organized ownership groups, the Phenom Pilots organization offers similar benefits – including attending member-only events, networking with fellow pilots, and learning about ownership topics through an online forum. Dissimilar to most, though, is the cost for owners and potential owners to join. The proliferation of Facebook groups helped sway him to make membership no-charge for those who can contribute to positive dialogue about Phenoms.

Someone who needs to receive access to the Phenom Pilots forum only needs to complete an application form on the group's website (www.phenompilots.org). Some recent topics discussed amongst the membership include 'Phenom 100 GPU issues fix below 30V,' 'Cabin Noise & Available Improvements,' and 'Flaps 3 or full?'. Users also have access to a performance calculator for both Phenom models.

"Jump into the forum and start asking questions, or do a lot of reading. You can gain so much knowledge by just coming in and reading the thousands of posts that are in there – good and bad," he began.

"You always need to be mindful that for every successful flight we have, we will not necessarily post about it. Right? We are going to post when we have problems. But that may be every few hundred flights. But I think someone in the market of buying a jet knows that there will be more complaints than praise in a forum like ours. But you want to find out how Embraer deals with those problems. Because there's nothing worse than dropping that much money on a plane and having it sit in the hangar for weeks or months because you can't get a part, and unless you had

> "Jump into the forum and start asking questions, or do a lot of reading. You can gain so much knowledge... " – Marcus Adolfsson

access to a forum like ours, you wouldn't know. There's so much that I've learned from my fellow members."

Adolfsson explained that another functionality of the website resulted from a commonly asked question – 'Why should I buy a Phenom?' He contends that aircraft model-type organizations are responsible for advocating for their represented airframes in a way that the OEM, brokers, and other providers cannot.

"Then, because it is such a common request, we have a 'Talk to an Owner' button on our home page. You click on that and fill in your information and your specific request. Then, that automatically gets posted in the forum for members to review and respond to. For the intenders (potential Phenom buyers), I know we have helped sell planes because people have been able to research the plane, get more honest feedback, and make better-informed decisions. It helps sell more [Embraer] airplanes than it turns people off." T&T

Grant Boyd *is a private pilot with eight years of experience in aviation business, including marketing, writing, customer service, and sales. Boyd holds a Bachelor's and a Master's of Business Administration degree, both from Wichita State University, and a Doctor of Education degree from Oklahoma State University. He was chosen as a NBAA Business Aviation "Top 40 Under 40" award recipient in 2020.*

Editor's Pics

Photos & Story
by Lance Phillips

Lockheed Lodestar

Beechcraft Model D18S

Beechcraft Model E18S

The well into which I can often dip to round up cool photos of cool airplanes runs deep. This month, we quench our thirst with two Beeches and two Lockheeds.

Does the Beech 18 ever get old? Nope. Nor does anything with the name Lockheed in its history.

Lockheed Lodestar

The Lockheed Lodestar was developed in the late 1930s to remedy the poor sales of Lockheed's Model 14 Super Electra, which was smaller and more expensive to operate than the DC-3. The Lodestar, designated Model 18, took the Model 14's fuselage and lengthened it five and a half feet to accommodate two more rows of seats. A lodestar (lower case) is a star used to navigate. The North Star is a lodestar.

N1940S is a Lodestar Model 18-56 with two 1,200-hp Curtiss Wright R-1820-56AS engines spinning Hamilton Standard 3-blade propellers.

Beechcraft Model 18

The Beech 18 first flew in January of 1937. All told, 9,000 Model 18s were built, half of those going to the military for use in World War II. The last one rolled off the Wichita, KS, production line in 1970.

Both of the Beech 18s pictured at left, a D18S and an E18S, use the 450-hp Pratt & Whitney R-985 series engines.

Lockheed T-33 Shooting Star

Licensed to Canadair as the CT-133 Silver Star, the subsonic trainer first flew in 1948 and was in production until the late 50s. T-33s were in regular military use around the world until the Bolivian Air Force retired the last of the type in 2017. Over 6,500 were built.

The Red Knight, sponsored by Modelo, performs at airshows around North America.

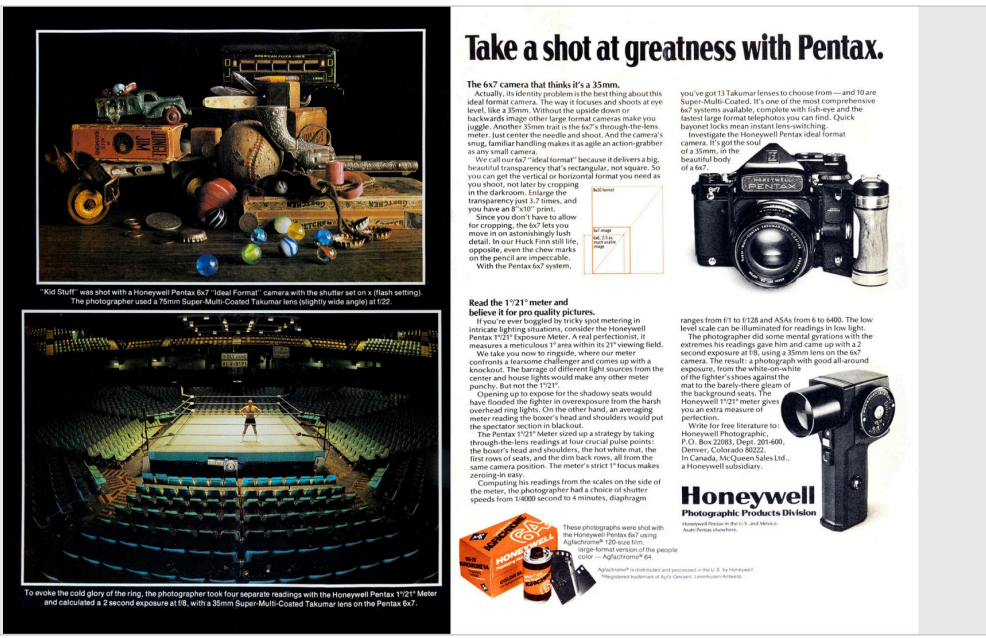
The Camera

The Pentax 67 is hefty. There's no way around it. Lugging it around Oshkosh isn't too fun, either, but it simply takes remarkable images. I use a purpose-built Pentax 105 mm f 2.4 lens that creates otherworldly resolve between the subject and the rest of the image. This lens is particularly special in portrait photography.

Here, you get to see the 67 next to my 35 mm Leica M6. The Pentax weighs around three times as much as the little Leica. But its negative size is five times greater. That denser resolution is what enables its magic. Very few other cameras can duplicate or come close to the Pentax 67.

I'm going out to take some pictures now.


Lockheed T-33 Shooting Star



The Pentax 67 compared to a 35 mm Leica M6

Twin Bonanza design bridges the gap between development of the Bonanza and the bigger twins, the Queen Air and King Air C90

Let 'Em Eat Steak: Beechcraft's T-Bone

by **Matthew McDaniel**

Once upon a time, there was no Beechcraft Royalty Series. The King Air, Queen Air, Duke, and Duchess didn't yet exist. The Beech Model 17 Staggerwing design dated to the early 1930's; however, even its timeless art-deco lines and luxury after WWII could no longer offset its complex and labor-intensive wood, tube, and fabric construction. Instead, Beechcraft pursued newer technologies, flying their Model 35 Bonanza within months of the war's conclusion. By 1947, it was in production and enjoying brisk sales. While building and operating was far more economical, the V-35 lacked the Staggerwing's plush cabin space and speed. But, the pre-war, tail-dragging, thirsty-twin-radial Beech 18 was a leap most buyers couldn't afford. Thus, with BE-17 production ended, Beechcraft's product line had a very sizable gap between the ahead-of-its-time V-Tail Bonanza and the much larger (and older) BE-18. So, late in 1949, the Model 50 Twin Bonanza first flew.

The unique and clean cockpit

The Army wanted a plane that could take off with a pilot and five troopers, clear a 40-foot obstruction in 1,700 feet, operating from a runway contaminated with sand and loose rocks. Beech proved their Model 50 could do just that. Immediately after, they crashed it (stalling at 50 feet AGL on the return landing). All six occupants walked away. Such crash-worthiness impressed the Army and effectively sealed the deal. Because the Korean War was ramping up, initial production was almost all to satisfy military demands, and 99 L-23s were delivered before consistent civilian sales began in 1953. A few initial buyers were Whirlpool, Lockheed, Outboard Marine, Marathon Oil, the U.S. Atomic Energy Commission, and Lufthansa Airlines (for pilot training). By the time production ceased in 1963, just shy of 1,000 Twin Bonanzas had been built, with about 200 going to the military as L-23/U-8 Seminoles.

Big and Innovative

The Twin Bo (affectionately nicknamed the "T-Bone") was certainly not just a Bonanza with two engines. While it did have limited parts commonalities with the Model 35, the twin was massive in comparison. One entire wing of a Bonanza became the outer wing panel on a T-Bone. The BE-35 flaps became the outer flaps of the T-Bone's segmented 4-flap design. The fuselage sides, roof, door, windshields, and windows of a BE-35 became the BE-50's upper-forward cabin (when widened by a foot). With the added wing center section and widened fuselage, the wingspan of the twin would grow to a dozen feet longer than that of the single-engine Bonanza. The Twin Bo's original cabin configuration was two 3-abreast bench seats with a cargo area behind. The aft baggage door was large enough to slide a 50-gallon drum through, and the baggage area would hold two of them! Oddly, the co-pilot position was in the center because the T-Bone retained the BE-35's throw-over yoke and rudder pedal position, putting the co-pilot controls on the centerline of the wider twin.

Innovative safety features were incorporated into the BE-50, as well. It was the first production aircraft certified with shoulder harnesses. Certification in the Utility Category gave it an airframe G-load limit of 4.4 Gs, translating into a 14% increase in maximum turbulence penetration speed. The design is very crash-worthy, too. Almost 70% of the airframe's mass is forward of and below the occupants, and engine and fuel cells are outboard of the cabin. The bench seats were anchored to the forward and aft spars, respectively. When retracted, all tires remained slightly exposed. In a gear-up landing, the tires would still be the main point of contact, and differential braking remained available, too. In addition to the main entry door (over the wing or rear airstair), there were two large emergency egress windows.

Variations

The initial civilian model was simply the 50. As with previous Beech designs, the Twin Bo's designations would add

a prefix letter (B50, C50, etc.) to denote significant changes. These were usually major engine upgrades or gross weight increases. An added suffix letter (D50A, D50B, etc.) signified minor changes, like the entry steps and doors, seating configuration, and other refinements.

The initial production Model 50 used geared Lycoming GO-435 engines of 260hp, turning two-bladed wooden propellers. Only 13 were built before Beech introduced improved versions. The B50 added a third side window. The C50 and D50 upgraded engine horsepower to 275 and 295, respectively, with Lycoming GO-480 engines. Subsequent D-models would incorporate better boarding steps, then a right-rear airstair door. The E50 got 340-hp, supercharged, GSO-480 engines. The F50 introduced fuel injection via the IGSO-480 (also 340hp). Variations on that engine would carry the T-Bone through its final production version, the J50.

Interior configurations would also vary widely. Eventually, the benches could be exchanged for two individual seats. The right-front seat slides to the center to allow the use of the center-mounted co-pilot controls. With the introduction of a third row of seating, many layouts became available, still forward of the aft baggage door or airstair door, as equipped. Four seats in a club configuration would have been the most passenger-friendly by today's standards. A left-side divan with seating for three, facing sideways, could be combined with second and third-row right-hand seat(s). The aircraft could be certified for up to eight occupants in the highest density configurations. With fewer seats, refreshment centers, foldable work tables, and even a flushable potty were options on later models.

Ed's Swords

Like so many great designs in aviation, the Twin Bonanza generated many after-market modifications. Extended range fuel-cells, instrument panel reconfigurations, extended baggage compartments, a slimmer nose cone allowing the installation of a radar unit, gross weight increases, and a single-piece "speed-sloped" windshield are just a few of the approved mods.

However, famed designer and engineer Ed Swearingen developed the most extensive and comprehensive modifications. His initial "Excalibur" models were re-engined with Lycoming IGSO-540's (380 hp). New doors fully enclosed the gear when retracted. The significant power increase and equally significant drag decrease, coupled with other performance-enhancing mods, made Swearingen's T-Bones the ultimate versions. All were customized to the buyer's desires and incorporated various mods. Thus, no two were exactly alike. His final iteration replaced the bulky geared engines with direct-drive, 8-cylinder Lycoming IO-720s, developing 400 hp each. The bulbous production cowlings (originally designed to house geared Franklin engines) were replaced with streamlined cowls. Marketed as the "Excalibur 800," a cruise speed of 245 mph was claimed (though 220 mph economy cruise was more realistic). An estimated 44 T-Bone airframes underwent Excalibur conversion.

Above Eastsound, Washington

PHOTO COURTESY OF DWIGHT BARTON.

Beautiful views around Washington State

PHOTO COURTESY OF DWIGHT BARTON.

Swearingen would go on to develop the Merlin line of business turboprops, initially using BE-50 parts. Twin Bonanza center sections, landing gear, empennages, and other components were incorporated into the early Merlin design and production. Between 1964 and 1970, Swearingen used about 118 Twin Bonanza airframes and unused Beechcraft production parts for his Merlin IIA and IIB production.

Flying The T-Bone

As with most vintage aircraft, Twin Bo owners consider themselves caretakers of the few dozen examples actively flying. Some current caretakers even help to ensure that BE-50s find suitable homes via word of mouth alone. Thus, most sell off-market. One new owner is Brett Zefting, who makes his living as a Lear 45 Captain and an A&P/IA. Yet, he also retains a passion for old airplanes as a pilot and mechanic. He and his young family have enjoyed various single-engine aircraft for many years. But, with a third child on the way, it was time to move beyond 4-seaters. He felt the Twin Bo fit the bill perfectly and recently acquired N28EC, a 1960 D50C.

Upon Brett's invitation, I climbed through the cavernous airstair door, walked down the center aisle, and settled into the pilot's seat. Having your co-pilot or instructor climb in, slide their seat to the center, and cozy up next to you is almost comical. Nonetheless, that's what the T-Bone requires for both pilots to access the controls. The panel and interior feel spacious and uncluttered. The left-side panel

Departing Orcas Island

fuel controls are similar to modern King Airs. The throw-over yoke, trim wheels, and piano-key switches are pure vintage V-tail Bonanza.

The only thing that feels foreign is the non-standard arrangement of the power quadrant. Beech put the throttles in the center and prop controls to the left, opposite of Piper and Cessna piston twins. However, with geared engines to manage, the arrangement is quite handy. Big power adjustments are made with the prop controls first, then throttles, to ensure the engines remain "loaded." It is important to keep the engines turning the props, not vice-versa (which can cause mechanical "backlash" and damage to the 77:120-ratio gearboxes). Ground-idle RPMs of 1,200+ are recommended for the same reason. Engine starts were straightforward, and taxiing the big twin was easy. The steering system uses direct linkage to the nosewheel, and any need for differential power is limited to the tightest of turns only.

Author Matt McDaniel in the left seat, and owner Brett Zefting in the right

Normal takeoffs are accomplished using flaps up and full power, achieved at 3,400 engine RPM. Noise is far less than you might imagine, thanks to prop RPM being 36% slower. The TwinBo's big wing will want to fly slightly before the 90 mph Vmc (minimum control speed or the lower redline). So, immediately after liftoff, climb should be shallowed to allow speed to quickly build above Vmc and toward the 110 mph Vyse (best rate of climb single engine speed or blue line). This will allow sufficient control and the best climb performance should one engine decide to go silent. For even shorter takeoff distances, half-flaps are used and retracted once speed is safe and obstacles cleared.


PHOTO COURTESY OF DWIGHT BARTON.

The first power reduction is a big one. Pull the prop controls to reduce engines below the 3,100 RPM caution range, keeping the engines loaded. Manifold pressure can then be reduced accordingly. The big girl climbs out easily, far lighter on the controls than her size would imply. Pilot workload is very low compared to most piston twins. The T-Bone's pressure carburetors are altitude-compensating, meaning mixtures don't require adjustments during climb. The big cowlings lack cowl flaps to fiddle with, and there is no pressurization to monitor.

Twin engine maneuvers are a pleasure to fly. The airplane goes exactly where you point it. It displays no bad characteristics in steep turns or slow flight, and control harmony is excellent. The manual trim wheels are centrally located below the power quadrant, but I would not call them convenient. Beechcraft's big throw-over yoke mechanism is in the way of anything below or behind it, which the trim wheels are. A bit of working around it is required, but it's manageable. Single engine handling proved docile, all the way down to Vmc. Granted, with just Zefting and myself aboard, we were well below maximum gross weight and well forward of the aft C.G. limit. Thus, even with the

Owner Brett Zefting on the air stair

critical engine at zero-thrust, at speeds near Vmc, plenty of rudder remained available. This was the case even with the operating engine producing enough power to sustain 200-300 FPM climb rates. Admittedly, that was something well below full power. Low ceilings prevented us from exploring Vmc manners all the way down to directional control loss.

Typical economy cruise in Zefting's normally aspirated, 295 hp Model-D50C is 160-165 mph TAS at 10,000 feet and 30 gph. Keeping the engines loaded while descending will cause speeds to rise, requiring some pilot planning to slow enough to extend flaps and gear on schedule. Maximum gear and flaps speeds (Vlo & Vfe) are 150 mph. In the pattern and on an instrument approach, the BE-50 is rock solid and responsive to power adjustments. Zefting invited me to fly a visual approach into Seattle Paine Field's (PAE) Runway 16L (their smaller runway, at only 3,004' x 75'). Flying the extended final right at or slightly above blue line (110) and slowing to 100-105 crossing the fence, with gusty crosswinds and only 10 knots of headwind component, we could have easily stopped within half the runway (1,500 feet). We rolled past the midpoint taxiway, seeing no need for heavy braking to prove a point already made.

After a short field takeoff from 16L (equally impressive), we quickly went IMC on the return to Boeing Field (BFI). There, I shot an ILS with a stiff crosswind aloft in a steady rain. The Twin Bo is so well-behaved and predictable that the resulting landing (only my second in the plane) was quite ego-stroking. More credit goes to Beech's design than to this novice T-Bone pilot at the controls.

Seven Decade Legacy

The Twin Bonanza legacy is an impressive one. While relatively few of them remain, its offspring are still everywhere. The BE-50 morphed into the BE-65 Queen Air, which got a bigger fuselage and tail. Next came the King Air, with turboprop engines and pressurization. Swearingen's Merlin line, which began production using major components of existing T-Bones, eventually grew into the Merlin III and then Metroliner regional airliners (both popular today as cargo haulers). The gear supporting the Twin Bo, then the Queen Air and the Merlin II, is the same system seen underneath King Air 90 models still in production until 2021 (72 years after it first flew on the prototype BE-50). 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.*

Chris Weber

Chris Weber and his two daughters on the boarding stairs of his 2010 Embraer Phenom 100 leaving Oshkosh

The life of Chris Weber would look remarkably different without aviation. A passion for flight has been ingrained in the entrepreneur since he was a child when he would fly around the Midwest in his Grandpa's Piper Saratoga. He has fond memories of flying to Meigs Field and Oshkosh, where readers may have seen his current aircraft on display – a 2010 Embraer Phenom dubbed the Millennium Phenom.

As the second owner of the visually striking jet, Weber says he plans on keeping its legacy alive. For those unfamiliar, the aircraft's previous owner, Mark Holt, painted the plane in an homage to the famed starship. Holt had flown the aircraft in support of the non-profit combat-injured veteran transport organization Veterans Airlift Command. While charity flying will be a component of Weber's mission, he predominately flies the aircraft to support his business endeavors – most commonly for his yacht brokerage, Weber Yachts.

"Our team helps people buy and sell boats (specializing in motor yachts, sport fishing boats, center consoles,

flybridge yachts, and express cruisers) around the Great Lakes and South Florida. When I started the company, I quickly realized that I had to travel to places that were not necessarily long distances as the crow flies, but would still take a long time," Weber began, adding that the geography of Lake Michigan is challenging. A specific listing underscored the inefficiency of driving to meet with clients.

"I was selling a boat in Mackinaw City, Michigan, about an eight-hour drive each way. I thought there had to be a better way of doing this than driving. I was busy and didn't want to waste all of that time. So, I went to the local airport and said I wanted to take a flight lesson to Mackinaw City. Luckily, I ran into a flight instructor who was flexible and understood not only what I wanted to do that day but also that I could 'kill two birds' while I learn to fly."

For about a year after the first flight, Weber would incorporate flight training whenever he needed to visit a boat for a survey, showing, delivery, or other need. He explained that aviation has had an extremely positive impact on his life.

Chris Weber and his CubCrafters Carbon Cub SS

"I think our business has scaled significantly due to aviation, not just the time savings, but the contacts you meet. It's a brotherhood of pilots, and we all want to support each other. I've seen that to be true in so many ways. Just last week, I had a very good friend who flies a CJ2 call me up and say he wanted an 80-foot boat in The Bahamas within two weeks for an important and meaningful trip with friends. That's a pretty tall feat!"

"But we flew to Fort Lauderdale, sea trialed and closed on a new-to-him boat in less than a week. It's hard to pull off something like that when coordinating commercial travel with several parties. We put a boat under contract the day of his phone call, and we were in Florida on the water the next day. Aviation made his accelerated timeline possible when it would have otherwise been a significant challenge."

Before purchasing the Phenom in 2021, Weber Yachts had a far smaller footprint in The Sunshine State. Weber had owned two Cirrus SR22s that worked well around the Midwest but were not a good fit for the frequent trips to Florida.

"As our business grew, so were the sizes of the boats we were selling. I knew that South Florida was becoming my primary mission, and I wanted the highest probability of making that trip non-stop in the shortest amount of time. The Citation Mustang was a consideration, as was the Cirrus Vision Jet. I enjoyed my time in the Cirrus family; they treated me extraordinarily well. The Vision Jet just didn't have the performance profile for us, and at the time of acquisition, a Vision Jet was a million dollars more. So, that equation just didn't resonate with me."

The opportunity to test his two top prospects simultaneously presented itself and helped make a decision easier.

"I've got several friends who own Mustangs, and they're great airplanes. But I remember one trip that convinced me to get a Phenom. We did a guy's fishing trip to The Bahamas and took a Mustang and a Phenom. I rode down on the Phenom and rode in the Mustang on the way back. On the way home, we took off first, and about five minutes later, the Phenom flew by us in the climb. Between the fantastic cabin, ramp appeal, and

Chris Weber flying his Phenom 100 with one of his daughters in the right seat

The Millennium Phenom on the ramp

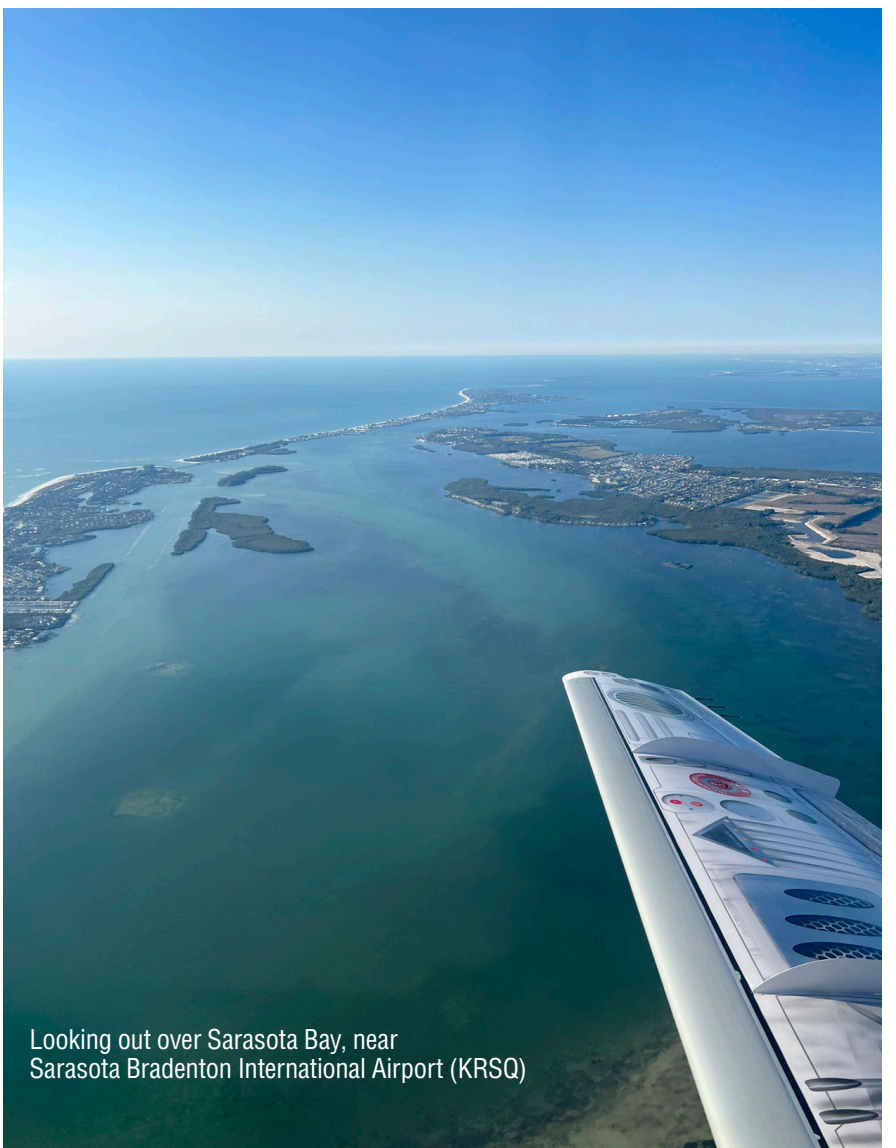
Chris Weber, as a boy, flying in his grandpa's Piper Saratoga

better performance, I knew which one I wanted to own. A lot of the things that drew me to the Phenom were what I appreciated about my Cirruses, a high value on (avionics) integration, technology, and ergonomics. The Phenom 100 was the most Cirrus-like next step for me, a proper twin turbine."

Weber has logged 1,450 hours total, 300 of which are in the Phenom 100. He estimates that roughly 20 to 30 percent of his flights are between Wisconsin and Florida, typically averaging a monthly round trip between the two states.

"A fairly common mission for us is from Kenosha to Fort Myers or Naples. It's just about a thousand miles, and I typically fly there with a light cabin, either myself and my family (wife and two young daughters) or one or two others. We take full fuel, as it's right at the edge of the aircraft's range. But it's an awesome flight for the Phenom," Weber said.

"We typically go up to maximum altitude for that flight, FL410. The plane is unbelievably quiet at that altitude, and we're typically doing somewhere in the neighborhood of 350 to 370 knots, depending on the weight



Looking out over Sarasota Bay, near Sarasota Bradenton International Airport (KRSQ)

and ISA temp. But 360 [knots] seems to be a pretty good middle ground. At that speed, we'll burn around 2,000 pounds of fuel and typically have a tailwind on the way down for what ends up being about a two-and-a-half-hour or three-hour flight. If we get more than a 15 or 20-knot headwind, we will have to stop coming back, but we have gotten remarkably lucky and only had to stop probably ten percent of the time or less."

As a member of both EJOA and Phenom Pilots, Weber is a staunch advocate for Embraer products and could see himself one day moving up in the product family.

"One of the things that the Phenom is criticized for is its braking. The pedal feedback isn't conventional, but the actual braking performance is fantastic. I haven't found it to be a huge inconvenience or imposition. But you're always sort of aware of it and exercising extra caution around landing distances, particularly if you have contaminated runways. Flying up north, there have been a couple of times when we've landed on ice-contaminated runways, which can require an eye-watering amount of runway length. But we've always had the runway length we needed, so it's been a non-factor. For others, it can be a big limiting factor and is something that we are all aware of," Weber explained before advising that his only wish for the Phenom 100 would be more fuel capacity.

"A Phenom 300 would be amazing because we'd never have to worry about fuel planning. We could take some more payload and fly a little faster, too. But I have to remember that I was flying pistons a couple of years ago, so I don't want to get too far ahead of myself. I'm thrilled with the 100. It's a dream come true."

Weber and his team have been communicating the value of boats to clients for more than a decade, and he's decided to apply the same formula for success to aviation. As a business and cabin-class aircraft owner, he is uniquely positioned to advise clients in similar positions.

Chris Weber, fishing with his brother and a friend on his 68 Viking Convertible in The Bahamas

"Weber Aviation is a sister company to Weber Yachts that focuses primarily on the owner-flown turbine category of aircraft. I think one of the things that is unique about our company is that we are experienced in buying and selling turbine aircraft and understand what it means to be a business operator. So, we have more insight than the average aircraft sales organization regarding what an owner might be looking for, whether from an expense, liability, or performance standpoint. We've had to go through all these exercises internally to understand the most efficient way to operate an aircraft within our businesses, what the tax implications are, and so forth," Weber said.

"I have two partners in this business, Al Waterloo and Rudy Poussot. Al was with Cirrus Aircraft for eight years, their Illinois/Wisconsin sales director for piston aircraft and their West Coast Vision Jet Sales Director. Rudy, like Al and I, is also a turbine pilot. He is typed in the Mustang, Phenom 100, and Citation 525-series and has worked at several large publicly held companies that utilize corporate fleets. We have well-rounded expertise that can bring tremendous value to our clients."

Weber added a concluding thought, "Many of my closest, lifelong friends are from aviation, and it's hard to imagine life without it. Aircraft are the biggest and yet easiest expense of the year. Easy to justify with how much they enhance our lives." T&T

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Lipstick and Jet Fuel

From "The Best of On Final" April 2009

The decade of the 80s was a wonderful time. My car wax manufacturing business was growing. Almost fast enough to keep pace with my desire to fly faster airplanes. First, a Baron, then a Duke, followed by a B100 King Air. But I really wanted to fly a jet. Almost any jet would do. Just one that made a lot of noise and flew fast. My only problem was money. I didn't have much. Couldn't afford anything new or even slightly used. But I wanted a jet. And then we found the Sabreliner Model 40. A relic of the 60s, this one was built in 1964. The previous owner had spent profusely refurbishing the interior and the paint was immaculate. It even had decent avionics by the standards of the day.

But I had to act quickly. The salesman said it wouldn't be around long, and my wife Patty hesitated just long enough for me to act. There is no more exciting time than starting the engines on your very first jet…..until you see the fuel flow.

The engines on the Model 40 were of 1950s vintage, JT8 turbo-jets, to be exact. They had two rates of fuel flow…..OFF and "You've got to be kidding." Total fuel capacity was 7,122 lbs, which at takeoff power was enough for one hour. If we taxied on one engine and climbed straight to FL 410-450, we could get 2+45 out of it, but we could count on sucking 300 gallons an hour! When and where we stopped enroute was based solely on where we could find the cheapest fuel.

At this point, you might reasonably ask, "What does the price of fuel have to do with lipstick?"

My wife is naturally beautiful. She reads many of my aviation magazines. Did I mention she is beautiful? Her natural beauty is "enhanced" by the use of makeup. I don't know about you, but around our house, we have a lot of makeup. Drawers and drawers of it…everywhere. And not just drugstore brands. From a recent inventory, it appears that we have about 1,628 vials, tubes, and jars of mostly half-full beauty aids.

On December 26, 1985, we planned a trip to our favorite skiing destination, Gunnison, Colorado. One of my jobs was to load the bags onto the airplane, for which I was thoroughly trained and experienced. We departed Addison airport early that morning, roaring down the runway and burning fuel like there was no tomorrow.

About 20 minutes after takeoff, somewhere over Wichita Falls, Patty came into the cockpit, tapped me on the shoulder and said, "Where is my makeup?" Instantly flashing before my eyes was a mental picture of the exact location of that makeup bag. It was not a pretty picture.

Mustering all the courage I could, I said very commandingly, "It's in the trunk of my car."

We were now at the turning point of this flight and perhaps our marriage. We were like two male dogs sniffing at each other to see who is going to blink. "Turn this airplane around right now!" Patty screamed. "You've got to be kidding," I retorted, "it's just makeup."

Mistake number one.

I did a quick mental calculation as we flew the Standard Instrument Departure out of Dallas. Probably 200 gallons of fuel to Addison and back at $1.80 per gallon (remember, we are talking 1985 dollars). That's 360 dollars, and you can buy a hell of a lot of makeup for 360 dollars.

Mistake number two.

Just short of a mutiny in the cockpit, my decision prevailed, and we continued to GUC. Upon landing, we drove straight to Walmart (the Neiman Marcus of Gunnison) and purchased about 100 dollars worth of makeup. No problem, I was still 260 dollars ahead. But alas, this makeup won't do. It's not the "right color." Patty wanted her left-behind cosmetics, and she "absolutely positively had to have it overnight." I was "instructed" to have someone retrieve the bag from my car and ship it FedEx to Gunnison. For another 175 dollars, I was able to persuade one of my employees to stop laughing and drive the precious package to FedEx.

It's OK; I am still a genius and 85 dollars ahead.

The next morning, we bundled up and drove off to ski in the bitter cold that only Gunnison can produce. The high for the day was -20 C. After a wonderful day of fun, we returned home and low and behold, FedEx had performed flawlessly. There, at the front door of the house, was Patty's makeup!

It was like Christmas morning again! Excitedly, she opened her special package, and YES, it was exactly what she wanted…… And yes, it was FROZEN SOLID! …..Like 20 little popsicles.

And for those of you who may not know…..FROZEN makeup is WORTHLESS!

Upon our return to Dallas, we purchased all new makeup, the cost of which is not important. Of course, the moral of this story is to make sure the jet you buy has fuel-efficient engines!

Fly safe. T&T

David Miller *has owned and flown a variety of aircraft from light twins to midsize jets for more than 50 years. With 6,000 plus hours in his logbook, David is the Director of Programs and Safety Education for the Citation Jet Pilot's Safety Foundation. You can contact David at* **davidmiller1@sbcglobal.net**.

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