



THE MAX-OUT

Newsletter of the Magnificent Mountain Men

AMA CHARTERED CLUB #177



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2018-03 (May-June)

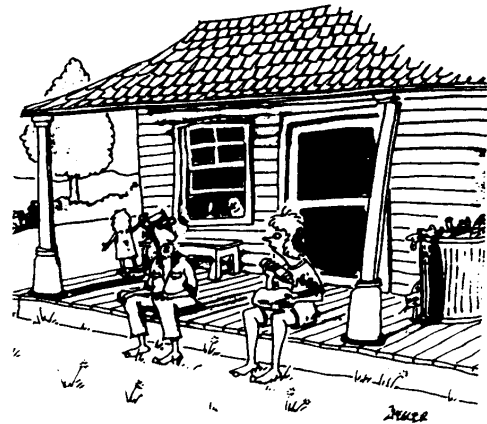


PONDERINGS DEP'T

I seems like a loong time since I put out an issue, but here it is! There is this stretch in the beginning of the season where some things have to gel and reports have to be written. However, we pile through it all and they are compiled here. Coupled with out of town travel and family affairs the outdoor season is in full swing.

The MMM club has had a noticeable presence with newcomers like the Crosswinds RC Club in an "Alpha" contest, the SciOly Nats in Ft. Collins, CO and the annual Youth and Newcomers Contest.

A new insert is the Cat Box article, with more to come, by Bob Miller. If anyone builds more CLG's than him I would like to hear it. He built in the hundreds in the past few years and wants to share some of his "finds."



"Ma ...

"Ochroma lagopus in perpetuum"

Thermals!, or heat from the lights, or whatever...

Rick

"The MAX-OUT" newsletter is printed "periodically" about the second or third (?) week of the month. Submissions should be not later than the end of the prior month.

TO JOIN THE CLUB OR SUBSCRIBE

- Full membership is offered to any current AMA member: \$40
- Newsletter Subscription Only: \$15
- Send \$ to:
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MMM MONTHLY GET TOGETHER MTG!

Every *Second Thursday* at 7:00 PM, Dinner at the Castle Cafe in Castle Rock. Check with the Yahoo web group for info.

Operating the club and providing you with great flying opportunities whether indoor and outdoor, it does cost money and we solicit contributions to help offset that cost. You can donate directly to Chuck Etherington or use the MMM Paypal opportunity noted below.

Motorcycle Use on the Field Policy:

*Follow the roads wherever possible
Take the shortest path possible to the plane in order to retrieve it. Avoid riding through noxious weeds.*

MMM Now accepts "PAYPAL" for Dues, Contest Entry Fees, Etc !!

- Simply Log in to paypal.com (or create your own 'PAYPAL' account if you want)
- Click on "Send Money" in the upper menu bar
- In the "To" block, type in mmmffclub@gmail.com, the amount, and click the button "Services"
- In the next form where you confirm payment, in the Lower "Subject" and "Message" boxes state what the money is for... annual dues, entry fees and such.

PRESIDENT'S PONDERINGS



The 2018 outdoor season is off to a great start. A very nice addition to the field this year is the pair of professionally painted **MMM Club signs**—one at the Quincy Gate and one at the turn-off from the paved access road to the dirt road leading to our site. Darold Jones made these signs, and they do the club proud. Thanks, Darold!

Other thanks go out to the four MMM members who supported the **Science Olympiad Nationals** in Ft. Collins on May 19. Ray Boyd, Chuck Etherington, Jerry Murphy, and John McGrath worked a very long day at timing duties. You guys did a great job supporting the best and brightest among America's youth. And you did invaluable work in promoting free flight.

The first Scramble of the year was on April 29. Thanks to Darold Jones for taking the reins as CD when Rick Pangell had to step down for a wedding in the family. This Scramble featured a special **AMA Alpha event** for our friends in the **Crosswinds RC Club**, who are fellow lessees on the Lowry Ranch field. Thanks to Murph and Rick for proposing the AMA Alpha event—and to Murph for running it on contest day. Despite less-than-pleasant winds, I understand it went well and everyone had a good time.

Thanks also to all the **guys who donated money to buy AMA Alphas** for the Crosswinds fliers, as well as for the subsequent Youth and Newcomers Contest. Donors include: Mark Covington, Chuck Etherington, Darold Jones, John McGrath, Jerry Murphy, Rick Pangell, and myself. If I've left anyone out, please let me know.

The annual Kids' Contest is now called the "Youth and Newcomers Contest." This is to reflect the fact that we welcome newcomers of all ages. It was held Sunday, May 20, in conjunction with the May Scramble. This year, we provided the contestants with ready-to-fly catapult gliders (Air Rippers Sky Riders, from Wal Mart) and AMA Alphas. We had four eager young fliers, and they all had a great time and put in some very impressive flights. Details are elsewhere in this issue of the MaxOut.

Speaking of Scrambles, don't forget that we're promoting **Legacy FAI** this year. So, dust off those old F1A, F1B, F1C, F1G, F1H, and F1J models and come on out to share in the fun. At each Scramble, there'll be a **\$10 cash prize** for the highest Scramble score for a Legacy FAI model.

We'll also be featuring Legacy FAI in the annual **14 Rounder Contest**, which is only a few weeks away—June 22-24. You may remember that at the club annual business meeting in December, we voted to move up the dates for that contest by a couple of weeks. This was to avoid conflict with the AMA Nats, which are held in late July. The 14 Rounder kicks off with the F1E (slope soaring) Team Selection Finals, which will be Saturday, June 22, at our Indian Point site north of Quincy Ave. Our own John McGrath will be the CD. Thanks for taking on this very important job, John!

Please consider **volunteering** to help with timing, scorekeeping, or other duties at the 14 Rounder. It takes more than just the CDs to successfully run a contest of this size. Fortunately, in past years, the club membership has been very generous in helping out. I'm hopeful it'll be that way again this year. I'll soon be sending out an e-mail requesting help.

It's great to belong to such a fabulous club! Wait a minute, I think there are thermals out in my front yard. **Hey, let's go flying!**

Pete

4/29 Scramble

CONTEST REPORT, APRIL 29, 2018

Darold Jones - CD

I left Colorado Springs with the flags all hugging their poles. I also noticed as we turned onto Lincoln Ave. that the flags were more standoffish. Got to the field and the winds were flyable but just barely.

Mark Covington was flying HLG with some success, but none of the rubber fliers were having any luck. David Aronstein was on the field with some well built models and got in a few short flights. The only other official flights were posted by John McGrath with a P-30. We had a total of 8 MMMers who signed up. Chuck Etherington and Jace Pivonka were on the field to help with the RC contingent.

The bright spot of the day was when the Crosswinds RC Club contingent began arriving about 11 am. We furnished them with AMA Alphas and proceeded to trim them for maximum flight performance. This was difficult as the wind was blowing right at the maximum for sage ground handling of the Alphas. They finally managed some 30 second flights and had a lot of fun doing that. Monica and Kate, whom we had met at Manitou High School gym as they were preparing for the Science Olympic competitions were there. Kate (a Junior) was also given an Alpha and got in some successful flights. We staged a mass launch for all the new Alpha flyers.

Sadly, the wind continued to increase in the afternoon and we all left the field about 3 pm.

2 Minute

John McGrath P-30 149

HLG/CLG

Mark Covington 299



Contest Report: 2018 Youth and Newcomers Contest

by Pete McQuade, CD

What's in a name? Shakespeare once asked that, and so did John McGrath. Thus, our annual Kids Contest has become the Youth and Newcomers Contest. This makes it clear that we're rolling out the welcome mat to new fliers of all ages.

Although we had hoped to have two adults join us this year, schedule conflicts intervened, and it was a kids' affair after all. So, when the two-hour contest started at 9:00 am, we had four eager young fliers waiting to take advantage of the light winds: Thomas and Megan Monda, Will Wengrovius, and Skilly DeLoach. For their \$5 entry fee, each contestant received a Sky Riders ready-to-fly catapult glider AND a slide-together AMA Alpha rubber model. (Thanks to the MMM members who donated money for the Alphas! They're mentioned by name in this month's President's Corner article.)

Several adults pitched in to help the kids trim their models, and everyone enjoyed seeing the delight in the young eyes as their models began to perform better and better. With the weather holding nicely, official flights began to fill the sky and impressive scores populated the scoresheet.

Skilly DeLoach had her catapult glider tuned to a fine competition edge and snagged a thermal on her first flight for a terrific 47 sec flight. Her other two flights were excellent as well, to vault her into first place with a three-flight score of 96.9 sec. Megan Monda also had a fine first flight that helped her garner second place, with a total score of 33.6 sec. Will Wengrovius and Thomas Monda weren't far behind and finished within half a second of each other at 24.5 and 24.1, respectively.

In the AMA Alpha event, the great performance of Rob Romash's design made the flying a joy for the kids. This was doubled because of the batch of 1/8" motors

that Jerry Murphy made up for everyone; this gave the models the power to quickly get up and out of ground turbulence. Also, Don DeLoach came up with an idea and John McGrath advised everyone that adding a bit more dihedral to the wings, by means of a piece of Scotch tape stretched across the center panels would prevent spiral-in during the power burst. Megan Monda launched into a nice thermal on her second flight. Buoyed by the many "oos" and "ahhs" from the spectators, the model stayed aloft for an amazing 76 sec. Her final three-flight score of 110 lofted her into first place. Her brother, the ever-smiling Thomas Monda, was close behind at 92 sec, by virtue of consistent flying on all three flights. Skilly DeLoach had some very nice flights to grab third place with a 70 sec score. Will Wengrovius also had good flights, and finished fourth with 50 sec. Excellent flying, all!

We were fortunate to have a pair of very special visitors. Eileen and Dave Zeigler of Fayetteville, GA, were in town following the Science Olympiad Nationals in Ft. Collins, and they stopped by to see the kids fly. They're the owners of Freedom Flight Models and, their kits are widely used in Sci Oly. They're a great asset to the Free Flight community. Dave had heard about the fabled field we fly on, and he was amazed and delighted to finally see it.

When 11:00 am rolled around and the awards were given, the smiling faces on the podium said it all. Every contestant—and the parents, too—said, "We'll be back next time!" The entire MMM will be counting on it. Be sure to check out the photos from the contest on the next page.

Photos from the 2018 Youth and Newcomers Contest



Will Wengrovius, center, confers with his team of expert advisers: his dad, Jack, in red, Chuck Etherington, left, and Murph, in blue jacket.



The Monda family: Thomas, on left, about to launch; Megan, winding with her dad Eric. John McGrath, mentor par excellence, watches Thomas.



Father-and-daughter team, Skilly DeLoach, left, and Don. She's holding her AMA Alpha model. She was first in Catapult Glider.



Eileen and Dave Zeigler, proprietors of Freedom Flight Models, stopped by to wish the kids well. From Fayetteville, GA, they supply kits for Science Olympiad and were in Colorado for the Sci Oly Nationals at Ft. Collins.



Winners of the Catapult Glider event. The muffins given to all participants are only partly responsible for the big smiles.



And here we have the winners of the AMA Alpha event.

Contest Report: May 2018 Scramble

by Pete McQuade, CD

The Youth and Newcomers Contest is a hard act to follow, but right after the kids had stopped flying, the May Scramble got underway. Perhaps it was poetic justice, but the light winds the youngsters had enjoyed abandoned us and a steady cool breeze became the order of the day. Cool temperatures and significant overcast were thrown into the mix, and the stage was set for some challenging flight conditions.

Just after the start of flying, Herb Kothe and Don DeLoach strode confidently out to the launch area with their Old Time Rubber models in hand. It was time to settle a certain ambiguity that had persisted over the winter. At WESTFAC 6 in Arizona in October, 2017, they had tied for first place in OT Rubber. Now it was time to throw down the gauntlet and decide who should wear the crown. On command, they launched simultaneously. All eyes were on the models as they spiraled together, upward and away in what could have been a finely choreographed dance. Several times, it seemed they would surely collide. They eventually found their own ways, and when the dance was done, Herb walked away the laureate.

Soon after, Mark Covington was in action and he continued to be so all day, with his tip-launch HLG, his CLG, and his Classic Towline glider. He showed everyone that this was going to be nobody's cakewalk, since the lift was spotty and fleeting in the wind. Don DeLoach's flyoff flight against Herb had bested the two-minute max mark, so he continued flying the same model in the Scramble. It looked like a rocket as it climbed away in a solid thermal for a second 120 score. Ray Boyd also had an impressive high flight with his old-timer rubber model, to garner a max. Not to be outdone, John McGrath had a beautiful max with his blue-and-yellow P-30 that climbed with a majestic, easy certitude that left the crowd feeling somehow calmer and rejuvenated.

Not deterred in the least by the fickle weather, Jerry Murphy was putting up one max after another with his E-36, which seemed to be right in its element. Murph's power patterns and transitions were spot-on and his air picking was impeccable. Meanwhile, his carpool mate, Darold Jones, was busy trimming his Andrade Small Mulvihill rubber model.

Also unfazed by the wind was Chuck Etherington with his F1C power model. Chuck is accumulating time to qualify for the US FAI Team Selection Finals in Lost Hills this October. He did a fine job, including some long chases that made him pay for those 180-second maxes. He had the top score in the three-minute Scramble category, with a three-flight total of 332 seconds. He went on to put in all seven allotted flights for his Finals qualifying, netting an admirable 989 seconds.

CLG/HLG was a real shootout between Don DeLoach and Mark Covington. CLG seemed the way to go on this day, and each of them snagged a single max, in addition to some solid second and third scores. When it was all over, Mark was the top HLG/CLG flier.

But there was also high drama in the two-minute category in which Murph's perfect string of three maxes was eventually recognized as unassailable, to make him the May Scramble Champ. Don was close behind, with 337 sec. Mark rounded out the top three places, with his CLG score of 319. For the details, see the Scramble results table and the photos on the following pages.

Many thanks to Tom Norell who came out to time flights and help in other ways. Thanks also to the MMM's safety officer, Jeff Pakiz for assisting throughout the day. Jeff is also our monitor for both the Scramble points and the season points. Bob Miller was on hand, flying his CLG models just for the fun of it, and chasing them on foot. These beauties are finished with the most intriguing paint jobs, including a mottled pattern sprayed through foam shelf-liner material. You really have to see it. Also present was our MaxOut editor, Rick Pangell, whose Jet Catapult Bell P-59 Airacomet drew sighs of admiration from everyone for its consistent, impressive climbs, transitions, and glides. I'll leave the telling of the rest of the FAC contest story to the illustrious Eaglerock squadron.

It was a great day, and a real test of persistence and air-picking skill. With a sense of satisfaction, we all packed it in, looking forward to the June 10 Scramble and the 14-Rounder, which is only a few weeks away.

Photos from the May 2018 Scramble



After waiting all winter, Herb Kothe, left, and Don DeLoach line up for the fly-off to break the tie they had at WESTFAC 6 in Arizona last October. It was a cliff-hanger all the way, but Herb edged out Don for the title.



Chuck Etherington eyes a hawk high overhead in lift as he contemplates whether it's time to launch that F1C power ship. He had it flying fine all day.



The MMM's Dynamic Duo: Darold Jones, left, and Jerry Murphy. Note the chilly weather gear! Murph had the day's only max-out, flying his E-36 with great skill in the wind.



"You should have seen the one that got away!" At least that's what Rick Pangell seems to be saying. Our faithful MaxOut editor wowed everyone with his well-trimmed P-59 in FAC Jet Cat.



Tom Norell, right, maintains lock on a model in his binoculars as Mark Covington, holding CLG, surveys the action.



Here we see Mark C. with larger fare—his tip-launch HLG. He's sizing up the tactical situation with CLG-wielding Don DeLoach. Each put up a max with these birds, a tough feat in this weather.

Photos from the May 2018 Scramble (cont'd)



Bundled up and ready to do battle. John McGrath prepares to launch his P-30 model. He flew well for fourth place in the Scramble.



Our diligent club safety officer and points monitor, Jeff Pakiz, with his usual smile.



Ray Boyd prepares his Thermal Seeker old-timer rubber model with help from Don DeLoach. Meanwhile, in the background, Mark Covington studies the thermistor.



With pipe in one hand and an exquisite catapult glider in the other, Bob Miller emerges from the prairie, following a long on-foot trek.

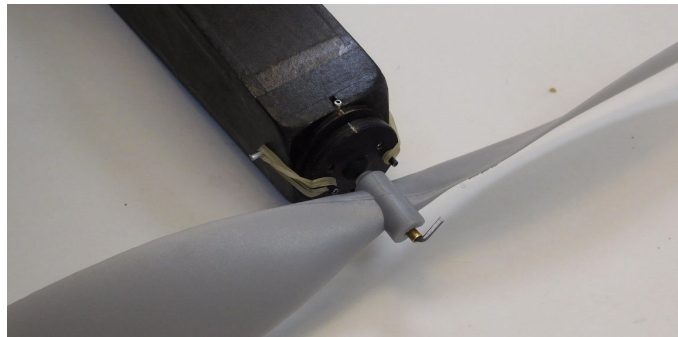
Borrowed from "El Torbellino," San Diego Orbiteers NL, edited by Howard Haupt

New Adjustable Thrust Bearing Kit

By Mike Jester

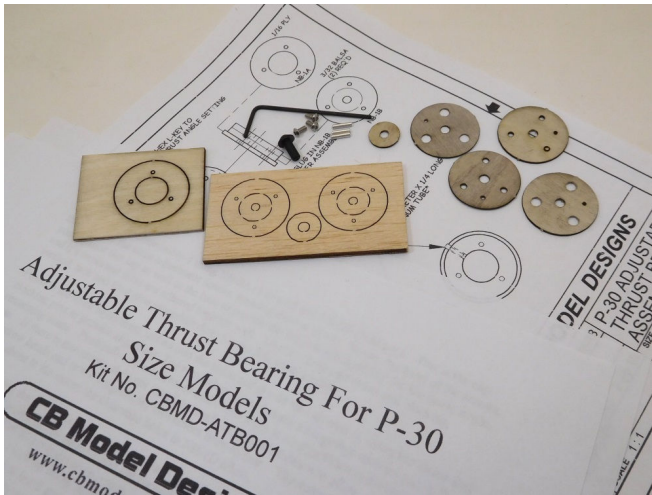
Precise and reliable thrust line adjustments are critical to the trimming process and to successful fun flying and competition flights. Shimming the nose block or sanding the front end of the fuselage are slow, cumbersome, and inaccurate techniques. One of the main advantages of the GizmoGeezer (GG) adjustable thrust bearing is that precise and stable thrust line adjustments can be quickly made with that device. Unfortunately the GG bearing and prop assemblies incorporating the same are no longer being manufactured. At this time it is uncertain whether they will return to the marketplace. Retail supplies of the GG bearings and props have pretty much been exhausted. Clearly some kit manufacturer or parts supplier needs to fill the gap.

CB Model Designs has long supplied premium P-30 kits that have included GG prop assemblies. Proprietor Clint Brooks realized that he needed an alternative prop shaft bearing with a similar adjustable thrust line feature. Clint has decades of experience in aerospace engineering, production and tooling and decades of success in designing, building, and flying rubber powered free flight model airplanes. He recently used his combined experience to develop a new adjustable thrust bearing (ATB) for P-30 size free flight models. This new ATB is shown in the photo below. Bear in mind that making steel tooling to injection mold plastic parts for a device of this type was probably not viable from an economic standpoint given the relatively small size of the market.



Adjustable Thrust Bearing (ATB) from CB Model Designs

Clint gave me a free sample of his new kit and I was anxious to build his new ATB. The kit includes all of the parts needed to build the mating forward thrust bearing and rearward receiving bushing. Three #1-72 x 3/16 long steel screws with hexagonal sockets connect these two components and thrust angles are adjusted using a .050 hex L-key provided with the kit. Clint's ATB is sized to install in a 7/8 diameter hole in a fuselage or nose block. Similar to the GG bearing, the ATB is preferably installed with the adjustment screws at 10 o'clock, 2 o'clock and 6 o'clock positions.



The ATB Kit

The ATB kit includes nine (9) laser cut balsa wood and plywood discs of various diameters and thicknesses, a detailed set of assembly instructions, and a full size plan illustrating the steps of the assembly process. It also includes a small black plastic thrust bearing for a 3/64 (.047) prop shaft and three 1/16 x 1/4 Aluminum tube segments. One of these tube segments extends radially in the receiving bushing and serves as a nose key when the ATB is inserted into a nose block or fuselage. The other two small Aluminum tube segments serve as posts that retain rubber bands that hold on the nose block. The heads of the screws are cleverly captured in recesses formed in a stack of wooden discs with different size laser cut holes. Even if you had a copy of the plan it would be extremely difficult and time-consuming to scratch build Clint's ATB with the precision needed to yield a properly functioning device, especially without having a copy of the detailed assembly instructions.

Clint's ATB can be adapted for use in other models besides P-30s, including scale and non-scale FAC models. The wooden discs of the ATB can be turned, e.g. on a Dremel tool, to reduce their diameters to fit into particular fuselage and nose block configurations. The 1/16 plywood ring of the receiving bushing can directly attached to a nose block assembly and the two 3/32 balsa wood discs that otherwise serve as a plug can be eliminated. The Aluminum tubes can also be eliminated and a nose block incorporating the ATB can instead be held in place with magnets.

I was able to construct Clint's new ATB relatively easily and look forward to testing the same in the field. I have every reason to believe that it will fulfill its promise. My plan is to install this thrust bearing in the Super Y P-30 that I will build from the recently released kit that I purchased from CB Model Designs earlier this year. Check Clint's web site about the future availability and price of his new adjustable thrust bearing kit. See www.cbmodeldesigns.com

MMM & Science Olympiad

Here are some scenes from the 2018 Scientific Olympiad National Tournament (SONT) held at Colorado State University 19 May.

The indoor flying event was well attended by many fine middle school young fliers from all over the United States. It is encouraging to see so many excellent young women fliers.

The MMM team of timers, John McGrath, Jerry Murphy, Chuck Etherington and Ray Boyd timed teams from Hawaii, Vermont, Wisconsin, Michigan, Ohio, Indiana, Texas, California, Idaho, Florida and Georgia among others.



This is the winning team, in fact. Those flyers were machines. Two flights only, both official, both in the 2:30 range, both flights significantly better than their nearest competitor. Very impressive indeed.



This is one of the best storage and traveling boxes in the competition. This particular team of fliers were very well organized and among the very top competitors.

The “CAT BOX” via Bob Miller

“Imitation” is the most sincere form of flattery.” Let them copy all that they want.

This article started with Bob Miller asking me things like “How do they do that?” His comments are really pointed to anything that shows up on a plan and assumes that you have the skills to do it without any questions asked. Bob is an extremely gifted “build from wood” kind of guy and his comments are appreciated. The problem shows up with any and all sorts of published plans in magazines, mail or whatever. I had a fuselage on my Gollywock with a 1/8” bow in the fuselage. I just used my 36” straight edge and made the lines straight... redrawing the plans over the plans, but I do know that when copies are made sometimes the paper doesn’t always give you the straight answer. Newcomers and inexperienced flyers believe the plans. Take note of some Dime Scale plans where the spans are 16-1/2” and such. Fortunately, some of us do have the equipment and skills to make them right... ed.

“The weather looked great when I woke up this morning and so I decided to go to the park flight gliders before the weather changed. I ended up staying till 2:30 PM and had to come home for something to eat. So I changed my socks and went back to the park and stayed till 5:30 PM. Had multiple flights over 2 1/2 minutes and all within the park boundaries. Only lost one glider, I saw it DT, but could not find it. I gave one glider away to a boy of about 12 and his two younger sisters. When you ask them their name you think they'll tell you something like Joey or Vinny but his name was Mossadegh... cute kid and very polite. I had more fun than I can tell you, and I'm burnt to a crisp.

So far my Cat Box article will be just a collection of things that I've read with some of my thoughts scattered in. Not in any particular order, or anything that makes sense

I have the book that John Kaufmann wrote on how he makes his glider and flies. It, it's called flying hand-launched gliders. It's more of a how to do it. Book. I was more interested in adding theory of glider design also . It a lot of articles I read about gliders and their trimming methods don't stipulate what type of thermals there flying in or the location in the country. Different weather conditions and altitude change how you fly your glider and they don't specify this. So I'm not sure how to get it all together. Maybe have it in different segments would be better. Don't know.”

Cat Box - Origins...

“I spent most of today repairing my texture machine (for spraying ceilings and such), and went to finish some of my gliders (note: Bob did not use his texture machine to finish the wings! This is just a comment). I started last night, stopped to look through my record book of hand launched and catapult gliders, and counted 140 gliders since 2000 and 38 gliders so far this year. Stan Huyge came by to get some balsa wing blanks that I cut up for him, and while he was here I showed him how I went about making gliders. I got the impression from him that he was nowhere near as methodical as I am. He could only stay about an hour as he was going to a pinball ball machine meeting. He seems to be excited in getting back into the club.

I'm still interested in writing an article for whomever, The Cat Box, catapult launched gliders dirty little secrets. I have never written an article before. I'm not sure how to go about organizing, or breaking it down into something that would make sense to the readers.

I've been flying catapult launched gliders with the "tongue grip" (tab) since 2017 and only had a problem in the beginning when my thumbnail was too long. The trick is to hold the grip with your fingers pointing to the fuselage, not to the front of the glider. Don DeLoach is mounting his grip midway between the wing trailing edge and the stabilizer on the carbon fiber tail boom, but I'm not using carbon fiber, I don't think it will work with Pampas grass Tail booms.

As far as the indoor carbon fiber fuselage construction, I use pretty much the same method as everyone else... slather adhesive onto carbon mat and sandwich balsa in between, but I am using medium thick, CA. Tom Norell suggested I clean the carbon fiber with acetone before gluing because of the dust created from sanding. Maybe I will try this next time.”

Cat Box *Catapult Launched Gliders Dirty Little Secrets*

Glider Design - Wings Swept back leading edges & tapered outer panels, to reduce tip weight. Straight trailing edges. Lee Hines Sweepette Model Airplane News July 1965 Round corners as “sharp corners tend to break.” Wing alignment on any high-speed model is very important. Often unexplained deviations from the desired flight can be attributed to a wing that is not properly aligned.” Ron Higgs CHALLENGER Model Aviation August 1985.

Stabilizers & fins my preferences are swept back leading edges and straight trailing edges. The outlines can be cut from tapered balsa wood without any additional shaping other than rounding the leading edges. This also aids in sanding with a flat sanding block to remove one third of the finish between coats easily. 1/16 of an inch at leading edges and .040 at trailing edges for stabilizers and .050-.032 for the fins. Use thin CyA to reinforce the leading edge by dragging the leading edge through a puddle of thin, CyA on glass and wiping it off with a tissue before it starts to kick and bubble up. Ron Higgs Challenger model aviation August 1985

Rudder Bruce Kimball Climbmax “The rudder is smaller than normal to give the model a slight instability. During a normal glide, the model rocks back and forth and wanders slightly, but when lift is encountered, speed increases and the rudder becomes more effective tightening the turn.”

Airfoil thickness” I start with 16 inch span, 3 ½ inch cord, ¼ inch wing stock so that the final thickness is about .234- inch at the high point approximately 28%. I believe the thicker airfoil provides slower glide plus quicker stall recovery” *TOMCAT* Thomas Jones December 2002 NFFS May 2003.

Dihedral Dihedral is all over the map, From effective dihedral angles EDA of 12.5° for the *SWEEPETTE 19*, 15.5° *SWEE CAT 18*, 19.5° for the *Scalded Cat 18*. Differences might be because of weather conditions across the country. Common trend is larger effective dihedral angles “ensures positive rollout at launch transition”. Bruce Kimball Climbmax 1987 NFFS Symposium. I’m not in favor of flat center panels as any upset means the center panel of the wing will be below the center of gravity, inhibiting recovery.

Outer wing panel skew also known as toe-in for wing washout. *SWEEPETTE 18* inch indoor glider EDA OF 10° total dihedral Lee Hines Model Airplane News July 1965. Its not recommended in outdoor gliders with more dihedral. #1. It causes drag and #2 at outer tip angles skew is more like a rudder, than having a washout effect, but if you do use it, the stabilizer will require a bit of up incidence to keep it from diving in if both outer panels are skewed, theoretically for good stall recovery. (“That means on a 0-0 set up the wing is actually at a negative incidence to the stabilizer, causing a diving tendency in the transition stage.”) Zip a Doo Too... Vik Nippert July - August 2003 NFFS Digest.

Center panel offset skew for glider turn not recommended with balsa wood fuselage result is dragging the fuselage sideways through the air stream causing drag. Not critical with round or Tubular fuselage tail booms. It’s best to set the tail fin at a slight angle for turn without bending, which causes drag. Using tapered tailstock facilitates built-in trim, keeping the left side of rudder parallel to the dihedral breaks gives you exactly what you need for left hand turn. Also the top of the stabilizer should be 0-0 in relationship to the wing. Minor tweaking is all that’s necessary for good glider recovery at the top. Not for straight up launches which is not recommended by Lee Hines “better to get over the top with a little incidence then miss a launch and have it come straight down “

Wash in tab left main wing “washing Improves transition from launch to glide, helps counter spiral dives, and improves a gliders thermal seeking ability.” Stan Buddenbohm NFFS “Less wash-in in calm air, more in windy weather” *SWEEPETTE 19* by Lee Hines... If the glider glides in squares, circles, there is too much wash-in tab.

Glider Finish Putting too much finish on that sub 5 pound per cubic foot glider wing wood can make it equal to unfinished 7-8 pound per cubic foot balsa wing. For the last sanding, NORTON aluminum oxide 320 grit sandpaper, rub in talc powder and wipe surface with facial tissue, then use aerosol spray sanding sealer using no more than when the surface looks wet, use good lighting. Resist putting anymore on, even if it doesn't look fully wet. Let dry 5 minutes and spray the other sides. When dry 20 minutes sand with NORTON aluminum oxide 320 grit sandpaper. It should weigh slightly more than when you put on the talc powder after sanding 1/10 of a gram. Spray the second coat of sanding sealer very lightly. Not even looking wet, then quickly brush with a dampened with thinner letting dry 10 minutes before spraying the other side. When dry 20 minutes sand with NORTON 320 gray sandpaper, you should be able to reduce the second coat of sanding sealer weigh by 1/3. Each coat on an average 18" x 4" glider wing will weigh approximately 7/10 of a gram, sanding between coats reduces the weight by 1/3. Now you are ready to put in the dihedral.

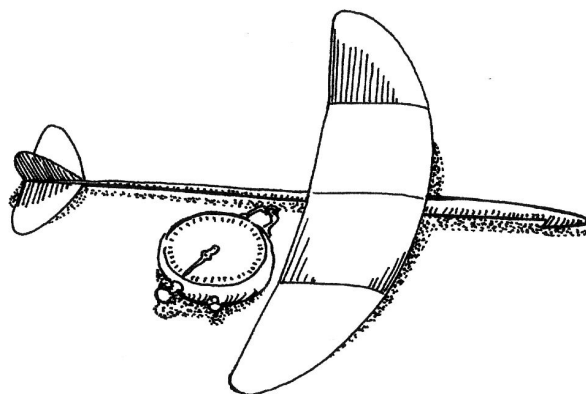
When gluing the wing to the fuselage, remove the finish with acetone with a Q-tip where the wing will join the fuselage for a stronger bond. For gliders under a 16 inch wingspan skip the second coat of sanding sealer to save weight as smaller gliders have to have a very light wing loading. Dan Danieli, *THE DRIFTER*, Model Airplane News January 1962. Using Design Master. Spray paint, you should be able to paint the entire wing and tail surfaces very lightly without adding any more than $\frac{3}{4}$ of a gram.

Fuselage fuselage material has run the gamut over the years, from all balsa, combinations of balsa & spruce to all Basswood or all spruce. Mostly to avoid the dreaded broken fuselage without realizing that when higher wing loaded gliders hit the ground fast and hard, they break. Keep it light and not too much finish. Current trends use balsa wood, and carbon fiber." *Long booms...* I find shorter ones give better stall recovery, which is my criteria for longitudinal stability in a design. Better to get it over the top with some incidence, so the glide can respond to any lift in the area (Lee Hines NFFS June 2005).

Contrary to current belief fuselages do not have to be straight! Everything attached to the fuselage is being put on crooked. Wing skew or rudder angle... Stabilizer tilt and offset wing... It's best to have a method to adjust incidents or a way to measure your built in incidents & rudder turn.

My current preference in fuselage material is balsa wood and Pampas grass tail booms. Pampas grass material is very light and extends the full length of the fuselage to save weight. This design method was pioneered by Glenn Simperts using tapered carbon fiber tube in his Spirit of Democracy HL glider. (Flying Models June 2000) Pampas grass weighs 11 to 12 pounds per cubic foot, that is very much stronger than balsa wood at that weight range.

More to come... Bob Miller



It's Back to the Future ...

Hey, Marty! Do you have an old FAI model you don't fly anymore? Because you think it's supposedly *outdated*?

Yeah, sure Doc. Why?



Then get with the times!

Come on out to the next MMM Scramble and fly

Legacy FAI

The rules:

F1A: Current F1A rules except no bunt allowed

F1B: No DPR allowed, 40g max motor and 190g empty weight

F1C: NFFS Vintage FAI rules*

F1G: No auto surfaces or DPR

F1H: Circle tow allowed but no bunt, 5.08 oz. minimum weight

F1J: 7 sec engine run, no bunt



Special \$10 cash prize at
each Scramble for high
Scramble score in Legacy
FAI

* For NFFS Vintage Power rules, see Section 18 of the 2017-18 NFFS Competition Rules. Download at:

<https://freeflight.org/wp-content/uploads/2016/01/NFFSCompetitionRules2017-2018v1.pdf>

Flyers Little Helper

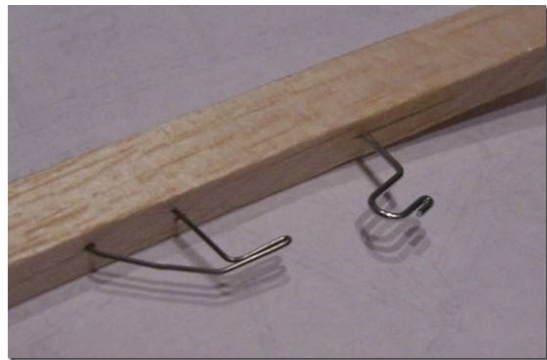
The 20:1 winder from the AMA has a hook that is too big to fit "O" rings typically used on the rubber loops on indoor models.

Here is a picture of my solution. A hook made from 0.047" wire.

After putting it on the winder hook, I closed up the hook on the winder.

I use the "O" rings from FAI Model Supply. Next picture is my rear hook for P-18s and Pennyplanes made from 0.020" wire. The front leg serves as an "anti climber" for the motor.

Keep smiling,
Steve Riley



Fellow FAI, AMA, NFFS, and SAM Fliers,

We hope to see you at this year's MMM 14 Round Contest in Denver. The field is in fine shape! If you haven't already done so, please consider pre-registering--there's a discount if you pre-register by June 16. Details are in the attached announcement.

Please note the contest dates, June 22-24, which are a bit earlier than in previous years. This was to avoid conflict with the AMA Outdoor Nats.

If you need to make hotel reservations, there are many choices within reasonable driving distance to the field. I've listed just a few at the bottom of this message.

See you in June!

Pete

Some hotels in the local area:

Super 8, Parker, CO
Motel 6, Greenwood Village, CO
Fairfield Inn and Suites, Aurora/Parker
Country Manor Motel, Watkins, CO
Crossland, Denver Airport
Intown Suites, Southeast Aurora, CO

2018 Overall Regional MMM Contest Schedule

Paste this into your home calendar so you have anticipation to your travel and build plans!

2018	Revision "B" 5/28/2018		
DATES	CONTEST	NOTES	CD
June 3	Indoor	Manitou Springs HS	
June 10	MMM Monthly Scramble	Lowry Field – Late day meet 9:00 AM – Sunset	Rick Pangell
June 22	FAI World Cup F1E	Indian Point (Lowry Field)	John McGrath
July 8	Indoor	Manitou Springs HS	
June 23-24	39th 14 Round FAI	Lowry Field	Pete McQuade & Jerry Murphy
July 15	MMM Monthly Scramble	Lowry Field	Mark Covington
July 23-27	AMA Outdoor Nats/USOC	Muncie Indiana	AMA
August 5	Indoor	Manitou Springs HS	
Aug 11-12	Tulsa Glue Dobbers 67th Annual	Perry Oklahoma	Bobby Hanford bhantulsa@cox.net
August 19	MMM Monthly Scramble	Lowry Field	John McGrath
September 1-3	Rocky Mountain Free Flight Champs/FAC/Mtn States Scramble/Dynasty Cup	Lowry Field	Don DeLoach Chuck Etherington
September 16	MMM Monthly Scramble	Lowry Field	John McGrath
Sept 22-23	Texas Cloud Climbers Annual	Denton Texas	
October 6-7	Heart of America Annual	Marion, KS	
October 21	MMM Monthly Scramble	Lowry Field	Tom Norell
November 4	MMM 12th Annual Frito Pie Meet	Lowry Field	Ken Phair
December 8	Annual Business Meeting	Location TBD	MMM President



IF YOU HAVEN'T PAID YOUR DUES YET OR WANT TO BE A MEMBER:

JOIN THE MAGNIFICENT MOUNTAIN MEN FREE FLIGHT CLUB HERE

NAME _____ AMA NO _____

STREET ADDRESS _____

CITY/STATE _____ ZIP _____

PHONE (HM) _____ (WK) _____ EMAIL _____

DESIRED STATUS: MEMBER _____ 2018 DUES: \$40.00 includes Newsletter
(CHECK ONE) (Under 16 yrs. old – FREE!)

HARDCOPY NEWSLETTER ONLY _____ 2018 RATE: \$15.00 PER YEAR

SEND THIS FORM AND CHECK PAYABLE TO: MMM CLUB
C/O: CHUCK ETHERINGTON
33946 GOLDFINCH DR.,
ELIZABETH, CO 80107



News Note: MMM Now accepts "PAYPAL" for Dues, Contest Entry Fees, Etc !!

- *Simply Log in to paypal.com (or create your own "PAYPAL" account if you want)*
- *Click on "Send Money" in the upper menu bar*
- *In the "To" block, type in mmmffclub@gmail.com, the amount, and click the button "Services"*
- *In the next form where you confirm payment, in the Lower "Subject" and "Message" boxes state what the money is for... annual dues, entry fees and such.*
- *When pre-entering a contest that needs event selection or similar, you still need to send in the pre-registration form to the Contest Directors*

Note, Paypal does charge a fee for this service so if you do use paypal maybe add an extra buck to help us out



**FREE FLIGHT WITH AN ALTITUDE!
UPCOMING EVENTS**

<i>DATE</i>	<i>EVENT</i>	<i>FEATURE EVENT</i>
<i>June 3</i>	<i>Manitou Spg's HS</i>	<i>Indoor</i>
<i>June 10</i>	<i>MMM Scramble</i>	<i>Late day Contest 9AM to Sunset!</i>
<i>June 22</i>	<i>F1E World Cup</i>	
<i>June 23-24</i>	<i>29th Annual FAI 14 rounder</i>	
<i>July 15</i>	<i>MMM Scramble</i>	

FIRST CLASS



**IF THIS BOX IS CHECKED, THIS IS YOUR
LAST ISSUE UNTIL YOU PAY YOUR DUES!**



**The Magnificent
Mountain Men**

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80120