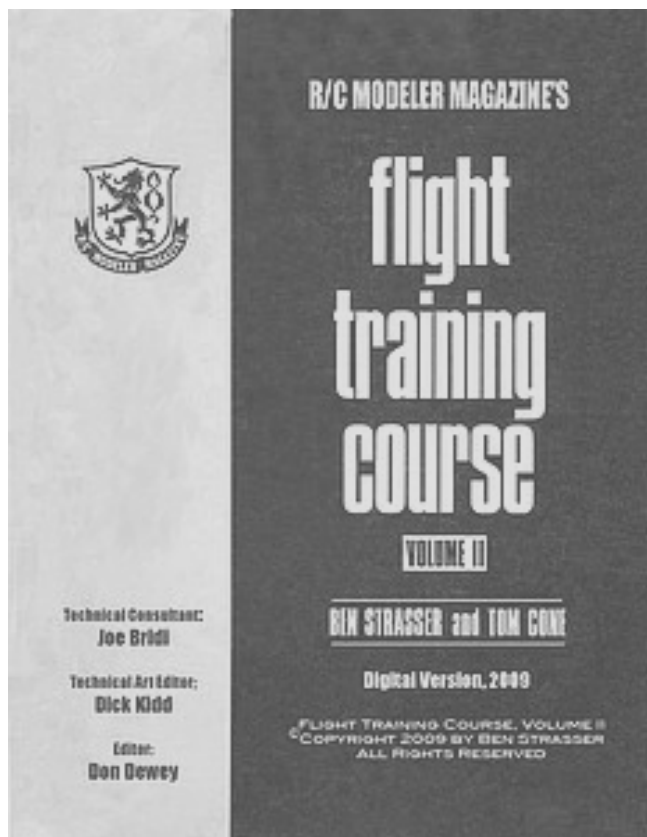


Classic Interview: Ben Strasser

Note from the Editor: *The “RC Aerobatic Holy Grail”, a phrase I penned in November of 2008 for a thread on RC Universe, was the catalyst for meeting Flight Training Volume II author, Ben Strasser. I was thrilled and honored to learn that Ben had seen my thread on RCU and decided to offer the publication on DVD.*

In my opinion, the 173 page book is without question, the finest and most complete book discussing radio control precision aerobatics ever published. When I say complete, I mean trimming, set-up, control input and background for THE elements of aerobatic maneuvers, practice, a construction article of Ernst Totland's Miss Norway (note that this is NOT included in the new DVD version) and there are photographs of the 1973 FAI World Championships. Rusty



RCM Flight Training Volume II

By Ben Strasser

Format: DVD

Street Price: \$19.95

Phone Orders: Cell (818) 571-7112

E-mail OKRCPilot@aol.com

The following interview was conducted via e-mail during the month of May and June 2009.

CP-T: *Ben, how long have you been involved in modeling?*

Ben: Well, my first recollections of becoming a modeler are when I was in elementary school in New Jersey. I was in the 4th grade (circa 1937/38?) and they

had some kind of a school-wide hobby contest. Anyway, I submitted a few small solid balsa display models (one of which was that beautiful swept wing Beech) I had previously built for my entry. Well, I didn't win anything. When my Mother talked to some of the judges afterward, who were neighbors, they told her that I didn't win because they were convinced my father had built them for me! Unfortunately, no one bothered to ask.

Later on I was involved on occasion in building “stick models,” for which I was never fully successful. The most fun was putting a thick line of Ambroid glue down the bottom, hanging a string from the back, lighting the string and watching the plane fly off to its' doom! Yup, I know I didn't invent that. Surely there are lots and lots of us who played the same game.

I really became what one might call a modeler with the advent of true proportional radios. (Remember the Galloping Ghost? No I didn't have one of those but at that time I thought it was a far advancement over the reed stuff guys were flying) Prior to that time it was build. Crash. Build again months and months later, then crash. And so on. Those pre-proportional days didn't offer much in the way of successful experiences and the enhancement of one's self-concept as a modeler, though lots of learning went on!

CP-T: *When did you become interested in radio control?*

Ben: Well, I've always been a “gimmick” person. When radio control was first on the scene (with large tube radios and planes that had to carry a rather large dry cell battery) in about 1957-8 I guess, I was an elementary school teacher at the time and on the side was working on an educational video on the Science of Flight. Needless to say, we promoted an R/C plane and radio from Babcock R/C systems. (I had never flown anything even remotely related to R/C at that time.) While all of the script writing and shooting was going on I was also building the plane and setting up the rudder-

only R/C system. We did get some footage of my R/C plane taxiing looking like it was ready to take off out at El Mirage Dry Lake Bed here in Southern California, but that was the best I could do. We did include that footage in the video and of course gave Babcock credit. But in reality trying to fly alone (I just didn't know anyone who flew R/C at that time) we really never got that plane airborne. That was my introduction to R/C. Then I waited and watched the on-going development of radios, receivers, servos, and such. Of course, as a teacher with Los Angeles Unified at the time receiving a monthly salary of \$350 take-home and working as a musician playing dance jobs on week-ends, there wasn't much left to spend on buying an R/C system! Finally though I managed to get myself a used proportional set and for my first times I was actually flying and bringing home a plane that was still flyable next time! Whew. My personal thanks to all those geniuses like Babcock Radio, Bonner, Phil Kraft, Orbit, and.... who made my success possible.

CP-T: *Where did you learn to fly?*

Ben: At some time prior to my real entry into the hobby LA County Parks and Recreation had built an R/C field at what we now call The Sepulveda Basin. There was a very large blacktop runway with a pit area. Unbelievable. (In later years that runway was relocated toward the western edge of the Sepulveda Basin when a road was added through the area and other park development took place.) At that time it was an otherwise unused area behind the Sepulveda Dam, constructed to tame the winter waters that previously would flood out parts of southern Los Angeles County. Well, it was when I found that wonderful place to fly and could meet and get lots of welcome help from other R/C guys that my real interest and enthusiasm for R/C bloomed. So, it was really my experience at the Sepulveda Basin that I consider it was where I really learned to take-off, fly around, land, and come home with a flyable airplane for next time!

CP-T: *What was your first radio controlled model?*

Ben: My first radio controlled model that I actually flew and enjoyed flying?

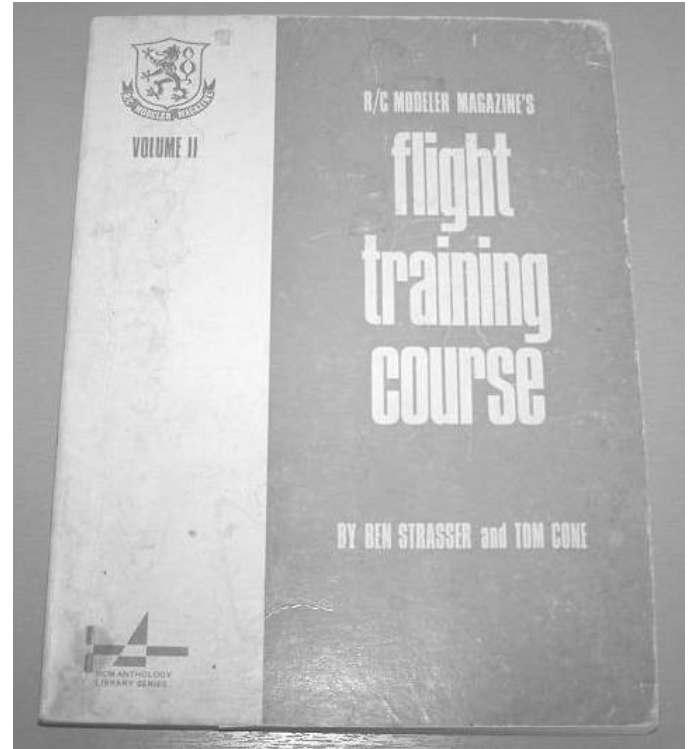
CP-T: *Yes.*

Ben: It was Joe Bridi's Kaos. Now flying that was heaven. My first concern about an R/C plane at that time was that it would land slow. And the Kaos could land so slow that with the plane at an idle and holding full up elevator it would just hang there in ground effect. To get it down all I did was simply ease off the up elevator. I even wore down some of the sub rudder because I'd come in for a landing hanging it at such a

nose-up attitude that with the nose and mail gear off the runway I could drag the tail on the blacktop. With that thick wing cross section and blunt leading edge it was just about impossible to stall! What a plane. Matter of fact, I still have a Kaos that I flew in the 1970's with many hundreds of flights on it. A few years ago I pulled the original Kraft radio and replaced it with a 6-meter Futaba as a way of paying homage to a great R/C plane.

CP-T: *When did you discover aerobatics?*

Ben: Well, remember that I have never implied I was or wanted to be a contest aerobatic pilot. As I recall I got



interested in flying some aerobatics or maneuvers after the point at which I was able to take off and land somewhat routinely and got tired of just flying around in circles up there. I'd see someone at the Basin fly a loop and that looked neat so I'd ask him how he did that. And with his words of wisdom I was flying something that sort of resembled a loop, in my mind at least. Then inverted flying, an axial roll, and spin about made up my repertoire. And while they were no doubt quite sloppy because I didn't really know how to finesse those maneuvers, I was at least proud of what I was learning to do up there!

Remember, in those "way back when" days we didn't have any of the wonderful computer capabilities we have now. For example, if you installed your elevator linkage, and the elevator went the wrong way, there was no transmitter switch to correct that. You had to switch sides on the servo output – if that was possible. Sometimes it meant removing and reinstalling the servo to move it over because that was the lesser of two evils;

when it was too involved to relocate the hardwood pushrod that was used at the time. Or sometimes it meant taking the servos to our local RC guru to have the internal wires switched so the servo would operate in the opposite direction. If the control surface moved up and down too far, you had to experiment with changing holes in the servo output and/or the clevis horn at the control surface end until you got it right, or at least nearly so. That was what it was like, back then before the days of the chips...

CPT: *Tell us about your education career path?*

Ben: Gad, my education career path is more or less the story of my life! Well, since I was in about the 4th grade and started playing trumpet, my goal in life was to become a professional musician. Played in the school band and orchestra and had my own “dance band” in high school for which I studied and learned how to write my own arrangements. Then, when I graduated from high school I went to a local junior college, taking all and only all the music courses I could find. At the same time I was also working full time as an aircraft engine overhead inspector at Pacific Airmotive located in Burbank. One day I got a letter informing me that the California National Guard unit I belonged to was called up and I was in the army. It was at that point at which I really benefited from all of my years behind a trumpet and learning to write arrangements because I auditioned for and was able to join the really outstanding 120+ member 40th Division Army Band.

As Army bands go this one was special because it was



comprised of musicians like myself who had joined the Guard to avoid the draft rather than guys who joined the Army then decided that the Army Band was a good place to be! We also had two dance/show bands made of the Division Band guys. Because I had a complete “book” of arrangements, I led and wrote arrangements for one of them. We played dances, officer’s clubs, and Division special service shows. After about six months

at what was then Camp Cook (now Vandenberg) we were shipped off to “occupy Japan.” And, as far as we all were concerned, that was great duty. The Division Band played various Army-related events and concerts including the then great Ernie Pyle Theater in Tokyo. And my dance band was also kept busy. Called the Night Winds, we even had a weekly Armed Forces Radio Service hour radio show. And thanks to the US Army, I was what I had always wanted, the life I had wanted to lead, that of a musician! After about 10 months of that wonderful duty in Japan, we were sent to Korea, though, thank goodness, things were quiet at that time. Four months later our enlistments were up and most of the 40th Division Band members were sent home and soon I was back at work at Pacific Airmotive. But now I had the GI Bill and was able to study music at a well-known institute in Hollywood – four nights a week after work. However, that was about the time that guitars began to rule the music business and my kind of big band stuff was becoming passé. As I realized what was going on I decided that the music business wasn’t for me and enrolled in college full time to get a teacher’s credential. And I loved every moment of it, completing work to get my BA in about a year ahead of schedule. Good thing though because my GI Bill ran out the last day of my college work! And I was immediately hired as an elementary teacher for the Los Angeles Unified School District.

In addition to the horrendous challenge to the first-year teacher preparing lessons and so on, that was a new kind of fun for me because I was always interested in science and did all kinds of science stuff with my students – which they loved! And because of my music background I got the principal to pay for tonettes for each of the 40 kids in my class and they all learned how to play some songs. So I really enjoyed all of that variety in the classroom very much – as did my students. Meanwhile I continued going to the local Cal State Northridge working on my MA – administrative credential. That led to my getting offered a position with the Los Angeles County Office of Education as a science consultant – as well as a very serious pay raise! In that position we worked with all of the 70+ school districts in Los Angeles County. They ranged in size from the behemoth Los Angeles Unified to our one-room school in Gorman, with all kinds and sizes of districts in between. And I was knee-deep in my first love; science.

During my 45 year tenure with the Los Angeles County Office of Education after about 15 years or so my position changed from science consultant to a consultant in Teaching Strategies and became co-director of the Teaching Strategies Center. In that role we developed training systems for teacher aids, teachers, and

administrators of Los Angeles County Schools – though we also provided occasional service to districts outside of LA County including the California State Department of Education. Our staff of four conceptualized the training programs we offered, we developed all of our own written and related media training materials, and, produced all of our own videotapes that were used in our training programs as well as training for the California State Department of Education. That experience got me very involved in writing and well as video production work. Presently I am enjoying being retired, though I'm not sure what that means to most people. I work on my R/C airplanes, get out flying twice and sometimes three times a week, do some commercial video production work (which I'm doing between these paragraphs) and try to keep up with some of the maintenance on my 40ft. sport-fisher boat, The Centerfold. That's my definition of retirement!

CP-T: *How did you get involved with RCM?*

Ben: Well, I wanted to get myself one of those new Kraft Proportional R/C Systems, at that time selling for \$900. And because that was clearly something I could not afford on my teacher's salary, I decided that one thing I believed I could do was write about getting your first R/C airplane set up and flying. But I also realized that my experience was somewhat limited, having only built a few R/C planes at that time. So, I called Phil Kraft, whom I did not know personally at that time, and asked if I could have a few moments of his time to meet with him about a project I had in mind. Thankfully, he agreed.

I drove down to his business near San Diego and told him that there was need for the type of book I proposed (there were few if any such books available at that time as I recall). My proposition was that I would meet with him to discuss various installation techniques and so on. I would do the writing, submit to him for editing, then, when complete, Kraft would sell the book with Phil Kraft as the senior author. And my payment would be a shiny new Kraft proportional R/C system! He agreed and I started work. On occasion I'd drive down to meet with Phil and the book began to take shape to the point at which it was just about done, short of a final read by Phil.

Then I got a call from Don Dewey, who owned RCM. Don said that he was working on the same kind of book that he learned from Phil Kraft I had been doing. (Apparently as part of his RCM business, Don Dewey knew and was friends with just about everyone of note involved in R/C) Don asked if he could see my table of contents and a chapter or two. Much to my surprise in having Mr. Dewey contact me, I found time to get up there, share my table of contents and drop off a couple of

chapters. While meeting with Don I noted that I had been working with Phil Kraft, and Don said Phil told him it would be ok with him if I were to sell what I had done to RCM.

On the next day Don called and said that he wanted my book! When he asked what I wanted for it I said that I had been doing the writing because I wanted a new Kraft proportional radio. Don's agreement with me was that the book, RCM's Flight Training Course (volume I) would be published with him as the author. He would, however, give me credit for my work in the forward. And that seemed great to me because I was about to get what I had been working for. And while many in the hobby knew RCM and Don Dewey, no one but my wife and kids knew Ben Strasser, so it was clear to me



that with Don's name on the book certainly more would be sold. Two days later I received a brand-new Kraft proportional R/C system with about 10 servos and a life-time subscription to RCM. Wow. Things just couldn't get better than that. I had a new Kraft proportional R/C system; then undoubtedly the best of the best in R/C systems. I bought one of Bridi's Kaos kits and started building!

CP-T: *When did you meet Joe Bridi?*

Ben: Actually, since Joe Bridi flew at the Sepulveda Basin I had talked to him on occasion about trimming and flying my Kaos. For example, I had found that when flying the Kaos straight and level and giving some left rudder, while it would push the tail slightly to the right, the plane would fall off into a right bank! When I asked him about that his comment was, "Yes, isn't that interesting. It's adverse yaw." Then, when I received approval from RCM to work on Volume II, Flying Maneuvers, and asked who they would recommend as a current, well-known pattern contest winner, they recommended Joe Bridi. Joe and I met and the book was on its way. After the book was done Joe hired me to

write the building instructions for all of his kits and also he wanted me to take over coordinating their advertising. So I worked with Bridi Hobby until the time when Joe and his partner Lou Stanley sold their company to Great Planes.

CP-T: *Were you involved in the development of any of the designs?*

Ben: This is an easy one; no. Lou Stanley, Joe's partner was the airplane design genius. The only time when I became involved was when I was building the prototype. Once in a while I'd run into some assembly problem that would not work as I was writing the assembly instructions or building the prototype. Then I would meet with Lou and he would come up with a solution. I never actually participated in the real design of any of their many kits however. I was what one might call a feedback person when it came to assembling their designs.

CP-T: *How many of Joe's designs did you complete a construction article?*

Ben: I started working for Bridi Hobby after they already had the Kaos and RCM Basic Trainer and RCM Trainer available. So I worked on all of the kits they produced after those first kits; from the 40 size Kaos,



Dirty Birdy, all of their fiberglass scale kits including but not limited to their Shrike, F7 Tigercat, and so on, until they closed their doors. So my answer is, I really don't recall. All of them!

CP-T: *The construction elements for the photos, did you do the work?*

Ben: Re the construction photos, yes, I shot all of them as I was building the kit prototypes and writing the assembly instructions. But let me differentiate here between the model prototype and the kit prototype. Joe and Lou had always built and flown the models before the kits were designed. I was not a part of that process.

Then, when Lou would design the kit and come up with the first set of manufactured parts for the kit, that's when I came onto the scene; to use the kit parts to build and test fly the kit prototype. And that was really very interesting and fun work because I really enjoyed working with Lou and Joe, especially for all that I was learning from day to day; model to model, about building and flying R/C models.

CP-T: *I loved the perfectly applied "center-lines" on all of the parts. Did you do those?*

Ben: Bridi would have already applied the lines and cut-out all of the parts as well. Remember, this was produced before Photoshop so I would use a razor knife to sharpen some of the lines.

CP-T: *Did you build the proto-types?*

Ben: Yes, I did complete all of the prototype models and flew them, but with some exceptions as far as the flying was concerned. For example, when the Shrike and F7 Tigercat kits came out, for example, I was not expert enough to fly those planes; that was Joe's job. That was also the case for several of their later scale kits. I'd get them together basically to write the assembly instructions and make sure all of the kit parts worked and fit, but Joe and his and Lou's friend Nick Zirolì, as I recall, would do the test flying on those models.

CP-T: *The Anthology Series, was this a Don Dewey idea?*

Ben: Well, RCM had been doing anthology stuff before the two volumes of the Flight Training Course in which I was involved. Then RCM asked if I would like to do the anthology of their Ford What It's Worth Column. I did several volumes of that before Jerry Smith agreed to take over the monthly feature and he then did all of the following FWIW anthologies. I also did several anthologies of Clarence Lee's Engine Clinic articles. While very challenging because in both cases I had to determine the various categories of the articles and sometimes revise an article that covered several topics to the article could be separated and grouped accordingly, both kinds of anthologies were a great experience. Imagine getting paid to read and really think about each and every article, letter and Clarence's response to those letters that appeared in his column. I don't recall exactly how many of Clarence's anthologies I did of Clarence's articles, perhaps 3 or 4?

But getting back to the Flight Training Course, as I stated earlier I was working on the Flight Training Course with Phil Kraft just about the same time Don Dewey was either thinking about doing the same thing so I guess you could characterize Volume I as two

people identifying and responding to the same need. On the other hand, the Volume II which centered on following up Volume I with learning to fly the various basic maneuvers, that was all my idea. I wanted to learn how to make my plane do some of those neat things up there. With the support of RCM and Joe Bridi I was really involved in a super training program during those years. I must add that Joe was a really great guy to work with all of the way from start to finish.

CP-T: Tell us about RCM's Flight Training Course, Volume II, a truly awesome work, fantastic detail and concepts...your thoughts, Joe's thoughts?

Ben: I sincerely appreciate those very nice comments. Well all of the detail, concepts and so on were my baby. Joe and Dick Kidd of RCM decided what maneuvers should be included, but after that, it was my job. I first turned to Tom Cone, a very competent R/C pilot and really nice guy (who was credited as my co-author because without him there would have been no book!), to demonstrate the maneuvers for me and help me find my way through them. As I worked I simply kept mental track of what I was going through. It was my learning experience which then became the basis of each chapter. Then Joe would enter the scene, review what I had written and make editorial comments. We would then sit and talk about flying that maneuver in a contest while I listened, tape recorded his comments, and kept notes. That unique viewpoint of the accomplished contest flyer added a lot to each maneuver. Then we also decided to dedicate an entire chapter to flying in contests, based, of course, on Joe's experiences.

Remember, I have been a life-long professional educator; teaching was my business. And true teaching means getting down deep into the content with which you are concerned, figuring it out from the inside in a way that makes sense to others, then putting that together. That, in truth is what real teaching is all about. While working for Bridi Hobby (I came up with the name they used on all of their kit boxes, BRIDIKITS!) I was working full time first as a science consultant then consultant in teaching strategies for the Los Angeles County Office of Education. My job was to develop training programs, including conceptualizing what was to be learned, developing all of the written support material, producing our training-related videos and so on; that was what I did. So my way of thinking about learning; breaking what was to be learned by teacher and administrators into make-sense, learnable, achievable steps, was my job. So you can see that my work on Volume II was essentially the same kind of thing I was doing from day to day and what I found challenging and what I enjoyed doing. The way the various maneuvers

are written simply captures my way of thinking and learning about them. It's really nothing more than that.

CP-T: Was there discussion about a manual III and what would be included?

Ben: Well there was no discussion about a Volume III after the Volume II was written, Volume II was a lot of work and took well over a year to write. No doubt some of my sense was, "Been there, done that." And there was the problem with all of RCM's anthologies, (of which they had many I might add and many different authors who wrote them), including the Flight Training Course volumes. All of their productions were additional work for the RCM's normal magazine production staff. That is, when I would meet with RCM's graphic artist, for example, it was between her work on coming issues of the magazine. When I would meet with some of the really wonderful ladies who were typing the galleys (this was long before the days of MicroSoft!) to review and perhaps edit what they had done, that meeting was in the middle of their work on coming magazines. So, all of the people at RCM were working full speed all of the time. Each anthology or other RCM production was additional stress on them. And all of that came in about the time that Don Dewey started his monthly Aquarium Magazine – again which depended on the time and talents of the existing RCM staff. So their production of anthologies became, for the most part, a thing of the past.

CP-T: Are you still involved in modeling today?

Ben: Very much so, although since RCM's demise I no longer write product reports and other things which I did for RCM for many years.

I must add that while I enjoyed doing product reports for different airplanes, some of which were for planes I wanted to build, now I only build or work on those planes I want to fly. I presently belong to three active R/C clubs in the general area and have a lifetime-desired work area for my planes with three work benches, lots of light and lots of room to hang my many, many flyable models during their trips to the field. Recently, with the tremendous advances in electric motors and batteries all of my recently built or ARF planes such as the Yak, Sukhoi, Kantana, seaplanes, float planes, foamies, and such are electric, though they are not the larger 1/4 scale electrics. And, of course, while I still fly all of my 2/4 stroke glow planes on my reliable Futaba 8UAPS on six meters (got my license when they were having trouble on 72 with third-order interference), all of my new electrics are flying on 2.4.

Classic Flying: Flight Trimming and Set up

***Note from the Editor:** Many of you may not be familiar with one of America's pattern flying giant's, Dave Guerin. Dave Guerin is a world class pattern aircraft designer, builder to the "stars", former F3A Team Manager, USA FAI Selection Committee Chairman and AMA Pattern NATS Contest Director 2005-2009.*

In 2006, Dave and I created a precision aerobatic clinic curriculum geared to the most accomplished pilots and callers, to level the playing field for potential USA F3A Team members. The clinics were conducted in 2006 and 2007 in Green Sea, South Carolina, Milwaukee, Phoenix and Chicago to over 100 attendees with very positive results.

*The concepts and processes that Dave discusses can be applied to ANY model airplane. It is amazing how much more fun it is to fly the typical airplane that is properly trimmed! Future articles will discuss coaching, practice and contest preparation. **Rusty***



Flight Trimming and Set up

By Dave Guerin

Flight Trimming

CG location

We require our aircraft to fly straight and level, straight up and down, and inverted with a minimum input, and not be speed sensitive. Not a small order. The center of gravity or balance point is the starting point of all trimming because it affects every trim function on the aircraft. Without going into a long explanation I will attempt to explain how center of gravity location affects our aircraft. Every aircraft design has an ideal center of gravity. Airfoil design and wing plan form will determine where the CG will be on a given aircraft.

It would appear that we can compensate for nose heavy or tail heavy conditions to some degree with incidence or elevator trim, but we pay a price. In the case of a nose heavy condition we are using the stab to hold the tail down. In a tail heavy condition it is holding the tail up. As speed changes the wing and stab are either more or less effective causing the aircraft to climb or dive.

1. Any time a control surface is not trimmed to neutral its effect is speed and attitude sensitivity. The term attitudes relates to whether the aircraft is flying upright, inverted, or straight up and down.

2. When the aircraft is flying vertically the wing is no longer lifting the weight of the aircraft so the elevator trim is no longer correct.

3. In knife edge flight the wing is vertical and not lifting, the elevator is now a rudder steering the aircraft.

4. When the aircraft is inverted any trim used to compensate for CG error will be backwards. Nose heavy will dive and tail heavy will climb.

Therefore; aircraft trimming must start with setting the correct CG.

Flight trimming begins with verification of the CG location. **Do not do anything until this is done.**

The correct procedure is to trim the aircraft for straight and level flight, then roll to inverted and note the amount of down elevator required for level flight. A slight amount of down should be required. Land the aircraft and adjust if necessary.

Incidence Settings

Elevator

After the CG is correct note the neutral trim setting of the elevator. If it is slightly up add more positive incidence to the wing. If it is down reduce the incidence.

Test fly, trim for level flight and check again. Repeat this process until the elevator trim is neutral.

Ailerons

If the ailerons are not neutral with the aircraft trimmed to fly straight and level the wing incidence must be adjusted again. If an aileron is up that panel has too much positive incidence. If an aileron is down that panel needs more positive incidence. Adjust, fly again and re-trim. When you are satisfied everything is correct there is one more test.

Fly to a comfortable altitude, reduce throttle, and point the nose straight down. Note if the aircraft rolls to the left or right on the down line. Repeat as many times as necessary to be sure. If the aircraft rolls left reduce the

incidence in the left wing panel or increase the incidence in the right wing panel. Repeat the test and re-trim until the roll is eliminated.

Thrust Settings

Assuming you have done the other steps correctly the only setting that is effective in vertical flight is thrust. **Do not change anything else!**

To determine if the thrust settings are correct pull the aircraft to vertical and note if it moves to the left or right or toward the canopy or the bottom. Add or take away thrust angle until the aircraft goes straight up.

Note: Some aircraft propeller combinations require extreme right thrust angles to make hands-off vertical lines. Experience has shown that extreme right thrust can cause problems in horizontal and inverted flight at cruise (mid range) throttle settings. If this becomes the case it is wise to reduce the right thrust and deal with the issue in a different way. We will cover this in Set-up.

At this point the basic trim is complete, but because there is some interaction between CG location and incidence settings it would be prudent to verify the CG again.

Set Up

Control Surface Deflection

To maximize servo resolution it is necessary to use 100% servo travel where possible.

Use the dual rate function in the transmitter to adjust the aileron and elevator throw until the aircraft is comfortable to fly. Remember- at this point we are adjusting for high rate. Now measure the amount you are using at each control surface. Write it down. Return to high rate at the transmitter and mechanically adjust each control surface to the new throws. You now have set the high rate throws with 100% servo travel.

At this point you should zero out the dual rates and add new values for low rate as necessary.

Note: The dual rate function is used for this exercise so that the servos are mixed together, such as ailerons will track the change together. They will not track together in end point mode.

Aileron Differential

It is important that our aircraft roll around the thrust line in order to track straight in vertical lines. There are many factors that influence the amount, if any, that is required for a given aircraft. Top hinged ailerons are an example that can be a real challenge. This is a real trial

and error exercise, but is important and worth the time and effort.

Mixing

Mixing is the last resort to be used only when all other trim options have been exhausted. Mixes are control surface deflections and are speed and attitude sensitive. **Use with caution!**

Pitch Mix

The most common mix is pitch, usually more with left rudder than with right. The mix will not be the same on both sides because our aircraft are subjected to spiral air flow from the propeller.

The mixing requirement can be checked either in knife edge or straight and level flight. I prefer to use straight and level because that's where we use rudder most for positioning and heading corrections.

Set up the mix function in the transmitter. Fly the aircraft straight and level and apply rudder. Note any pitching, add the appropriate mix and try again. Repeat as necessary.

It is wise to verify mixes on a vertical line to be sure you have not created a problem with inputs and attitude.

Thrust Mix

Thrust mix is used to correct the need for extreme right thrust. An incremental mix function can be set up to add right rudder at higher throttle settings.

Exponential

Exponential is a great tool for making an aircraft feel comfortable, but if used to extreme it can create some spooky results. A large amount of exponential creates a soft spot around neutral which may feel good in calm air but makes it difficult to correct for turbulence because of the amount of stick deflection required. The result is you tend to get behind with corrections.

A large amount of exponential creates a sharp curve at approximately half stick deflection making it difficult to smoothly transition through that area.

Propeller

Engine and airframe propeller combinations need to work together to optimize performance. Experimenting with different combinations of propeller pitch, diameter and number of blades can help optimize throttle management and overall performance.

Don't be afraid to experiment!

Classic Alerts: Breaking News and Pricing...Free!

Want to know the latest items offered on E-Bay, RC Universe, Flying Giants and the World? The Classic Pattern-Trader is pleased to announce "Classic Alerts", another no fee, no hassle service delivering the latest items available to the subscribers of the Classic Pattern-Trader, E-Bay, RC Universe and Flying Giants.

What is the format? All Classic Alerts are e-mails from boyd.dose@att.net with a one page attachment.

How to subscribe? If you are already receiving the Classic Pattern-Trader directly from Rusty (boyd.dose@att.net), you're signed up! Send an e-mail boyd.dose@att.net with "...send me Classic Alerts..." somewhere in your message and you are on done.

How often will Classic Alerts be sent? As often as cool stuff or special is found or special news.

Sample:

E-Bay Item #: 370215996229
Auction End: 6/21/09 @ 5:45 PM
Bridi Utter Chaos "60"

Wing Span: 63.25"
Wing Area: 700 sq inches
Engine: .50-.90 glow



Classic Links:

Classic Pattern Image-base and more

www.trentonrcflyers.com/pattern/pattern1.htm

Ballistic Pattern Association

www.ballisticpattern.com/

Senior Pattern Association

www.seniorpattern.com/

Vintage R/C Society

www.vintagercsociety.org/

World's largest R/C Pattern hobby shop

www.centralhobbies.com/

Tower Hobbies

www.hobbico.com/

Futaba (I am a Team Futaba member)

www.futaba-rc.com/

YS Engines (I am a YS Team Member)

www.yspartsandservice.com/

The best graphics, best service and value...period!

www.badbradgraphics.com/

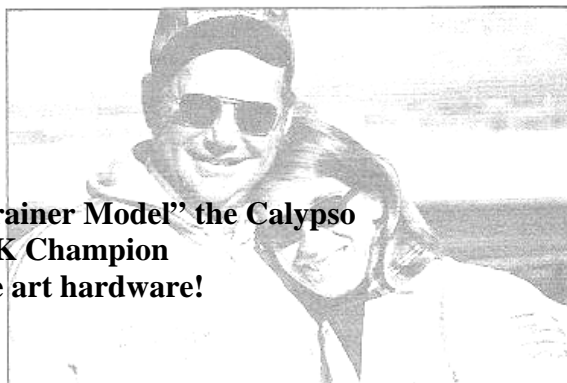
Classic Future Features

September 2009



Flight Report: Hanno's WC "Trainer Model" the Calypso
Flight Report: Sig Komet vs. MK Champion
Rig your Classic with state of the art hardware!

December 2009



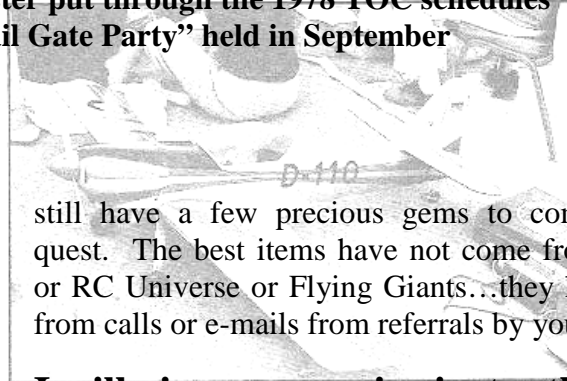
Hanno Prettnner and his championship Dalotel DM-165.

The famous team of Dave and Sally Brown.

Build the Model Airplane News Spinks Akromaster...6 flown @ 1978 TOC!
Flight Report: M.A.N. Akromaster put through the 1978 TOC schedules
Report from "Rusty's Classic Tail Gate Party" held in September

Classic's Wanted

The Classic pattern-Trader was originally created to find more classic pattern kits, engines and accessories...for ME! I have actually managed to find most of the items have been searching, but I



still have a few precious gems to complete my quest. The best items have not come from E-Bay, or RC Universe or Flying Giants...they have come from calls or e-mails from referrals by you! **Rusty**

Call or e-mail if you find them, I will give you a price instantly!

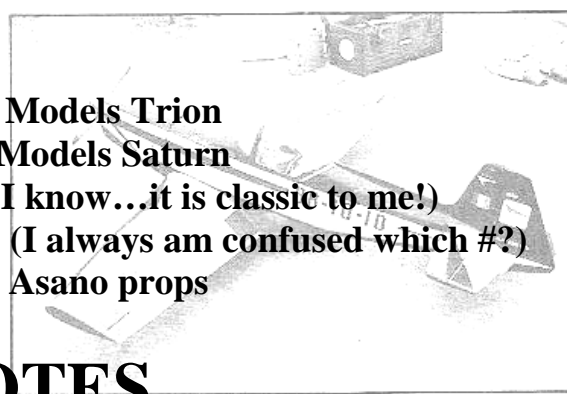
Ivan Krieger's new model kit to the classic

Malcolm's new model kit to the classic

Rusty's Most Wanted:



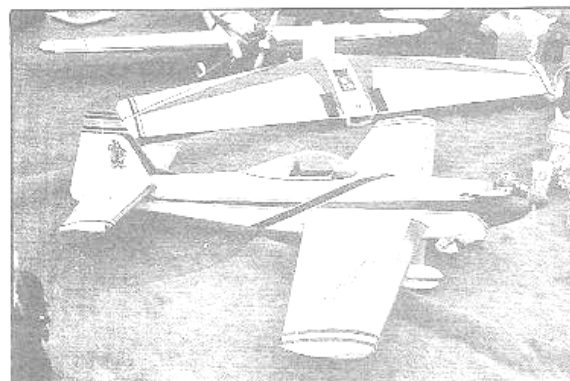
Fliteglass Models Trion
Fliteglass Models Saturn
Airtronics Gere Sport (I know...it is classic to me!)
Webra .61 RE from 1981 era (I always am confused which #?)
D&W or Asano props



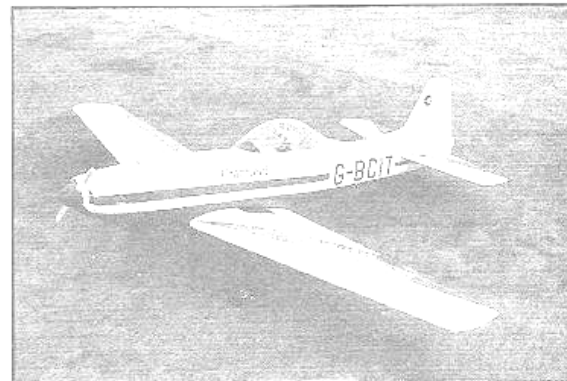
NOTES

Dean Koger had a pair of Laser 200's.

This beautiful Zlin 526 AFS belongs to Benito Bertolani.



A neat Spinks Akromaster by Fred Kugel.



Gunter Hoppe's Cranfield A1 has a jazzy pilot.