



# Blue Max Aces

*The Monthly Newsletter of the Blue Max R/C Flying Club*

Editor - Larry Breit

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## **Constitutional Amendment**

**At this month's meeting, we will be discussing and voting upon a Constitutional Amendment to make the Editor an appointed position rather than an elected one.**

**Visit Our Club Web Site at [www.BlueMaxRC.com](http://www.BlueMaxRC.com)**



## **ARFS VS KITS**

*by Jim Keehan*

If you have been in the R/C flying hobby for a few weeks or more, you have found out that it is a lot like religion and politics; everyone has a different opinion!

Well, here are my thoughts on building ARF's and kits. Other people may disagree but I have built both and I have been in the hobby since 1997, so I am entitled to my opinion too.

First of all, building an ARF is probably the best way to get into the hobby for most people. It doesn't require a major commitment to the project, but you do get a feel for how R/C planes are designed and put together. You will learn how the radio ties into the various controls of the plane and how placement affects the Center of Gravity. The major ARF suppliers have great directions and the components fit together very well. Just follow the directions, step by step and you will build a very nice flyer. Read the directions all the way through and don't skip any steps.

OK, so you have already built an ARF. Now ask yourself a few questions. Was it FUN™? Did you enjoy watching how a bunch of parts and subassemblies became an airplane? Were you able to follow the directions, one by one, and not skip anything? Don't lie, now. You had a few frustrating moments but you were able to get through them – right?

If you answered positively to the things above, you should consider a kit for your next project. A kit isn't really much harder than an ARF. It just has more steps and takes longer. The biggest issue is that you need a place to build it. Do you have a table or workbench that you can leave your stuff on for a couple of months? If you have this, you can build a kit.

Remember what I said about getting frustrated but getting through it? You will have more of this with your kit. For me, the key is being able to tell myself to STOP and WALK AWAY! This is why you need the table or workbench that is dedicated to your plane for a few months. Come back to your project after a few hours or days. While you were away, your mind was working on the problem. Sometimes, you "see the light" of the problem while you are driving to work. Sometimes, you don't see it until you sit back down with the plane and directions in front of you. But trust me, you will have the revelation you need to get to the next step.

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## ARFS VS KITS (cont'd)

Are you afraid that you will have trouble covering the skeleton? You are not alone here, either. Just remember a few things. Sanding is very important. Any imperfection that you have before you cover it will not be hidden by the covering. In fact, it will look worse. Take your time and work slowly. There are some techniques that a lot of the Club members can show you. Finally, have a positive attitude. This is the most important thing in covering and Ron Petterec taught it to me while I was watching him cover one of his planes. He had a wrinkle that wasn't coming out. I asked Ron, "Do you think that you can get that wrinkle out?" He just looked at me with a straight face and said, "Of course. It has to come out."

If you build a kit and find that you enjoyed yourself, you will find that your understanding of the assembly process can be used in helping you repair damaged planes. Since you know how everything goes together and what needs to be strong and how you can strengthen things, you will be able to rebuild a damaged plane to be as strong and look as good as it did before the crash.

Whether you are building ARF's or kits, remember the idea is to have FUN™.

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## THE WOLFE'S DEN

*by Don Wolfe, President*

**C**rashing sucks! And it happens to all of us. If you are going to fly R/C aircraft, then you have accepted this as part of the hobby. This does not make it any easier on us when that crash does happen. In fact most of us enjoy taking risks with our model aircraft. This is why we like to fly low and fast and do aerobatic maneuvers. It seems that as a group, R/C aircraft flyers are always looking ahead to next level in our flying ability as well as the type of aircraft that we fly. This is good because in our hobby/sport there is always a new level to graduate to.

I feel that the hardest time for an R/C pilot is when he is first learning to fly their new trainer airplane. Everything is new to you and the learning curve can be quite steep at this point. This is also the time when you are dependent on everyone to help you, as you have not yet developed the skills to fly on your own. This is also when a crash can be devastating to the new pilot. New pilots for the most part only have one aircraft to fly and if the aircraft is damaged it can keep them grounded for a long time. Then, when they get back into the air, they have to spend time relearning things that they had mastered before they crashed.

Our club happens to have a pretty good flight instruction program in place. Our program has evolved over many years and we are always trying to make it better. We as a club have 18 instructors and 7 ground crew people to date and these numbers will go up as club members move up within our system. We all need to remember that not just anyone gets to be an instructor in the Blue Max Club. First you have to pass your Sport Pilot test and then Mark Matzuka gives you the instructor test. There is one other qualification that a flight instructor must have and that is that they have to want to do it, as our system is staffed entirely by volunteers.

I know that our instructors do not take their responsibilities lightly and really take it hard when they cannot recover a student's airplane. I know this from some of my own personal experiences this year. It is a bitter pill to swallow when someone comes to you for help and you come up short, but it is a risk that we all have accepted when we got into this hobby.

So what can you do to make flight instruction work better for you? Well, first of all, be a good listener of your instructor(s) and learn. Second, don't try to jump ahead. The instructor(s) has (have) a good grasp of where you are at in the training. We all had to crawl before we could walk and walk before we could run. Third, do your homework. Get together with your instructor(s) and talk about what you should be working on at home on the flight simulator. If you don't have a simulator, read as much as you can on what you are working on and have a good mental picture of what you are trying to learn. This will make things easier at the flying field later. If you are really new to the hobby, see Ray Zinkowski and check out one of the flight manuals that he has put together. This will help you a bunch in learning what makes your airplane fly.



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## THE WOLFE'S DEN (cont'd)

So what do you do if you and your instructor have a crash? I would try and learn something from it. What was the cause and how can you prevent it from happening again in the future? Pilot error, equipment failure and bad weather conditions all have been known to play a part in our model aircraft crashes but as stated earlier, this is the risk we take every time we go up. Second, if the worst happens, go easy on your instructor, he probably feels just as bad as you do if not worse. And remember that you could find yourself standing in his shoes a few years down the road, when it becomes your turn to step up.

See you all at the meeting.

## THE NOVICE CORNER

*Editor's note: This month, we are fortunate to have two articles for the "NOVICE CORNER" about flying solo. During the past month or two, both Jim Janiak and Ray Zinkowski who have written many articles for this section, passes their Solo Pilot Proficiency tests. With any luck, we will be able to coax an occasional article from them but we need more people to step up and write about their novice experiences. No matter what our proficiency level is, we all learn from the articles.*

## CUTTING THE CORD - PART 1

*by Jim Janiak*

This month Ray Zinkowski and I offer two perspectives on "cutting the cord" – the buddy box cord that is. Passing the solo test is an exciting and scary time for the novice pilot. It represents a level of skill and responsibility as it takes the R/C flying experience to the next level. What follows are some of the things I have learned making the transition from novice to solo pilot.

First, I found the best way to get a great aerobic workout just standing still for ten minutes – fly solo the first few times! The heart races, blood rushes and palms sweat as you approach the flight line for your first few solo flights. It's a better workout than most exercise tapes. Being a "low risk taking" flyer, I was probably more nervous than most the first few times.

Second, at least for me, is psychological – knowing there isn't an instructor to take control if something happens. The first few times I flew alone, Larry or Don were standing by a few feet behind me if I needed some assistance. It helped knowing there was an expert close by and fortunately their services were not needed.

The benefits of the club flight instruction program are immediately apparent to the new solo pilot. Being trained by some of the clubs' best pilots you never doubt what you need to do – in the pits or in the air. From the pre-flight check to final approach and landing you have the confidence to fly safe and have fun – which is after all, what it's all about.

There are a few things I had to do differently flying solo. First was getting the plane to the runway. With an instructor, they usually took the transmitter while I carried the plane out. Now I have to carry both. Not a big deal but be careful of the prop and what might be dangling near it. Next is remembering to extend the transmitter antenna – again something the instructor did.

# THE NOVICE CORNER

## CUTTING THE CORD - PART 1 (cont'd)

I use a timer and too many times forget to start it. Now I try to get into the habit of starting it when I'm walking to the flight station. I also clip the time to the channel tag in the transmitter, so it is easier to see and hear. If you don't have a talking timer I suggest you consider getting one. They work great and allow you to keep your eyes on your plane.

One thing I dreaded was my first dead stick landing. I practiced on RealFlight, but wasn't convinced it was realistic. The plane seemed to float more in the simulator than what I saw at the field. I didn't have to wait long to experience the real thing. Two of my first four flights were dead stick landings. Fortunately both were successful landings. I was lucky the first time to be in the right place in the pattern so I could easily turn in to land. The second I was farther out and had to work it in to land across the runway. In both instances it took me a little while to realize the engine died. I fly between ½ and ¾ throttle and didn't notice the loss of power as soon as I should have. I know this will come with time. It feels good to have successfully passed another "rite of passage" for the solo pilot.

A suggestion to the more experienced novice pilots and our instructors is to practice simulated dead stick landings where the engine is brought back to idle. If you practice this, make sure you discuss it with your instructor before the flight, so that the two of you are in sync with what you are doing.

A suggestion for the new solo pilot is to take advantage of your freedom and fly as often as you can. Building up flight time is the best way to gain confidence and increase your skills. Always remember to fly safely and with someone else present.

Having accomplished one goal requires one other thing – to set new goals. My goals are to get my "Intermediate" (if I can learn to level out my rolls) and become more comfortable flying in windier conditions. I also want to become more proficient in tuning my engine so I can avoid more dead stick landings.

A final comment – having had the opportunity to see how other clubs handle training novice pilots, we are very fortunate to have our excellent instructors and the formal flight instruction program. Sometimes we forget how lucky we are. Our instructors are very successful teaching us newbie's how to fly safely and have fun. Considering they are all volunteers, this demonstrates their dedication to safe flying and the club. Thanks guys from one pilot who really appreciates it!

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# CUTTING THE CORD - PART 2

by Ray Zinkowski

This month Jim Janiak and I discuss our experiences of "cutting the cord"; the umbilical cord (a.k.a. buddy box cord) between student and instructor.

Both of us soloed during the past month. I finally soloed during the club picnic on August 10<sup>th</sup> and boy, talk about the pressure, with all the club members out there along with spouses (Patty, my significant other included); it was a day to remember.

Picnic day was very odd weather wise. Cool but the winds kept shifting; out of the east, then out of the west every 20 minutes. It was a very good day for the picnic, a rather odd day for flying, at least for a novice. My first take off on the cord with Bob Tomasulo was, well, rather pathetic and the landing was not much better. My better half, Patty, who was attending the picnic, said to me, "I thought you could at least take off and land!" I suddenly wished I had left her at home! The peanut gallery in the pits is one thing but her comments were much worse.

Well, after flying some with Bob and having an excellent time eating many brats, burgers and hotdogs (I can't even count them all), Bob took me up for another flight which was perfect! I fueled up again and was flying the pattern with Bob when he asked me, "Are you ready to solo?" I said yes, thinking maybe on the next flight. He pulled the cord, handed me the transmitter and said your test starts now. Talk about rapid heartbeats and lots of jitters. Here I was, on my own, flying the airplane and umm, wondering about the outcome (with Patty, who has now become one of the more vocal members of the peanut gallery watching and commenting). As I tried to calm down, I told Bob I'd just do a few pattern turns at first (so I could get my composure). As I was calming down Bob gave me his last bit of advice, he said "Don't screw up". Seems like that last kick in the butt is all I needed because I passed. It was interesting though, with the winds shifting, the first take off and landing was to the west. On the second attempt, the pattern switched in midair, so takeoff was to the west with landing to the east which held for the third take off and landing. It's more than most students usually have to go through but if want to solo; you have to learn to adjust for the wind.

Of course, I had to fly alone for a couple of flights at the picnic due to the pressure of the club members and to show Patty (and reassure Bob) that I could fly by myself; talk about the shakes. The next couple of flights in the following days were not much better. I'd shake all the way to the field and then really shake on the pad. However, all the flights have been fine and on the drive home each day I'd have such a rush that all I could think about was the next flight and what fun this hobby is.

I've been taking more vacation days off than normal just so I can get out to the field and fly. Being solo now, if I see the forecast for the next day looks good, I charge the plane and head out to the field. I've got past the days when I shake before take off or shake at landing but that's not to say I have not scared myself a few times. And I will continue to scare myself since I'm practicing skills that will take me to the next level of piloting. I'm practicing some aerobatics and dead stick landings where I throw the power back at different areas and altitudes on the field and see how far back I can make it (wow, Jim J. already had two real dead sticks, what a thrill for a newly minted pilot). Also, a few of the days have been windy, so I'm learning to compensate for the wind as well.

When I started to fly solo, there were a lot of surprises. In the training days, the instructor carried the transmitter to the pad and you carried the plane out of the pits. I have to carry both now and I now find I need to wipe a bit of oil off the transmitter too. Also, on my first solo flight I was getting ready to take off. Umm, the antenna looked a bit short. The instructor always had extended it, so now; it was a new item to add to the checklist.

## UPCOMING BIRTHDAYS

### September

9/17 - Ardie Arnold  
 9/18 - James Blanch  
 9/19 - Mark Phillips  
 9/22 - Tom Jetson  
 9/28 - Alex Gutierrez  
 9/30 - Cas Dabrowski

### October

10/1 - Mark Giannis  
 10/3 - Tim Niemiec  
 10/4 - Dick Smagur  
 10/7 - Duane Lang  
 10/15 - Armondo Cando  
 10/18 - Clay Smith



Happy Birthday

# THE NOVICE CORNER

## CUTTING THE CORD - PART 2 (cont'd)

I found it helpful to use a spotter during my early solo flights. Sometimes I used an instructor, sometimes I used an experienced pilot. I recommend this to anyone just off the buddy box, it really helps. Also, if you're going to try new maneuvers, use a spotter that knows those maneuvers by heart. I've been doing some aerobatics past the basic loops and rolls and it really helps. I was up a couple of weeks ago with Mark Matzuka and he thought I should try some inverted flight. Man, if you're going to do this, have an experienced person with you because it's very unnatural. While inverted, his comments were "PUSH, PUSH, PUSH" to get the nose up and on an Avistar, you really have to feed in a lot of forward elevator just to stay level.

Well, I look at new students and all the troubles they have staying upright and in control and just scratch my head at the field. I've almost forgot what it was like to be a newbie with a plane at the field and no flight experience. It all looks easy and basic flying comes very easy now but that's not really true when you're starting. My advice to all the novice rated pilots is to just keep at it and try to fly as much as possible.

We have a great training program and if you stick with it, eventually basic flying will become second nature and you WILL solo. It's just a matter of stick time. The Blue Max Pilot Proficiency Program has awarded over 70 proficiency upgrades this year with many more to come and our pilots continue to fly in a safe and responsible manner. I hope many more students will be upgraded from Novice to Solo before the flying year ends.

I've flown with most of the instructors in the club and they have all been great. However, I would like to especially thank those that I have gained the most gray hair from during my endeavors, namely, Larry Breit, Steve Haas, Mark Matzuka and Bob Tomasulo. (*editor's note: we've picked up a few extra gray hairs from Ray too.*)

Happy flying to all.

## FOR SALE / WANTED

### FOR SALE

**Art Chester "Jeep" 1933-1938 Racer with G90 Supertiger engine, 46" wingspan.** Includes radio. **Price:** \$250.00. **Contact:** Dick Campbell, [DickCBell@aol.com](mailto:DickCBell@aol.com).



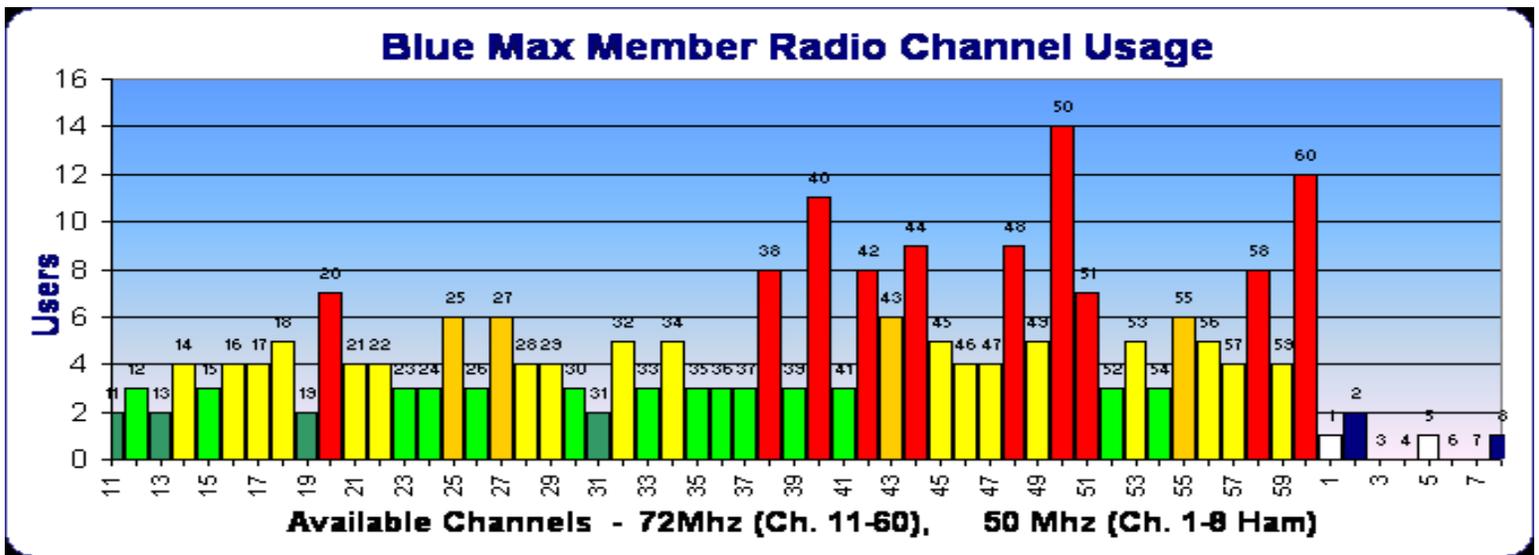
**Top Flight Beechcraft Bonanza (straight tail) - Gold Edition, 81" wingspan** with a new OS 91 FX 2-stroke engine and 4 Futaba servos. Only two 10 minute flights on the plane. Ready to fly, all you need is a receiver and battery. **Price:** \$500.00. **Contact:** George Gibisch, [Geeegib23@aol.com](mailto:Geeegib23@aol.com).

**Kyosho Gee-Bee ARF**, includes Saito 56 4-stroke engine, Futaba radio. Professionally assembled. Everything is brand new, never flown. **Price:** \$325.00. **Contact:** Ron Williams, [RWill55867@aol.com](mailto:RWill55867@aol.com).



### WANTED TO BUY

**Futaba/Hitec Buddy Box and Cord** for use with a Hitec Flash 5 Radio. **Contact:** Mark Hepler, [M.Hepler@comcast.net](mailto:M.Hepler@comcast.net).



Please contact Mark Matzuka ([Info@BlueMaxRC.com](mailto:Info@BlueMaxRC.com)) with the following information to add or change radio channel numbers.

1. Your name.
2. All transmitter channels (example: 16, 44, 58 and Ham 4).
3. Any other comments.

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# MINUTIA FROM THE MEETING

*by Tim Niemiec, Secretary*

The August meeting started out with Morgan Bondi talking to us about Embry-Riddle Aeronautical University where he is a senior and what it takes to fly full scale planes. Prior to going to school he flew R/C for 10 years and flying was always his passion. He applied to ERAU and his flying experience started. With over 280 hours of flying time logged and he says "every day at school is like a dream come true." The cost of the tuition is high (\$120,000 so far) but the school has a good student loan program. He plans to work for a corporation and get his turbine rating through his employment due to the high cost of operation.

Following the guest speaker, the treasurer's report was read and passed. Committee reports were as follows:

- The Banquet Committee had nothing to report.
- The Field Marshal reported that the grass is being cut on time.
- The Noise Committee was happy to report that this year has been one of the quietest seasons we have had yet. Great job on noise control everyone.
- The Picnic Committee thanked everyone who helped this year and hopes everyone had a good time.
- The Safety Committee reported that there have been many members flying dangerously close to the pits and wanted us to be aware that all flying must be done no closer than the middle of the runway. If you see someone flying overhead or over the pit area, please let that individual know the flying rules for his/her safety as well as ours. Also, props are very dangerous. Do NOT start your engine by hand, unless you have a heavy leather glove or a chicken stick.
- The Fun-Fly Committee reported that the August Fun-Fly went well and it consisted of 13 maneuvers that progressively got harder. Contestants had two minutes to complete the maneuvers and had opportunities for extra points on takeoff, landing and taxiing to the flightline. First place for sport went to Mark Matzuka, Advanced/Intermediate went to Bob Davit, Duane Lang won solo and on the buddy box Michael Altschuler got 1<sup>st</sup> place. Well done to these members and to all who participated in the Fun-Fly.

A lot of members moved up the proficiency ladder this month. Maurice Forde advanced to sport and will be a new primary instructor, Jim Speers received his sport rating and is also primary instructor, Bob Davit passed his advanced pilots test, Steve Tomczyk got his well deserved advanced rating and finally, Mr. Ray Zinkowski got up enough nerve to take his solo test and passed!! Congratulations to all on moving up in your flying ability.

Old business: see Ira Katz for hats and t-shirts.

New business: Jim Speers and Jody (you always see them together at the meetings) recently got married. Congratulations to you both. There was a motion made to cut the driveway curb at the field; it was seconded and passed. A motion was made to buy 12 more talking timers. This too was seconded and passed.

We had 4 crash reports this month. Guillaume Dougados crashed his Carrousell on takeoff. He reported that his ailerons were reversed and lost control of the plane shortly after liftoff. Joe Keehan was bringing his GP Shoestring in on a dead stick landing and stalled the plane a few feet in the air. The plane cart wheeled and damaged a wing. Big brother Jim fixed it up like new and Joe did the exact same thing to the other wing a week later. Stay tuned for more.... Don Wolfe gets the "why'd ya do that" award this month. He was flying his Somethin' Extra and got caught in the rain. He placed the plane under a tree and finally left for home after the rain didn't stop. The next day he took the plane out of his car to fly again and noticed that there was water in the plane. He dried it out the best he could at the field and flew the plane. Needless to say, the water in the plane shorted out his battery pack and he crashed the plane due to a dead battery. Finally, Jim Speers was flying a Dura Plane and crashed it on a landing approach. He said the plane went inverted and crashed near the swamp.

Show-n-tell this month brought us an ARC Falcon on floats that Ira Katz put an OS 61 into. This plane is reported to fly great on water but he recommends that you upgrade the clevis hardware because the stock ones break easily. Mike McGee brought us his electric Mirage 550 converted to aileron flight. He has crashed the plane inverted twice already but has a lot of fun with it. This is his 5<sup>th</sup> Mirage. Tim Niemiec brought a Dave Patrick Ultimate biplane powered by a Saito 180.

The raffle prize was a H9 T-34 Mentor. Roger Rivenburgh donated a glow driver and a 12v starter too. Charlie Pollack won the T-34 and John Brach won the starter equipment.

# FUN-FLY

*by Ira Katz and Jim Speers, Fun-Fly Chairmen*

It was another successful Fun-Fly. This one was called "Making Maneuvers." Each pilot was timed trying to complete 13 maneuvers as fast as they could. As always, there was a way to receive bonus points; yes it was, taking off and landing in a circle. We did have a couple of small incidents and I'm not one to tell but Kyle Der, try to keep your landing gear on next time. You keep ripping them off and your Dad is getting pissed! Oh yes and I had a dead stick and my plane didn't make it back to the field. Besides that everything was as lot of fun.

The following is a list of contestants and the order of finish:

### **Buddy Box**

1. Michael Altschuler

### **Intermediate**

1. Bob Davit

2. Dan Deitemeyer

3. Maurice Forde

### **Solo**

1. Duane Lang

### **Sport**

1. Mark Matzuka

2. Ed Der

3. Tim Niemiec

4. Ron Petterec

5. Frank Stillson

6. Kyle Der

7. Steve Haas

8. Ira Katz

9. Don Wolfe

Congratulations to all of the contestants.

The next event is a free style event. Each pilot gets to choose five maneuvers with each maneuver being assigned a point value; the harder the maneuver, the more the point value. The highest point total in each proficiency level wins. Don't forget that you compete against the same level pilot that you are - even buddy box pilots. So be there Sunday, September 14<sup>th</sup> at 10:00 A.M. and fly with the rest of us or at least come out and cheer your friends on.

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## FLYING THE LARGER AIRCRAFT

*by Mark Matzuka, Flying Proficiency Chairman/Webmaster*

*Editor's Note: This is a reprint (with minor updates) of an article that Mark Matzuka did for the "Blue Max Aces" back in August, 2001. The information contained in this article is just as important today as then, so please read/reread it.*

With the huge increase in numbers of ¼ scale and larger ARFs on the market, flyers are finding it easier to get into the larger planes. In the last 5 years we have seen many companies move from making mostly kits to making mostly ARFs. The most common bigger ARFs are the Hanger 9 ¼ scale CAP 232 & 27% Edge 540, SIG ¼ scale Cap 231EX, ¼ scale Extra 300 and ¼ scale Sukhoi SU-31. Even more recently we are seeing 33% scale and larger ARFs such as Hanger 9's 33% Extra 330L, 33% CAP 232, 33% Sukhoi and even the new 46% Ultimate Bi-Plane ARF.

Many people who wouldn't have had aircraft this large in the past are now buying them at very reasonable prices. The problem arises when people get into these larger airplanes sooner than they are ready for them. We have seen a huge increase at our field of these larger planes... Unfortunately we have also seen an increase in the number of crashes of these larger planes. This increase in crashes is most likely due to flyers getting into these larger airplanes before their flying ability is ready. They are trying to fly these larger aircraft like they have flown their 40 & 60 sized airplanes.

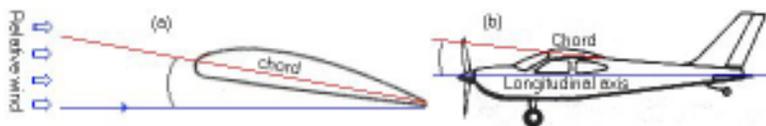
Like I always tell people, a plane is a plane...elevators, ailerons, rudder and throttle all do the same thing whether it is a .40 sized trainer or a 40% CAP 232. But the difference soon becomes apparent when you look a little deeper. Basically it is said that when a model exceeds about 70" in wingspan, it starts to fly based on the aerodynamics of the airfoil and not so much on the engine merely pulling the plane around the sky. All of these ¼ scale and larger airplanes mentioned

## FLYING THE LARGER AIRCRAFT (cont'd)

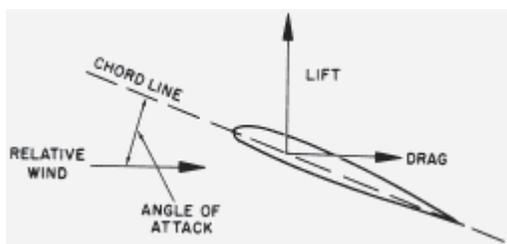
above are greater than 70" wingspan. Things that you can get away with on your 40 or 60 sized plane will cost you dearly if you try the same things on a 1/4 or 1/3 scale plane. Let's look at two of the biggest problem areas that cause people to get in trouble with the larger planes.

**Throttle Management** – In your 40 or 60 sized airplane, you can burn holes in the sky all day long at full throttle. You can do loops and keep the throttle wide open through the entire maneuver and generally not have a problem. One of my favorite things when I had my Ultra Sport 40 was to make full power dives and then a high speed pass. If you do either of these things with a 1/4 or 1/3 scale plane, you better bring your Hefty bag and rake because you will most likely be raking up balsa scraps for a long time. The culprit here is what is known as load factor or G-Forces (effect of acceleration measured in Gravity Units... sitting in a chair you are experiencing one "G"). All these planes are made out of the same materials: balsa, ply, glue and covering. These materials can only handle so much stress. Let's look at your 40 sized plane which weighs 5.0 lbs and your new Suhkoi SU-31 which weighs 14.25 lbs. Now you do a loop with both, full power all the way around.... On the pull-out of that loop the plane endures enormous forces (because of the full-throttle dive), let's say 12 G's (some maneuvers with very abrupt pulls can momentarily exceed 20 G's). Now on your 40 sized plane, 12 G's times 5.0 lbs makes the force that the structure endures 60.0 lbs (the rate of "G" onset is a very large factor on this but we aren't going to go that far in this article). Do this same maneuver with your 14.25 lb. Suhkoi and that same balsa structure must endure a whopping 171 lbs of force (have you sat on your airplane lately? Would you even think of it????). You can see the importance of throttle management in this example. By reducing the throttle to near idle on the back side of the loop you can cut the "G" forces in 1/2 or less.... If you can get the force down to 4 G's on the backside of the loop now your 14.25 lb. Suhkoi will only endure 57.0 lbs of force (less than your 40 sized plane doing full power loops). Throttle is as much of a flight control as the ailerons or elevator. Don't forget to use it, even on the 40 & 60 sized planes, start those good habits early! Generally on the lighter planes you can get away with throttle-mismanagement, on the heavier planes the structure could fail or you will get into an Accelerated Stall after which the resulting maneuver will cause structural failure upon impact with terra-firma.

**Accelerated Stalls** – Once again with your 5 lb., 40 sized airplane you can pretty much get away with yanking it around the sky in any way you like. With the 14.25 lb Suhkoi, you will get to see some new maneuvers you've never experienced before. Most everyone associates a stall with going slow; a wing will stall when going too slow but that is not the only case when it can stall. A wing stalls because the airflow over the upper surface of the wing gets disrupted and is no longer smooth, this disruption changes the pressure patterns on the wing and you no longer have the pressure differential which allows a wing to create lift. This disruption occurs when the angle between the chord line and the flight path (relative wind) become too great, this angle is known as the Angle of Attack. Above this given angle, the wing is not capable of keeping the upper airflow smooth and the pressure differential breaks down, the wing stalls (i.e. stops producing lift).



A stall typically happens at slow speed but it can (and does) happen at high speed when the airplane is under high "G" loading (such as a tight turn). If you are going at full speed and pull into a very steep turn and pull back on the elevator to tighten the turn you will approach (and probably exceed) the critical angle of attack that will cause the wing to stall (accelerated stall). In an accelerated stall, the stall speed of a wing increases by the square root of the load factor times the wings normal stall speed.



LOW ANGLE OF ATTACK



MEDIUM ANGLE OF ATTACK



EXCESSIVE ANGLE OF ATTACK. AIR FLOW IS BROKEN. NO LIFT TO SUSTAIN THE AIRPLANE



Lets look at a couple examples, if your 5 lb. plane that has a light wing loading (19.2 oz./sq.ft.) typically stalls at 15 mph and you pull into a very tight turn pulling 10 G's, your wings stall speed is

## FLYING THE LARGER AIRCRAFT (cont'd)

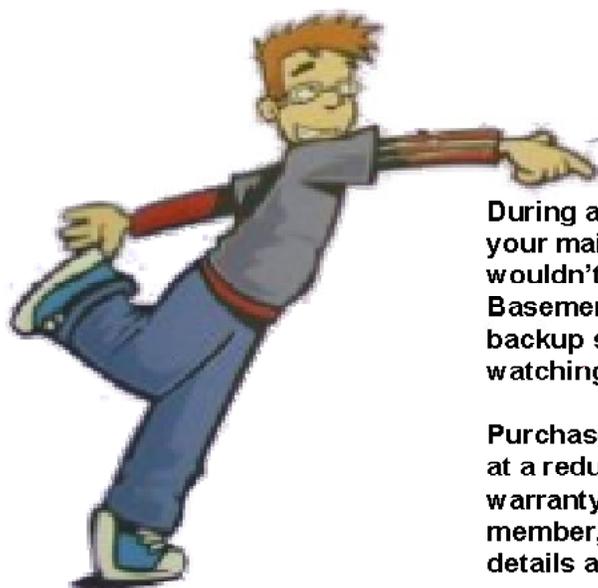
increased to 47.4 mph (15 times square root of 10). An APC 10x6 prop spinning at 12,500 rpm will produce a speed of 71.0 mph, well above the 47.4 mph accelerated stall speed of this wing. This leaves you a margin of safety of 23.6 mph over your stall speed; the plane should successfully complete this maneuver. Now with your 14.25 lb. Sukhoi that has a normal stall speed of 25 mph due to it's higher wing loading (28.5 oz./sq.ft.), you pull into that same tight 10 G turn your stall speed on that wing is now 79.1 mph (25 times the square root of 10). An APC 18x8 prop spinning 9,000 RPM produces a speed of 68.2 mph, well BELOW the wings accelerated stall speed of 79.1 mph in the turn. This wing is now 10.9 mph BELOW its stalling speed, guess what... The wing is going to stop flying, and do so very abruptly, usually resulting in a nice tight snap-roll because one wing will inevitably stall before the other wing. How do you get out of this maneuver? Reduce the G-loading or increase speed above the stall speed... since you are already at max speed, your only option is to reduce G-loading, increase the turn radius by letting off on the elevator control.

**Moral of the Story? - Throttle Management.** Remember that an airplane can stall at ANY speed and in ANY attitude! Fly the big airplanes as you have seen full-scale airplanes fly and you won't have a problem, try and do a 25 ft. diameter loop with your ¼ scale plane like a 40 sized fun-fly plane and you will have a very expensive mess to clean up. Throttle Management, Throttle Management, Throttle Management!!! Watch out for the high G loading maneuvers, they can bite you very quickly with an accelerated stall, with little or no warning of the impending disaster! OH! And did I mention Throttle Management?!?! (You paid for that fourth channel on your radio, USE IT!)

Don't let this discourage you from the big planes, they are VERY rewarding to fly, and actually quite easy to fly. You just have to respect the laws of physics and take your time working your skill level to the point you are comfortable flying the larger airplanes.

This review is just the tip of the iceberg about aerodynamics, if you would like to get deeper in depth you can always catch me at the field, I'd be happy to go into more depth about this interesting topic.

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**UPCOMING EVENTS FOR  
SEPTEMBER, OCTOBER and November, 2003**

**September, 2003**

- 14) Fun-Fly - 10:00 A.M.
- 15) Monthly Meeting - 7:30 P.M.  
Constitutional Amendment Discussion and vote  
Program - Barry Schilling on Pilot Busts  
Raffle - ?
- 27) Jewish New Year (Rosh Hashanah)

**October, 2003**

- 6) Yom Kippur
- 19) Fun-Fly (last of the year) - 10:00 A.M.
- 20) Monthly Meeting - 7:30 P.M.

**November, 2003**

- 17) Monthly Meeting - 7:30 P.M.

