



OF THE INTERNATIONAL AEROBATIC CLUB

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IAC NEWS

Certainly one of the most significant events for the One Design just recently happened. The IAC Board of Directors has given the green light to the ONE DESIGN class concept. At the recent IAC Board meeting it was decided to endorse the One Design class concept, publish a preliminary set of rules in *SPORT AEROBATICS*, and get feedback from the membership. This is what the class has needed to really get launched. IAC Rules Chairman Howie Stock has appointed Woody Woods to be the focal point for any comments or suggestions for One Design rules. Be sure to get your Ideas known by writing Woody. Watch for more details In *SPORT AEROBATICS*.

RULES

Bill McIntyre and Mike Anderson have submitted some of their ideas on the One Design class rules. There was little difference between what these two gentlemen suggested and what I proposed to the IAC (also see the January 1993 Issue of *SPORT AEROBATICS*). It seems we are all pretty much In tune with what we want to see happen. I would suggest that you wait to see what the IAC publishes before you put pen to paper, your Ideas may already be incorporated.

PILOT REPORT

Mike Anderson has written a pilot report which should appear In a future issue of *SPORT AEROBATICS*. Many of you probably remember Mike as a brilliant up and coming pilot. At the '89 US Nationals Mike placed a close second in the Unlimited category. Unfortunately, Mike was unable to compete in the '90 World Aerobatic Championships due to work related responsibilities. Since that time he has sold his airplane and retired from aerobatic competition. However, he has become very interested in coming back because of the ONE DESIGN class. I have found Mike to be an excellent test pilot and a superb aerobatic aircraft evaluator. Therefore I invited Mike to do some of the early flight tests prior to the Nationals. It wasn't long before he was practicing the '93 Unlimited Known and developing 4-Minute figures. Look for this report soon.

'93 US NATIONALS

The One Design prototype made its contest debut at the Nationals. Doug Jardine flew in the Intermediate category with virtually no practice in the airplane. Quite a gutsy move on Doug's part to fly a new airplane without the benefit of even one critique. Unfortunately, enthusiasm rarely beats hard work in the sport of aerobatics, and while Doug did gain some valuable experience, he vows to return with a vengeance. Also during the Nationals the prototype got quite a workout by being flown and evaluated by pilots of all skill levels. By the end of the week over fifty pilots had flown and evaluated the airplane. After the contest Doug Dodge delivered it to owner Lew Shaw with 83 hours on the Hobbs meter, 30 days after the first flight (that averages out to 2.76 hours per day). We all owe Lew a big thank you for sponsoring the building of the prototype as well as being so generous to allow so many pilots to fly his brand new airplane.

AIRCRAFT SPRUCE AND SPECIALTY

Construction plans will soon be sold by Aircraft Spruce. Aircraft Spruce and Specialty President Jim Irwin has agreed to work very closely with the IAC and the One Design team to not only sell the construction drawings but also help promote the One Design concept. Jim is very excited to be a part of this project, and his support will go a long way insure the success of the class. We anticipate a very good relationship that will benefit the sport of aerobatics in the future. Thanks, Jim.

INTERNATIONAL INTEREST

Bill McIntyre was invited to be a judge at the recent European Aerobatic Championships this summer in Grosseto, Italy. Bill found quite a bit of interest in the One Design class in Europe. There is talk of using it to participate in the upcoming World Air Games scheduled for 1995 in Greece. This could also be the way to a more competitive "B" class which is gaining strength in Europe. I continue to receive many letters from all over the world, and have sent these to the IAC, so you may see them in SPORT AEROBATICS.

EVALUATING THE COMMENTS

"Ask any pilot what his favorite airplane is and he/she will give you one of two answers; the one he/she has the most time in or the one he/she is currently flying." This is a quote from the late Eric Hartmann, the highest scoring ace in aviation history. I have always kept this in mind when I read any pilot report or listen to any evaluations. I also have to keep in mind that the evaluations were based on flights lasting less than 30 minutes. This is one reason why I wanted to get as many pilots as possible to evaluate the prototype and give me their feedback. With more input I can look for consistencies, address the problem, and develop a fix. On the whole the comments were all very positive. The two biggest problems were the geometry of the rudder pedals and the stick force per g when pushing negative as compared to when pulling positive g. These problems are being corrected at this time; I will continue to keep you up to date on this. I thank each and every one of you who participated in this event. You are all wonderful test pilots and I greatly appreciate your comments.

OTHER COMMENTS

There were other more general comments - the wing is too small. It needs a bigger engine. First let's talk about the wing: as built; the prototype stalls at 50 knots. This is slower than a Pitts S1S which has 26 more square feet of wing area. This low stall speed equates to a maximum coefficient of lift (CL Max) for the airplane of 1.6. This is very good for a symmetrical airfoil Wing. As a comparison a S1S CL Max is 1.1. Also keep in mind that if the wing were bigger, it would require a much beefier/heavier spar, because wing bending moments increase by the span squared. Again as a comparison; the One Design has 1/3 less wing bending moment than an Extra 230 when they both are loaded to their competition weight. Bigger engine: No one can disagree that the airplane would perform better with a bigger engine. Keep in mind that power costs, not only in initial acquisition but also in fuel consumption and that everyone will be using the same size engine. Most people want to keep the cost down and this will provide the best way to achieve this. I have asked all who have made this comment to tell me when was the last time they flew a Cessna 172 engine through the Unlimited compulsory. I suspect this will continue to get more comments during the development of the rules.

BROKEN LONGERON

When the prototype was in the shop getting a radio and transponder installed it was noticed that the left lower longeron in front of the landing gear clamp was cracked. This was probably due to some hard landings as well as a few problems with the landing gear attach design. Fortunately, the fix was relatively easy and the airplane is back in the air. The problem stems back to early design work; originally the firewall was 3 inches further aft which would have put the longeron/firewall cluster very close to the landing gear clamp where it could take the vertical as well as the tire spin up loads. The firewall was moved forward to increase fuel volume and the truss should have been beefed up to accommodate this change. This is not the same type of problem as seen on Pitts and Eagles. That was a torsion problem due to the gear flexing. The One Design should be adequate for preventing this type of failure. We will keep a very close eye on this and incorporate any changes in the construction drawings.

GOOD DEAL

Doug Dodge at Acro Specialties is looking for someone to sponsor the second One Design. This one would be built from the construction plans to help insure that there are few mistakes in these drawings. This would certainly get you into a One Design sooner!!! Call Doug at 517-893-0801.

*Dan Rihn
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