



# The THUMB PRINT

## Thermal Thumbers Of Metro Atlanta

[www.thermalthumbers.com](http://www.thermalthumbers.com)



**AMA**  
Charter # 1834

**Editor**  
**David Mills**  
(404)-509-4209  
[DavidMillsAtl@gmail.com](mailto:DavidMillsAtl@gmail.com)

**Publisher**  
**Brook Dixon, Jr.**  
[BrookDJr@gmail.com](mailto:BrookDJr@gmail.com)



**NFFS**

November - December 2010

.....

### HEADS UP

Merry Christmas and Happy Holidays! I hope I haven't stepped on any toes. If any atheists, Wiccans, Hindus, Muslims, or Celtic pagans are in the house and offended, I'm sorry.

These are times less joyous than we're used to in this country, but that's OK. It's helped us focus on what's really important, like health, family, and friends. Sometimes we need to be reminded. Sometimes we take listen to our better angels. Americans sometimes take these things for granted. I don't think many among us are doing so this year. Our nation's finances are still in the dumper, but our values got an upgrade. Onward and upward, my fellow Americans.

We've a good issue this time, chock full of necessities. First of all, there's the initial nag for membership renewal, so please take heed. The annual banquet plans are finalized, courtesy of Dohrman, and this info is provided, so please take heed. We've the closing installments from our outdoor season and full reportage follows, thanks to Gary and Barf. Club scribe Karl provides the last meeting minutes of the year, carrying much of interest, including our 2011 officer slate, which offers the usual suspects with the addition of Jim Altenbern as a capable Veep. As I always do, at the November meeting I beseeched the gathered quorum if anyone wanted to assume the editor's yoke. No takers were forthcoming; ergo, you've me to deal with for another year.

Later in this issue, I provide a little article about my current method of laying out wing and stab structures and building them. The resulting wings and stabs are light, strong, and look good. You might find it interesting. It works for me.

Time for me to get out of the way. Ciao, y'all.

### RENEWAL TIME, Y'ALL!!

It's that time of year again, my fellow Thumbs. As this is the first formal reminder, I'll keep it brief. 2011 dues are due. A coupon is provided later for your convenience. You know who you are. Don is making a list and checking it twice. Sent him a check at the address indicated. Note the price goes up mid-February.

### BEHIND CLOSED DOORS

We've plenty of indoor dates left this winter and spring at St. Lukes Presbyterian in the Golden Ghetto of Dunwoody. Mark your new calendars afresh for Jan. 22, Feb. 19, March 26,

April 16, and May 21. The church is easy to find; it's on Mt. Vernon about one mile east of downtown Dunwoody. Our fling site, the Grand Hall, is at the far corner of the property, way in the back. The site is a good one, category I, just a few inches shy of the maximum allowed height. Be there.

### **ANNUAL BANQUET**

Dohrman has finalized the annual banquet plans and we've a fine evening in store on Saturday night, Jan. 29. We've gone a notch more upscale and we're having the banquet at Petite Auberge, a very nice French place, in the Toco Hills Shopping Center. It's very easy to find and get to: 2935 North Druid Hills Rd., between Clairmont and Lavista Rds. If you're like me, you've driven past it a zillion times. A number of members have eaten there many times and it comes highly recommended. A flyer will all the pertinent info follows. Get your money in to Dohrman by Jan. 15. Show up at 6:00 pm for happy hour and show-and-tell set-up. We dine at 7:00 pm.

The area is several miles northeast of downtown and in a nice neighborhood. Out-of-towners have plenty of choices for accommodations, as the area is well-invested with all the hotel chains. Churches, too, if you're staying over and the evening offers opportunities for regret. A simple google search will provide dozens of choices for both. Petite Auberge has a good website: < >.

### **UNDER THE CATHEDRAL OF THE BIG BLUE SKY**

Dohrman is about to mail in the sanction applications for the outdoor season, starting in April. The weekends will be the same as 2010, more or less, allowing for the vagaries of our medieval calendar and uneven planetary orbit. We do the best we can. Be there.

Here's a shot across our collective bows. We need to start building some E-36 models in accordance with the new rules, or upgrading the models we already have with the new gear. Based on the models already built and the blather surrounding ongoing projects, we should be able to muster a solid core of fliers every month. Don't neglect that old and disappointing E-36 that's been gathering dust for the last few years; a shiny brushless motor and a 2-cell Lipo pack will perk up things mightily. You'll find the performance a little shocking in comparison.

A replay of the new, official E-36 rules set follows later for your elucidation. Get tah yer whittlin'! Be there.

### **THUMBS AT THE READY**

There's a plan to set up a NFFS table at the upcoming Southeast Model Show in Perry the first week of March. Here's the deal: for many years a table has been set up at a number of large west coast contests and quite a bit of NFFS merchandise is sold. This adds some much needed revenue to the NFFS coffers. We're looking at broadening this effort to cover other contests and events west of Rockies in addition to the Nats. The Perry show is a good candidate and will serve as a valuable experiment.

We need volunteers to man the table, sell stuff, answer questions, and hopefully take some membership checks and applications. Your editor (and southern district VP) will be in meetings all Saturday and delivering other VP's to the soiree Friday morning. I and some of the other VP's can man the table a couple of hours Friday afternoon, but that's it. What's left of Friday and all of Saturday is wide open. I'm going to suggest we put in near the MECA and SAM area

and the Walstons, so you'll be hanging out around there anyway. I'll be bringing up this opportunity for service at all inconvenient times over the next few months.

### **BEST WEBSITE IN THE WORLD?**

Yes, this is a bold question to ask. Let me propose a bold answer. Go to: <craftsmanshipmuseum.com>. Good grief! Not only amazing in detail, it's also vast in expanse. I've about six hours into it and I've only scratched the surface. There're links a-plenty and all uncharted by this pilgrim to date. I can't imagine the time I'm going to spend navigating this puppy. Check this out! However, you are forewarned!

This is the website of a hitherto unknown museum, to me at least, in CA of the same name dedicated to preserving the outstanding modeling projects by the world's best craftsman. Thankfully, their purview is widely ranging, encompassing cars, aircraft, ships, trains, tractors, machinery, and much more. I've always wondered what happened to the world's best models after their builders died or their heirs lost interest. I've always feared most don't find their way into museums and other places worthy of their hosting.

Let's hope this is a long-lived endeavor. The world is all the better for it. May all their winds be fair and their pockets full. Your contributions are tax deductible, BTW.

### **A LITTLE HELP, PLEASE**

Barfield sends this along for your attention:

“Wanted: Sterling rubber models kits. Does anyone have any of the small-to-medium span Sterling stick-and-tissue models (AT-6, Stuka, ME-109, etc.) that they are willing to sell or provide on loan so that I can copy the plans and make molds of the plastic parts? I would like to have them for building, as well as preserving. Obviously, Sterling isn't featured near as often on eBay as Guillow or even Comet.”

I checked my stash and no Sterling kits were in residence. I was shocked. Although, there's plenty of bottom-dwelling Guillow of the 500 series, equal sprinklings of several each of Bell, Herr, Dumas, Golden Age, Easy Built, and Flyline, and loners from Flair, Jetco, Airsail, and MRL. Where does all this stuff come from? Better yet, where does it not go?

I'll eventually build all of my duration kits, at least, perhaps thanks only to my desire and the attrition rate. Perhaps it's the realization that duration models build much faster and fly several times better. You really need some extra itch to build a scale model. There, I said it!

### **ALONG A RELATED LINE**

There is a big, global modeling world out there. Our corner of it is really small. This is unfortunate enough, but we impose further isolation upon ourselves that makes little sense. For example, the plastic modeling world is so vast it makes even the RC community look like, well, the free flight or control line crowd. Plastic modelers comprise many, many tens of millions of enthusiasts worldwide and zillions of dollars are spent annually. The Asian market is exploding; interest in China is growing by leaps and bounds, for example, as their people get a little change in the pockets.

Most free flight modelers are unaware of any of this and it's a pity. Not only are their contests a hoot to attend, but all, including local contests, offer much eyecandy and swap meet opportunities. Most large cities have clubs that host one or two contests a year. Very large cities rotate hosting the national championships that are spectacular and offer huge trade shows and swap meets. Atlanta is so blessed and I always attend.

(The real lesson learned here is the fact that even nerdy, middle-aged plastic modelers like hanging out *en mass* at our fair city's plentiful, upscale strip clubs, usually rated numero uno in the USA. No, the ladies aren't completely naked; they do wear high heels and a smile. But, I digress . . .)

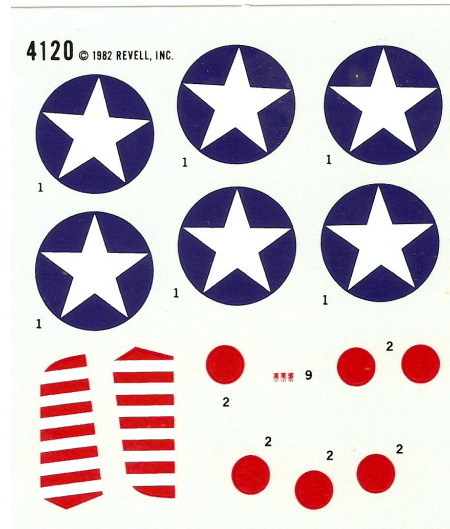
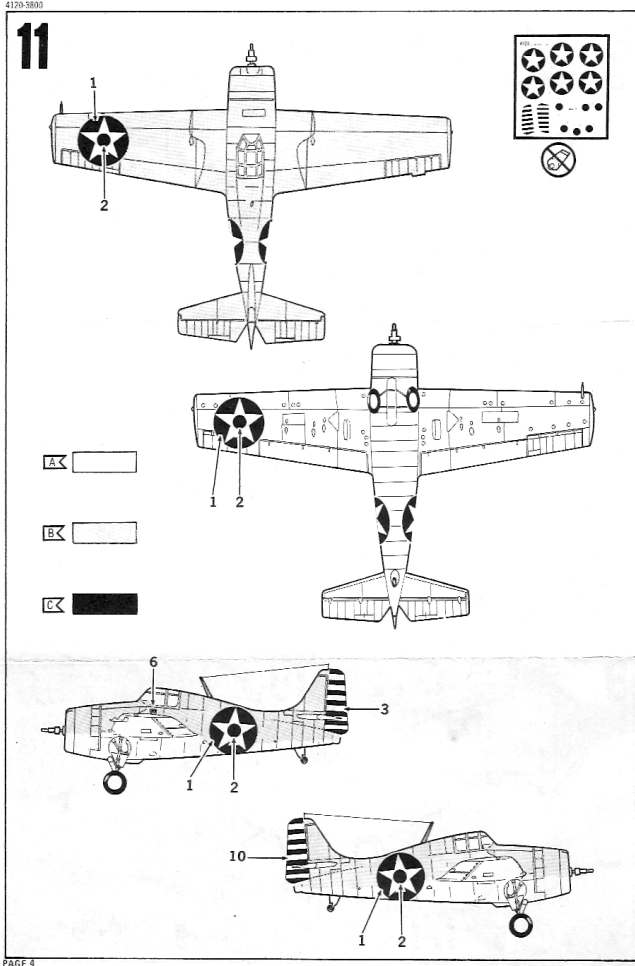
A really amazing aspect of the big plastic modeling world is the degree to which these guys collect and stockpile kits. You've no idea. We're talking closets, rooms, and storage units of the stuff. Frankly, some of these guys need real professional help. But let's incline to be kind; one man's junk is another man's treasure.

In my experience, their swap meets offer plenty of bounty. Plastic kits and after market products are some of best sources of scale documentation, color three-views, and other information. Publishing companies cater to the plastic modeling industry to a degree most free fliers cannot comprehend; their web presence is also near-overwhelming. Most of these plastic modelers collect aviation and military books, too, and you can also pick these up at dickering prices.

Every kit has a decal sheet and aftermarket decal sheets abound. These are great resources, largely under-utilized by us. If your project happens to be in the right scale that kits offer, say 1/32, 1/24 or 1/18, great, you're good to go. If not, these decal sheets can be scanned, manipulated, and printed out with ease after a little practice. Homebrew decals and spares are easy and cheap.

It's easy to get a window onto this world. Grab the latest issue of "Fine Scale Modeler" and have at it. It's always a good read with plenty of eyecandy. The International Plastic Modeling Society's national website, <[ipmsusa.org](http://ipmsusa.org)>, is always a good browse. Most cities of any size have chapters, so get on their e-mailing lists. You think we're obsessive? You've no idea . . .

An example follows. I picked up an old 1/72 scale Revell kit of a Grumman Wildcat at a swap meet who knows how long ago. I think I paid maybe four bucks for it. Some of the bounty within follows. And you still get to keep the kit! (I know guys with hundreds of kits in storage and they consider their "collections" small. The absolute worst are the Hot Wheels guys, but that's a whole other story . . .)



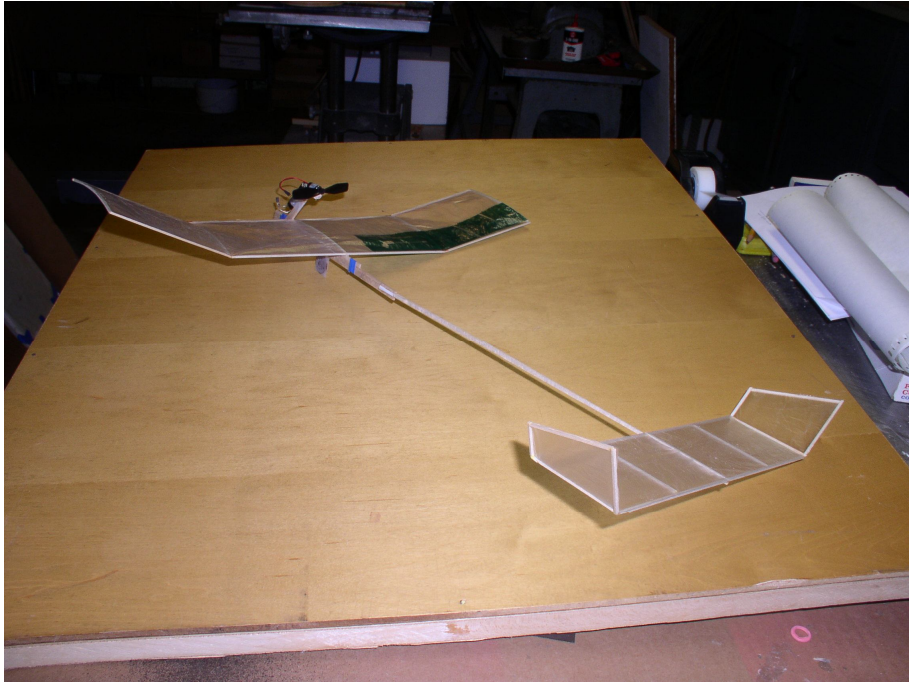
## GETTING SOMETHING TURNED AROUND

For many years, model aviation was a big part of the national Science Olympiad program. Over the span of a decade or so, hundreds of thousands of middle and high school students flew free flight models in local, regional, and national Wright Stuff competition. Many among the Thumbs and free flight clubs elsewhere mentored thousands of youths over the years and developed some of the best designs of the event. We also grew quite a few engineers along the way.

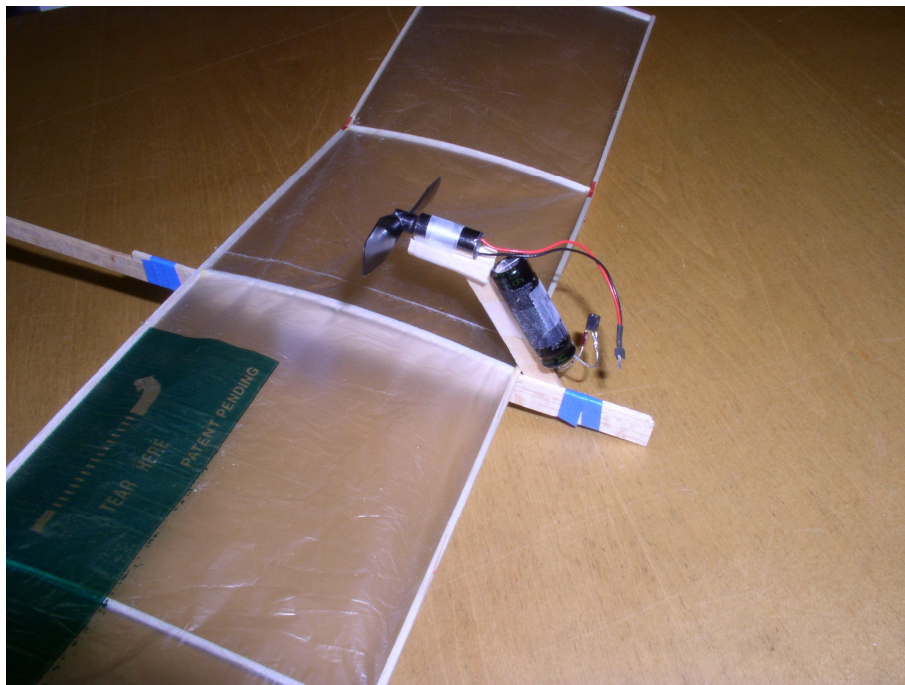
Sadly, the Powers That Be elected to move away from the finely developed rubber events and onto others less useful and ill-advised. All involved from the free flight ranks felt this to be a bad move, but nothing could be done at the time.

Well, a dedicated knot of free fliers and mentors, including point man Chuck Marcos and others, decided to do something about it. They've successfully established a new national free flight event within Wright Stuff arena for 2011 based on electric power. This delightful new event uses capacitors for power, rather than the usual batteries, and are currently getting flights of one-to-two minutes, depending. That's about right for school gyms and kids. Like free flight modelers did in years past, let's hope our peers step up to the plate again and mentor as before. (RC-oriented coaches were brutalized by the hundreds!)

Two photos of a prototype model follow. Very cool devices they are.



Prototype Wright Stuff Div-B Electric Power Model for 2011



Detail of Pager Motor, Prop, and Capacitor

This new event is an interesting development and full of potential. I suspect many of the youths enrolled in it will have a lot more applicable experience with electric power than rubber power via the park flier experience and other electric powered toys and machines. However,

they'll be as far behind the eight-ball in model construction as before, lightness and strength being as elusive a mistress as always. Still, I foresee this event being a fun one.

Looking at this new event within the context of other electric developments to begin in 2011, it should be a good year for electric-powered free flight. The upgrades in E-36 and A Electric will surely cause an upsurge in participation. I've often felt electric power was under-utilized in free flight. Many others agree. Maybe this will spur other uses for the avalanche of very cool techno-bits in the marketplace in our hobby and sport. Here's hoping.

A cool video can be found at: <[youtube.com/watch?v=ZUq6QKINCMU](http://youtube.com/watch?v=ZUq6QKINCMU)>. Don't know the guy in it, but he put landing gear on his. Not a good idea; looks like performance suffers as a result. Still, you'll get the idea.

### **MORE COOL THINGS TO DO WITH ELECTRICITY**

The new E-36 rules are official. The work is done and the rules are in the books and will be effective in Jan. 1, 2011. Frankly, I'm glad it's over. It took all year, but the results are worth it. (Personally, was it? A mixed bag of delight, Kemosabi.)

The new NFFS event rulebook is updated and posted on the NFFS website and all the full rules can be found there. I'd like to thank all the Thumbs and others that had a hand in this effort. Now the fun part begins, building and flying these very cool models! The full E-36 rules follow below for your convenience:

1. 36 in. maximum projected wingspan allowed
2. Any type electric motor allowed
3. Nickel or lithium batteries allowed, 2-cell lithium limit or 6-cell nickel limit
4. 120 gm. minimum weight, ready-to-fly, required
5. No autosurfaces allowed
6. Gearing and folding props allowed
7. Two minute maxes required for all flights
8. First three official flights to be made with a 15 sec. motor run each. If all maxes, a fourth flight to be made with 10 sec. motor run, and if maxed, then all later flights to be made with 5 sec. motor runs until drops.
9. Six attempts for three official flights allowed, immediate declaration required and 20 sec. maximum for attempts, overruns being automatic attempts for the first three official flights and overruns after the third official flight to be automatically awarded a "0" score

Be advised: the motor runs and two-minute maxes prescribed are seen as appropriate for large field competition. CD's are encouraged to modify the motor runs and maxes to suit local conditions. This is a NFFS event and records won't be kept, so fly smart and keep your models on the field.

### **THANK YOU, ROLAND**

The editor of *SAM Speaks* continues to do a good job and this benefits all of us, not just SAM members. The august Roland Friestad has scanned and amassed into a DVD set the entire run of *Model Builder* magazine, all 229 issues. Let's let that sink in for a second, the entire run of *Model Builder* at your finger tips. Wow! I don't know squat about price and ordering info, but that shouldn't be long in coming. Get yours today!

I, as do many others, have very fond memories of that old and great magazine. My collection of same ain't too bad, either. Naturally, I speak mainly for the early years, when FF coverage was most extensive. The mag suffered the same commercial pulls of all the others, but to this reader at least, it resisted them with more determination than the rest. I credit the owner Bill Northrop for this.

(I know he stiffed a few writers on the way out, but I forgave him of that. I figured he was due, as he kept his magnificent plans business intact.)

His oversight of fresh drawings of many of our old timer classics is reason enough for his going into the short line into heaven. Phil Bernhardt's exquisite rendering of Lanzo's 1941 Rubber Stick model is the high water mark of the art, unmatched as yet by this pilgrim's eyes. There're many others.

#### **NEXT ISSUE**

We should have the report of the annual banquet and more details on the Peach Sate Indoor Champs and the Perry Model Show. We continue to beseech the multitude for articles, opinion, rants, photos, plans, or whatever. Don't make me work too hard!

Ciao, y'all!



## OCTOBER CONTEST REPORT

David Barfield, CD

It was actually a good day, even though the wind increased a bit in the afternoon. Quite a bit of flying took place, but more times need to be posted to reflect that. Regardless, the day was fun as always. Hopefully, all have their plans for next year and are hard at work to make a strong showing when spring arrives again. Here's what happened:

### Stahl Hi-Climber

Bob Thoren	304
Al Pardue	195

### Embryo

Karl Hube	120
-----------	-----

### Catapult Glider

Bob Thoren	206
Karl Hube	146
Al Pardue	83

### P-30

Karl Hube	Scorpion	360
Dohrman Crawford	NJAPF	306
Bob Thoren	Pirate	246
Al Pardue		200
David Barfield (Comet)	Cloud Buster	35

### Rubber Scale

David Barfield (Comet)	Taylorcraft	107
------------------------	-------------	-----

***Campbell's Custom Kits is a commercial friend of TTOMA***

***[campbellcustomkits.com](http://campbellcustomkits.com)***

***Tail Spin is a commercial friend of TTOMA***

***[tailspinaviation.com](http://tailspinaviation.com)***

## NOVEMBER TURKEY SHOOT

Gary Baughman, CD

November 7 was one of those just-right, halcyon days: sixty degrees with light and variable winds, cloudless with warm, abundant sunshine. It was a perfect flying day for an assemblage of Thermal Thumbers, anxious to vie for a shot at a turkey for their table on Thanksgiving. You should have been there. No entry fees, no BOM rule, and lots of flying, fun, and friendly laid-back competition. The TTOMA Turkey Shoot was enjoyed by all.

I opened the gate at 9:05 EST and Karl Hube was already in the parking lot, chucking gliders. Margaret Hube was parked in the van across from the locked gate, watching her hubby make like a teenager again. We staked out the first flight line location just behind the office buildings in anticipation of the forecast north wind of six miles per hour. As more and more Thumbers appeared on the premises, the promise of a north wind gave way to a slight southeastern zephyr. All in agreement, we moved the flight line to the next road below the offices. After flying there for about an hour, and the drift changing to northerly, we moved to the hangar area and flew for the rest of the day.

At every location, Thumbs were taking shots at Target Time flights and Longest DT of the Day. Karl flew a Hangar Rat for target times of 60 seconds, Dohrm with a TLG shot for 60 seconds. Barf, Mills, and Peacock joined in the fun. Dohrman shot for 60 seconds on one flight and ended up with a 4:40 flight before the viscous timer cooperated in the cool air overhead and ended the flight only 200 yards away. The 46 second DT time to the ground gave Dohrm the temporary lead in the Longest DT Time event. Graham Selick and Bill Brown enjoyed the light thermals, Graham flying his high performance gas ships and Bill with an immaculately crafted Stahl Hi-Climber. Graham soon figured out how to compete in the longest DT event by flying “slight” over-runs on his Hustler and Mini-Pearl models and DT-ing at the top of the run. Dohrm kissed his lead in the event goodbye when Graham put in a 79 second DT with the Mini-Pearl that held up for the rest of the day. Graham was awarded a coveted Publix gift certificate for \$25 by the CD.

At mid-day, the Model of the Year Combat Event was held with three contestants. Although combat could have been contested with any MOY from the last five years, Bill Brown, David Mills, and David Barfield chose to fly the Stahl Hi-Climber. Each had made numerous trim flights in anticipation of entering “combat” at high noon. The assembled Thumbers watched with eager anticipation of which man would come away with bragging rights and a Thanksgiving turkey. On the CD’s count there was a mass launch into the azure, cloudless, autumn sky. It was a spectacular sight. Bill’s yellow model was a bit over-torqued and quickly bit the dust to the right under power. One down! The white, black and red, aptly-named Hi-Climber of Mills’ went up in a beautiful spiral climb, above Barf’s white and blue model. Mills’ model was a little higher at the end of the climb, and out-glided Barfield’s model to just short of a max for a well-deserved win of \$25-worth of groceries.



Bill Brown's Earl Stahl Hi-Climber

As the afternoon warmed, spectators also became fliers. Dohrman and Karl graciously loaned catapult gliders to Howard Klemmetsen and Jim Altenbern, respectively. Howard, especially, became a max-maker extraordinaire. Reading the streamers, Howard put in many flights, several 120-second maxes, but could not string two together in the "Max String-em-out" event. Barfield got a max with his Hi-Climber but had a rear peg dislodge on the subsequent flight that put him out of the running. Mills maxed with a P-30, but lost it OOS over the river and decided to search rather than put in flights with another model. (Model was found later that afternoon at the horse farm.—DM) Graham took home the turkey with back-to-back max flights and a third flight of 114 with his big Hustler gassie. Thanks to Jim Juliano for timing numerous flights on Sunday.

There was a rare tie in the "Time on Target" event between Karl and David Mills. Both achieved a "zero" score by landing exactly on the time they had predicted, Karl's 60 seconds with a Hangar Rat, and Mills', with a 60 second CLG flight. One *mano-e-mano* target time fly-off flight was conducted in front of the assembled group. Both flew CLG models, with Karl flying the closest to his predicted time once more. Chef Karl will serve a turkey at the family gathering on November 25. Spouse Margaret will give thanks TTOMA and her hubby that Thursday!

Bill Brown won the day's-end drawing, wherein all Thumbers who made at least one flight were eligible. A turkey will be on Bill's table on Thanksgiving courtesy of TTOMA.

Put the TTOMA Thanksgiving Turkey Shoot on your "Don't Miss" contest schedule next year. Thanks to all who attended this year. Tell your flying friends. They will be glad you did.

Now, let's fly some indoor models!

## **OCTOBER MEETING MINUTES**

The October meeting of TTOMA was held at 1:20 PM at the North Georgia Turf Farm during the regular monthly club contest flying session. A total of nine members were present.

### **Treasurer's Report**

Don Brown presented the updated information about the club finances. On September 24, 2010 the balance was \$X,XXX.XX. The only activity during the period ending October 23, 2010 as a deposit of \$70.00 from entry fees collected at the September FAC competition. Jim Altenbern made a motion to accept the report a presented and Don Peacock made a second to the motion. The member ship gave a unanimous approval vote.

### **Meeting Minutes**

Karl Hube read the brief minutes from the rain-shortened September meeting. Jim Altenbern made a motion to accept the minutes as read and Al Pardue gave a second.

### **Old Business**

The October meeting marks the point I the year when nominations must be submitted for officer positions for 2011. No nominations were offered and all the present officers volunteered to stay for duty in 2011. Jim Altenbern volunteered to fill the vacant position of Vice President. Dohrman made a motion to accept the slate of nominees and James Martin gave a second. The voting for the positions will take place at the November 7 meeting.

Dohrman Crawford presented the available menu and pricing for the Petit Auberge as a banquet site. This subject has been discussed several times and Petit Auberge looks like a very good choice. Bob Thoren made a motion to commit to Petit Auberge as a banquet site in January 2011. Jim Altenbern gave a second to the motion and the members voted unanimously to accept the plan. An Internet URL for Petit Auberge will be listed in the Thumbprint newsletter and a hotel list will be offered later. Don Brown suggested that because the club treasury is in such good shape that a \$5.00 amount could be paid for each banquet attendee to reduce cost to the individuals. The general discussion that followed led to the conclusion that the \$5.00 probably would not influence the attendance and the idea was not pursued.

Don Brown asked if sanctions needed to be obtained for the coming indoor season. Speaking from his position as an AMA representative, Bob Thoren said that he needs at least thirty days and a \$20.00 fee to get a sanction complete. In regard to indoor contest CD's, it was suggested that Bill Gowen be asked to be the primary CD for the winter indoor series of meetings. Others can fill in when Bill is not available.

### **New Business**

Selections for the Model of the Year (MOY) and Event of the Year (EOY) for 2011 were discussed. The general view was that many current HI Climber MOY and Embryo EOY have not been flown enough for the effort needed to build and trim the models. Jim Altenbern made a motion to retain the Hi Climber as the MOY and FAC Embryo as EOY for 2011. Bob Thoren gave a second to the motion and the members voted unanimously to accept the idea.

There being no further business, David Barfield adjourned the meeting at 2:00 PM. Karl Hube, Secretary, reporting.

## **NOVEMBER MEETING MINUTES**

The November meeting of TTOMA was held on November 7, 2010 during a special day of flying at the North Georgia Turf Farm. Ten members were in attendance and the meeting convened at 1:00 pm.

### **Treasurer's Report**

Don Brown's Treasurer's report was presented, which showed an opening balance on October 23 of \$X,XXX.XX. During the reporting period there was one deposit of \$60.00 from entry fees collected during the October outdoor contest. The only expense encountered was a charge of \$125.00 for prizes presented at the November flying session. The final balance on November 3 was \$X,XXX.XX. The report was accepted unanimously.

### **Meeting Minutes**

Karl Hube presented the minutes from the October meeting and no changes were suggested. The minutes were accepted as read.

### **Old Business**

The primary objective of the meeting was to complete the election cycle for TTOMA officers for 2011. The nominees were: President-David Barfield, Vice President-Jim Altenbern, Treasurer-Don Brown, and Secretary-Karl Hube. David Mills volunteered to continue as newsletter editor. Howard Klemmetsen made a motion to accept the nominee slate as presented and Jim Altenbern gave a second. The vote for the nominees was unanimous. Officers will be installed at the banquet to be held in late January.

Dohrman Crawford reported that arrangements have been made for the 2011 TTOMA banquet to be held at Petite Auberge in the Toco Hills Shopping Center on Jan. 29. It is expected that the price per person will be about \$30.00. Details will be supplied soon.

There being no new business offered, Dohrman made a motion to adjourn and Don Peacock gave a second. The meeting adjourned at 1:20PM. Karl Hube, secretary, reporting.

## NOVEMBER OUTDOOR SCENES



Graham, mid-prayer, and his Mini Pearl



Karl bestowing wisdom upon Graham



Graham's Hustler on the wing



Your editor readies his Hi-Climber

# Petite Auberge Restaurant

2935 N. Druid Hills Rd. 30329  
(404) 634-6268

6:00 pm Show and Tell set up and social hour

7:00 pm Dining

## Menu Suggestions

Menu:

### Seasonal Mixed Greens

*Served with a choice of dressings*

\* \* \*

### Choice of Entrees

*Entrees served with Vegetable, Starch, Bread and Butter*

### Chicken "Cordon Bleu"

*Chicken Breast stuffed with Ham, Cheese served with a lemon butter Sauce.*

OR

### Trout Almondine

*Fresh Trout fillets Sautéed and topped with a lemon Butter Sauce and toasted Almonds*

OR

### Beef Burgundy Roast

*Braised in a red wine mushroom sauce*

\* \* \*

### Strawberries Romanoff

OR

### Chocolate Mousse

\* \* \*

### Coffee and Iced Tea

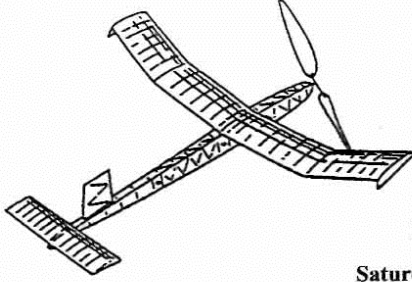
Price \$30.00 (includes tax and gratuity)  
Must have guaranteed number of people and  
entrée selection 48 hours in advance

## 2011 TTOMA BANQUET ORDER FORM

List below the names and entree and desert choices for the meal.

Please have your check and info to me by January 15, 2011.

Send your check for \$30.00 per person to:  
Dohrman Crawford  
1400 Mile Post Drive  
Dunwoody, GA 30338



MODEL AIRPLANE CLUB  
OF HUNTSVILLE, ALABAMA  
**MACH WINTERCOUPE EVENT**

Sanction Class A # 11-0054

**Pensacola, Florida Navy Helicopter Field Site 8A**

**Saturday, February 19 and Sunday February 20, 2011**

Directions to Site: Take I10 West from Pensacola. Take Exit 5 to Alt 90 and continue west approximately 2 miles to the field

Enter the 22nd annual MACH Wintercoupe Event to be held in Pensacola, Florida at Navy Site 8A. The glider events (HLG,CLG and Classic Towline Glider will be flown on Saturday. Coupe d'Hiver will be flown on Sunday. Sunday's events will also include P-30 and Commercial Rubber. .

**Contest start-stop times are 0800-1600 on Saturday and 0800-1500 on Sunday**

This is a National Cup event for HLG,CLG,TLG and P-30  
\$15 Entry Fee. Fly any or all events. Plaques to third place

---

**Saturday Events:**

**ENTRY FORM**

- Hand Launch Glider
- Catapult Launch Glider
- Classic Towline Glider — Any glider 750 sq inches max total area projected; No weight requirements; BOM applies; No circle tow; fixed surfaces except for glide rudder; zoom launch OK; No tow time limit

**Sunday Events:**

- Coupe d'Hiver — 70 gm airframe; 10gm rubber; 5 flights, 2 minute max — No rounds
- P-30 Rubber — 40 gm airframe; 10 gm rubber; 3 flights, 2 minute max
- Commercial Rubber — 36" max wing, freewheel prop; 3 flights, 2 minute max

Signature \_\_\_\_\_ email \_\_\_\_\_

Name \_\_\_\_\_ AMA #. \_\_\_\_\_

Address \_\_\_\_\_

CD — Bob Thoren, 10002 Bluff Drive, Huntsville, AL 35803, Tel 256-880-8099 email [dthoren3@comcast.net](mailto:dthoren3@comcast.net) or [bob.thoren@tdystsi.com](mailto:bob.thoren@tdystsi.com)



## QUICK AND EASY, LIGHT AND STRONG

David Mills

I build as many free flight models as the next guy, but there are only so many hours in the day, and a little laziness and relaxation will keep the tin foil hat off your head. Ergo, when building a model I'm always looking for ways to save time and still get the job done. I've also had what I think is a healthy skepticism about theoretical considerations in model airplane structures as they actually appear on models and in the air, appreciating it's in the execution that their benefits are realized, not on paper or on computer screens.

I've always had my doubts as to the virtues of the time-honored I-beam wing spar for traditional, all-balsa wings, always being considered as the ultimate structure in resisting loads in tension, compression, and torsion. We've all seen them for decades, two wide, hard balsa or spruce spars at the top and bottom of the wing's airfoil, usually one-third to one-half wing chord, joined by vertical balsa shear webs. Often these I-beams are allied with diagonal ribs, offering even more resistance to bending and twisting loads. The resulting I-beam structure is indeed strong, but does it ever take time! And, if there are any gaps in balsa-to-balsa contact between the spars, shear webs, and ribs, and if there's any void in the spread of glue, you've just sent a precise signal to the wing to break precisely there next time.

Over the last few years I've developed an alternative wing structure and method of construction for my medium-to-large rubber-powered models that, while not quite as strong as the theoretical promises of the traditional I-beam, still offers sufficient strength and much greater ease and speed of construction. There's nothing truly original in any of this, but the combination of these design elements and their sequence of assembly does offer light, strong, and easily built wing and stab structures.

I hereby provide some scans of the wing and stab framework for my Top Banana 200 E-36 project for illustration. I also provide a bit of step-by-step tedium in instruction to aid the reader's understanding of the procedure, as this is what brings the time-savings. Done in proper sequence, and with due diligence along the way, well, my friends, I'll never to do it another way again.

Much of the method is purely conventional, starting just so, for at the beginning you cut out the straight ribs to shape and LE and TE stock to length. However, don't cut any notches! Per tradition, pin the LE and TE down over the plan and install the straight ribs in the usual manner with simple butt joints at both ends of the ribs. At this juncture, I use an extreme minimum of glue, preferring thin CYA, just enough to hold everything together. Next, glue the wings panels together into the proper polyhedral. After that, install the ribs at the dihedral breaks. Let everything dry thoroughly.

Now you can liberate the wing from the board, and from now on, you'll be building in the air, which offers greater access to the wing's nooks and crannies and speeds things up a lot. You can also keep a vigilant eye out for unwanted warps as you go.

Looking closely at the photos, you'll see the TE is of two parts and the usual notches aren't there. Instead, cut lengths of 1/8 inch square balsa, the lightest you can find, and glue them between the ribs to the forward face of the TE. Now is the time to install whatever LE and TE gussets you think are necessary at the dihedral breaks. I like to keep mine small; I think most make theirs too large.

Now you install the full-depth main spar, but in two parts. In this case, we'll use a 1/16 in. thick spar as an example. Cobble up a handy throwaway jig from scrap to space the spar location from either the LE or TE. Glue two short lengths of hacksaw blade for a 1/16 in. wide notcher. At the top of the wing, make a notch at the spar location to a depth of a little over half the wing's thickness. Take your time; you need some accuracy here. For main spar material, use good, stiff, A-grain stock of at least 8 lb. weight; remember, you need real bending strength here. Cut the top spar to half the wing's thickness at this point and glue into the notch, making sure your eyeball test indicates no unwanted warps in the wing panel. Also, take care to custom fit the spar ends to each other at the dihedral breaks, no gaps! I use the smallest tab of CYA, just enough to keep everything in place.

Now flip the wing over and make a corresponding notch at the bottom of the wing, directly below the top spar. Take your time and stay accurate. Cut the bottom half of the main spar from the same stock to size. Apply glue to both surfaces of the top and bottom spar halves at their juncture (aliphatic and Ambroid is good) and install the bottom spar. Clean away any excess glue, no fillets anywhere at this point! Let the wing dry thoroughly. Keep an eyeball for unwanted warps along the wing panels. Pin the wing back down onto the board if you want to. Let everything dry thoroughly.

I like to add dihedral braces onto the main spar at the polyhedral breaks. I use 1/64 plywood. Dead straight along their top but running flush with the bottom of the spar, they're long and heavy but add much resistance to vertical loads and lock the two panel sections of main spar together in a vice-like grip. I use them on both faces of the main spar, fore and aft. I make the braces almost as high as the wing thickness and use a Zona saw to cut out space for it from the rib. Don't nick the spar! This deep and long ply brace adds quite a lot of bending strength at the center dihedral break, too, right where you really need it.

Now it's time to install the diagonal ribs and I do this in the air, too. It doesn't matter which you do first, those fore or aft of the main spar. Note the diagonal ribs forward of the main spar are used doubly in a "sawtooth" fashion and those aft, half in number. Make templates and cut them out, without any notching. Make the ends of both a little long to allow arrowhead beveling at the main spar and a straight bevel at either the LE or TE. Glue them into one panel at a time. I use the thinnest dab of CYA I can manage. Note both ends of the diagonal ribs make full, beneficial contact with the main spar. Keep checking for warps.

I like to use a turbulator spar between the LE and main spar. So, if you're inclined, notch the straight and sawtooth ribs and install the turbulator spar. My AE gurus tell me most of the torsion load is carried in this area and turbulator spar further locks in these busy elements.

Having completed all of the basic assembly, now is the time to inspect for unwanted warps and other related issues. After the wing is thoroughly dry, I give each panel a good look. Unwanted warps can be steamed out or wanted warps steamed in. If any stubbornness results, you can spray the offending panel with dilute clear ammonia solution, and let it dry overnight, pinned down.

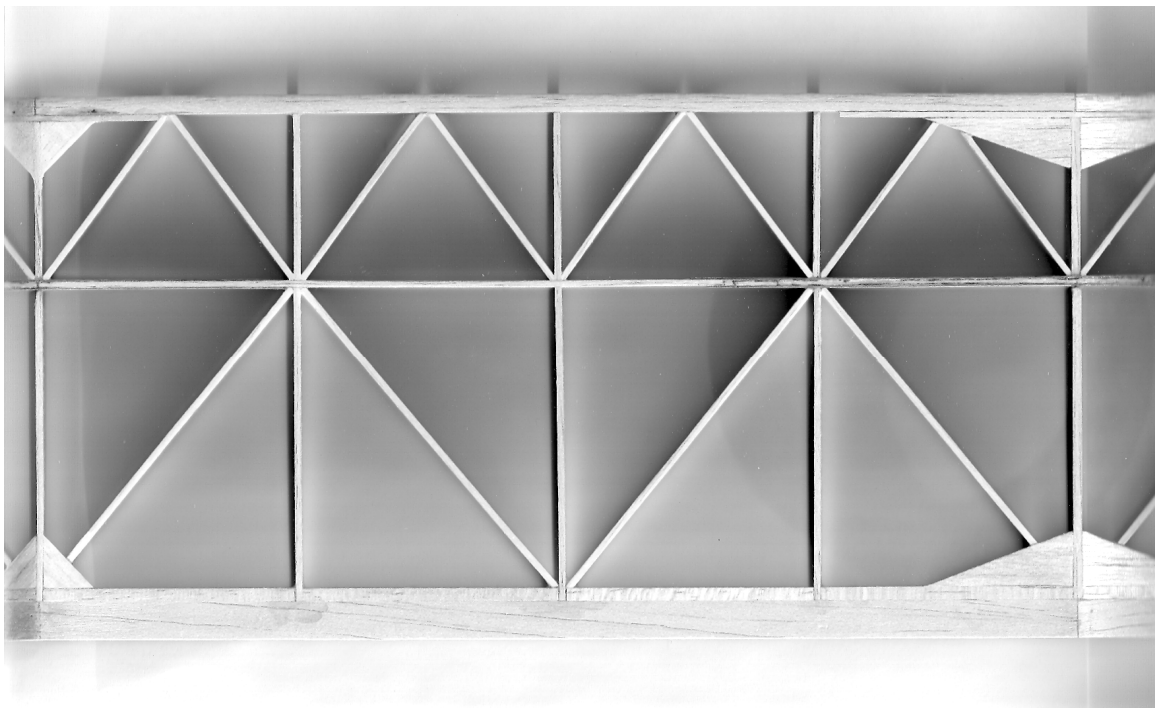
Now is the time to start the final application of glue to the structure. After you're sure the panels are flat or giving wash as desired, dilute some Ambroid with nitrate thinner. (Acetone evaporates too fast.) You can also use Titebond or equivalent diluted with water, too. With a small brush, brush on a good fillet to each glued joint. This is why only a small dab of CYA was used initially. Most of the useful adhesion is being done now, as Ambroid and other glues are less brittle than CYA. Let it dry and inspect everything thoroughly. If you suspect glue voids, give it another coat. Remember: unlike CYA, Ambroid, Titebond, and their ilk loose a lot of

their weight during drying, so don't be stingy. As evaporating glues dry, they add stresses to, so check for warps again. Remedy as required.

The wing can now be sanded and covered to your preferences. I'm very pleased about the degree this structure and method offers lightness, ease of construction, and bending strength. It also looks very cool through translucent covering.

Much of the wing's strength will depend on the sizing of the parts, particularly the main spar. But, anybody reading this is likely to be an experienced modeler and can go forward on their own. I would suggest, though, for larger models flying at higher speeds and undergoing higher loads, a thicker section of main spar be used at the wing's center than further out. This thicker spar can be sanded thinner easily enough prior to assembly as it moves outward toward the outer panels. Also, the diagonal ribs can be made from thicker stock in the central, higher load area. I've found this to be unnecessary with rubber models, but it's something you might want to consider with gas power models and towline gliders.

Stabs need less structure and bracing than wings do because they're asked to carry far less load. The photo provided of my Top Banana stab shows less extensive diagonal bracing than the wing. It all depends on the anticipated load. Keep in mind adding more structure than you really need is just hauling lumber around. Remember: mass and gravity aren't your friends in the air.



Top Banana 200 wing bottom, note 2-piece TE and 1/64 ply braces at polyhedral breaks



Top Banana 200 stab bottom, note 2-piece TE and limit of diagonal ribs

## 2011 TTOMA MEMBERSHIP FORM

Name \_\_\_\_\_ AMA # \_\_\_\_\_

Address \_\_\_\_\_

State and Zip Code \_\_\_\_\_

Other Family Members and AMA # \_\_\_\_\_

Telephone \_\_\_\_\_ E-Mail \_\_\_\_\_

\$20.00/yr. adults, plus \$1.00/yr. for all juniors and for additional family members in same household. Send check, payable to TTOMA, to Don Brown/477 Safari Cir./Stone Mountain, GA 30083/404-292-0379. **\$25.00/yr. after 2/15/2011.**