

A Sign of Progress

**March Meeting, Mon. the 12th,
7:30 PM, in Our Hangar.**

Agenda:

1. Sign for outside wall of hangar, choose design
2. Fall Saturday Fly-In/Breakfast, member interest
3. Meeting topics, Membership drive

The Demo for the meeting will be on making molds from automotive body plastic and plaster of paris, to make plastic parts such as control stick handles. We will make some left and right hand control stick handles. Refreshments will be served!

Last Month:

We enjoyed great chili made by Bob Baird and Dale Neddeau!

8 Members Present

Old Business:

Insurance questions were raised. Does it cover just the hangar or hangar and contents? All EAA members or just Chapter 865 members? Suggest we take inventory of contents and take pictures.

A BBQ and Flyout is planned for Sat. June 2

New Business:

Bob Baird will provide his Mini-Max as a member project as soon as room is made in the hangar.

Jim Van Hulle volunteered to be our Maintenance Director.

Board Meeting:

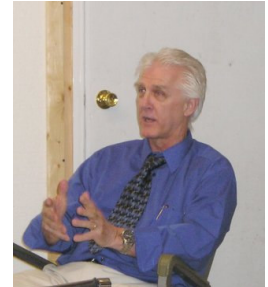
We discussed the June BBQ/Old Buzzards Flyout, hangar sign, Fall Fly-In, June Fly-In airplane rides, T-shirts, and meeting programs.

In The next few months, we'll be planning and constructing a sign for the Lake St. side of our hangar. This sign will promote our chapter and advertise our meeting date and time. The whole purpose of this is to gain new members and, hopefully, more activities for our members. You see, just wanting more activities is not enough. Why? Because each activity takes planning organization and participation. As with most organizations, there is usually a core of people that are active members. But these people also have lives that include other interests. The larger the member base, the larger the core of active members, and that many more activities can be planned. The less work for everyone. If your thinking, this sounds like a plea for me to become an active member, you may be right. But only you can make that decision. I can say this, it's a lot more fun when you're involved.

On that activities subject, Your officers/board members, are planning some interesting and fun things for this Spring and Summer. A Chapter Mini-Max Project, A BBQ/Fly-out, A speaker or demo for every meeting. We can pull these things off with your help and participation. So, don't stand back and wait. Join in the fun! Volunteer.

The Prez Sez

By
Bob Baird



This is an exciting time for us who love to dream, design, build, fabricate, repair, rig-up, piece together, fiddle around, patch, sew, glue, wire, stitch, darn, suture, scratch out heads, tinker and then fly. Wow! I'm pumped. Come on sunshine. This summer, we together, Chapter 865 members, Experimental Aircraft Association, will experience growth, become wiser, have fun, probably do some dumb stuff, and experience aviation in all kinds of different forms. Some of us will have some good fellowship slapp'n down some shingles on Doc Thomson's hangar and helping to finish it off. Some of us will be engaged with designing a new LARGE sign for the side of our hangar building. We will have some sample ideas at the meeting. Maybe it will be up after a few months work. That means more public visibility for us and more visitors, new members and new friends. We will probably have two fly-ins this year and one will be on a Saturday. Many people from my church will be there to enjoy and to help on the Saturday event. We already have some real quality hands on (which means you will get dirty and be pick'n glue and various chemicals off your fingers for weeks) kinds of demonstrations lined up. One demo will be to repair a fabric tear on my Skyraanger. One demo may have something to do with getting Jim's Fisher back in the sky. One demo will be about moldless composite construction. One demonstration, this coming meeting, will be for us to make some really cool control stick handles from a home made mold and automotive

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plastics. We will have both left and right hand control sticks and they are tricked out with PTT and Trim buttons. One demonstration in the near future will be on mold making for fabricating parts such as fiberglass wheel pants, cowling, and fairings. Doc Thomson is doing fabulous work with fiberglass. Another demo will be a demonstration of working with carbon fiber and Kevlar. Another demo will show how to use vacuum bag techniques to optimize the resin cloth ratio in airplane parts. We will enjoy

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Perfect Minus One

By Lisa Vann (Bob Baird's Sister)

As a student pilot, I consider "ideal conditions" to be Perfect everything (weather, airplane, physical and emotional well-being) Minus One – one factor that's not so good, so I can learn to deal with it and become a better pilot.

I felt great on the way to the airport this afternoon, looking forward to a solo mini-cross-country (20 miles) in the best Cessna 152 at United Flight. This would be a practice run for my first real cross-country flight to Paso Robles. I wanted to satisfy myself that I could find an airport without any help, and that I wouldn't get completely lost on my own! The weather was beautiful—a million miles visibility. All in all, I figured it to be a perfect day, except for some gusty wind, and that made it...Perfect Minus One!

At United Flight, Bill told me the active runway had been switched back and forth all day from 19 to 26. I would be taking off on 26—a new experience for me, and a double lucky break. The downwind departure from the pattern put me right on the heading for Hollister, my destination.

I took off and leveled out at 2500 feet, then I looked at my sectional, glanced at the Pilot's Guide, noted the Pajaro River winding sleepily below me and the hills ahead. Right on course.

Over the hills, I encountered light turbulence. (Minus Two.) Somehow,

turbulence is bumpier than when the instructor is along. Anyway, it seemed bumpier than I'd ever experienced before. I didn't let it unnerve me, though; just over the hills I could see Hollister.

Now, to find the airport. Busy Highway 101 drifted past below me and I guesstimated three miles north of town where the airport was supposed to be. I checked my DG and got back on course, as with the wind and the "Minus Two," I'd managed to drift off some. I dialed up the Hollister Unicom frequency and asked for an advisory, but instead of Unicom, a familiar voice replied, "Left traffic, Runway 20, winds are out of the north at about eight. Hi, Lisa." It was my instructor, Ron, coming back from Hollister with a student! What luck! Now the turbulence didn't seem so bad after all. The flight improved to Perfect Minus One again.

My nerves soothed, I took a deep breath and thought to myself, *Okay, now that Ron knows I'm here, I'm going to find this airport, and not only that, I'm going to do a touch-and-go.* I decided if I had to, I would fly all the way over to the other side of the valley and back if I didn't see it on the first pass. I wouldn't consider giving up and flying west again to Watsonville. How could I face my instructor? How would I ever get the nerve to go to Paso Robles?

Just then, I saw the airport right where I said it would be when I'd planned the trip in my living room two nights before! I figured out the forty-five degree entry and flew in with not a half-bad landing, considering the little crosswind to worry about.

Touch and...Go! I headed west immediately. I'd done what I'd set out to do, and now I wanted to go home. But, heading west at 5:30 p.m., I was faced with the sun blaring at me through the bug-ridden windshield. Even with my sunglasses on, I had to shield my eyes with my hand. Visibility dropped to fuzzy and spattered. Minus Two again!

Back over Highway 101, and over the

hills again. More turbulence. Worse! Minus Three!

I changed the radio frequency to Watsonville's and heard that familiar voice again. "Watsonville traffic, Cessna 89955, turning left base, 01."

"01! I'd never landed on 01 before! I listened again and sure enough, in the few minutes I'd been gone, Watsonville's active had been switched from 26 to 01. This trip was starting to get, uh, challenging.

With the Pilot's Guide still in my lap for reference, and familiar Pinto Lake gleaming up at me from the threshold of 19, I figured out downwind for 01; then, over the radio I heard someone in the pattern announce, "Right base, 01." *Right* base? I called Unicom. They advised left traffic. I heard someone else announce, "Left downwind 01." But how could they? *I* was entering left downwind!

I scanned the sky left and right and couldn't see a soul. I needed room and time to think. I needed a couple of pluses. I don't do Perfect Minus Four! I rolled in the throttle and climbed to 2000', heading for sky out over the blue Pacific Ocean. There, I had an excellent view of the airport. Mr. Right Base landed, Mr. Left Downwind landed, and the pattern at last sounded quiet. I headed in again, determined to land this time myself, park, and go have a ...Pepsi. I wiped my sweaty palms on my jeans and thought about the minus factor now. With the new runway to land on and the wind, I figured the situation at Perfect Minus About Two. Perfect Minus Two I can handle.

I turned final and the VASIs were red. Darn! Too low. Power brought me up—too high. I let go the remaining flaps and pulled the power, and though I sort of roller-coastered" the approach, in the end, the landing was on the mains and even soft. My instructor saw the whole thing, but he was kind enough to give me thumbs-up when I taxied in.

I wonder if he'd consider taking a student to, say, King City, on the day I have to fly that solo to Paso Robles...

Zen and the Art of the Weld Puddle, *cont. from Feb.*

Taking the problems in reverse order, let's solve them. Regardless of how much of an eagle-eye you think you are, break down and buy a pair of those \$12 reading glasses you see in racks in the drug store. Pick the lowest power they have, but get a pair.

It is difficult to make people understand how critical it is to actually see what is happening at the puddle's leading edge. If you don't clearly see it, you can't easily control it. You may be able to weld, but you are working the puddle in a general fashion, because that's the way you see it, not in a specific, detail-driven fashion.

As far as what the puddle and its leading edge are supposed to look like, it's difficult to tell it in words, so we'll try to combine it with the illustrations.

In the first place, although the joints in an airplane vary wildly and those changes from joint to joint do effect the puddle and the way it reacts, the basics of the puddle don't change, and what's happening at the leading edges stays absolutely constant. For that reason, most of our conversations will deal with an imaginary 90-degree tubing joint, like a vertical into a longeron. We'll make random comments on puddle behavior for other types of joints later.

Bet you didn't think we could drag a tiny subject like a weld puddle out this long, did you? Just wait! There's more exciting stuff to come! First let's describe the ideal puddle. We'll get to the techniques of developing and controlling the puddle once we have it clearly in mind as to what it is supposed to look like.

Viewed from directly above, the

puddle should be a roughly circular area of molten metal that will vary in diameter depending on the torch tip, thickness of metal and the configuration of the joint. A "C" shaped bite will be taken out of the circular shape at the leading edge, where it is eating into the edges of the joint. If it was on an uninterrupted surface, the surface of the puddle would be convex, like a drop of water. However, since it is sitting on a crack and is eating part of the edges of that crack, the front edge is concave.

Yeah, I know, it's confusing; just look at the drawings, then it will make sense.

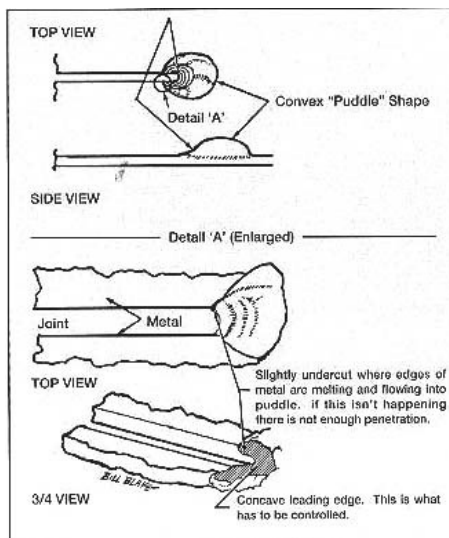
The really important features to notice, and those we are trying the hardest to influence, is what the surface and edges of the parent metal look like right at the interface where the puddle is melting into the surface. What is happening at that interface is what determines the strength of the weld. Nothing else counts.

You can have the ugliest weld in the world, but if it looked right at the interface, while welding, then it is still a safe weld. It can be a really pretty, smooth weld, but if

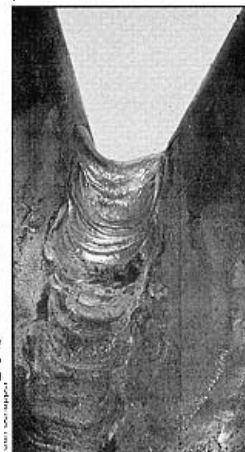
the interface wasn't right, it has no strength.

The first thing you're looking for is that the square edge of the tubing cut is melting and flowing into the puddle and, if your eyes are really good, you'll see the edge is very, very slightly undercut by the puddle. The edge of the puddle should not be riding up on top the edge of the metal. The edge should be melted and flowing down into the puddle. If the puddle is riding up on top the edge of the tubing, it's not getting penetration. The edge absolutely has to be melted.

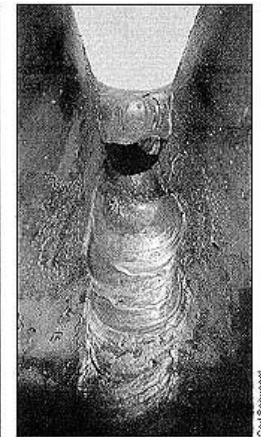
The smooth surface of the longeron, which has no exposed edge, should be melted, very slightly concave and should have clearly sucked the molten metal of the puddle into it, making it flow along the surface into the joint. This part of the joint can sometimes fool you! It is possible to "wet" the surface of the tubing with the torch and it will appear as if the rod is flowing on to it. However, when it is cooled you can chip it off with a screw driver. What you are looking for is unmistakable melting of the surface and a very, very gentle concavity right at the front edge of the puddle.



Part of the art of welding is holding the torch just right to direct the heat into the correct spot, and for the welder to support one or both hands to provide better control. Below, Lloyd Toll demonstrates the proper angle. Note in the opening photo how Paul Poberezny uses the engine mount as a support for his left arm.



The deep "V" of this joint requires increased heat as you move into the "V" itself and may require adjusting of your flame.



This close-up of a "V" joint shows how a puddle can melt above the edge of the material leaving a slight void in one place.

Carl Schwepker

"Cri-Cri" World's Smallest Twin Engine Airplane.

Noted French pilot Nicolas Charmont has installed 2 AMT Olympus turbines in his Cri Cri together with AMT on-board automatic start-up units and individual EDT's. (AMT is a company from Netherlands.)

The Cri Cri weighs 170 Kg (375 lbs), and should have enhanced performance with over 36 Kg (80 lbs) of thrust available.

Top speed at this flight was 240 k m/hour (150 mph). Flying with only one engine the speed is still 160 km/hour (100 mph).



We had great chili and a productive meeting in Feb. Hope to see more of our members at the March



Calendar of Events

March 12—Chapter Meeting, Hangar

April 9—Chapter Meeting, Hangar

May 14—Chapter Meeting, Hangar

June 2—Chapter Event, Old Buzzards BBQ and Fly-out, Where Members get to go Flying!

June 11—Chapter Meeting, Hangar

June 24—Chapter 865 Fly-In / Breakfast

FOR DETAILS ON ABOVE EVENTS CALL RALPH @ 269-684-0972

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welding, riveting, wood working, and all kinds of craft lessons. Jim Van can show us a lot about geodesic wood construction and he's good home made rocket fuel too. I could go on and on. We have more good stuff lined up than can be fit onto one year of meetings. Furthermore I plan to take anyone up who wants a ride in my Skyrainger to get a little stick and rudder time. I promise to avoid my two greatest flying fears when I take you for our ride, fire and ice. I did buy the four Boredom Fighters. Cha! Ching! Look these beauties up on the internet. They jam! I will bring some pictures to the meeting.

Finally I will bring a MiniMax to the EAA hangar to begin final assembly and we can put our heads together to figure out how to put floats on it. Come on good weather!

Hope to see you at the Hangar, Monday night, 1930. Bob

Pilots Progress is published each month by Experimental Aircraft Association Chapter 865, Inc., located in Niles MI. The contents are for the use, education and enjoyment of the chapter. No claim is made for the accuracy of materials presented. Editorial content is the opinion of the contributor and does not necessarily reflect the position of Chapter 865 or the EAA. Members are encouraged to submit articles for publication. Other EAA Chapters may use articles for publication, as long as credit is given. Meetings are held at our Chapter Hangar, east side of the airport on Lake St., Niles MI, unless otherwise stated in the newsletter.

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