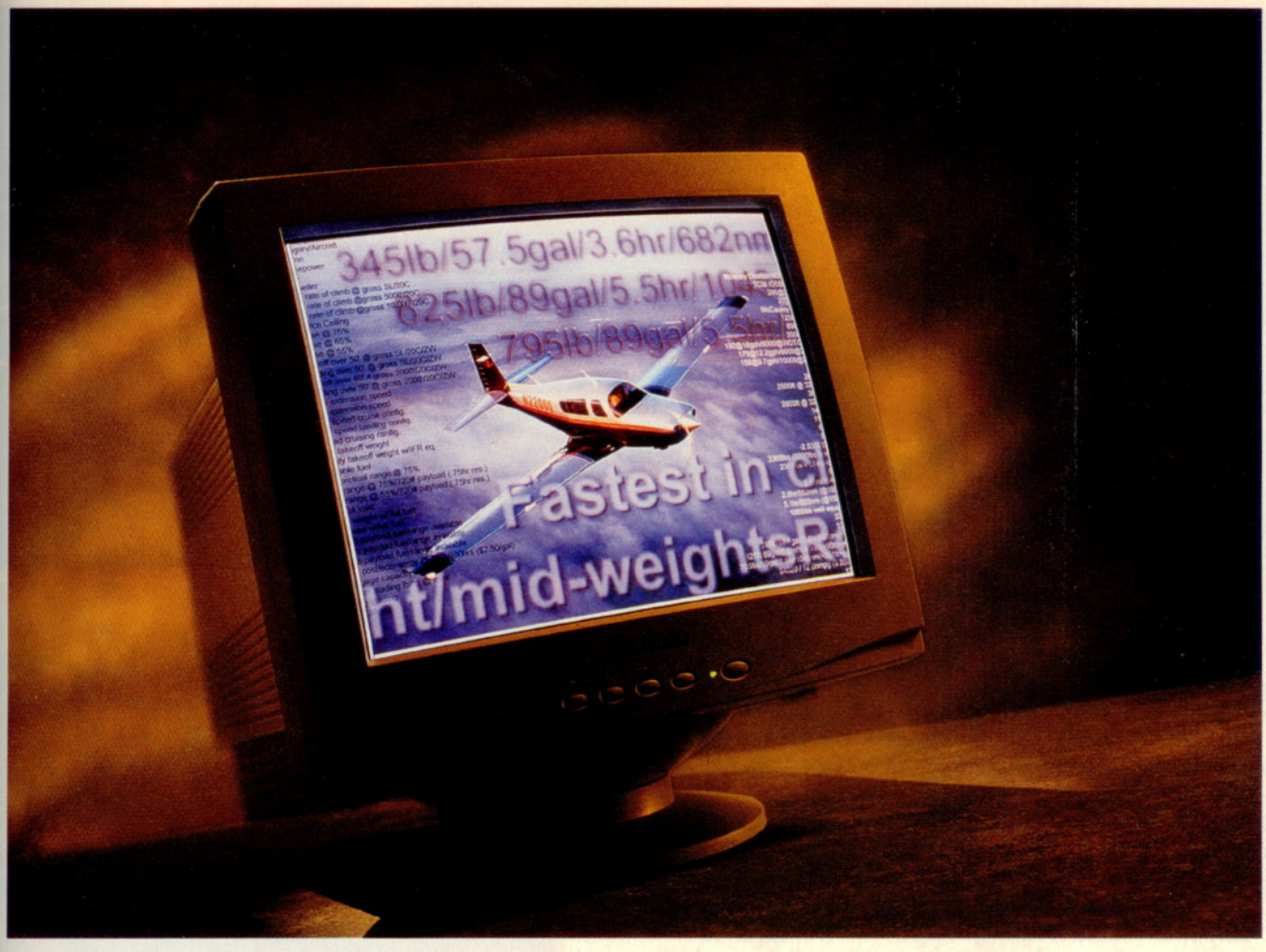


DREAM SHOT

One pilot's search for the ultimate single

BY TIMOTHY J. KURCZ

Hundreds of hours in rented Skyhawks gradually built my desire for a more capable machine, free from scheduling challenges. I wanted something complex, yet affordable—perhaps with a nostalgic twist. After a long search, my dream was fulfilled with the purchase of a gorgeous, polished aluminum 1949 Ryan Navion. Though only 205 horsepower, N4927K offered acceptable speed, delightful handling, and stunning short-field ability. My wife and children especially enjoyed its stability, roominess, and panoramic view. Sadly, after only two years of ownership, life's path dictated its sale. ■ It didn't take long before my family and I realized how greatly we missed the adventure and flexibility of travel afforded by private aircraft ownership. We also missed regular exposure to our friends and activities in the airport environment. We were determined to reenter the aviation community; the only question remaining was when. Sooner than expected, careers and finances realigned to the positive, and my wife and I recommitted our family to an aviation-based lifestyle. With that

PHOTOGRAPHY BY MIKE FIZER

The Mooney Eagle was the least expensive in its class and was very fast and fuel efficient. The author's research also showed that he could expect good service and ease in obtaining parts from the dealer. His offhand comment was, "awesome speed and efficiency."

decision being made, the much-anticipated question evolved: Which aircraft should we now purchase?

While the Navion offered excellent value in a complex high-performance aircraft, the continual maintenance required for this (or any other) 50-year-old machine made it more like a pet. Fortunately for us, ownership was made easy with assistance from John Larsen, a local Navion expert. Under his tutelage, we learned to appreciate the money/time trade-off. Understanding that our next aircraft was to be used primarily for business transportation, reliability would be critical. Two things were certain: We were in the enviable position of being able to purchase new, but there would be serious financial implications to that decision.

I gave up my preconceived notions and decided to evaluate each manufacturer's offerings apples-to-apples to determine what would be best for us.

Like most pilots, my aircraft knowledge was based largely on ramp appeal and often-boastful hangar talk. Though I'd been exposed to a few high-performance singles, my sights were set on the Bellanca Super Viking for its blend of raw power and crisp handling. Concerned that we make the most of our nearly half-million-dollar purchase, however, I decided to undertake a research effort to rationalize my selection. Discussions began with Liz Myer, the experienced New Hudson, Michigan, airport manager and maintenance inspector whose service-history judgments helped to separate fact from fiction. Our meetings proved that parts support is critical to maintainability of any aircraft and brand familiarity is helpful in the event off-field service is needed. Taking stock in her advice, I gave up my preconceived notions and decided to evaluate each manufacturer's offerings apples-to-apples to determine which would be best for us.

Beech A36 Bonanza

Published high-performance single-engine reviews proved that each model demonstrates its own idiosyncrasies and performance envelope. Direct comparison was not easy, however, as reviews are sometimes measured and/or reported in different formats, often with a marketing spin. To complicate matters, each type is fitted with myriad avionics and options. Despite my experience, I couldn't discern exactly what we needed. The question of mission was asked of me early in the hunt by Jeff Anastas, an energetic sales representative from Raytheon Aircraft. Pointing out the broad range of the A36


New Piper Saratoga II HP


Mooney Ovation2


Commander 114B

The Bonanza (bottom left) proved to be the most expensive in its class and the most thirsty. It was a solid performer, however. The Mooney Ovation2 (above) was the fastest in its class and was very responsive and stable.

Bonanza's capabilities, he suggested that my family carefully consider what we intended to do with the aircraft. Taking his suggestion to heart, I carefully developed a list of questions to create a mission profile. Our family's mission profile (defined) is the combination of the speed, range, load-carrying, and flight capabilities necessary to operate from the airfields that we intend to frequent. It does not address avionics options, as they are ancillary to that purpose. Logic further dictated that application of the "80/20" rule to our profile should lead to the purchase of an aircraft able to complete most of our missions most of the time.

Here's how our profile evolved:

Do we frequent grass strips? Is short-field capability important? Somewhat, as a few of our aviation friends are hangared at short grass strips. To a certain extent, I also equate short-field landing performance with safety in an emergency.

How many and how big are the people we intend to seat? What is our typical payload? As a family, we expect to transport up to four at a time, the possible exception being a 75-lb. Labrador retriever. Thankfully, we are smallish people. For business, I'll carry one or two larger passengers, plus baggage. The combined total in either case is approximately a 720-lb. payload.

What type of baggage or cargo do we intend to transport? Though an early consideration, we nixed the idea of a skitube, as most resorts stock the latest and greatest. There is no need to lug around all that stuff. So, short of the retriever, standard luggage will do.

What is the range and duration of our flights? This is a tough one. While range varies, bladder duration is about three hours, regardless. Thus, three hours with IFR reserves became my 80-percent target.

Is speed or fuel efficiency important? It's my opinion that more speed is better, though I'd rather not flog an engine to get performance, unless I have a headwind.

Finally, weather flying: Is ice protection important? For Great Lakes pilots like me, winter means ice. While avoidance sounds easy, it generally doesn't work. Inevitably, I'm stuck in a hold or at the minimum altitude inbound when accumulation begins. A TKS anti-ice system pumps an alcohol-based fluid through tiny holes in leading-edge surfaces to prevent ice buildup. While the thought of shelling out 50 grand for known-ice TKS seemed high, Mark Woods of Northern Mooney convinced me otherwise. He pointed out that it's only 10 to 15 percent of the price of a new aircraft and allows much safer year-round use. I agreed with Woods' assertion that TKS weeping wing technology greatly increases confidence associated with climbs and descents through weather in colder climates.

Mission profile defined, I could now easily choose aircraft performance attributes necessary to support it. The only remaining barrier was the need to rank each of the selected attributes

Category/Aircraft	Mooney Ovation M20R-II
Engine	TCM IO550-G5
Horsepower	280 @ 2500
TBO	2,000 hr
Propeller	McCauley 2-bl.
Max rate of climb @ gross sea level/20°C	1,250 fpm
Max rate of climb @ gross 5,000'/20°C	890 fpm
Max rate of climb @ gross 10,000'/0°C	650 fpm
Service ceiling	20,000 msl
Cruise @ 75%	192 @ 16 gph/8,000 @ wide-open throttle/2,500
Cruise @ 65%	179 @ 12.2gph/8,000 @ 2,500
Cruise @ 55%	158 @ 9.7gph/10,000 @ 2,400
Crosswind capability	13 kt
Takeoff over 50' @ gross sea level/20°C/zero wind	2,600 ft
Landing over 50' @ gross sea level/20°C/zero wind	2,500 ft @ 3,200 lb
Takeoff over 50' @ gross 2,000'/20°C/zero wind	3,000 ft
Landing over 50' @ gross 2,000'/20°C/zero wind	2,800 ft @ 3,200 lb
Gear extension speed	140 kt
Flap extension speed	110 kt
Stall speed cruise config.	66 kt
Stall speed landing config.	59 kt
G-load cruise config.	+3.8/-1.5
G-load landing config.	+2.0/-0.0
Max takeoff weight	3,368 lb (3,200 lb landing)
Empty weight w/IFR eq.	2,361 lb well-equipped
Usable fuel	89 gal
Theoretical range @ 75%	5.5hrs/1045nm
IFR range @ 75%/720 lb payload (.75 hr res.)	2.8 hr/552 nm (@ 192 kt)
IFR range @ 55%/720 lb payload (.75 hr res.)	5.1 hr/805 nm (@158 kt)
Useful load	1,065 lb well-equipped
Fuel weight w/full fuel	534 lb
Payload w/full fuel	531 lb
720 lb payload fuel/range available	345 lb/57.5 gal/3.6 hr/682 nm (gross)
440 lb payload fuel/range available	625 lb/89 gal/5.5 hr/1,045 nm(+90 lb=gross)
270 lb payload fuel/range available	795 lb/89 gal/5.5 hr/1,045 nm(+261 lb=gross)
Fuel cost/economy @ 75%/100 hr ($2.50/gal)	$4,020/12.0 nmpg ($.209/nm)
Baggage capacity max.	120 lb
Power loading lb/hp @ max	12.1 lb/hp
Wing loading	19.3 lb/sq.ft.
Limitations	Normal category, day/night IFR
Tannis heater	STC
IFR price w/dual Garmin 430s, HSI, Autopilot	$419,000
Warranty coverage	24 mo airframe (24 mo/720 hr engine)
Maintenance coverage	
Downside comments	Not a short-field aircraft, firm handling 3,200 lb landing weight limitation Short/stiff landing gear; limited rough field
Upside comments	Fastest in class, fuel efficient Great range @ light/mid-weights Responsive (if firm) handling, very stable No cowl flaps, speed brakes excellent Push Pull tube controls, improved serviceability Dual batteries, elec. stby. vacuum standard Gear shock disks maintenance free Good dealer parts/service network
Stall characteristics	Well-defined stall buffet, gentle break
Offhand comment	Awesome climb, speed, and efficiency
Technical comment	Book cruise performance at all weights Electromechanical gear & flaps Over-gross gear insp. pilot responsibility Gear doors may be lost in very rough fields Narrow post in center of windscreen 1,350 rpm downwind taxi propeller limitation

to be cross-referenced with available aircraft data. Originally, I thought that only a few hours of research would arm me with the knowledge needed to recognize value in the attributes critical to our profile. However, the complexity of features, performance, measurement methods, airframes, and avionics options quickly proved otherwise. Fortunately, my intense personal interest, a background in statistics, and years of computer experience made development of electronic tools possible for this process.

This search was limited to current production, naturally aspirated, high-performance, retractable-gear, single-engine aircraft with factory-installed options, available for purchase in the United States. The list included the Mooney Eagle and Ovation2, Bellanca Super Viking, Commander 115B, New Piper Saratoga II HP, Socata Trinidad 2000 GT (see "Top-of-the-Line Trinidad," p. 60), and Beech A36 Bonanza. Parameters thus defined, I reviewed current pilot's operating handbooks to validate data. Ambiguous information was reconciled with the help of factory representatives for each make and model. I then uploaded all data into a Microsoft Excel spreadsheet to make an accurate comparison.

Examination of subjective detail was necessary; I conducted a thorough preflight examination and flight test of each aircraft to provide information not necessarily found in the printed material.

Raw numbers don't tell the whole story, however. Examination of subjective detail was necessary to further validate the information. Thus, I conducted a thorough preflight examination and flight test of each aircraft to provide information not necessarily found in

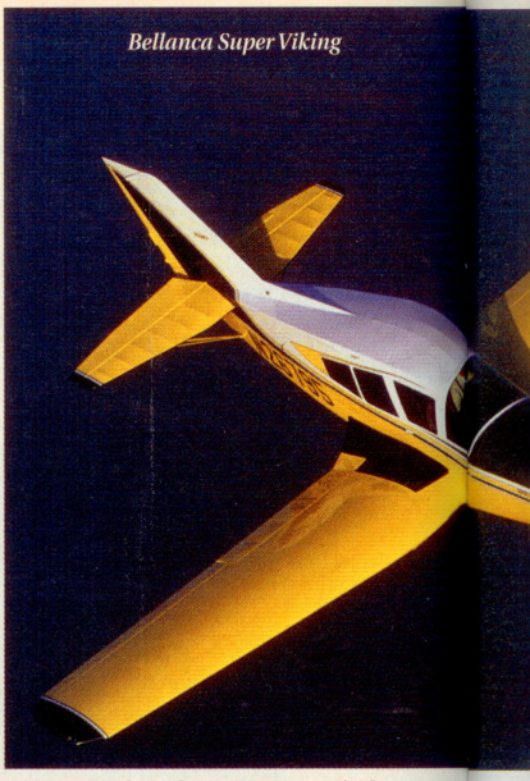
The author created a spreadsheet detailing the performance and cost of each of the seven aircraft researched. Data for only one aircraft is shown here. The complete spreadsheet can be found on AOPA Online.

the printed material. Standard and high-performance departures, landings, and maneuvers—including approach and departure stalls—were conducted in each type.

Factory tours of Mooney, The New Piper, and Raytheon were also taken to better understand engineering priorities, assembly processes, quality controls, and aircraft manufacturing quirks, to form the comparison. Note that as the learning process evolved, I found it helpful to organize performance attributes and their effect upon my mission into three basic decision-making categories:

Objective measurement: How many seats? How much useful load? Speed? Range? Efficiency? Short- and soft-field capability? Dealer parts and service network? Airworthiness directive history?

Subjective measurement: How does it handle? Is it comfortable? What kind of ramp appeal does it have? Will it suit my all-important egocentric mission regardless of performance? Safety record? Ease of maintenance? Dealer or FBO relationship?



Bellanca Super Viking

Financial analysis: How much does it cost? What is the warranty coverage? What is the short- and long-term market value? How should I finance it? Should I incorporate? Can I write off business use? Do I want a partner? What are the annual operation, maintenance, and insurance costs?

While this immense assembly of data made comparison possible, it still was

The Socata Trinidad 2000 GT climbs enthusiastically, and its trailing link gear smooths every landing.

Socata Trinidad 2000 GT

The Bellanca Super Viking offered great handling, climb performance, and was the most fun to fly.

not easy. Therefore, I decided to rank each aircraft relative to the others in what I call my Dream Shot electronic comparator. Eleven top-down priority forced rank numbers (11 = high, 1 = low) are applied to the attributes, then summed to form a numerical comparison. In case the results surprise you, the data matrix can be reviewed cell by cell for detail on AOPA Online (www.aopa.org/members/files/pilot/2000/comparison0010.html) and you can adjust the weighting of the various attributes to see which of these aircraft fit your mission profile. The interactive comparator shows an aircraft's capabilities relative to those of the others for each attribute category. As expected, each aircraft demonstrates its own compromise of strengths and weaknesses.

Because of space limitations, it is not possible to publish the full spreadsheet, but a sample is on p. 70. (Note: This evaluation process applies to any type of aircraft, new or used. For turbocharged pistons, pressurized cabins, twins, or jets, you need only to carefully qualify, rank, and enter complete data for any class of aircraft to make the selection process work.)

Given an objective set of mission-based priority selections, one aircraft may quickly emerge among the competitors. Using another set of selections, the aircraft might be so close that additional research is necessary. For example: IFR range at a given payload depends entirely upon the power settings and density altitude. Given the broad range of perfor-

mance envelopes available among target aircraft, if IFR range is critical to your mission, a deeper comparison should be made. In the end, your purchase decision might ultimately depend upon a purely subjective rating.

Whichever the case, development and use of this tool eliminated the guesswork in my decision-making process. It made possible the ability to simultaneously evaluate competing aircraft against each other and our family mission profile. My wife and I were able

We were able to narrow our focus based on the research, methodology, and tools developed during our process.

to narrow our focus based on the research, methodology, and tools developed during this process. An unexpected surprise: My dream shot turned out to be an entirely different aircraft than I had originally selected. While the Super Viking is still my pick for outstanding flight characteristics, I ultimately selected a Mooney because its blend of capabilities better suited our family mission profile. This was the result of my decision to review all aircraft, as my previous experience with Mooney's older products was not good. Had it not been for Woods' patient salesmanship, Mooney design improvements, and known-ice capability, another aircraft would have held favor. Note that our decision isn't quite complete yet, as my wife's favorite is the A36. If only the Bonanza had factory-available TKS.

Development of the Dream Shot comparator was a challenging, yet rewarding project. In the end, I believe it will provide us with the best airplane fit for our family. And when an airplane fits your mission and your expectations, it's always much easier to make it fit into your budget. □

Links to the electronic comparator and a spreadsheet on the comparison aircraft may be found on AOPA Online (www.aopa.org/pilot/links.shtml). Timothy J. Kurcz, AOPA 821020, *is a 1,000-hour IFR pilot based at Oakland Southwest Airport in New Hudson, Michigan.*