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RNP AR  
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Owner's Corner:  
Phenom 100

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# Contents

JULY 2023 • VOL. 27, NO. 7

## Editor's Briefing

**2 American Innovation**  
by Lance Phillips

**4 Curved Approaches**  
by Ed Verville



**8 Industry Insights**  
Cutter Aviation  
by Lance Phillips

**Owner's Corner**  
**12 Phenom 100**



**16 Editor's Pics**  
by Lance Phillips

**From the Flight Deck**  
**20 Zen and the Art of Aircraft Maintenance**  
Aircraft owners are allowed to perform some maintenance on their own airplanes  
by Kevin Dingman



**24 How to Prepare for Your First Recurrent Jet Training & Proficiency Check**  
by Tigre Pickett

## On Final

**32 What Good Looks Like**  
by David Miller

## COVER PHOTO:

Photo Courtesy of Tigre Pickett

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## American Innovation

*If I have seen further it is by standing upon the shoulders of giants*

– Sir Isaac Newton

This month in America we celebrate our independence as a nation. I often reflect on what I learned in college about the unique contributions the United States has made to aviation across the globe, some of which might not have been possible (or could have been considerably delayed) had some industrious Americans not been in the right positions at the right time.

Obviously, we all know the Wright brothers flew their Flyer in 1903. But what about the industrious aviators who made aviation a tool of commerce, in turn making the U.S. more competitive in the world?

*I believe that simple flight at least is possible to man and the experiments and investigations of a large number of independent workers will result in the accumulation of information and knowledge and skill which will finally lead to accomplished flight. I wish to avail myself of all that is already known and then if possible add my mite to help on the future worker who will attain final success.* – Wilber Wright

1914 – Scheduled air service begins between Tampa and St. Petersburg, Florida for five dollars.

1918 – Airmail service begins between New York City and Washington, D.C.

1927 – Boeing starts producing the B-40 aircraft after bidding for and winning the Chicago to San Francisco airmail route. It is powered by the Pratt & Whitney Wasp engine. The U.S. government begins installing the first radio navigation system, low- to medium-frequency four-course ranges.

1928 – Jimmy Doolittle is assigned the task of solving the problems inherent with flying solely by instrument reference. Doolittle enlists the help of several disparate engineers and entrepreneurs. First, Elmer Sperry of the

Sperry Gyroscope Company develops an artificial horizon for attitude reference and a directional gyro. Next, Paul Kollsman develops the sensitive altimeter.

1929 – Jimmy Doolittle makes the first totally blind flight (without reference to the horizon).

1933 – Boeing develops the Model 247, the first passenger aircraft with an autopilot, de-icing boots, constant-speed propeller and retractable landing gear.

1934 – Elrey Jeppesen, an airmail pilot, starts publishing airway manuals, providing navigation information, airport elevations, obstruction heights and runway lengths.

Without our American innovators and risk-takers, who knows where we would be now? What if Doolittle hadn't brought together the inventions of Sperry and Kollsman? What if Elrey Jeppesen hadn't lost countless friends in the freezing clouds over their airmail routes? And what if he hadn't measured the field lengths, taken the barometric readings, and listed the waypoints along his routes to start producing his airway manuals that sold for 10 dollars in the 1930s, saving many lives along the way?

It is incredible to think about how far we have come in such a short amount of time thanks to a few Americans who somehow figured out a way to fly in the clouds safely. This month we can celebrate American independence and at the same time raise a glass to those whose shoulders we stand upon.

In this July 2023 issue, we start by deciphering some of the new terminology around RNP AR approaches. You know, those ones with all the requirements and curvy lines. Ed Verville has been instructing RNP approaches for years and brings us up to speed. I think we can be pretty sure that Jimmy Doolittle did not envision the technology and sophistication involved in creating and operating within our current RNP environment. Or maybe he did.

I am also starting a new column called Industry Insights about people who are instrumental in keeping our aviation operations going. First off, I talk with Will Cutter, the grandson of William P. Cutter who started the first chartered flights in the American Southwest in the 1930s. Will describes how his business Cutter Aviation



provides service to twin and turbine pilots throughout the southwest and how the family company remains competitive and growth-oriented.

Some people are born to fly, and they don't even know it. Mr. Gabriel Ruz, Jr. of Miami, Florida takes us through his life of business and how it happened to lead him to a life of aviation.

How long has it been since you read "Zen and the Art of Motorcycle Maintenance"? Kevin Dingman uses the same philosophy and takes us on an odyssey showing how elegance and creativity play into maintaining our aircraft.

Finally, we learn what "good" looks like and how we can avoid the dreaded red screen when visiting our preferred simulator training provider.

By the time you are reading this, Independence Day is probably in the rearview mirror, but I hope that it was safe, fun and full of reflection on those who made it possible. Oh, and you might find another Editor's Pic stuck in this issue somewhere. That's where I get to display some of the interesting stuff I capture with my various cameras and tell the stories behind the photos. Enjoy!



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# Curved Approaches

by Ed Verville



## (RNP AR)

**H**ave you ever looked at an approach plate and wondered what was up with the curved lines on the plan view? These approaches actually allow you to fly an instrument approach with a curved path and also provide a glide path down to a Decision Altitude (DA). We have made amazing strides with GPS approaches. The first approaches provided lateral guidance down to a Minimum Descent Altitude (MDA). Sometime later, manufacturers created approaches with vertical guidance using baro-aiding. The next leap occurred in the United States when the Satellite Based Augmentation System (SBAS) and the Wide Area Augmentation System (WAAS) provided vertical guidance. WAAS approaches provide approach minimums down as low as ILS CAT I minimums, 200-foot DH and 1800 RVR.

### **AR = Authorization Required**

The “AR” in the notes section indicates that special aircraft and aircrew authorization is required. Pilots need to attend specialized training, much like you would for an ILS CAT II authorization. The training will include flying at least two approaches in a full-motion simulator, both as pilot flying and as pilot monitoring, for a multi-pilot crew. The approaches will include normal approaches and being vectored off the approach for re-sequencing. You will also need to perform a published missed approach and complete a landing out of an approach. You will subsequently

need to request authorization from the FAA, which will be granted in the form of a Letter of Authorization or Operations Specifications.

The airplane also needs to be certified for RNP AR approaches. The Bombardier Challenger CL-650 with the Pro Line 21 is approved for approaches with an RNP as low as 0.3. This 0.3 is the minimum lateral approach sensitivity. It indicates that a full-scale deflection of the CDI from about the Final Approach Point (FAP) to the Missed Approach Point (MAP) will be about 1/3 of a mile. The approach minimums will actually be based on the sensitivity of the approach capability. Boeing’s 777 is certified for RNP AR approaches down to minimums of 0.12. The lower RNP minimums will provide lower approach minimums.

### **RNP = Required Navigation Performance**

RNP defines performance-based navigation to operate between two points in space or in a block of airspace. In addition to the RNP lateral sensitivity requirement, the approaches also require specific equipment just like when flying a CAT II Approach or flying in RVSM airspace.

### **Required Equipment**

An interesting observation from an RNP AR “required equipment list” indicates that “two GNSS sensors must be available to commence the approach” and “one GNSS sensor is required to continue the approach.” This differs from the Flight Management System limitations that require



suitable navigation information from “one GNSS; or two DMEs; or one VOR/DME; or one IRS”.

RNP AR approaches need to have a clear, unobstructed GNSS signal from the satellites when conducting an approach such as along the ridgeline of mountains in Palm Springs, CA. It is also worth noting that RNP AR approaches do not use or require WAAS. This also means that the lateral distance remains linear from the FAP (yes, Final Approach Point, not Final Approach Fix) to the MAP unlike the angular guidance provided by an LPV WAAS approach.

### **RF = Radius to a Fix**

The curved portions of the approach are referred to as Radius-to-a-Fix legs (RF). In addition to the obvious curved lines, RF legs can be identified on the plan view of the approach charts by the lack of the magnetic course printed on the chart. The profile view identifies the curved path by “LT Arc” or RT Arc” for left turning arc or right turning arc respectively.

### **Speed Limits**

To keep the airplane within the required lateral distance, there may be speed limits. Posted speed limits, such as “Max 210 KIAS” may be printed on the plan view next to an intersection. The manufacturer may establish additional restrictions (e.g. the CL-650 must be fully configured by the Intermediate Fix (IF) on the approach,” and the FAA imposes a maximum airspeed from the FAP to the DA of 140 knots for a CAT C category airplane.

### **Flying the Approach**

Let's use the Rockwell Collins Pro Line 21 on the CL-650 for demonstration purposes.

When cleared for the approach, proceed directly to the cleared fix, select Approach and VNAV Modes on the Flight Control Panel (FCP), and remember to verify that the appropriate modes were accepted on the Flight Mode Annunciator (FMA). Set a lower altitude in the altitude selector to the FAP altitude or MDA to ensure the aircraft continues on the descent path for the approach. When the Flight Mode Annunciator captures the VGP (Vertical Glide Path), the approach will no longer recognize or capture altitudes in the altitude selector or altitude alerting device. You may now set the missed approach altitude in the altitude selector to prepare for a missed approach.

Lastly, confirm that the message on the Primary Flight Display (PFD) switches from “RNP AR ARM” to RNP AR APPR” and verify that the RNP APPR CDI Scale indicates “0.3 nm” prior to crossing the final approach point (FAP).

Now you can pretty much just sit back and watch the magic happen. The airplane will fly curved paths around cities, mountains, or airspace while descending via an FMS-generated glide path down to a decision altitude.

### **Tolerances**

The maximum allowed lateral deviation is two dots, and vertically one dot. The one dot vertical is 75 feet. An amber deviation alert is displayed for deviations beyond the above limits.



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## Missed Approach

During a missed approach the RNP will ramp up from 0.3 back to the 1.0 that is required for the terminal area. A few approaches, such as KSDL RNAV (RNP) Y Rwy 3, have a note stating: "Missed approach requires RNP less than 1.0." Most airplanes will not be capable of conducting this approach due to this restriction.

## Non-normal

The FMS also provides internal monitoring and alerting of the approach and as stated earlier, does not use WAAS. Non-normal indications include: "UNABLE RNP," "NO APPR," "EFIS MISCOMP," and "Loss of GNSS." A missed approach is also required during training to practice sequencing the FMS through the missed approach.

## Miscellaneous

- You must have and use the local altimeter setting.
- The primary altimeters must be within 100 feet of each other; if you have two.
- You may not proceed direct-to-waypoint immediately preceding an RF (curved) leg; you must start on a straight leg.
- You must also monitor TAWS (Terrain Awareness equipment) to ensure obstacle and terrain clearance.

## Titles and Minimums

The titles of the approach plates prove to be one of the most difficult areas to understand. They are inconsistent between Jeppesen, FAA, TERPS, and Pans Ops. Just because "RNP" is in the title does not necessarily indicate that it is an RNP AR approach. All FAA government RNAV charts indicate "RNP Apch" in the notes, even for the normal approach minimums of LNAV, LNAV/VNAV, and LPV approaches. You must actually look at the minimums section to determine the type of approach.

GPS Approaches have come a long way since their conception. I never envisioned that I would be flying curved approaches with vertical guidance to a decision altitude. If your flight simulator is set up for these approaches, you might be able to persuade your instructor to let you fly one during your next recurrent training to see if they're right for you or your operation. **T&T**

*Ed Verville is an experienced FAA instructor and examiner for business jet pilots and aircrew programs. He has more than 15,000 flight hours in 98 different makes and models, and holds type ratings in the Bombardier CL-65, CL-30, CL-604 and Boeing 747. Ed has been instructing RNP-AR Approaches for the past three years.*

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# INDUSTRY INSIGHTS

## CUTTER AVIATION

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by Lance Phillips

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There are several reasons I wanted to start this column by reaching out to someone who knows a thing or two about running a successful aviation business. Will Cutter is the third generation of Cutters running Cutter Aviation, a business started by William P. Cutter in 1928 in Albuquerque, New Mexico. As someone whose grandfather started charter flights and FBO services in the Southwest, I can't think of anyone better to provide insight into our aviation environment and give details about how to stay competitive and keep the customers coming back year after year.

**Lance Phillips:** Let's talk about Deer Valley and how your new operations there are providing pilots in the southwest with new options for support.

**Will Cutter:** We have just built 75,000 square feet of new turbine hangar space in Deer Valley to support the largest business jets in the area with three bays. They're

two-thirds full now and will be completely full by the end of the summer. Some operators are coming from Scottsdale, some from Sky Harbor, and some from California. Phase two will begin once construction costs come back in line, probably before the end of the year.

In Prescott, Arizona we're the sole provider of services now. And Cutter is reinvesting in the area by completing and expanding the ramp by another six acres.

In Georgetown, Texas, just outside of Austin, we have 181,000 square feet of hangar and offices that are completely full. We consolidated the FBO services at the airport and are growing the fuel business significantly this year.

The charter business is down right now due to pilot shortages. There

is a lot of opportunity right now for those looking to get into the business aviation environment.

**LP:** Are you looking to expand further in the next few years? And do you ever see Cutter outside of the southwest?

**WC:** We have looked at additional opportunities in the southwest recently. Some opportunities work out, and some don't. Some recent ones didn't make sense. But we're also looking at growing and expanding our current locations.

**LP:** How about used aircraft sales? Are those as strong as we're seeing everywhere else?

**WC:** Yes, used inventories are low, and demand is high. We're sold out for the next year and a half or so.

**LP:** How does your competitiveness in the market translate to providing better services to pilots like the readers of *Twin & Turbine*?

**WC:** We try to be a one-stop shop for everyone. We can store (with



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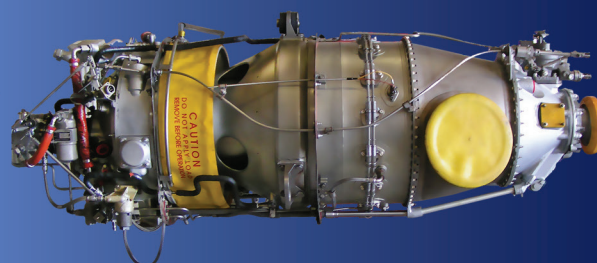
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hangar space), fuel and maintain aircraft across the board. We focus our MRO on a few brands, but other than that; we're an inclusive business. Everyone is welcome.

The ramp is full right now here at Sky Harbor. There are around 18 to 20 aircraft out there. We try to focus on customer service and provide operators with a familiar face and better service. It works. We always ask our customers what we can do

better, and we understand what it takes to make those crews and passengers successful.

**LP:** What does your induction into the International Air & Space Hall of Fame mean to you and how does that translate to Cutter Aviation providing better service to its customers?

**WC:** We have been a family-owned business for 95 years this year. I have two kids in the business now, so we're on the fourth generation. It shows

dedication, commitment and excitement in the company and toward our customers. It's the biggest honor I have received, other than having kids.

We try to promote longevity in the company, hiring within and giving back to the employees. If our employees are excited and want to stay, then our customers will want to keep coming back.

Many thanks to Will Cutter for spending time with me this month. **T&T**

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## Phenom 100

"The first time I saw it in person, I was immediately impressed with the door. I knew a lot of engineering thought and pride was behind it. I was right."



"The Phenom 100 is a phenomenal entry-level business jet that offers remarkable performance for a substantially lower price than its competition. It is beauty and the beast in one powerful plane," stated Gabriel Ruz, Jr. of Miami, Florida.

"The first time I saw it in person, I was immediately impressed with the door. I knew a lot of engineering,

thought and pride were behind it. I was right. From the entrance to the class-leading cabin, its Maserati seats, the clever lavatory design, and extra seating, I felt that the Phenom 100 meant business. As an experienced pilot, I have found that everything is much easier in the Phenom than in any other platform. It's a much simpler airplane to fly single-pilot. Besides, you have the peace of mind of almost centerline thrust, which is fantastic."

Mr. Ruz purchased his 2012 model in the first quarter of this year and has already racked up nearly 150 hours in it. Before this aircraft, the entrepreneur had owned a handful of others, most of which were purchased in the last few years.

"I started flying in 1997. I was an IT consultant back then. I had a client at Hollywood/North Perry Airport with a flight school, a flying club, and





and flying it for a while, “life got busy, and I stopped flying.”

While continually thinking about ways to get back into aviation, Mr. Ruz spent twenty years out of the cockpit. He explained that a meeting in 2019, five and a half hours from his house, was the catalyst for returning to the air. His neighbor had a Mooney and reintroduced him to general aviation, emphasizing the time savings of owning an aircraft.

“I was then off to the races. I got current again and then bought an Archer. I got my IFR rating in California, where I did a condensed two-week course. That was some of the best training I ever had because I was in the soup every morning, in real IMC conditions.”

Mr. Ruz continued to set his eyes on the next step in his aviation journey, asking himself, “What is the next step up? What should I buy?” A direction would soon become apparent.

“Then I sold half of my company to private equity in 2019 and started talking to Dick Rochfort about which plane I should buy next. He said that I should buy a turbine. I told him he was out of his mind, questioning going from a fixed-gear low-wing to a turbine aircraft. I spoke to a few other people who said he was right and that flying a turbine aircraft is much easier. So, I went for a demo flight in a Piper M500, fell in love with the plane, and acquired an M600.”

The cockpit of the Phenom 100, sporting a G3000 avionics system. Due to Mr. Ruz’s previous Garmin experiences, he stated that moving into the Phenom 100’s G3000 avionics system was seamless and never felt “behind”

a testing center. They asked me to build their [IT] infrastructure, so I did. One day I went by to pick up a check and met with the owner. A family was returning from the Bahamas in a Cherokee Six, and I commented how cool it was.”

“So, he said, ‘Why don’t you go up with one of our instructors? Take a ride!’ I said that he was out of his mind. But I went up for an intro flight and logged the time. I was not impressed. That was it for me that day, but I kept my logbook in my car and kept going back there to do work.”

Mr. Ruz ultimately changed his mind about flying when the same flight school owner later asked if he would like to go to the Bahamas for a weekend in the Cherokee Six. He says that experience made him fall in love with aviation and he quickly earned his private pilot certificate after the trip. However, after acquiring a Cessna Cardinal with three partners



Gabriel Ruz, Jr. in front of his 2012 Phenom 100 that he purchased in early 2023





Gabriel Ruz, Jr. in the cockpit of his Phenom 100

He noted that he flew this PT6A-42A-powered bird for about 800 hundred hours, all over the country – to most major airports. Anywhere Mr. Ruz traveled, he flew the M600 until stepping up into a TBM 910.

Just as with the Piper, he loved this plane but expressed that the ultimate goal was a twin-engine jet. However, his aviation experience thus far had only included single-engine operations, an obstacle to overcome before transitioning further into the flight levels.

“You need to buy a Baron,” Mr. Ruz was told by his mentor pilot Tom Rau. “Buy a true, twin-engine airplane and fly it for a hundred hours, and then you’re ready,” he advised when I asked him about my next move. I got a Pilatus [PC-12], then went backward after that and got a Baron.”

“After the hundred hours I needed, the first cross-country trip was to Utah. I sold the Baron there and didn’t fly it back to Florida. With the 100-hour mission accomplished, I started looking at jets. The Phenom

100 fit my profile and had everything I wanted. We acquired mine in March of 2023 when I simultaneously bought a 2019 Cirrus SR22T that I also fly for local trips.”

Mr. Ruz noted that transitioning to the Phenom and getting his first type rating was a great experience.

“I reached out to Tom and Mary Beth at Norton Aviation and gave them my profile. Based on it, they said we would do four days back-to-back [flying], or seven or ten days, based on your schedule and pace. I had several business trips during training, so we went up to the Northeast a few times. Insurance asked for 75 hours before carrying passengers, which I did and got my type rating in two or three weeks,” he recalled.

“I felt very comfortable in the plane right away and never felt behind it because of my G1000 experience. I had about 600 hours on that platform and probably 700 hours with the G3000. I was never intimidated by that aspect or approach speed because the REF speed is very similar to the TBM. Your rotation speed is also very similar, and the main difference is that you have two engines.”

Of course, some of the differences between the aircraft and others he flew were points of extra attention during his initial training.



One of Gabriel Ruz, Jr’s aircraft, a TBM 910. He flew this airplane after owning an M600 and before moving into a PC-12.



"I think that the only thing that kept me up at night is that 'pain in a landing gear.' The torque link needs to be removed prior to towing and reattached prior to departing. That's the only thing about the airplane I'm still trying to get my head around because it's bizarre. Being a systems guy, though, I love learning new things, and the mental challenge of it is stimulating. I enjoy it."

For Mr. Ruz, the jet is capable and operationally similar, or even superior, as far as costs are concerned to his previous aircraft.

"I encourage you to spend the money on a jet instead of a similarly priced twin-engine piston or a single-engine turboprop. Acquisition costs are right in line. After I got into the Phenom, I talked with my mentor pilot again, and he noted that it was almost the same price he had paid for his M600. Until our conversation, he had never realized that operating costs are virtually the same because you are going nearly twice as fast. It's fascinating.

You don't know what you don't know, and this is one area that people don't venture into because they don't know."

Mr. Ruz expanded on this concept, showcasing a key benefit he has personally experienced in his Phenom.

"I will tell you that several mentor pilots I have flown with would not go up to 41,000 feet because they say the plane is slow to climb there and the fuel burn could be better there. I argue that that is not true. The book published speeds and fuel consumption figures are on point, in my opinion. For example, I flew to Indianapolis non-stop from Miami and went up to 41,000. I couldn't have made that trip if I had only gone up to 37,000 feet," he began.

"The difference between those altitudes is significant. When you get higher, you burn roughly 275 pounds per side, which is nothing. When you run that calculation, you are at 80 gallons an hour. I am right at the same burn as a TBM, but in reality, probably less since the TBM is going slower.

With a 100-knot headwind in a TBM, you are going 220 knots [groundspeed], whereas, in this jet, you are going over 300 knots. So, if you get up to altitude, you are actually at the same fuel consumption then."

Unsurprisingly, Mr. Ruz is more than thrilled with his ownership experience so far. And why wouldn't he be? Getting into a twin-engine jet was a long-term goal for the detail-oriented entrepreneur.

"As far as I am concerned, the Phenom 100 is a smooth, solid, and reliable entry-level business jet. It is fast and agile, and it is easy to start and fly. It doesn't hurt that this bird is loaded with some serious ramp appeal and never goes unnoticed. It is an amazing platform with a fantastic network. There is no comparison," he strongly concluded.

*You can follow along with Gabriel Ruz, Jr.'s Phenom journey on Instagram @chief.flying.officer.*



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# Editor's Pics

by Lance Phillips







Do you happen to remember last month how I described that I have taken a journey experimenting with several camera types, even trying out film photography over the last few years? No? Well, I described it, and this month we're looking at one of the stranger photos I have captured. Not only strange for its image of an old twin resting sadly all alone behind a building but also for the type of camera used. I'll get to all that in a moment.

In May of 2021, I had taken a road trip through Colorado, New Mexico and Texas. On the way back, a stop in Tucumcari, New Mexico brought me to a unique place, and I happened to have a pretty unique camera with me to take pictures of things there.

Tucumcari has this retro, mid-century throwback hotel called the Historic Route 66 Motel. As you can imagine, the famous Rt. 66 runs through Tucumcari on its way to California from Illinois. The new owners of this motel weren't satisfied with the standard Rt. 66 memorabilia-type stuff to lure travelers, they actually have old decommissioned Cessna singles scattered about the place as part of its outdoor décor. There's a 152 out front beneath its tall sign. And there's another one forming the awning over an outdoor bar area with its left wing.

What I didn't expect though was to find a polished aluminum Aero Commander out back in the weeds next to a ditch. I guess that it is a 520 model from the Aero Design & Engineering Company, later to be called Aero Commander. If someone wants to write in and let me know which model it is, please do so.

As the story goes, Ted Smith, an engineer at Douglas, formed the Aero Design & Engineering Company with some of his buddies back in the late 1940s. This crew leased a few thousand feet of hangar space in Bethany, Oklahoma and started making airplanes. AD&EC became Aero Commander in 1950, then joined Rockwell in 1965. The airplane would go through many iterations and finally was fitted with Garrett TPE331 turboprop engines in the 1970s and 1980s. By the 1960s, though, Ted Smith had also developed the Aerostar which was later produced by Piper.

The day that I found this lonely Aero Commander behind the motel, I happened to have a film camera called a Contax G1. It was a revolutionary camera of sorts due to the fact that it was a rangefinder (rather than a typical single-lens reflex type) with an autofocus system. Contax was an old German camera maker that had been purchased by Kyocera of Japan at some point, and the Japanese Contax cameras of the 1980s, like my G1, were some of the best in the market. And Contax used renowned Zeiss lenses like my 45mm f2 used here. Loaded in my old camera was a film by Kodak called Portra 400. Enjoy this month's Editor's Pic, and please send me a note if you have an interesting aircraft photo/camera combo of your own. **T&T**



# The Worldwide General Aviation

owner/operators and chief pilots of these aircraft

# 100%

## TOTAL MARKET COVERAGE

### JETS - 21,487

#### CHIEF PILOTS & OWNERS

##### COUNT AIRCRAFT

66	AIRBUS A300S
8	ASTRA 1125
39	ASTRA 1125SP
48	ASTRA 1125SPX
23	BEECHJET 400
239	BEECHJET 400A
228	BOEING BBJ
18	BOMBARDIER CRJ
745	CHALLENGER 300
286	CHALLENGER 600
68	CHALLENGER 601-1A
94	CHALLENGER 601-3A
325	CHALLENGER 604
62	CHALLENGER 650
3	CHALLENGER 800
58	CHALLENGER 850
6	CHALLENGER 870
354	CIRRUS VISION SF50
118	CITATION 500
339	CITATION 525
303	CITATION BRAVO
182	CITATION CJ1
96	CITATION CJ1+
231	CITATION CJ2
225	CITATION CJ2+
458	CITATION CJ3
216	CITATION CJ3+
383	CITATION CJ4
178	CITATION ENCORE
75	CITATION ENCORE+
370	CITATION EXCEL
10	CITATION I
241	CITATION I/SP
408	CITATION II
46	CITATION II/SP
140	CITATION III
145	CITATION LATITUDE
43	CITATION LONGITUDE
312	CITATION M2
489	CITATION MUSTANG
124	CITATION S/II
313	CITATION SOVEREIGN
108	CITATION SOVEREIGN+
268	CITATION ULTRA
260	CITATION V
25	CITATION VI
108	CITATION VII

297	CITATION X
37	CITATION X+
256	CITATION XLS
310	CITATION XLS+
1	DIAMOND I
23	DIAMOND IA
17	DORNIER ENVOY 3
310	ECLIPSE EA500
17	EMBRAER LEGACY
20	EMBRAER LEGACY 450
78	EMBRAER LEGACY 500
102	EMBRAER LEGACY 600
64	EMBRAER LEGACY 650
15	EMBRAER LINEAGE
332	EMBRAER PHENOM 100
475	EMBRAER PHENOM 300
86	EMBRAER PRAETOR
55	FALCON 10
23	FALCON 100
13	FALCON 200
248	FALCON 2000
5	FALCON 2000DX
25	FALCON 2000EX
135	FALCON 2000LX
126	FALCON 2000LXS
24	FALCON 20C
16	FALCON 20C-5
15	FALCON 20D
1	FALCON 20D-5
16	FALCON 20E
45	FALCON 20F
71	FALCON 20F-5
171	FALCON 50
5	FALCON 50-4
8	FALCON 50-40
99	FALCON 50EX
262	FALCON 7X
53	FALCON 8X
161	FALCON 900
26	FALCON 900C
17	FALCON 900DX
322	FALCON 900EX
85	FALCON 900LX
152	GLOBAL 5000
6	GLOBAL 5500
202	GLOBAL 6000
22	GLOBAL 6500
55	GLOBAL 7500
244	GLOBAL EXPRESS
25	GULFSTREAM G-100
110	GULFSTREAM G150
203	GULFSTREAM G-200

252	GULFSTREAM G-280
10	GULFSTREAM G-300
9	GULFSTREAM G-350
21	GULFSTREAM G-400
294	GULFSTREAM G-450
95	GULFSTREAM G-500
596	GULFSTREAM G-550
68	GULFSTREAM G-600
383	GULFSTREAM G-650
15	GULFSTREAM G-I
13	GULFSTREAM G-II
10	GULFSTREAM G-IIB
81	GULFSTREAM G-III
152	GULFSTREAM G-IV
290	GULFSTREAM G-IVSP
174	GULFSTREAM G-V
27	HAWKER 1000A
5	HAWKER 1000B
1	HAWKER 125-1AS
1	HAWKER 125-600A
9	HAWKER 125-600AS
36	HAWKER 125-700A
5	HAWKER 125-700B
65	HAWKER 4000
203	HAWKER 400XP
43	HAWKER 750
105	HAWKER 800A
14	HAWKER 800B
346	HAWKER 800XP
43	HAWKER 800XPI
82	HAWKER 850XP
167	HAWKER 900XP
2	HAWKER-3B
168	HONDA JET
2	JET COMMANDER 1121
1	JET COMMANDER 1121B
2	JETSTAR 731
6	JETSTAR II
4	LEARJET 23
4	LEARJET 24
1	LEARJET 24A
1	LEARJET 24B
13	LEARJET 24D
6	LEARJET 24E
6	LEARJET 24F
1	LEARJET 25
15	LEARJET 25B
1	LEARJET 25C
22	LEARJET 25D
1	LEARJET 28
23	LEARJET 31
152	LEARJET 31A

19	LEARJET 35
380	LEARJET 35A
20	LEARJET 36
34	LEARJET 36A
118	LEARJET 40
214	LEARJET 45
200	LEARJET 45XR
89	LEARJET 55
8	LEARJET 55B
6	LEARJET 55C
244	LEARJET 60
114	LEARJET 60XR
13	LEARJET 70
109	LEARJET 75
17	LEARJET 7T
119	PILATUS PC-24/45
272	PREMIER I
6	SABRELINER 40A
1	SABRELINER 40EL
2	SABRELINER 40R
4	SABRELINER 60
8	SABRELINER 60ELXM
38	SABRELINER 65
4	SABRELINER 80
1	SABRELINER 80SC
1	SUKHOI SBJ
3	SYBER JET SJ30
49	WESTWIND 1
1	WESTWIND 1123
12	WESTWIND 1124
38	WESTWIND 2

### TURBOPROPS - 13,856

#### CHIEF PILOTS & OWNERS

##### COUNT AIRCRAFT

174	AVANTI
2	AVRO RJ70
5	BRITISH AEROSPACE 146
486	CARAVAN 208
2109	CARAVAN 208B
137	CHEYENNE I
13	CHEYENNE IA
202	CHEYENNE II
45	CHEYENNE III
35	CHEYENNE IIIA
61	CHEYENNE IIXL
37	CHEYENNE IV
214	CONQUEST I
264	CONQUEST II
74	DAHER TBM-700A
86	DAHER TBM-700B



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124 DAHER TBM-940  
4 DAHER TBM-960  
163 DE HAVILLAND DHC  
25 EPIC E1000  
1 FOKKER 100  
1 FOKKER 70  
20 JETSTREAM 31  
68 JETSTREAM 32  
66 JETSTREAM 41  
29 KING AIR 100  
442 KING AIR 200  
20 KING AIR 200C  
13 KING AIR 200T  
238 KING AIR 250  
23 KING AIR 260  
175 KING AIR 300  
14 KING AIR 300LW  
629 KING AIR 350  
91 KING AIR 350C  
34 KING AIR 350ER  
375 KING AIR 350I  
6 KING AIR 350IER  
41 KING AIR 360  
7 KING AIR 90  
195 KING AIR A90-1  
6 KING AIR A/B90  
69 KING AIR A100  
162 KING AIR A200  
28 KING AIR A90  
95 KING AIR B100  
1030 KING AIR B200  
117 KING AIR B200C  
105 KING AIR B200GT  
6 KING AIR B200SE  
8 KING AIR B200T  
40 KING AIR B90  
281 KING AIR C90  
35 KING AIR C90-1  
181 KING AIR C90A  
358 KING AIR C90B  
68 KING AIR C90GT

96 KING AIR C90GTI  
137 KING AIR C90GTX  
13 KING AIR C90SE  
234 KING AIR E90  
147 KING AIR F90  
29 KING AIR F90-1  
4 MERLIN 300  
14 MERLIN IIB  
4 MERLIN III  
23 MERLIN IIIA  
42 MERLIN IIIB  
17 MERLIN IIIC  
2 MERLIN IV  
12 MERLIN IV-A  
32 MERLIN IV-C  
78 MITSUBISHI MARQUISE  
13 MITSUBISHI MU-2F  
1 MITSUBISHI MU-2G  
11 MITSUBISHI MU-2J  
30 MITSUBISHI MU-2K  
11 MITSUBISHI MU-2L  
20 MITSUBISHI MU-2M  
21 MITSUBISHI MU-2N  
23 MITSUBISHI MU-2P  
45 MITSUBISHI SOLITAIRE  
68 NEXTANT 400XT  
1 NEXTANT G90XT  
939 PILATUS PC-12 NG  
604 PILATUS PC-12/45  
202 PILATUS PC-12/47  
278 PIPER JETPROP  
82 PIPER M500  
193 PIPER M600  
1 PIPER MALIBU  
578 PIPER MERIDIAN  
255 QUEST KODIAK 100  
1 ROCKWELL 680T TURBO  
5 ROCKWELL 680V TURBO II  
5 ROCKWELL 680WTURBO II  
4 ROCKWELL 681 HAWK  
5 STARSHIP 2000A  
45 TURBOCOMMANDER 1000  
22 TURBOCOMMANDER 690  
126 TURBOCOMMANDER 690A  
130 TURBOCOMMANDER 690B  
61 TURBOCOMMANDER 840

22 TURBOCOMMANDER 900  
21 TURBOCOMMANDER 980

### TWIN PISTON - 8,807

#### OWNERS

#### COUNT AIRCRAFT

38 BARON 56 TC  
1446 BARON 58  
1 BARON 58 PA  
363 BARON 58P  
102 BARON 58TC  
3 BARON A56TC  
320 BARON G58  
181 BEECH DUKE B60  
292 CESSNA 414  
388 CESSNA 414A  
34 CESSNA 421  
28 CESSNA 421A  
272 CESSNA 421B  
615 CESSNA 421C  
109 CESSNA 310  
165 CESSNA 340  
553 CESSNA 340A  
53 CESSNA 402B  
BUSINESS LINER  
125 CESSNA 402C  
28 CESSNA 404 TITAN  
292 CESSNA 414  
388 CESSNA 414A  
34 CESSNA 421  
28 CESSNA 421A  
272 CESSNA 421B  
615 CESSNA 421C  
57 CESSNA T303  
111 DIAMOND D42  
120 DIAMOND DA  
84 PIPER 600 AEROSTAR  
3 PIPER 600A AEROSTAR  
45 PIPER 601 AEROSTAR  
4 PIPER 601B AEROSTAR  
203 PIPER 601P AEROSTAR  
24 PIPER 602P AEROSTAR  
581 PIPER CHIEFTAIN  
26 PIPER MOJAVE  
304 PIPER NAVAJO

257 PIPER SENECA  
12 ROCKWELL 500 SHRIKE  
23 ROCKWELL 500A SHRIKE  
83 ROCKWELL 500B SHRIKE  
47 ROCKWELL 500S SHRIKE  
4 ROCKWELL 500U SHRIKE  
12 ROCKWELL 520  
COMMANDER  
3 ROCKWELL 560  
COMMANDER  
9 ROCKWELL 560A  
COMMANDER  
5 ROCKWELL 560E  
COMMANDER  
6 ROCKWELL 560F  
COMMANDER  
11 ROCKWELL 680 SUPER  
3 ROCKWELL 680E  
10 ROCKWELL 680F  
COMMANDER  
11 ROCKWELL 680FL GRAND  
COMMANDER  
4 ROCKWELL 680FLP  
GRAND LINER

### HIGH PERFORMANCE MOVE-UP SINGLES - 6,873

#### OWNERS

#### COUNT AIRCRAFT

446 CESSNA 182  
55 CESSNA 206  
426 CESSNA P210N  
22 CESSNA P210R  
57 CESSNA T182  
1106 CIRRUS SR20  
3594 CIRRUS SR22  
21 MOONEY ACCLAIM ULTRA  
12 MOONEY OVATION ULTRA  
235 PIPER MALIBU  
183 PIPER MATRIX  
472 PIPER MIRAGE

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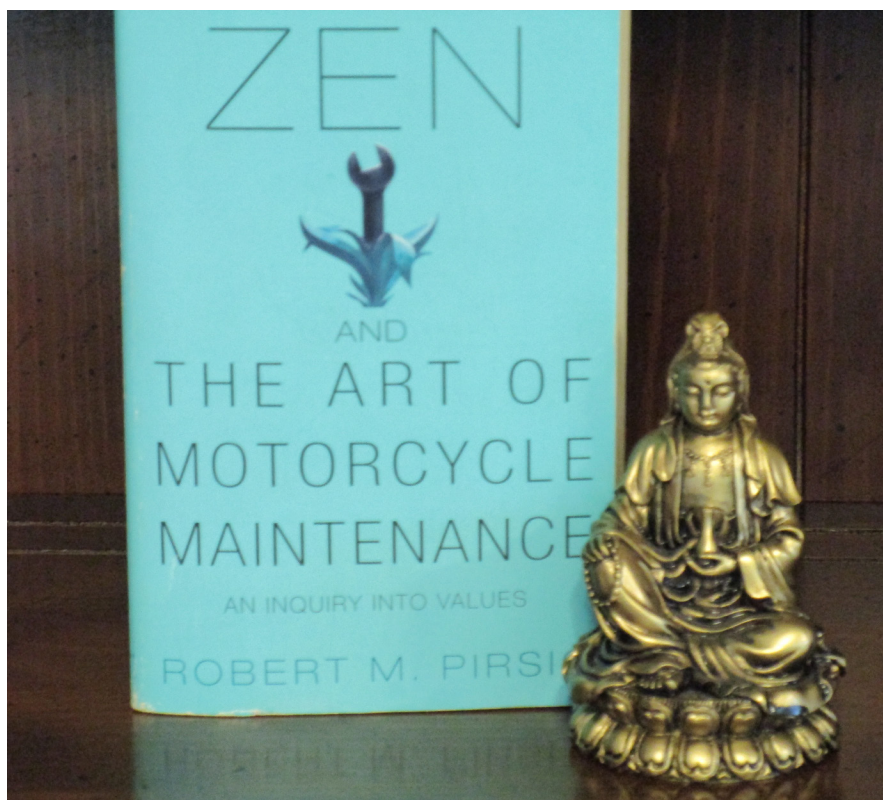
# From the Flight Deck

by Kevin R. Dingman



## Zen and the Art of Aircraft Maintenance

Aircraft owners are allowed to perform some maintenance on their own airplanes



First published in 1974 and now dutifully placed in the philosophy section of bookstores and libraries, Robert M. Pirsig's novel *Zen and the Art of Motorcycle Maintenance* became a modern classic. Likened by *The New York Times* to Thoreau and Melville, Pirsig's odyssey is a philosophical adventure about love and fear, growth, discovery and life's most critical questions.... like motorcycle maintenance.

The story revolves around a summer motorcycle trip across the U.S. by a father and son. Among its many contemplative and philosophical discussions, the story explores how the main character deeply understands and enjoys performing maintenance on his motorcycle, including manufacturing components from everyday materials such as a soda can if required. This is in contrast to a traveling companion who hates not only the physical act of maintenance and repair of his own motorcycle but

also the painful and confusing mental gymnastics required in order to understand the workings of machinery. The dichotomy provides fodder for many argumentative debates about life's choices.

### Overly Simplistic?

A pop quiz in another aviation magazine once included the following questions: If the battery dies, will the motor quit; what color is 100LL; what does a fuel quick-drain do; how many magnetos does the average aircraft engine have; and how many spark plugs does a four-cylinder engine have? The questions seemed overly simplistic. Then I contemplated the reason for the basic level of knowledge sought by the questions. We are all different in our abilities, interests, level of mechanical aptitude and experience, like the two characters in the book. That all pilots enjoy, or at least understand, machinery is not a valid assumption.

There are pilots that ignore the subject unless it's needed to pass a test, comply with a regulation or save their bacon.

### Creative Artistry

Creativity is seeing what others see and thinking what no one else ever thought.

- Albert Einstein

When young, I was a GA worker bee—mowing grass around the FBO, plowing snow from ramps, washing airplanes, pumping gas (including red 80 octane) and accumulating maintenance apprentice experience toward an A&P certificate. I learned amazing things while out on the airfield and in the hangar. The detail of things

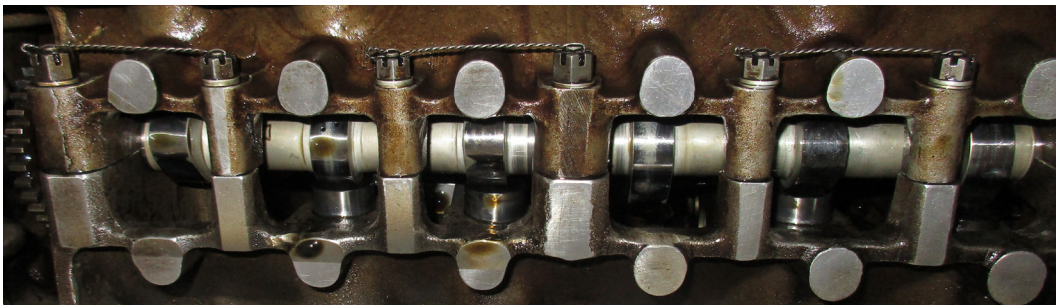




nut that has been created. The function and relevance of the hardware are overshadowed by the very elegance of the part itself. This manufacturing process is repeated hundreds, even thousands of times in the creation of a machine. It gives you a deeper appreciation of the adage: “Even the most complex flying machine is just a collection of man-made parts flying in close formation.”

## A Dizzying Nightmare

In the aviation field, we have the same dichotomy as explored in the motorcycle adventure as it relates to aircraft maintenance: some of us like to get hands-on, and others hate it. Most who are averse to performing maintenance are lacking in time, desire or knowledge. Our post-COVID worker shortage, coupled with a decades-long decline in the supply of aircraft mechanics, has made the owner-side of maintenance a nightmare. After an engine failure, I waited an entire year for the removal, overhaul, reinstallation and annual inspection of my Duke (not to mention a bill for \$108k). And the repaint and interior of one of our Citation III's, while beautiful, took twice as long as in the old days. So, as in the motorcycle adventure, to some, maintenance is a dizzying nightmare. Conversely, there are those who have the time, desire and knowledge who would rather take an airplane apart and put it back together than fly it. For all of us though, getting involved shows us why maintenance can be time-consuming and costly,



This camshaft and lifters demonstrate the sheer elegance of machine parts.

found only by walking or crawling in close proximity. For example, I learned the shape and size of the taxiway, runway lights and the design and spacing of VASI's. The details of a taxiway stripe—how the paint has a thickness and the edges are rough; nothing at all as they appear when you taxi or fly past, oblivious to their details. As a maintenance apprentice, I made the same observations about machinery. This revelation of “detail” gave me an appreciation for the mechanical redundancy, reliability, complexity and absolute creative artistry of airplanes.

## Elegance

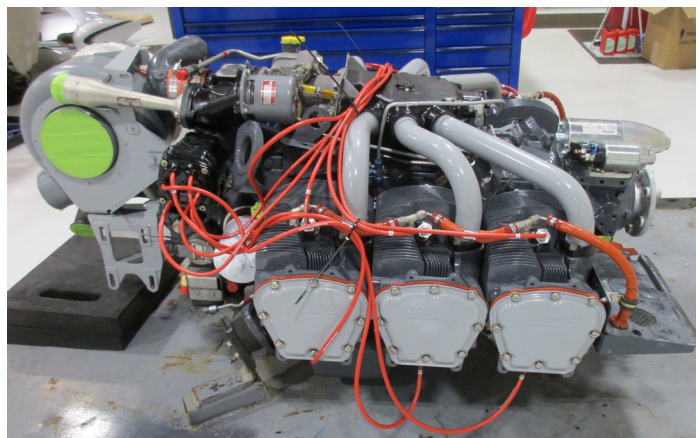
It's this creative artistry where “Zen” enters our story. The details of a simple nut, as in nut and bolt, serve as an example of the contemplation of detail. There is no steel in nature; all nature has is the potential for steel. First, you must create the type of metal you need based on sheer and tensile strength, heat-treating and elasticity; then drill a hole in the selected material and use a lathe to make the threads -- finally recognizing the shape of the

and it helps us to understand aircraft systems better. If you are still disinclined to participate, consider this: you are responsible for not only the maintenance of your plane but proper logbook entries as well. To wit, from the FARs:

91.403(a) The owner or

operator is primarily responsible for maintaining the aircraft in an airworthy condition.

This means that it's our responsibility to fix things that break, to know what inspections are required and when,



The Duke's engine overhaul took 6 months.





Steve inspects our Citation at the paint shop.

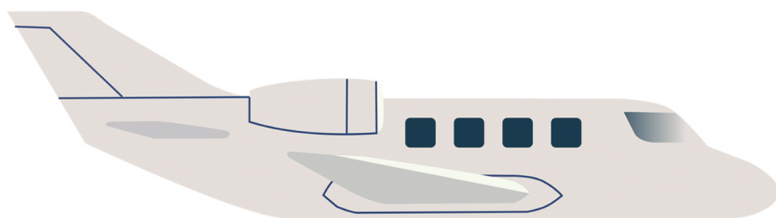
unless we ensure that all maintenance has been performed per the FARs, and logged properly (neither endeavor of which we have much knowledge), the Feds can revoke our airworthiness certificate. So once again, we hire someone to comply and trust them to know the rules and document their work properly.

form preventive maintenance on any aircraft owned or operated by that pilot, as long as the aircraft is not used under Part 121, 127, 129, or 135. If you do the preventive maintenance authorized, you must make an entry in the logbook documenting the work and the entry must include: A description of the work performed, the date of

## Use the FARs, Luke – Star Wars, 1977

You probably shouldn't jack your G550 and change the tires and re-pack the wheel bearings yourself or have your R2-D2 droid do it either, but your shop may allow you to supervise. It would be a great opportunity to see the "details" of the nuts and bolts of the landing gear assembly, and it may encourage you to reflect a bit before you slam on the brakes during the next landing. To get deeper still into its components, and become one with your machine, use the FARs to guide your journey; to wit:

"The holder of a pilot certificate issued under Part 61 may per-



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with Parts 21, 43, and 91 of the FAR's as appropriate...."



completion, the signature, certificate number, and kind of certificate held by the person performing the work."

There are just over a dozen maintenance items that we, as the owner/operator pilot, are allowed to accomplish. The list includes things like changing the oil and filters, changing air filters, cleaning and gapping spark plugs, changing tires, cleaning and greasing wheel bearings and servicing or replacing the aircraft battery. In addition to the maintenance procedures authorized, there are over 90 "checks" on the engine, cabin interior, landing gear, wings, empennage and propeller that we are allowed to accomplish. Basically, these checks are all things that you might perform during an extremely thorough preflight, run-up and test flight.

I invite you to substitute the word airplane for motorcycle in this quote from Zen and The Art of Motorcycle Maintenance: "Precision instruments are designed to achieve an idea, dimensional precision, whose perfection is impossible. There is no perfectly shaped part in a motorcycle and never will be, but when you come as close as these mechanical instruments take you, remarkable things happen, and you go flying across the countryside under a power that would be called magic if it were not so completely rational in every way."

### Way Outside the Box

The EAA conducts its annual gathering of inventors, builders, technicians, authors and aviation enthusiasts later this month in Oshkosh (24th-30th). It's an inspirational gathering in which people are encouraged to think outside the box in the design, manufacture and maintenance of aircraft and components -- often, way outside the box. With the advent of 3-D printing, the reality that materials and parts like the aforementioned nut, which have no shape or function except in our minds until we manufacture them, have been placed into the toolbox of dreamers. Any person can now transform a thought into a physical, functional component—even a completely operational device. We have only to recognize the potential of nature's elements in order to create materials with the chosen properties and then "print" a component or mechanism with the desired capabilities.

Perhaps with this type of technology, a Zen-like appreciation of materials, and the hands of a hard-working visionary like VanGrunsvan, Poberezny or Rutan to shape them, another quantitative leap of discovery awaits. With a newly kindled interest in aircraft maintenance, the visionary could be you. **T&T**

*Fellow Duke owners and pilots: Please check your DFA newsletter or email me to register for our Fly-In on September 21st.*

**Kevin Dingman** has been flying for more than 40 years. He's an ATP typed in the B737, DC9 and CE-650 with 25,000 hours in his logbook. A retired Air Force major, he flew the F-16 and later performed as an USAF Civil Air Patrol Liaison Officer. He flies volunteer missions for the Christian organization Wings of Mercy, is retired from a major airline, flies the Cessna Citation for RAI Jets, and owns and operates a Beechcraft Duke. Contact Kevin at [dingner10d@gmail.com](mailto:dingner10d@gmail.com).

## Aircraft Widgets Sunshades

**Aircraft Widget Sunshades** are the answer to reducing glare and providing sun protection for the pilot and co-pilot. Made with a smoke-tinted acrylic that reduces light transmission 75%, reduces UV 99% and keeps the cockpit up to 30 degrees cooler. These shades are designed to be left in place during all phases of flight.



Each Sunshade piece is curved to match the curve of the window and windshield, providing a great fit. No modifications or custom installation is necessary.

**Aircraft Widget Sunshades are available for:**  
Piper 1984-present, Phenom 100-300,  
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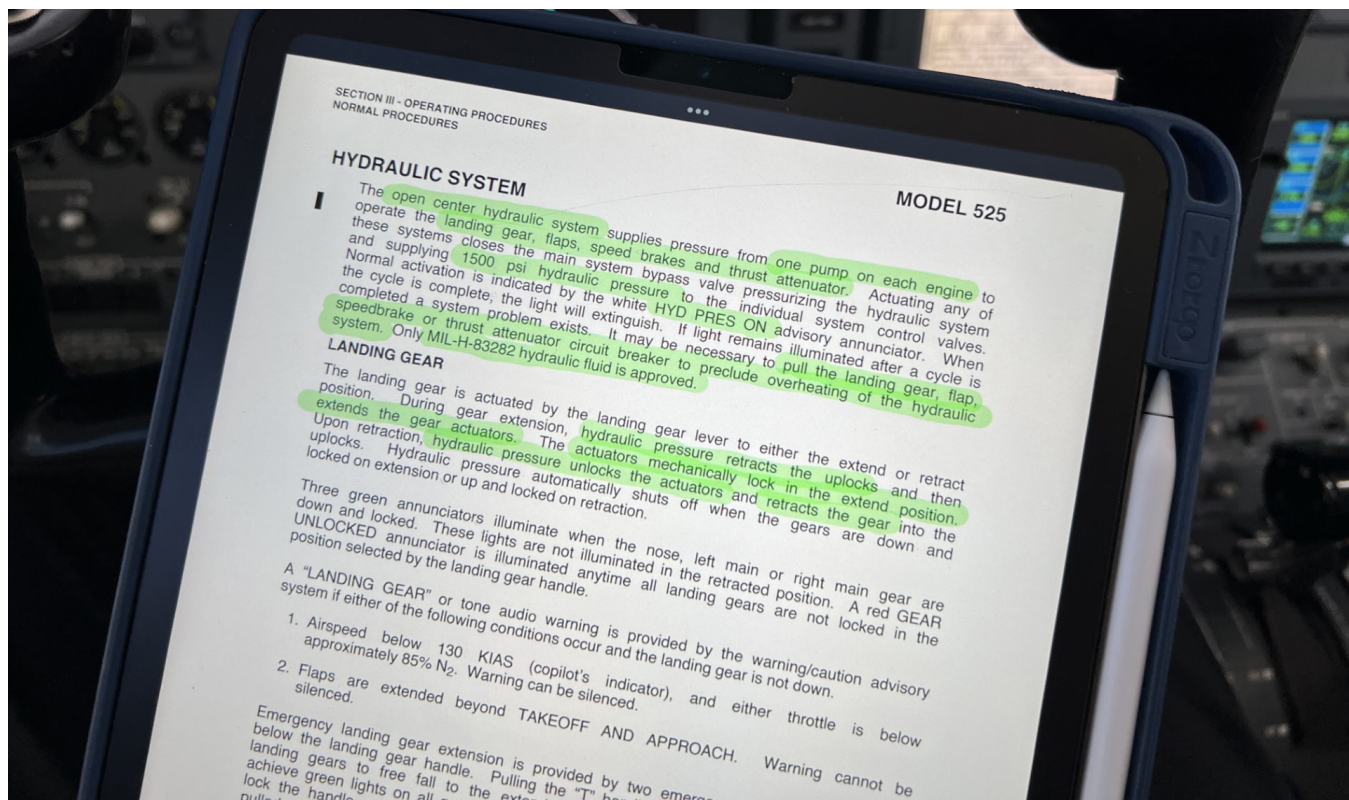
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# How to Prepare for Your First Recurrent Jet Training & Proficiency Check

by Tigre Pickett



Preparing for your first jet recurrent training and proficiency check can be as nerve-racking as your initial type rating, especially if you leave your study and practice until the last minute.

While every pilot responds differently to testing and evaluation environments, one thing remains consistent: quality preparation and persistent practice will greatly improve your experience.

Recurrent training serves to uncover and address your blind spots. By embracing the opportunity to learn, grow, and confront challenges, pilots reduce their risk factor. When you arrive exceptionally prepared, not only will you enjoy the process more, but you'll also efficiently accomplish

the required tasks and truly put your skills to the test.

Here are some suggestions and timelines to help you prepare for your recurrent check ride. This timeline starts the day after you receive your initial rating and extends for a year, give or take a few days since your rating is valid through the end of the calendar month in which you received it.

## Day Zero

Congratulations on passing your check ride! The first thing to do is rest. Whether you're on cloud nine because your check ride went smoothly or you're exhausted from late-night cram sessions to meet ACS standards, take a moment to relax. Remember that there is a world outside the simulator, and life goes on regardless of

your performance. Connect with your loved ones, indulge in activities you've put off, enjoy life, and engage in exercise. The hard work is done, so allow yourself to unwind.

## TAKE OFF: Week One

After resting and possibly enjoying some flying without engine failures or adverse weather conditions, take time to review your proficiency check debrief and assess your strengths and weaknesses from training.

Acknowledge the areas where you felt comfortable. Reflect on why they felt fluid and seamless. You'll likely discover that these elements were more familiar to you because you practiced them. With your weaker areas, make an honest list — there's no sense in pretending or sugarcoating things. Being



truthful about your proficiency will help you avoid failure in the future. Embrace your minor mistakes now so that they don't escalate and cause significant problems later.

As a newly (re)minted jet pilot, you're officially in the pros, even without a commercial license. You're operating high-performance aircraft in demanding environments alongside verified professionals whose careers and lives are at stake. Treat this responsibility with the respect and deference it deserves.

With your list of weak areas in hand, create an action plan for strengthening them. Determine when and how you will dedicate time and focus to practice those skills or memory items. Identify additional training you may need and understand why specific maneuvers were challenging for you. Remember that the quality of our lives is determined by the quality of the questions we ask ourselves, so ask yourself meaningful questions.

Once you draft your action plan, seek out a respected mentor or friend and ask for accountability support. Review your list and action plan with them, and get feedback and ideas



for improving your plan. Establish a frequency for connecting with them and stick to it.

A great plan is only as effective as the structure supporting it. I recommend using the Reminders app on Apple devices. You can set recurring reminders and notifications or establish a routine where you review specific skills, systems/knowledge items, or procedures.

Some people respond well to rewards or consequences for meeting or missing goals. You could promise yourself a tail-dragger rating if you maintain a three-month study streak on Quizlet, or agree to give your mentor \$100 every time you fail to meet your weekly goals.

## CRUISE: Weeks Two Through Forty-Two

Enjoy the privileges of your rating and make the most of your flying opportunities. However, it's important to remember that routine flights without challenging scenarios can create a false sense of security and proficiency. To ensure you stay sharp and prepared, consider the following training and preparation activities:

### Review Memory Items

Set aside time once a week to review the memory items for the

aircraft you are rated for. You can use flashcards, digital tools like Quizlet, review the emergency checklist, or even ask your co-pilot to quiz you if you fly as a crew. For an extra challenge, aim to memorize the Emergency Checklist tab for each memory item.

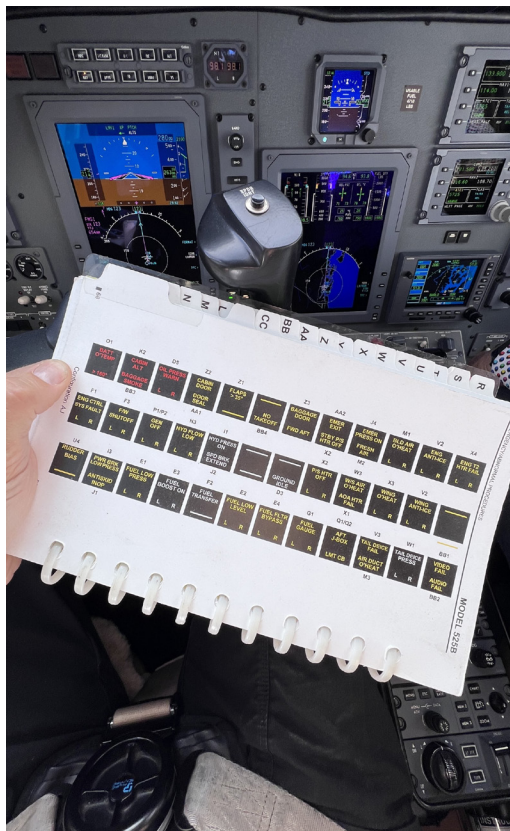
### Practice Emergencies

While on the ground and in a safe environment, simulate emergency scenarios specific to your aircraft. Verbalize and mimic the required actions without creating an actual in-flight emergency. For instance, you can pick a CAS (Crew Alerting System) message or scenario, such as smoke in the cabin. Set a timer, execute any memory items, respond to it promptly, and follow up with the Emergency Quick Reference Handbook (QRH). Keep a log of your response times and identify areas where you struggle the most. Focus on strengthening your weak memory items through targeted practice.

If you fly with a co-pilot or a non-pilot partner, ask them to surprise you with emergency scenarios or randomly choose CAS lights. This helps replicate the startle factor associated with real emergencies and enhances your preparedness.

### Emergency QRH

Pay particular attention to the Emergency Checklists provided in your aircraft's QRH. Once you have completed the memory items,





and the aircraft is stabilized, the checklist becomes the next step. Practice the proper flow, understand potential challenges or gotchas, and follow the checklist until you reach the "PROCEDURE COMPLETE" point.

### Join a Pilot Owner's Group

Even if owning the aircraft you are typed in is not feasible at the moment, it is highly beneficial to join a pilot owner's group. Groups like Citation Jet Pilots (CJP) offer a wealth of knowledge and insights from experienced pilots who share their experiences, including both mistakes and successes. Engaging with such communities expands your knowledge base and allows you to learn from others.

### Chair Fly

If you are responsible for flying and managing the aircraft, take advantage of the time it takes to update databases. Utilize this opportunity to sit in the flight deck and mentally practice maneuvers, emergency procedures, and systems knowledge. If access to the aircraft is limited, you can still chair fly at home using a poster or visual aids that you should have received during your training.

### Systems Review

Make it a habit to review one chapter of your training manual each week. In the case of the Flight Safety Citation CJ3 Training Manual, this means reading each chapter twice during this specified time frame. For variety and a more comprehensive understanding, consider reading sections of the Aircraft Operating Manual (AOM) as well. Textron's Citation AOM is an excellent resource for familiarizing yourself with the aircraft's systems.

To enhance your understanding, read these chapter sections while in cruise, allowing you to visualize the components in your actual aircraft and how they interconnect. Additionally, explore the emergencies related to each system. This knowledge will prove invaluable in the event of a system malfunction, enabling you to effectively communicate with your mechanic or maintenance team.

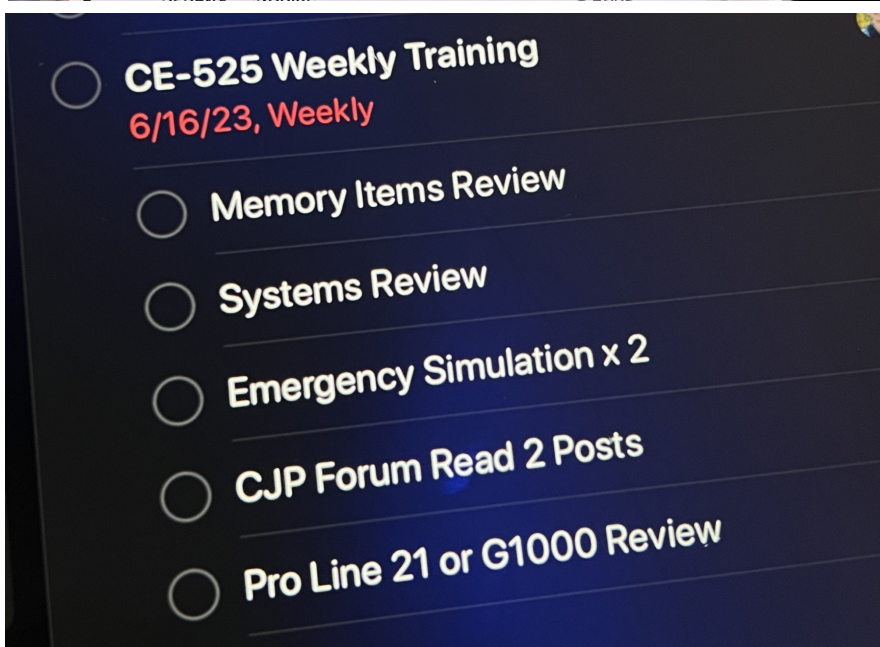
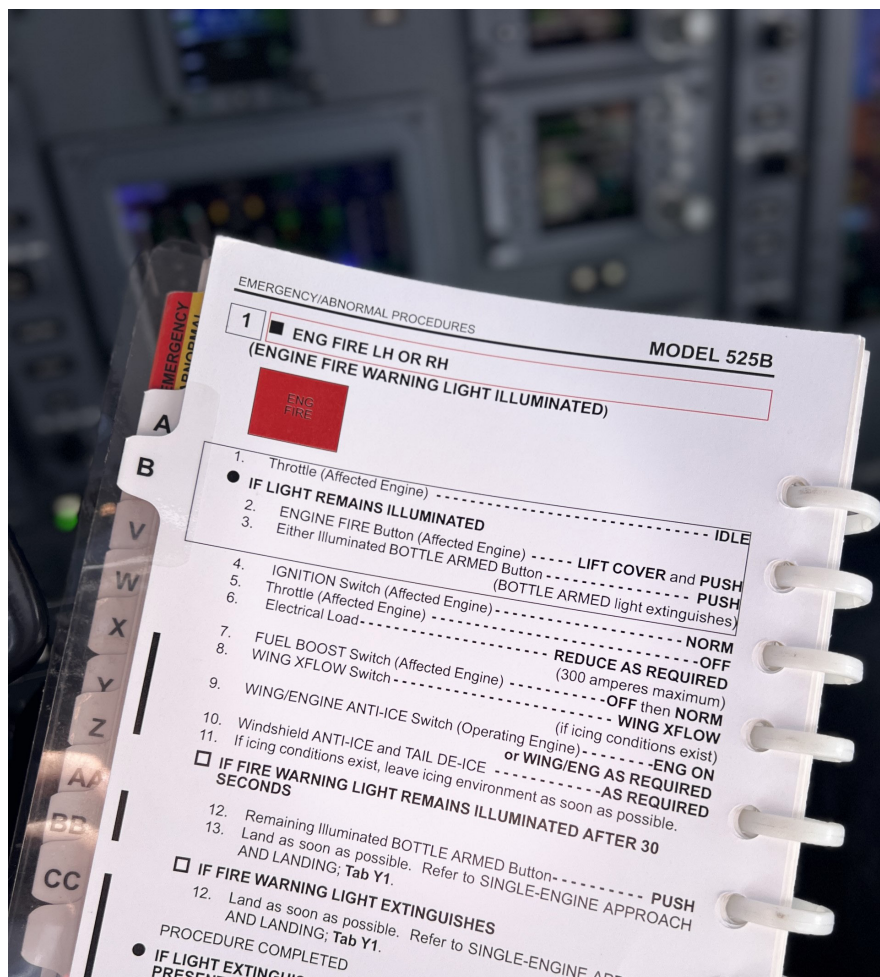
**Tip:** Search for "training manual [your

aircraft type]" on Google to find additional resources and PDFs that you can add to your iPad for convenient access.

### Go Missed & Fly the Maneuvers

It's easy for pilots to fall into routines, especially when flying in favorable weather conditions. To avoid complacency, it's important to

schedule dedicated flight time with a crew member or instructor to practice real missed approaches and maneuvers. Even if you don't own the aircraft, emphasize the benefits of maintaining and sharpening your skills to your flight department. Given the limited availability of simulator training, this becomes an even more compelling





reason. Aim to spend an hour or two once a quarter engaging in this practice to keep your proficiency intact.

### Teach Others

One of the most effective ways to solidify your own knowledge is by teaching others. Seek out flight training students, new Certified Flight Instructors (CFIs), or other aviation enthusiasts and offer to teach them about jets. Teaching requires verbalizing your book knowledge, which helps reinforce your understanding on a deeper level.

Additionally, providing early exposure to turbine aircraft, even if it's through ground instruction, can have a significant impact on aspiring pilots, allowing them to visualize the potential of their future careers in aviation. By sharing your expertise, you not only contribute to the aviation community but also enhance your own understanding and mastery of the subject matter.

## APPROACH: Weeks 43 Through 51

If you've followed the previous guidelines, the remaining two months leading up to your recurrent training should primarily be focused on review. However, if you tend to procrastinate, it's crucial to start studying now. Waiting until the weekend before your training to cram all the knowledge back into your head will only lead to a stressful and ineffective experience. Avoid this by allocating sufficient time for preparation.

While you may only need to intensify your studying three or four weeks before recurrent, it's wise to give yourself a realistic window of two months. Unexpected events and distractions can quickly consume your time and focus, so it's essential to be prepared.

Evaluate your understanding of each chapter in the training manual on a scale of one to ten. This self-assessment will help you identify ar-

reas where you need to invest extra effort. Once you get to training, take advantage of non-classroom time to seek assistance from your training center instructors in reinforcing your knowledge.

It's crucial to communicate with your family, friends, partners, and colleagues about the significance of this training. Make them aware that you'll require dedicated focus time without distractions. This becomes increasingly important as the training dates approach, allowing you to maintain a drama-free environment as much as possible.

Recurrent training should be an opportunity to learn something new rather than relearning what you should have known from the start. It's not a time to play catch-up but to showcase your sharp skills and professionalism.

## LANDING: Week 52

Finally, the day has arrived to demonstrate your knowledge and skills



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to your instructors and examiners. Remember, most training centers for recurrent training want you to succeed. They aim for satisfied, repeat customers and are there to assist you in demonstrating your proficiency.

Arrive early, establish rapport with fellow participants, share insights, and stay organized. Prioritize some exercise at the hotel, ensure you get quality rest, and nourish your body with nutritious food, rather than relying on the donuts and processed snacks often provided by the training center.

Treat this experience with the same level of focus and attention as you would in the flight deck. Minimize distractions and prioritize your training. While life may present unexpected challenges, it's important to avoid multitasking with work-related matters or handling personal situations during class instruction. Such behavior not only distracts the instructor and your classmates but also disrespects the investment you've made in the training

and the time and effort invested by others. If necessary, address personal matters outside of the training environment and block out your training days to ensure you can fully immerse yourself in the learning experience.

And once you walk out of the simulator for the last time, complete your debriefing, and receive your stamp of approval for another year... it's time to celebrate! You've earned it through your hard work and dedication. **T&T**

**Tigre Pickett** is a commercial single- and multi-engine pilot type rated in the Citation 525-series jets. With his father and Co-Captain, Rich Pickett, Tigre manages multiple CitationJets in southern California. Tigre has a passion for aviation and loves to fly various aircraft, exploring new destinations with his family in their Cessna Turbo 206. You can follow his exciting journey as a professional pilot alongside Captain Pickett on their YouTube channel and find more aviation content on **PersonalWings.com**.

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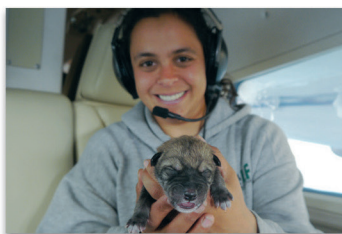


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## Ad Index

1st Source Bank .....	27
AEA .....	28
Airtex .....	22
Aircraft Widgets .....	23
Avidyne Corporation .....	7
Blackhawk Aerospace Technologies .....	Back Cover
Central Flying Service .....	15
CIES Corporation .....	15
Corporate Angel Network .....	31
Covington Aircraft Engines.....	5
Elliott Aviation .....	.....Inside Back Cover
Factory Direct Models .....	6
Genesys Aerosystems .....	29
Lighthawk .....	30
Luma Technologies .....	11
Ocean Reef Club.....	3
Pilots N Paws .....	28
Preferred Airparts LLC.....	23
Raisbeck Engineering .....	..... Inside Front Cover
Select Airparts .....	6
Turbines Inc. ....	10
Wingman Med .....	15
Wings of Hope .....	3



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[corpangelnetwork.org](http://corpangelnetwork.org)



It's wonderful that organizations like the Corporate Angel Network are able to help connect those most in need of flights to those who are flying.

*-Henry Maier, President and CEO, FedEx Ground*



# What Good Looks Like

Who is your favorite source for aviation videos? For single-pilot jet operations, I like to watch Citation Max and Premier 1 Driver. Both Max Weldon and Greg Mink do a really nice job of flying and explaining how they operate Citations and Premier Jets. They take you along on an average flight where everything usually goes just as planned.

In an airplane, normal is good. But what about the rare instances when things go really badly?

In 2017, the Citation Jet Pilots (CJP) organization, through their safety committee, decided to create a series of videos placing the viewer in the pilot's seat when the excitement hits the ventilator. Using simulators provided by FlightSafety, they created all sorts of mayhem including engine failures, pressurization problems, flight display anomalies; you name it.

Some of the emergencies were the result of simulated system failures. But all too often, they were created through a series of human failures. The pilot would experience the problem and try to rectify it with varying degrees of success. Then, a "real pro" would provide suggestions on how to handle the challenges better.

The safety committee realized they needed a "human failure" to act out what "bad" looks like. My name was submitted. There were no other nominations.

And so began six years of producing almost forty videos.

"You will be perfect," they said. "You fly badly really well." The picture above is a sample of my work, and the red screen is what you see in the simulator after a crash. FlightSafety instructor Dax Beal has this picture as the screen saver on his iPad.

I wish I were kidding.

A few of my pilot buddies would laugh when they watched me struggle to perform competently in the cockpit. But most watched silently with interest. Perhaps they had experienced similar situations.

A few years ago, something interesting happened. A member of the association mentioned he wanted to talk about an incident that happened during his takeoff in a CJ3. Then another wanted to share a climb-out story after forgetting to turn on his pressurization. Another



took off with his rudder trim out of tolerance and thought he was experiencing an engine failure.

We were able to take these real experiences and re-create them for everyone to watch and think about how they would react. FlightSafety liked the idea so much that they linked our video library to their curriculum.

Although the videos are Citation specific, they will make you think about how you would handle an event in your personal airplane.

Recently, I was in Wichita for a FlightSafety event. An instructor walked up and thanked me for starring in a video about a stall warning "stick shaker" failure in a CJ3. "I teach about this in every ground school class, and we use your video to stimulate discussion," he said.

Next Saturday, over your morning coffee, take a walk to the library.

<https://www.citationjetpilots.com/safety/videos>

Fly safe. 

**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](mailto:davidmiller1@sbcglobal.net).



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