



EAA Chapter 478

# COCKPIT CHATTER

Lexington Park, MD

January 2001

## FROM THE EDITOR

In this issue of *Cockpit Chatter*:

From the Top, New Chapter President Bernie Wunder makes the case for supporting the chapter's activities, committees, and projects. Establishing monthly board meetings, he envisions streamlining the chapter meeting by minimizing the business and maximizing the socializing and airplane stuff. Finally, Bernie has planted the seed for creating a chapter vision and mission to help guide us in our efforts just like a flight plan gets you to your destination.

In the Member's Forum, We get another installment from Bernie Wilder as he recounts his second flight in his recently completed Pulsar. Not to be out done, Suzanne and Mike Logan describe their first flights in Suzanne's recently completed Pulsar.

In the Chocks has a quick summary of the holiday dinner at the terminal and a fly-in notice put out by the Mid-Atlantic RV Wing.

- Paul Gambacorta, Editor

## FROM THE TOP

*Bernie Wunder, Chapter 478 President*

Happy New EAA Year!! I look forward to working with you all as we pursue our joy of flight. We also have a slate of officers that I am sure will give their all to support the chapter. However, we are still missing a couple of key positions - a meeting program coordinator and a chapter social chairperson. It could be some boring meetings without a program and some munchies!! But not to worry, we have always had folks step forward to help out. Additionally, if you should be so inclined to volunteer to lead a team or function, you won't be by yourself. My goal is to have every member assigned to at least one committee - and we have several teams and committees to choose from. In addition to the social activities and programs, we have standing committees for the fall fly-in, Young Eagles day, and the A-1 construction project. I also see things like the Air Expo at the base happening this year. It will be a busy year and we need to recruit new members while keeping us old timers engaged but not burning out.

I plan on having monthly board meetings (open to anyone) to do most of the chapter business. That way we might be able to shorten our regular business meeting by presenting to the members what we have discussed/planned, then bringing it up for a vote if it requires the chapter's concurrence - - this is so we can devote more time to programs, building and socializing. We might also want to start looking at

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### Chapter Officers

President: *Bernie Wunder*  
Vice President: *Tom Weiss*  
Secretary: *Bernie Wilder*  
Treasurer: *Lois Rose*

### Committee Chairs and Chapter Advisors

Social Chairman: *Open*  
Program Coordinators: *Open*  
Librarian: *Paul Gambacorta*  
Flight Advisor: *Stu Fitrell*  
Technical Counselors: *Ed Stewart, Nate Frank,*  
*and Rich Gill*  
Newsletter Editor: *Paul Gambacorta*

what we do at our monthly meetings and do some "thinking outside the box".

Finally some organizational philosophy:

Most likely, you and others volunteer because your personal mission (love of aviation) aligns with the chapter's mission and vision. A vision is the destination and the mission reveals the commitment to achieve the vision. So what is the chapter's vision and mission? I would propose that the chapter's vision is to become the Mecca of sport aviation in Southern Maryland. I think our chapter's mission would be to provide members educational programs on sport aviation, promote flying activities, and sponsor fun-filled aviation related social/community activities. Our activities, teams, and efforts should all support this mission to attain our vision (destination). We can discuss and/or refine this vision and mission statement at one of our future meetings. I don't know of too many of us that take off in an airplane without having a destination or not planning out what it takes to get there.

C U at the chapter meeting on the 16<sup>th</sup>  
- *Bernie*

### **MEMBER's FORUM**

(Bernie Wilder's second flight in his Pulsar - *Ed*)

What I didn't put in the account of the first flight was that I lost my airspeed indicator momentarily on the first approach. It is a digital Rocky Mountain Micro encoder with airspeed, altimeter, and vertical speed all in one. It shut off and came right back on again, but that takes four or five seconds. I have an angle of attack gauge on the wing. A "Bacon Saver" so I wasn't naked. I have tried but haven't been able to duplicate the problem since.

I also had a scratchy radio. Again, was not able to duplicate the problem between the first and second flight.

The wild behavior on the ground was due to an extreme amount of toe-in in the main gear. 7/8"

difference between the width front to back on the tires. I temporarily shimmed the front out with washers. I will try this for a while to see exactly what is needed to get it to taxi well and then I'll have a plate machined to permanently solve the problem.

The airspeed indicator tested out at the FBO to be spot on. I guess I wasn't aggressive enough with the stick on the first flight and let it fall off in the turn. Later turns at 70 at altitude on the second flight, I was able to hold altitude with no problem. I just wasn't familiar enough with the plane.

Rule of thumb is that approach speed should be 1.3 times the stall speed. Most Pulsars stall at around 46 to 48 MPH. Using 50 as the stall speed to be conservative would put the approach speed at 65 MPH. Seventy should have been alright. And it is. However, other Pulsar fliers like to establish a speed of 80 mph opposite the numbers, pull on the flaps, and maintain that speed until on short final. They slow to 70 before crossing the fence and let it down with a little power, planning to touch down at around 60. Why?? The angle of attack of the Pulsar at stall speed is so high one can't see anything when you get it down around 55mph. Further, if you don't keep the nose up when you get close to stall speed, it will fall like a rock. Hence, most like to come in a little fast.

I also added a fixed rudder trim; Mark Dayton helped and we used the TLAR method to determine the size and angle.

On the second flight, I duplicated the plan of the first flight. No problem on take-off. Rudder trim is almost enough. Need rudder in a right turn to keep the ball centered and the rudder is firm. In a left turn, you need practically no rudder to keep the ball centered and only very light pressure. No problem with the airspeed. Electric trim stopped working in the air. On the ground after the flight, it worked again. Loose wire someplace. Flap lever kept getting caught in the seat cushion. Cut a notch out of the cushion to solve this problem. Radio stopped working. I found that if I pushed it in while talking it would work. Later found it was not tight in the tray. Bracket internal to the radio was bent. Straightened it

out and tightened it up and it now works. I think there may still be a problem with the plug in the tray or a loose wire. I will carry a hand held as a backup on the next flight.

On my first flight the engine stopped on roll out after landing because the idle was too low. On approach, when I pulled the throttle all the way back, wind milling must have kept it going. Set idle up and on the second flight and it was too high and didn't give the breaking effect needed with a plane as clean as the Pulsar. Have since cut it back a little.

It took one less approach to get it down on the second flight - the third time did it. I used the speeds mentioned earlier. The landing was a squeaker. I eased the stick back to keep the nose wheel off the runway and we were flying again. I kept the stick back to let it ease back down to the runway, but in true Pulsar fashion, at that angle of attack, when it was through flying it just dropped. I was only a foot or so off the runway at that point so though it wasn't another squeaker as the first time it wasn't too bad.

The weather has been cold and blustery and with a tight new engine and no heater, I have been reluctant to fly it until it warms up a bit. First time it gets above forty, I'll take the third flight.

- *Bernie Wilder*

Nov. 4, 2000 Test pilot - Jerry Eastman

First flight of Suzanne Logan's Pulsar, Nov. 4, 2000 test pilot - Jerry Eastman.

Visibility was almost unlimited, just enough cover from very high clouds to block the glare of the sun, winds were very light and almost straight down the runway.

Liftoff was uneventful, Jerry said it flew like a Pulsar. Stall speed was checked and slow speed handling was checked before coming in for landing. Everything was smooth until turning base, then the airspeed indicator went out. Airspeed was called out by the chase plane for landing but not really needed. Brakes were a little weak on the right side but it

tracked straight and taxied with no problems. Airspeed indicator problem was caused by pitot tube tubing being dislodged during the installation of the wings after transporting to the airport. It was fixed in no time, after lunch, a second flight was done to check the systems out, and the plane was ferried to Chesapeake Ranch Estates.

The brake problem turned out to be a limitation in the movement of the caliper, which was fixed by using a narrow axle nut to allow more movement. Now the brakes work fine.

These are Suzanne's words about her first flight in the plane:

December 4, 2000, yes, folks, she FINALLY made it into the skies!! I finally just said the heck with it, (now that the brakes are fixed) and soared into the skies over Southern Maryland in 'Syzygy', Pulsar N22SZ!

I finished 'work' at 2:35, and thought, 'Hey, it's not windy, and it's sunny out, only 42 degrees... looks like a day to fly?' Called Mike to get home early, and set out to make sure everything was ok on the plane. Had to glue the Velcro on the seat cushions, check the brakes, add some fuel, check the gauges, etc, etc. Then around 4:00pm I fired her up, taxied out to the Chesapeake Ranch Estates runway, did a run up (sounded a little rough on the L ignition.. but actually ok). Then I did a couple of fast taxis up and down the runway, getting up to 40 and 45 mph.

I didn't like how the left brake felt, so I taxied back to the hangar. Did a little stomping on it, Mike wiggled it a little, and we decided that it was fine. Now - was the pilot really ready? Good question. I did another pass at taxiing, and Mike taxied his Kitfox out to the end of Runway 13. There was only about 3kts of wind, so it didn't matter which we used. I let him go first, and said I might be coming. Once he turned downwind, I decided to just go for it.

(Actually, she waited until I was over the bay and circling, she didn't let me know when she was rolling so she ended up way ahead of me from the start. I

think she did that on purpose so she could complain about how slow my plane is. Mike).

Full throttle, feet off those dumb brakes, and go!!!! Had a little pull to the left, which was corrected with only a tiny bit of right rudder. Climbing out, I noticed that very little forward or backward motion on the stick was reacted to immediately. Wow - very tiny inputs! Headed North, out of the Pax airspace, and climbed to 3500'. What a climber! I know I didn't have just the right speeds for best climb or anything, but I know I saw 1500 fpm. Slowed her down, and had Mike watching me. He even thought I was going very slow, and he's in a Kitfox!! ;-) Tried to stall with no flaps, and don't even think it was a real stall at 45mph, but I figured close enough for this time.

Back to the ranch. I'll spare the full details, but I went around several times, (5) trying to get used to the speed and rate of descent. Didn't use flaps, and not used to the flat approaches. Too fast (90mph), too high, etc., but finally got her down and made the turn off, no problem. OH MY GOD! I can't believe this has finally happened!!! Now I can actually think about doing the whole test period. Use the flaps, etc, etc. Temps all looked good, even on the ground. I think, in the case of this airplane, that the plane is fine, the test period is just for the pilot to get used to the plane.

These are Mike's words about his first flight in the Pulsar:

December 8, 2000 - I did the run up with no anomalies. Taxied around a little to get used to how it felt on the ground. I hate those heel brakes; you can't apply much rudder when you need to use the brakes. Lined up on 31 for takeoff, pushed the throttle in slowly, MAN that thing wanted to go hard left from the engine torque, I used right brakes to keep on the runway until the rudder had enough authority. It lifted off very quickly and it headed for the trees on the left side of the runway, my Kitfox wants to go in the opposite direction so I was not used to this. A little right aileron and about 3000 heartbeats later (one or two seconds), I was headed in the right direction.

It climbed like a banshee and was extremely pitch sensitive. I did some turns to see how it was going to handle and what kind of rudder input I would need, man that sucker was twitchy, not slow and steady like my Kitfox. I climbed to 3500' and tried some stalls. Power-off first. It would not really break, just shake real bad and mush downward at an indicated 40-mph. This thing gives enough signals that you would have to be near death not to notice. In the power-on stalls, I could never get it too stall, I pulled it up and up and up and it just kept going. I was at such an angle of attack that I was afraid that it was going to stall on me and go into a tail slide. Not a fun feeling, but it never stalled on me. If anyone stalls this thing when they are low and slow, something is wrong with their backside and their flying abilities are in question.

I decided to land at Duke Regional for my first landing of a fast plane. Down wind and base was done at 80 mph with final being cut back to 70. It was very smooth and I touched down about six inches before I thought I would. It tracked straight down the runway with very little rudder input. I started applying brakes and OH MY GOD!!! NO BRAKES ON THE RIGHT SIDE! Luckily, I had enough rudder authority left to get it straightened back out. I let it slow down by itself and got it off the runway on the left side to let a couple of RV's come in and land.

It took me about 15 minutes of taxiing in left turns to get back to an area where I could get out and park it. When you have differential steering, you have to release the brakes about 120 degrees prior to the direction you want to go. Turned out that I pinched the brake line with the gear when I used the brakes on takeoff. The original location in the plans for the Pulsar brake lines allowed them to get pinched if the gear wiggles enough. With a little advice from Bernie Wilder, I was able to get the plane back in the air in a couple of days.

Flight tests have gone well and we have about 15 hours on it now. We have not consolidated the testing results to determine the V speeds yet.

- Mike and Suzanne Logan

### **IN THE CHOCKS**

My first EAA holiday dinner was an enjoyable feast. Sid thanked everyone for their support. Bernie Wilder was describing his first Pulsar flight.

From my e-mail, Mid-Atlantic RV Wing will be gathering at York PA on 20 January (e-groups.com).

Welcome back!

- *Paul Gambacorta, Editor*