



## September's Busy Month!



### President Says ....



#### CONGRATULATIONS

We made it another month! I've got a lot of stuff" to cover, so I won't go into a lot of details. First, I want to thank all of you who helped out with the Labor Day IMAA Festival. Especially to both of our CD's, Rick Maida and Joe Francis; to our cooks, Joe and Chantel Francis, Chris Thomsen, Dick Moeller, and to Crash. We did have a lot of others show up to help the event, but forgive me for not writing down names. We did have a raffle for the pilots. We had 15 registered pilots, 35-40 planes, and had A LOT of flying! We didn't have the crowd we wanted but I think we have that figured out for next year.

Next we had the IMAC event. A lot of great flying, a lot less work, and a lot of friendly folks. I believe there were 18 pilots, two days

**Continued on Page 2**

full of great flying, and after the competition there was some SPECTACULAR stunt flying! Thanks to Steve Saulovich for organizing the event, even though he wound up having to work that weekend. He got other folks that were there to run the event. We had several folks including Bob McGregor, Chris Meharg and his father, myself, Joe Francis, Fred Baker, and a lot of others that came out to help. Steve's bunch ran the flying, Bob did the computer work and the rest of us fed the tribe. Made new friends, made some money and had a BLAST!

We always seem to have you folks come out to help support what's being done at the field. When I first joined the club back in the early 80's we had to get a list of folks to commit to help, then make calls to remind them, then hope half of them showed up. NOW, we don't need a list that will be there, because you come to help without being asked to. We really do have a SPECTACULAR bunch of folks in this club!

The next event that we need to support as a club is the upcoming Electric Fun Fly that Dennis Stanley will be organizing for October 20th. It'll be a one day event but we will be having coffee and donuts in the morning and lunch at noon. This will be a fun event and will show that the electric folks are just as involved as the gas-guzzler bunch is.

Now for the quick topics to mention: we are coming to the end of the 2007 year and need to think about whom YOU want running the club for 2008. We have a lot of new blood in the club now, how about some of you stepping up and running for one of the officer or board positions. There's always help and support, and it's not that hard to do. Only position I've never occupied in the club is the treasurer's job and I think Mr. McGregor has that for as long as he's willing. THINK about it folks.

We also need to think of what events we want to run for 2008. I will be offering a proposed calendar of events at the November meeting with the Midgorden's help.

Toys for Tots will be the first weekend in December as usual and the Christmas dinner/annual meeting will be on December 1st at The Landing Zone in Salinas. More info to follow on this but plan to be there!!!

I think we still need a cook for the October ruddergate for the 28th. The October float fly is right around the corner on 12,13 & 14th. We will be doing a lot more talking about the T-34 racing as we seem to have more folks getting interested in that possibility after the Labor Day demo put on by Rick Maida, Denny Baker and Babe (sorry Rick, I don't remember his last name). Denny and Rick had a mid-air collision. The race event was SPECTACULAR! I'm even thinking of getting involved in it.

Support you local hobby shops: Salinas-SRS Hobbies on Front Street, Gilroy-Flying Fortress at 7367 Monterey Street, Capitola Hobbies at 3555 Clares Street off of 41st avenue, D & J Hobby and Craft in Campbell, California Hobbies in San Jose at 1702 Meridian Ave (I went there last weekend and Mike has a FABULOUS shop with a lot of variety and GREAT prices), Sheldons Hobbies in San Jose, R/C Country in Sacramento. And PLEASE don't forget one of the most important stores is St. John's Attic on the internet at [www.saintshobbytools.com](http://www.saintshobbytools.com). This is Linda's site and she offers a lot of great stuff for tools and building supplies. And her prices will beat any other place you can find.

The usual reminders: don't leave the gate unlocked if you're the last one out, first one in closes the lock on the chain, don't fly over the pits, don't fly without your frequency pin and putting your card in the slot, don't fly alone, and say "HI" to anyone you haven't met yet.

*HAPPY LANDINGS!!! Jim "CRASH" St. John.*

## October Club Meeting

**Oct 3, 7:30 P.M.**

**The Board meets at 6:30 and all members are welcome**



# Minutes

## SEPTEMBER BOARD MEETING

Members present: Jim St John, Chris Meharg, Chris Thomsen, Malcolm Bruce, Malcolm Beety, Dick Moeller, Dale Oxford, Dennis Stanley. Board member absent were, Bob McGregor, John Midgorden and Jack Jellá.

President Jim St. John called the meeting to order at 6:38 p.m. and reported that the treasurer's report should be about the same as last month.

### Old business:

1. Malcolm Beety asked about the sealing of the runway. It was discussed that Travis Bond, who did the sealing last time, may be sealing the runway again for us. Bob McGregor will be taking him to the field and report back to the board.
2. Malcolm Beety then suggested that we should clear bamboo and continue to fill cracks rather than sealing the runway at the next field improvement day.
3. There was also a request to have people bring additional chainsaws for the improvement day. Jim St John will have Bob do an email.

### New Business:

1. Jim St John shared that 15 people flew during the IMAA event. He feels that next time we should hold the event either 1 week before or after Labor Day as there seems to be too much happening on that day. This should be discussed further when we begin scheduling for next year.
2. There will be a full report on both the IMAA and IMAC events at the next meeting
3. Pylon racing was briefly discussed again and Jim St John will try to see if Kevin Norred can come to a future meeting and give a presentation on racing.
4. Dennis Stanley will be helping out with the electric event. There was some discussion on whether we wanted to advertise the event in the media. Dennis will check on prices and report back. It was also decided that there will be a \$7.00 landing fee that will include lunch.

5. Dale Oxford reported that "we are good to go" for the float fly but he will call the rangers the Monday before.

The board meeting was adjourned.

## SEPTEMBER CLUB MEETING

Alan Brown was the only additional member at the start of the Club meeting. Alan thanked everyone who helped with the IMAA event. The business part of the Club Meeting adjourned.

### Show and tell

Alan Brown brought his Blackburn monoplane that was featured in the September newsletter. Malcolm Beety brought his flying wing and Chris Thomsen brought his electric PBV.

*Respectfully submitted  
Chris Meharg, Vice-president.*

*I wish to express my thanks and appreciation to Chris Meharg for taking the minutes for the September meetings in my absence. John Midgorden.*



**Don't forget the Electric Fun Fly on Saturday, October 20th. Dennis Stanley will be running this event. There will be donuts and coffee in the morning and the \$7 Landing Fee will include lunch.**

# The Labor Day IMAA Event\*



\*Thanks to Joe and Chantel Francis and Jack Tossman for the photographs on this page!

# International Miniature Aerobatic Club\*



\*Photos by  
Chantel & Joe Francis

# September Float Fly @ Lake San Antonio\*



Don't Forget!  
 Come join the fun at  
 Lake San Antonio  
 October 12-14  
**The last float fly of the season!**

\*Thanks to Chris Thomsen for these photos at Lake San Antonio—September 14-16

## Aerodynamics 101 —Landing Speed

Some time ago in an article by the late Chuck Cunningham, he asked “*Why did I design the original Lazy Ace with a wide blunt nose and an upswept forward fuselage section ...?*” and continues “*...the blunt nose acts like a big air brake out in front of the fuselage .... The more streamlined the front of the fuselage, the faster the landing speed. Second, the upswept front of the fuselage acts somewhat like a space capsule with the large end striking the atmosphere first and acting as a buffer all the way down to landing. In normal flight, it acts as a lifting airfoil, adding a bit more overall lift to the aircraft.*”

The first thing that hit me was “The more streamlined, the faster the landing speed.” Well, this just isn’t true for a normal power-on landing. The principal determinant of landing speed is wing lift coefficient. The equation is

$$\text{Lift} = 1/2 C_l \times (\text{air density}) \times S \times V^2$$

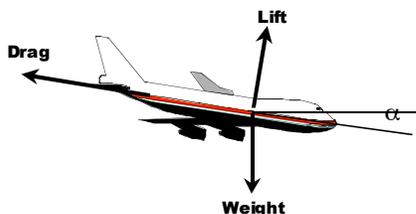
where lift = aircraft weight, W, for a 1g approach,  $C_l$  is the lift coefficient, S is the effective wing area and V is the airplane velocity.

Lift coefficient increases with wing incidence, and maximum practical lift coefficient (just below the stall) is a function of airfoil camber. Flat-bottomed airfoils are somewhat better than symmetric airfoils and heavily cambered airfoils and airfoils with flaps are better yet. So to get the landing speed down we should increase lift coefficient, air density or effective wing area or reduce the airplane weight. If we divide both sides of the equation by S, the wing area, the left hand side becomes W/S which is wing loading. So landing speed is proportional to the square root of (wing loading divided by the lift coefficient).

So what happened to drag? The answer is made obvious when we look at a dead stick landing. In this case there

are only three forces acting on the airplane, lift, drag and weight. They form a triangle which has to balance.

With power on in level flight, drag is balanced in a fore and aft direction by thrust, and weight is balanced vertically by lift. However, with the power off, the only way everything balances is by the airplane flying downhill! The lift is still at right angles to the flight path, the drag is still along the flight path, and the weight is still acting vertically, independent of the flight path.



If the glide angle is  $\alpha$ , then the balancing equations are: along the flight path, drag = weight x sine  $\alpha$ , and at right angles to the flight path, lift = weight x cosine  $\alpha$ . Dividing one equation by the other, we get lift/drag (L/D) =  $1/\text{tangent } \alpha$ . For small glide angles, which go with typically high lift/drag ratios, tangent  $\alpha$  approximately equals  $\alpha$ , so the drag/lift ratio is about equal to the glide angle (in radians, not degrees). Note something interesting. Lift now is a bit less than the weight of the airplane because cosine  $\alpha$  is always less than one. The drag is doing its share in holding up the weight of the airplane, but only to a very small extent. Not only is it (hopefully!) much less than lift, but it's acting in an almost horizontal direction.

Now let's look at some numbers. A reasonably good model monoplane may have a lift/drag ratio of about 12, giving a glide angle of almost 5 degrees. Cosine of the angle is 0.9965, so the lift will be a whole 0.35% less than it is in level flight. The velocity will be 0.17% less than for level flight at the same lift coefficient. If the airplane normally lands at 30 mph in level flight, it will now land at 29.95 mph dead stick. If we double the drag (which is fairly hard to do), the glide angle goes up to 9 1/2 degrees and the landing speed drops all the way to 29.85 mph, a change of 0.1 mph. Now there may be some club members who could pick up these speed differences, but I'm sure not one of them! However, the vertical component of the landing speed goes almost directly with the drag. In this case, the sink speed changes from 2.5 mph for an L/D of 12 to 4.9 mph for an L/D of 6. Well, sorry, Chuck, but I think I'd rather not have the extra drag for landing.

Now although drag does not affect the minimum landing speed, it does affect deceleration. So if I start off with an initially high speed, the draggier airplane will get down to a slow landing speed more quickly, which clearly can be an advantage. So it's possible that that was what Chuck had in mind. That's certainly a good point. The answer is, of course, that if you have a very low-drag aircraft, get down to your landing speed on the downwind leg. Don't wait until you are crossing the end of the runway.

Now what about the lifting airfoil effect of the blunt nose? Well, that of course is a valid effect, except that the majority of lift on a lifting body comes from suction over the top forward surface, and much less comes from positive pressure from below. The other thing that you have to think about is that the lift is being generated well forward of the c.g. and is therefore destabilizing. This calls for a larger tail to compensate or a further forward c.g.. The Gee-Bee racer is a good case in point.

In fact, an interesting phenomenon about lifting bodies can be demonstrated by a simple tubular balloon tied onto a stick by its knotted end. Hold the balloon into the wind and it will oscillate back and forth or whirl in a cone-shaped manner, where the deviation from straight ahead is about 20 degrees. It does this because at small angles of incidence it develops positive lift from the hemispheric front end and negative lift from the hemispheric back end. The resultant center of pressure is about 1/4 to a 1/2 of a body length ahead of the nose of the balloon, depending on how well the flow stays attached at the back end. However, as the angle of incidence increases, the center of pressure moves aft. (Obviously, when the angle of incidence is 90 degrees and the balloon is at right angles to the wind, the center of pressure is half way out along the balloon). At about 20 degrees, the center of pressure moves behind the nose, which is stabilizing, and the balloon blows back to 20 degrees on the other side.

So overall, more drag doesn't really affect the landing speed but does proportionally increase the sink rate. Increased lift from the nose will add to overall airplane lift, thus decreasing landing speed a little. But it will be destabilizing. Because of the aft movement of center of pressure with angle of incidence, the airplane will gain stability as the angle of attack is increased, although I would expect this effect to be quite small, because

*by Alan Brown.*

# Contact Information and Calendar

### OFFICERS

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### BOARD MEMBERS

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### FIELD MAINTENANCE

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### SAM INTERNET SITE

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### SAM MAILING ADDRESS

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**SAM AMA Club Charter #1554**

### October Calendar

- Oct 3**  
Board & Club Meeting Salinas Airport
- Oct 12-14**  
Float Fly Lake San Antonio
- Oct 20**  
Electric Fun Fly Sam Field
- Oct 28**  
Ruddergate Sam Field

Come join the gang for dinner before the Board/Club Meeting at the Landing Zone Restaurant at the Salinas Airport. And bring your latest creation for Show and Tell.

### SAM Says . . . .

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