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HEART OF AMERICA FREE FLIGHT ASSOCIATION

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DISPATCH DECEMBER 2012

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Schedule of Flying Events

Date	Day	Location	Time	Notes
Dec. 16*	Sun.	Ozanam	8:30 AM -12 PM	Indoor
Jan 6*	Sun.	Osawatomie	8:30 AM - ?	Indoor
Jan 19	Sat.	Beatrice, NE	8:00 AM - 4:00 PM	Indoor
Jan 20*	Sun.	Ozanam	8:30 AM - 12 PM	Indoor
Feb. 3*	Sun.	Osawatomie	8:30 AM - ?	Indoor
Feb. 17*	Sun.	Ozanam	8:30 AM - 12 PM	Indoor
March 3*	Sun.	Osawatomie	8:30 AM - ?	Indoor
March 17*	Sun.	Ozanam	8:30 AM - 12 PM	Indoor
April 6*	**Sat.**	**Osawatomie**	**8:30 AM - 4 PM**	**HAFFA Annual Indoor Contest**
April 21*	Sun.	Ozanam	8:30 AM - 12 PM	Indoor
May 19*	Sun.	Ozanam	8:30 AM - 12 PM	Indoor

***** indicates official HAFFA event/activity

HAFFA Indoor Site Locations:

Ozanam Gymnasium
421 E. 137th St.
Kansas City, MO

Kansas City College & Bible School
7401 Metcalf
Overland Park, KS

Osawatomie City Auditorium
425 Main St.
Osawatomie, KS

For Outdoor flying information contact Mike Basta (913-492-4830)
For Indoor flying information contact Emil Schutzel (913-341-7788)

1. Osawatomie reserves the right to cancel our reservation if they get a paying customer.

INDOOR FLYING SITE FEE UPDATE:

This is a reminder that our indoor flying fee is $10/person.

HAFFA Indoor Championship Event for 2012-2013

We have decided that A6 will be the HAFFA Indoor Championship event again for the 2012-2013 season. The contest will begin in December. As in the recent past, there will be a single mass launch at each flying session. Each entrant will receive a point for entering & a point for each person he beats. For example, if 4 four people enter, the last person down will get 4 points (1 point for entering plus 3 points for each person he beat). We will hold the contest at both the Osawatomie & the Ozaman flying sites each month. Only your highest single score for the month will be used. This gives everyone two opportunities to participate in the annual contest each month & hopefully will encourage those that can not attend one of the flying sessions to still participate by attending the other session the same month. The contest will end with a mass launch at the April 6th HAFFA Annual Indoor Contest at Osawatomie.

If there are any questions, please feel free to contact Emil Schutzel or Gary Hodson


Classic
PEANUTS
by
SCHULZ
GOOD MORNING, GROUND CREW!
CONTACT!
SO LONG, CHAPS! I'M OFF IN MY "SOPWITH CAMEL" TO FIND THE "RED BARON"!
IT'S A TERRIBLE DAY FOR FLYING...AN ICY MIST FLOATS THROUGH THE SKY...
©1965 Peanuts Worldwide LLC
Dist. by Universal Uclick
11-4
SUDDENLY A STREAM OF TRACER BULLETS CUTS ACROSS MY RIGHT WING! I LOOK AROUND! IT'S THE "RED BARON"!
MY PLANE IS ON FIRE!
I LEAP OUT, AND PARACHUTE SLOWLY TO EARTH...
"I'LL GET YOU ONE DAY, 'RED BARON'!"
NOW, WHAT? I'M DOWN BEHIND ENEMY LINES, AND IT'S GROWING DARK...
I'LL NEVER SEE MY BUDDIES AGAIN...I'LL BE CAPTURED, AND SHOT AT DAWN!
WAAH!
?
HOW EMBARRASSING..
SCHULZ

Monthly meeting - 10/1/2012 by Dana Field

Attending this flying meeting were: Wally Freeburg, Jack Vetter, Dana Field, Lynn Chaffee, Mike Basta, Tem Johnson

Meeting was called to order at 7:02 pm.

Old Business

1) Secretary's Report from the September meeting – Minutes from September were read, and accepted as amended.

2) Treasurer's Report – No change from the September meeting. Report was accepted.

3) Indoor Flying Items –
   A) The Indoor Club Championship was discussed, and various different planes considered, but the consensus was that, although Gary, Emil, and maybe Tem, will continue to crush the rest of humanity, the A-6 is still the best plane. Without Emil or Gary actually at the meeting it is hard to consider changes. We would like to accommodate flying at both Ozanam and Osawatomie however because some members cannot get to Oz on Sundays before noon when the flying is over.
   B) Omaha – Beatrice contest – Only 6 flyers attended, 3 from Omaha and 3 from KC.
   C) The possibility of a postal contest was briefly discussed, with no resolution.
   D) To sanction or not to sanction our contests was discussed. For insurance purposes it would be desirable. Tem Johnson made a motion to sanction the contest, which carried unanimously. Mike or Tem will file the sanction.
   E) We would still like to have an additional contest at the Bible College in Overland Park.
   F) Hillside Christian Church in North KC – Wally's RC club flies there for next to nothing all day on some Sundays. It has a smooth ceiling, with no obstructions, and is similar sized to Osawatomie. Wally is to investigate the possibility of our flying there. It would be much closer than Osawatomie.

4) Meetings – a majority of members would like our meetings back at the Corinth Library Branch in Leawood. Tem Johnson said he would go to the library on November one and attempt to book the meeting room for the third Tuesday in January. If it is unavailable, he will book it for the second Tuesday, as no one had an objection to moving the meeting date.

New Business

1) The Marion Outdoor Contest – We had a total of 16 contestants, none from the Colorado club, probably because they had snow Friday, making driving here miserable or impossible. We had one junior. The weather Saturday was miserable, but Sunday was almost excellent. Chuck Powell (Benton, KS, Wichita club) won the Marion Cup. Mike Basta is to have a report with results for us at the November meeting.

2) Mike Basta wants to contact the Science Olympiad students who came to our September flying meeting and invite them to our club meetings.

Show and Tell

No one brought anything to show.

Next meeting – Tuesday, November 20 at 7:00 pm at the JC Main Library
Meeting was adjourned at 8:07 pm.

Indoor News & Views (INAV) status report by Nick Ray

After some starts and stops the new INAV webpage is up and running. Check it out. I welcome your feedback and I am planning to post some articles soon.

http://indoornewsandviews.wordpress.com/

Thermals,

Nick Ray

From the Editor's Desk:

From 1960 to October of 2012, the newsletter was distributed via print media several times a year. Over the years, too many people to name have supported INAV by providing editorial and publishing services. However, the strength of INAV has always been its content, which is provided by its readers. Beginning in November of 2012, Indoor News and Views will switch over to a web-based format. Much of what the indoor community has come to love about INAV will remain the same. Nonetheless, there will be a few changes that I hope will make the newsletter more informative and timely, and will simultaneously reduce the cost associated with its production.

The content of INAV will continue to be generated by its readers. The submission process is now somewhat more streamlined. To submit an article, simply follow the instructions on the submissions page. All submissions will be reviewed by an editor with some knowledge of the content being submitted. Once the article is approved for publication, it will be posted to the blog section for everyone to read. Once we have 40 pages worth of new content I will compile a new INAV issue and post it in the download section. Thus, it will still be possible for anyone who wants one to print a PDF of the issues.

Other changes that will affect INAV have to do with the new functionality of web based publication. We will be able to offer contest announcements under our events section. The events postings will be updated in a timely manner, thereby resolving INAV's historical problem of publishing the contest announcement and results in the same issue. Also, we now have the ability to allow comments on the content we publish. There has been some concern expressed about ensuring that all of the comments posted are constructive and polite. For the time being, I am trusting INAV's readership to conduct itself accordingly. However, if I am given cause, I will remove the comments feature from the blog. Last but not least, INAV will no longer be charging subscription fees. The web based format is much cheaper to produce and maintain. Therefore, INAV can now be sustained with occasional donations from its readership. Thank you to those of you whose donations have made the continuance of the newsletter possible all these years.

I now invite you to start writing and drafting content. Without your submissions there is no INAV. I will try to keep my meanderings about the business of INAV to a minimum from here on out so that we can start enjoying reading about our hobby again.

Regards,

Nick Ray

P.S. There is currently no registration required. If the comment feature proves to be a problem I might have to require a registration to use that feature so that it would not be anonymous. For now though you can do everything without registering.

From the Internet

If you like to be inspired by beautiful flying models click on the two links below.

A selection of Capt. Pat's Nov.-Dec. photos captured at Shangri-La South by bob Clemens

http://www.dcmaxecuter.org/060DECEMBER2012PHOTOPAGE/060DECEMBER2012PHOTOPAGE.html

More Pixs of Earl Stahl and his models by Bob Clemens

http://www.dcmaxecuter.org/061DECEMBER2012PHOTOPAGE/061DECEMBER2012PHOTOPAGE.html

Aerodynamic question from an internet discussion on the Indoor Construction (Yahoo Group) mailing list

Normally a wing is mounted perpendicular to the fuselage in plan view. However, if the wing is mounted at an angle other than 90 degrees to the fuselage, for instance with the leading edge of the right wing panel ahead of the leading edge of the left wing panel, the plane will turn to the left. What is the aerodynamic reason for this?
Gary Hodson

This is really a trimming dodge I picked up in the 1940s and it was probably well known even then. I had learnt to use some wash-in on the inside wing of the turn to avoid spiral dives. If you found you had not put in enough wash-in you realized that if you skewed the wing then the dihedral gave the effect of wash-in to the wing panel that was skewed forward and wash-out to the wing panel that was skewed back. The wash in of course gives as rolling moment on the model (with right tip forward a roll to the left.) The roll then will cause a slight left sideslip and therefore, eventually a left turn.
John Baker

About ten minutes after sending my earlier post I realized that as with so many aerodynamic happenings one thing leads to another and I needed to say a little more, perhaps, in this case, 'completing the circle' is the appropriate way to put it . Pushing one wing tip forward is the same aerodynamically as keeping the wing where it is and twisting the fuselage beneath it. This offsets the fin. Now offset on a fin, of itself, does not make an aeroplane turn but it does yaw the aeroplane so that one wing tip is forward of the other so, we are back to where I started in the original post. I will try now to complete things in a little more detail. The incidence difference on the two sides of a skewed wing will cause the aeroplane to roll into a bank. Some of the lift will now be acting sideways and the weight, as ever acting downwards, will cause the model to sideslip. The airflow will now be sideways onto the model, hitting the fin from the side and trying to turn the model in the direction of the sideslip (and eventually a spiral dive) however this oblique flow will also be interacting with the dihedral and if the dihedral and fin area are nicely balanced then a smooth banked turn will be the result.
John Baker

Skewing the wing relative to the flight path controlled by the vertical and horizontal stabs causes dihedral wing tips to act as ailerons (not rudders), rolling the model and causing the turn.

A model with a skewed flat wing (or a skewed wing with the induced wash-in/wash-out removed) will fly straight. White-wings has a model like this.

A polyhedral R/C sailplane will roll and turn with rudder only (i.e. with the rudder offset causing the wing to be skewed relative to the flight path), but a flat winged sailplane won't. Flat winged sailplanes required ailerons and elevator to roll and turn. Rudder is used to keep the nose level during the turn.
John Kagan

Strange Facts

Humans blink over 10,000,000 times a year!

Every year, kids in North America spend close to half a billion dollars on chewing gum!

More money is spent on gardening than on any other hobby!

No Secrets

One Flier's Approach to Better Performance - Part 1

By Don DeLoach

In Free Flight, as in most sports, the *competitor* wins the event, not the tennis racquet, skis, or race car. The model is just a tool to that end. In our sport (especially mass launches) the "best" or lightest model seldom wins. That said, I'm not going to try to convince you that building light isn't generally a good thing. If you're good at it and your models are strong enough to survive the rigors of contest flying, keep doing it. Lighter models generally have more duration capability, especially in ideal, light/no-wind conditions. But I believe that the mantra of "adding lightness" is ultimately a crutch. What most modelers should focus on first is improving foundational skills such as their understanding of trim/stability, and mastering their winding techniques.

My Models

All of the mass launch models I took to Geneseo in 2012 in are near the middle of the pack in terms of wing loading. Some are actually a bit heavier than the "big guns". I consider them "all-weather" airplanes. Here are the data:

F4U Corsair	39g	22.5"	Original plan using enlarged Drela Peanut fuselage. TVo = .65. Dihedral up to the bottom of the canopy, seems adequate. Very stable. 12g x 4str 3/32" & 2str 1/8".
Cessna CR-2	49g	22"	Reduced from 24" Rees plan, original wing and slightly enlarged stab, 10" prop. A spectacular, forgiving design. 16g x 6str x 1/8". Will take 8 in.-oz. safely.
Bristol Scout	53g	21"	Enlarged from 1970s Micro-X peanut plan. 35% C.G.,very stable. But also heavy! 11.5g x 4str 3/32" & 2str 1/8". 8.5" prop, carved.
DH.94	27g	23-7/8"	Enlarged from the great Mike Nassise plan, stab enlarged 10%. 8" plastic prop cut down from 9". 7.5g x 2str 1/8" + 2str 3/32".

Props and Rubber

For my 21-24" birds I aim for a prop diameter of 40% of the wingspan. This is a bit arbitrary but seems to work. All but one of my models have carved props in the Pitch/Diameter (P/D) range of 1.15 to 1.30. The less drag on the ship the higher P/D you can safely use, but I never exceed 1.3. The DH.94 is the only scale model I currently fly with a plastic prop, a 9" blue Peck prop cut down to about 8".

Too many guys ask obsess about prop P/D or rubber motor length/cross sections without remembering that the two are integrated. That is, for a given airplane every prop has an ideal rubber motor and every rubber motor has an ideal prop. Finding the right combination is first step toward optimizing your flight times.

Some guys--Wally Farrell comes to mind—get spectacular results with plastic props, which I consider generally inferior to carved props. Wally is able to do this because he optimizes his motors to his props. Conversely, Wally could probably not put one of my carved props on one of his airplanes and expect to not have to change the rubber motor to match it.

Dispelling the Myths

"Set CG at 25-30%". We've all heard that one, but it is often a trap for mediocre performance in FF scale. There's a simple antidote to this: the Bill McCombs Tail Volume Coefficient/Starting C.G. formulae.

TVo = stab area/wing area x tail moment arm/wing average chord

C.G. (%) = 16 + [TVo x 36]

As soon as I started calculating TVo and C.G. position my understanding of FF trim and stability was changed forever. My models were easier to trim, held their trim better, were less prone to crash, and were able to handle more power. All these factors lead to better (longer) flying models, and more contest success.

Bill was one of my early mentors and a Princeton-educated Senior engineer for Vought Aircraft. What is TVo? Put simply it is the measure of a horizontal tail's *effectiveness* as a function of its tail moment arm (length from wing LE to stab LE) and wing average chord. TVo is hugely important, because it explains why a "scale model with a 25% stab" is too vague. A 25% stab on a P-51 Mustang...or a Pilatus Porter? The two airplanes have vastly different moments that result in very different tail effectiveness. One may need a C.G. at 29% while the other needs to balance at 47%. This C.G. difference greatly affects flight trim and behavior.

The *magic* TVo number I have found (through much trial and error) for FF scale is 0.65. When plugged into the McCombs C.G. formula this results in a C.G. of 38%--well aft of the clichéd "one-quarter to one-third" point.

With a 0.65 TVo almost any scale model can be made to fly well with not a lot of fuss (assuming good fundamentals like warp-free

and well-aligned surfaces, adequate dihedral, proper fin area and methodical trimming in calm weather). With TVo less than 0.65 models become quite a bit harder to trim for competitive flight times, I've found.

Some subjects with longish tail moments and/or larger stabs can have even larger TVos, which is a very good thing. If you can achieve 0.75 without making the stab look excessively large (remember, these *are* scale models!) by all means, do it. This results in a C.G. of 43%-- meaning you can put in a very long motor often with little or no nose ballast. You'll also have a model with less need for downthrust and decalage.

Can a Model Have Too Much Stability?

Yes! The most common example in FAC circles is too much longitudinal (pitch) stability. This model is going require a lot of nose weight to balance, will need more decalage, and as a result will need much more down thrust to control the power burst than a properly-C.G.ed model. I see lots of these models at FAC contests. They fly fine in cruise mode but they can't take advantage of the last 30-50% of the available torque without looping or requiring gross amounts of cruise-killing down thrust. Many of these models could be rebalanced at 35-40% of root chord, and they'd require less nose weight, less down thrust, and they'd fly significantly longer because they'd be able to handle more power and climb more steeply.

How Much Decalage/Incidence?

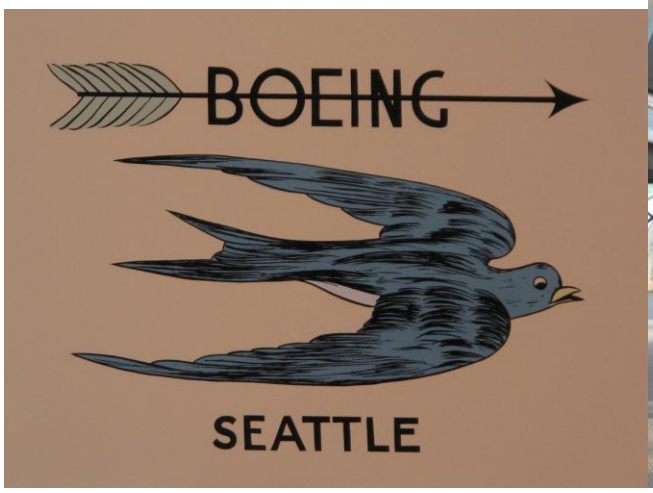
Forget about measuring this. Just calculate the TVo and starting C.G., balance on the bench with a motor installed, then start your trimming. Test glides over tall grass will reveal what is needed. Once the model is gliding safely over a short distance I take it to a steeper hill and let it glide longer. Some type of easily adjustable stab LE or TE is a big time-saver. I use 0-80 nylon screws under each TE on a "split" stab rotating on .040 carbon rod.

Postive Incidence in the Wing or Negative in the Stab?

This is a rabbit trail that just leads to confusion. I have models with 0 degrees of wing incidence that fly as good as models with 3 degrees wing incidence. All that matters is the *relative* angles of the wing and stab—known as *decalage*. In a typical FF scale model with TVo between 0.65 and 0.75 decalage is going to be about 2-3 degrees, but that's trivial because you're not ever going to actually measure it. Just set the C.G. per the TVo, start your test glides, and tweak the stab or wing angle until you get a floating glide. That's it. From this point you know you have a model with adequate pitch stability with C.G. in the right place that is safe to start power-trimming. You should never need to trim anything but the thrust angles from this point on. ---

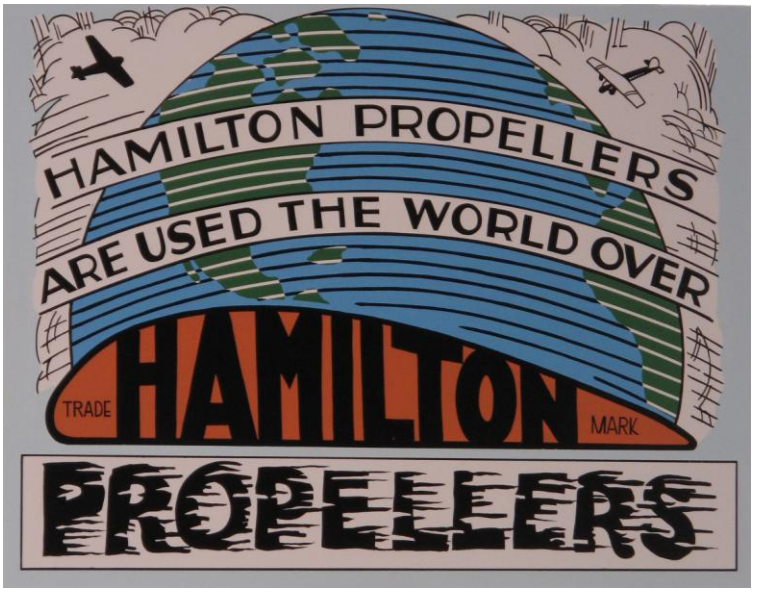
Some Photos from the Museum of Flight in Seattle, WA by Gary Hodson




BOEING
SEATTLE


SAN FRANCISCO
CHICAGO
BOEING
AIR TRANSPORT, INC

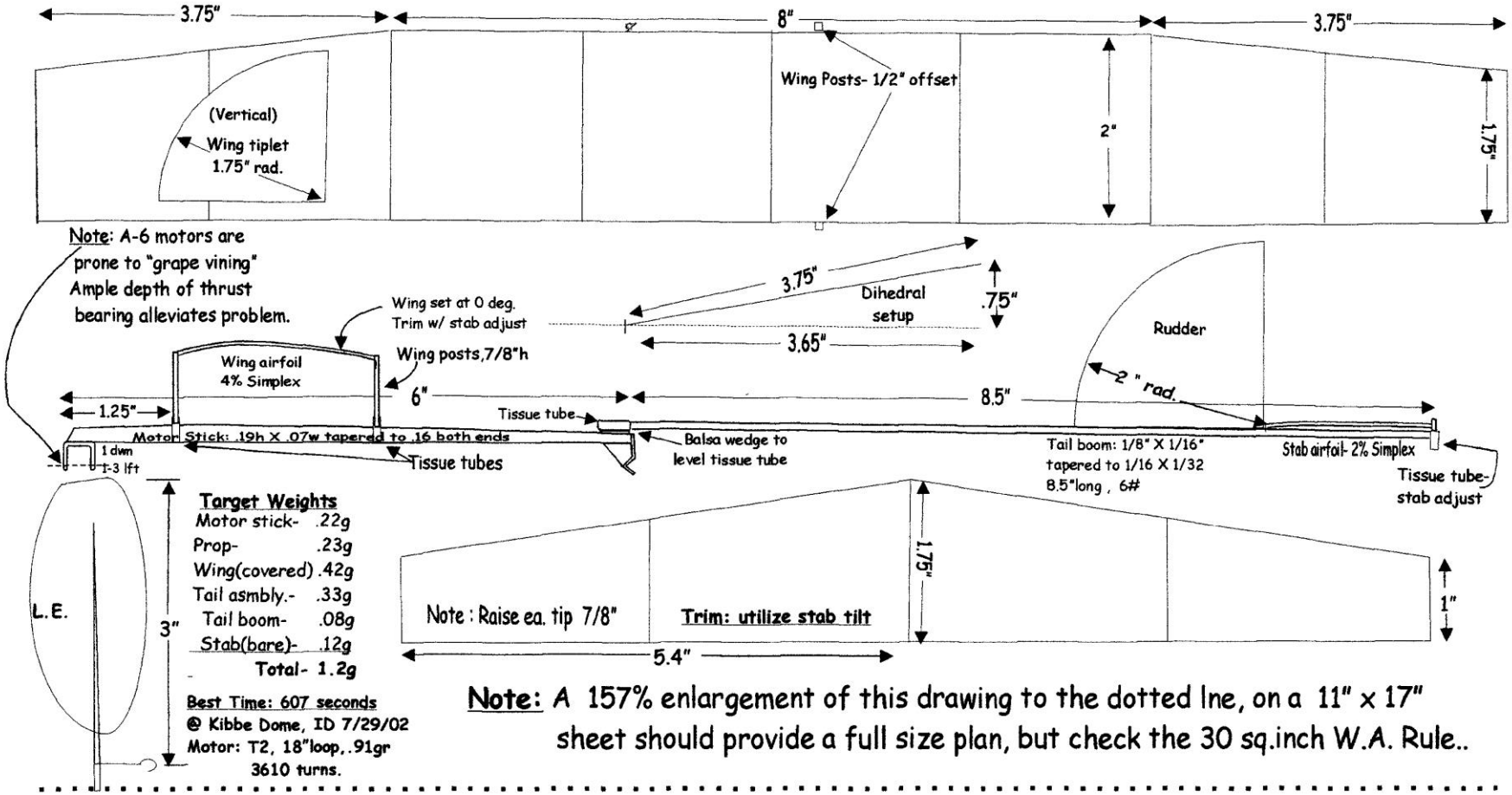

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City of Auburn


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N4339
140
UNITED STATES





Note: A 157% enlargement of this drawing to the dotted lne, on a 11" x 17" sheet should provide a full size plan, but check the 30 sq.inch W.A. Rule..

A-6 Rules: 30 max sq.in. W.A., 1/32" max prop shaft dia. 6' max prop dia., Blades-flat,no camber, balsa or plastic, 1/32sheet (edges not rounded)
Motor stick: 6 inch max length(rear hook to thrust bearing)
All strip wood to be 1/16 sq. (no sanding)
All sheet wood: 1/32nd stock (ribs ,prop blades, etc.)
Covering: Jap tissue, Gampi or condenser paper
Rubber powered

GARY HODSON'S "WART"

RECORD SETTING A-6 DESIGN

PUBL.- INAV, ISSUE #108, 09/02

Drawn: J. O"Leary , Minneapolis. Modeler 01/03

Note: Do Not use the enlargement % on these plans. Use the dimensions.