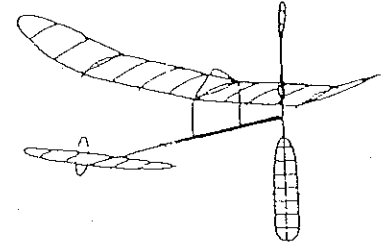


ISSUE # 126
WINTER 2010

INDOOR

NEWS and VIEWS



FROM THE EDITOR'S DESK

Here we go with issue #126. We still have bugs to work out, mostly in the end of subscriptions. Its going to take a lot of typing and going through our past records and my back is not quite up to it. I can sit for a while but pay for it afterward. The best place to sit is in my van, it has real comfortable seats up front. Back to the end of subscriptions. I will not cut off any body until I get it squared away. The other problem is getting a bank to get a non profit checking account. I have the Federal EIN number, but am having problems with the City Of Newport News. It should be solved in a week or two. I have a bunch of checks to be cash and have been waiting for this checking account. My back is getting better but progress is slow.

Back to issue #126. We have the rest of the text on Lou Young's radical Limited Pennyplane. It helps to read this so you know where Lou is coming from in his design. I just reread it myself and I thought EZ-B was a bit too technical.

Our next set of plans is an EZ-B by Yuan Kang Lee. What got my attention was the 30 minute flight in it's log book and of course it's total weight, .38 grams. If your going to build this model check with Jeff Hood and Tim Goldstein for the wood. Your not going to find it at your local hobby shop. Kang has also given us a good list of wood, grain and size to help keep you near the weight of his model. The top view has the shape of an FAI power model and is quite pleasing to the eye. All my stuff has square corners. Send in pictures and results if you build and fly one

Let's talk about the Wally Miller One design event to be held at the 2011 Indoor Nationals in Johnson City, TN. A letter from Wally indicated the weight should be 1.7 grams, so as you will see in this newsletter, I made that change. I then received another letter from Wally that the model weighed 1.6 grams. In the interest to eliminate confusion there will be no more rules changes. There is also a small blurb elsewhere in this newsletter on this subject.

Also in this issue is a flyer on an International Postal contest for Ministicks and A-6 models the times are handicapped on ceiling height so flying a low ceiling site helps. It is a postal contest, however I will take scores by E-mail to save time and money. However since we send the results and trophies to the flyers we will need addresses as well as the scores, site height and date. No, I will not set up a web site. By the way the Brainbusters have run this contest for a number of years and are looking for a club or some person to pick up the operation of this long running contest.

My telephone # is 1-757-877-2830 and the E-Mail is vandover@cox.net

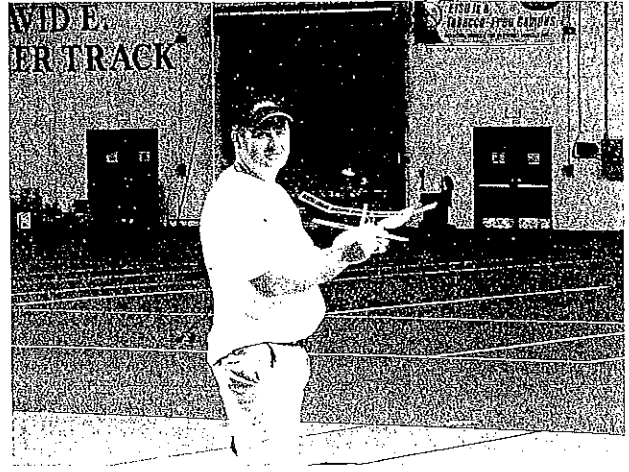
WALLY MILLER'S ONE DESIGN EZ-B EVENT RULES.

We mentioned these rules in the last newsletter and now we want to update you. We have changed the weight from 1.9 grams to 1.7 grams. A letter from Wally suggested this and I feel we should respect his wishes, so 1.7 it is. The prop blades may be cupped, the degree is up to the builder. The covering will be Mylar and the rubber motor will be Tan II, the vintage will be your choice. All dimensions as given on the plans will be adhered to. Wally also added that the prop is 10 inches in diameter and the stab width is 8 inches, We'll publish some of Wally's flying tips on trimming the model in the near future, so stay tuned.

PICS FROM THE 2010 INDOORS



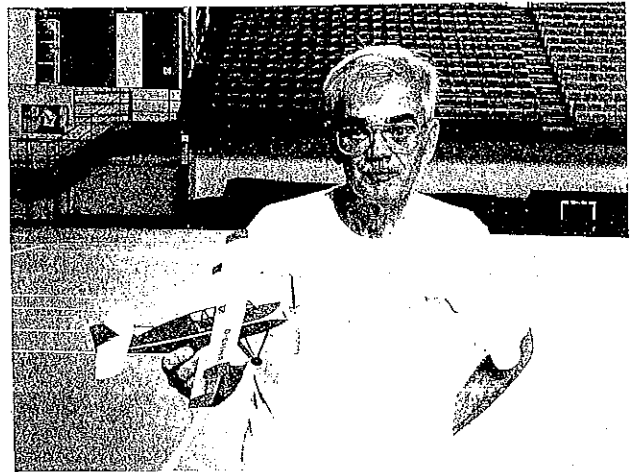
Name all these guys and win
A cup of coffee in 2011



Doyle Blevins, won in scale

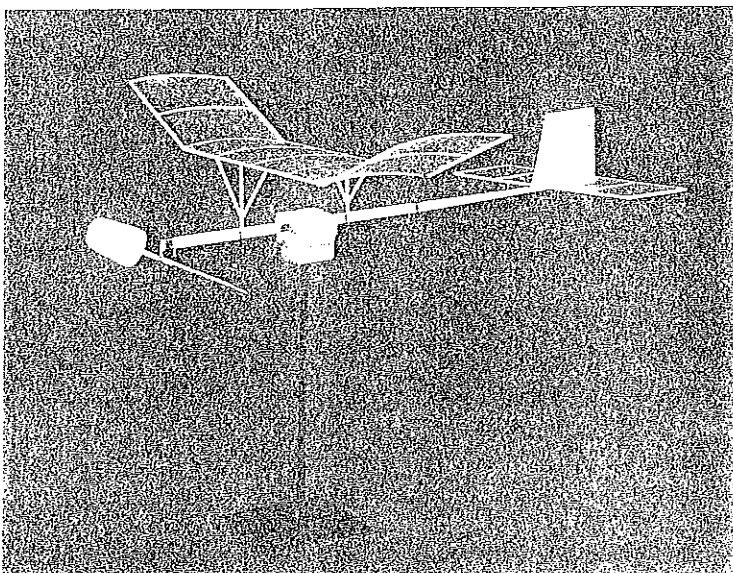


Hard working Bill Gowen



Paul Grabsky is that you ?

Pics by Ken Achee



A級
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室内競技機の中で、A級はもっとも基本的な種目ですので、性能だけに留まらず、加工・組みあつかい・強度・安定性などがより重要になってきます。

ここに取り上げる「アパワッチ」は、以上の各点を

を考慮して設計したもので、競技機というよりむしろ、入門機と云って可也です。軽便材料を用いることで、高性能競技機として高い記録に挑戦することもできます。本機は機体重量2.5~2.6gで、3分以上の飛行性能を持っています。

HELP!!, MR DANJO.

Crooked Penny 9

Lou Young 8/15/2010

I'm an experimenter who almost never builds the same plane twice. However, plans for Limited Penny Planes are constrained so I have been using the same layout with minor variations for some time. I like to try different ideas with every plane, for LPP that pretty much comes down to props. The crooked wing design has been explained in the 41st Symposium Report of the NFFS, so I don't need to describe the reasoning other than to say that the plane is supposed to fly level at its design cruise circle radius of about 17 feet (constrained by the size of the San Jose gym we test in). I believe that the reduction of area on the right wing is not a problem because the whole wing, when circling close to its design circle radius, is more efficient than a rectangular, offset and twisted wing, especially at small radius circles. The effect is that the lift distribution is similar to a symmetrically tapered wing flying straight. In my earlier LPPs I was troubled by wing deflections that spoiled trim, added drag and caused performance variations that masked effects of changing rubber size and props. I stiffened #9s wings with boron strips. Time constraints kept me from making a new motor stick so I used the one from CP #8. On the 15:39 flight at Kibbie Dome under high torque the motor stick twisted and caused the right wing to twist (diverge) to a nearly negative angle of attack and the plane raced left around me for a couple of laps, tipped into a right roll! It should have rolled out of the circle -- I couldn't see it, but I think the motor stick was also bending so the resulting downthrust was actually left thrust. Karma. Luckily it straightened out and went into a good climb to just under the "clouds" (suspended white panels) and a nice cruise. For the next flight the torque was only 78 percent of the first but the flight was longer, though the plane gently hit the clouds twice.

Here are my outlooks on the features of the plane.

Winglets: Invented by Dick Whitcomb at NACA Langley Field, they are widely used on full size planes to improve lift/drag ratio, and are also very popular on indoor ships that are span-limited by the rules. Years ago Hank Cole glide-tested winglets on a Pennyplane and said that they improved performance over the non-winglet wing. I had already been using them, but with Hank's stamp of approval I went whole hog. I've tried longer (higher) winglets but their structure has to be heavier and I don't want weight at the wing tips, nor do I want the twisting effect of the winglet drag high above the wing. It seems important to fit the winglets carefully to the wing tip chord to minimize parasite drag at the joint. Winglets also help to reduce the span wise airflow caused by both sweep and dihedral. I've tried no dihedral with only winglets plus the high wing to substitute for dihedral but it was obvious that the plane had to yaw to avoid slipping sideways into the turn. Adding sweepback to a wing without dihedral but with vertical winglets still required a little yaw to provide stability.

Sweepback: I use it to reduce the divergence tendencies of straight wings. It also serves as extra dihedral if the plane runs into disturbances or whacks the ceiling.

Dihedral: I will decrease the dihedral on #10 a little bit to increase projected area.

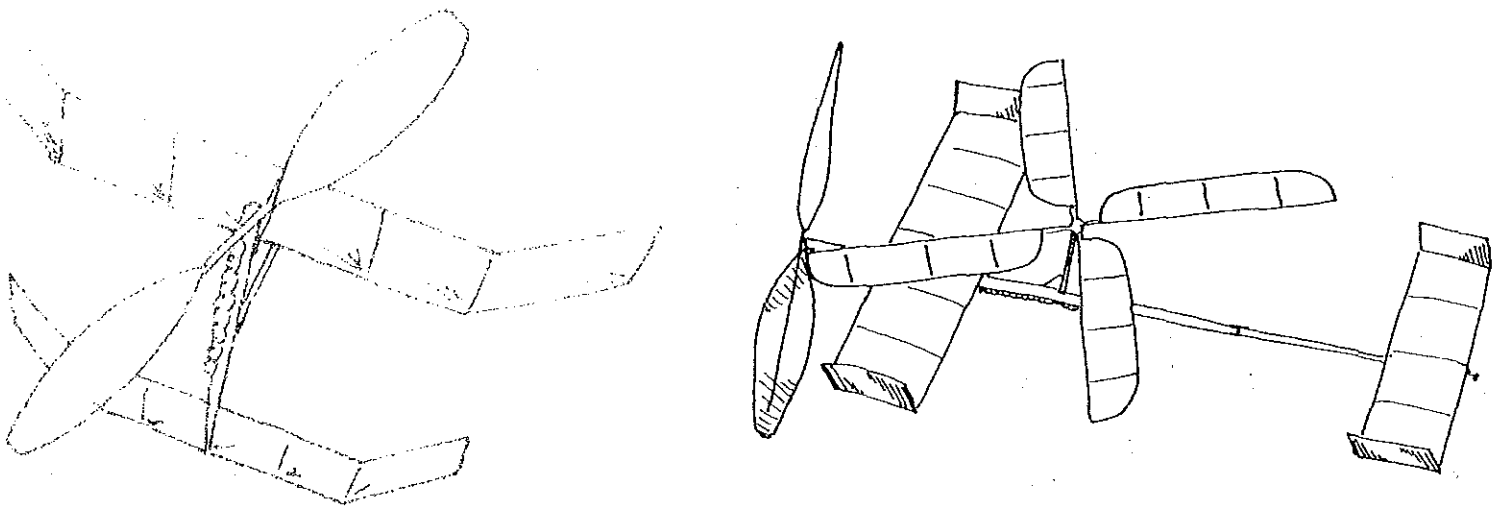
Airfoils: Don't seem to make much difference, though I favor higher camber for no good reason. I've tried high point at 40 percent and 60 percent back from the L.E. and they seem to work, too. Hank found a German paper that showed performance advantages for the 60 percent location, and I want to try that again.

Covering: I like tight covering so I build the wing in 2 pieces and glue them together after covering. I've tried only dihedral at about midway out on the wing because it is more effective than central-only dihedral but the wing was heavy where I don't want it to be heavy.

Prop: This is the biggest area prop I've tried. I wasn't happy with its flare because the camber made the spanwise stiffness too high. So I made a new form and took the camber out. This thing flares good.

Trim: The prop became heavier during the Nationals after repairs - a fully wound motor broke while I was fitting it to the rear hook and whacked the prop. So the balance point moved further forward, and to keep minimum weight I couldn't use enough ballast to move the balance point back. I should have made the tail heavier so the rubber weight would be centered at the BP and the decalage could be decreased so the big tail would carry a larger share of the lift. After we got home from Kibbie Dome I checked the lateral balance of the wing. An accident at the Nats required repairs to the left (larger) winglet so it turns out that the wing was heavier on the left side by 0.015 gram. Also, the tail boom offset for turn places its weight slightly to the left of the centerline. I may try cocking the fins with no tail boom offset on #10, though I don't expect a measurable performance change..

Tail planform: The tip fins should increase tail lift like the winglets. The sweptback wing places less side area ahead of the C.G. so only small fins are required to provide lateral stability. I was asked why the tail isn't whopperjawed like the wing. I have tried it (unswept), but couldn't justify the extra weight to make 1 or 2 more joints on a surface that has lower span and therefore less velocity difference across the span than the wing.



Clip art by Steve Gardener

2011 INTERNATIONAL INDOOR POSTAL CONTEST MINISTICK & A-6

Welcome to the 2011 International Postal Contest. Once again the Brainbusters will host the Competition for Ministick and A-6. As before the two events will be flown between 1 January 2011 and 31 March 2011. Individuals may fly as many times as they like, in as many sites as they can, in the three month period. However, only their highest scores will count towards winning in their respective events. All scores will be mailed or sent by E-mail to the address listed below. We will not have a web site and will not divide flyers into various groups. Scores will be published in the Brainbusters Newsletter for February and March and in the February/ March 2011 Indoor News and Views. All final scores will be mailed to all entrants that participate. Trophies will be awarded to third place in both the Ministick and A-6 Events. E-mailed scores will include the flyers home address, please print. Thank you for your past support and good luck in 2011. Both event rules are included.

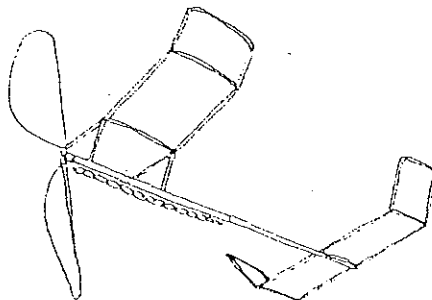
SEND YOUR RESULTS TO:
BRAINBUSTERS
112 Tillerson Dr
Newport News, VA
23602 USA
E-MAIL vandover@cox.net

This contest is open to indoor models that comply with the AMA Ministick Rules:

All contest flights to be timed by someone other than the flyer

Best single flight time wins after the flight time has been corrected for different ceiling heights. Ceiling height to be measured as per FAI Rules, but with a five meter circle. The correction factor is 627 divided by, (167 plus 46 times the square root of the ceiling height in feet.) The time in seconds will be multiplied by this to give the corrected time.

MINISTICK RULES



24. Mini-Stick. For event 220.

24.1. The intent of this proposal is to make Mini-Stick an official event to allow including the event in AMA contests, to increase participation, and to allow records to be more easily kept.

24.2. The Mini-Stick model shall be a monoplane covered with any commercially available material sold in sheet form. Microfilm is not allowed.

24.3. The maximum projected wingspan shall be seven (7") inches.

24.4. The maximum wing chord shall be two and one-half (2-1/2") inches.

24.5. The maximum length (from front of nose bearing to front of rear motor hook) shall be five (5") inches.

24.6. The maximum length from front of nose bearing to rear most part of model shall be ten (10") inches.

24.7. The projected area of the stabilizer shall not exceed 50 percent of the projected area of the wing.

24.8. The maximum diameter of the propeller shall be seven (7") inches. The propeller shall be constructed of wood. Wire shafts are permitted. Hubs that allow blade replacement and/or manual pitch adjustment are allowed. Mechanisms that cause variable pitch and/or variable diameter of propellers while in flight shall not be allowed. (Natural flexing and flaring of wooden blades is allowed.)

24.9. The minimum overall weight of the model (without motor) shall be 0.015 ounce.

24.10. Construction is to be primarily wood, with adhesives used only for joining. Tissue and/or thread is permitted for wrapping bearings, hooks, and for making sockets, if desired. Boron, carbon fiber, Kevlar, and fine wire bracing are not permitted.

24.11. Mechanisms that restrict the torque available to the propeller are not allowed.

1. The contest is open to indoor models that comply with the A-6 rules.

2. All contest flights to be timed by someone other than the flyer.

3. Best single flight time wins, after the flight time has been corrected for the 70 ft factor. Ceiling height will be determined by the AMA/FAI measurement method. Flight times will be normalized against times from the highest site entered according to the following formula:

* The normalized flight time = $\frac{2}{3} (\text{Highest Ceiling Height}) - (\text{Local Ceiling Height}) + (\text{Local Time})$

* Highest ceiling height will be established as 70 ft until an entry from a higher site is received.

* Example:

Highest ceiling entered = 70 ft
 Local ceiling = 22 ft
 Local time = 97 sec
 Normalized time = 129 sec
 $\frac{2}{3} (70-22)+97 = 129.0$

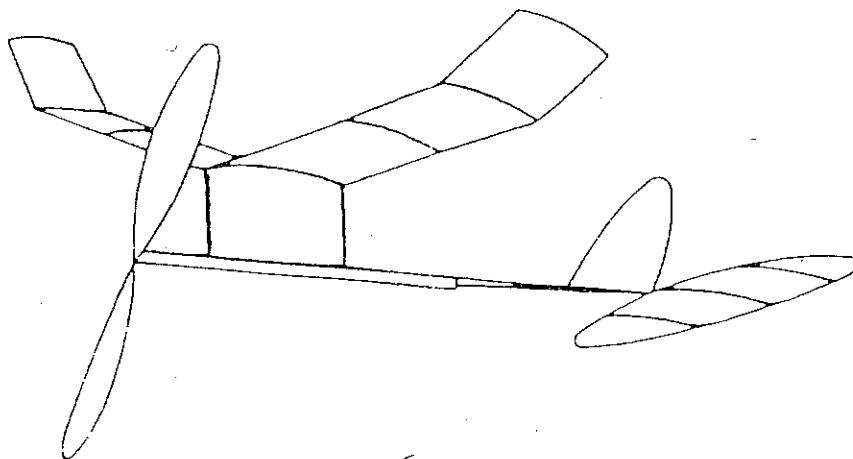
*Note That the official normalized times will not be available until the contest is completed

A-6 MODEL RULES.

1. 30 sq in max wing area.
2. 1/32 max prop shaft diameter
3. 6 in max prop diameter. The blades are to be flat, no chamber. Blades may be made of balsa or unlightened plastic, no foam. 1/32 in thick or 1 mm
4. 6 in max motor stick length as measured from the prop thrust bearing to the rear hook. Tail boom length unlimited.
5. All strip wood construction is to be a minimum of 1/16X1/16 or 1.5X1.5mm where only metric sizes available. The strip wood may not be sanded to any shape other than a square.
6. All sheet wood construction, prop blades, wing and stab ribs are to be a minimum of 1/32 or 1mm thick. Prop blade edges will not be rounded.
7. All wing and stab ribs will be 1/32 X1/16 or 1.5mmX1mm minimum cross section.
8. Covering materials are limited to: Jap tissue, condenser or Gampi paper.
9. Only wood, wire, adhesives and allowed covering materials can be used for construction with the exception of the prop shaft support and bearing which may be wire, aluminum or plastic. No special indoor material may be used.
10. Rubber power only.
11. The use of metric size wood is restricted to those that normally cannot get other size wood.
12. The model must weigh a minimum of 1.2 grams

Mail results to:

Brainbusters
 112 Tillerson Dr
 Newport News, Va
 23602
 USA



Indoor Postal Contest Results Form

BRAINBUSTERS
112 TILLERSON DR
NEWPORT NEWS, VA
23602 USA

Club Name _____

Date of Contest ____ / ____ / ____ Site Name _____

Ceiling Height _____ Feet Circle one Ministick A-6 EZ-B

Contestant Name	Address	Time in Seconds	Timer Initials

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Contest Balsa & Laser Cut.
item code: PP001-L

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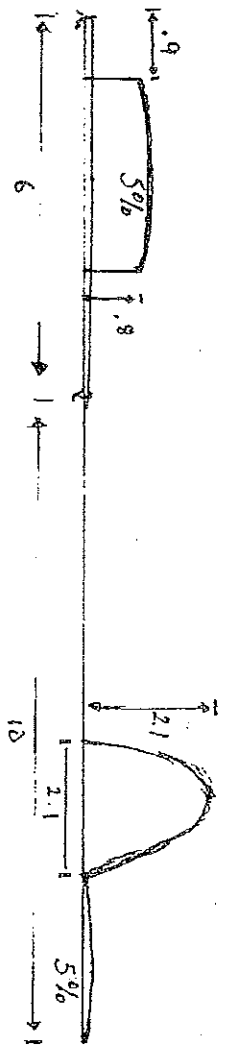
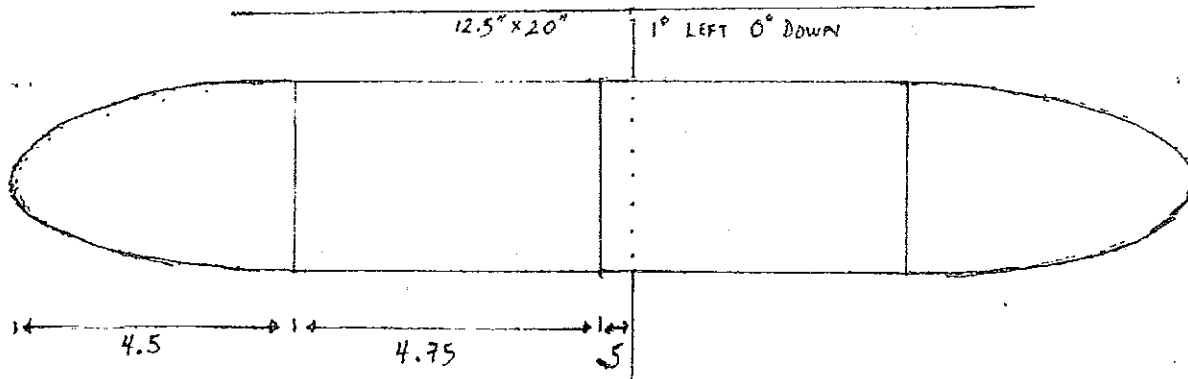


Ray wants to add this to his ad for Indoor Specialties, so here it is.

Specialty tools, including Scales, Rubber and Balsa Strippers, Tail boom forms, Dial gages, Boron glue Applicators, And Top Hat Benders.

Materials, including, Ultra and Superultra Pigtail thrust Bearings, Bracing Wire, Boron (.003 and .004), O Rings, Condenser Paper.

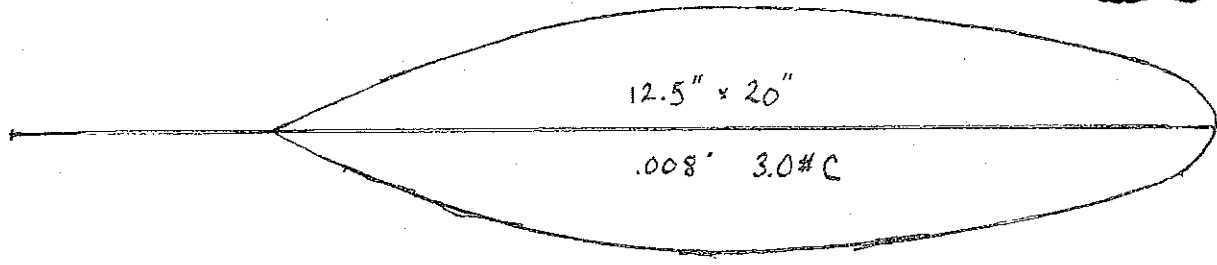
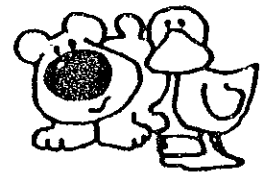
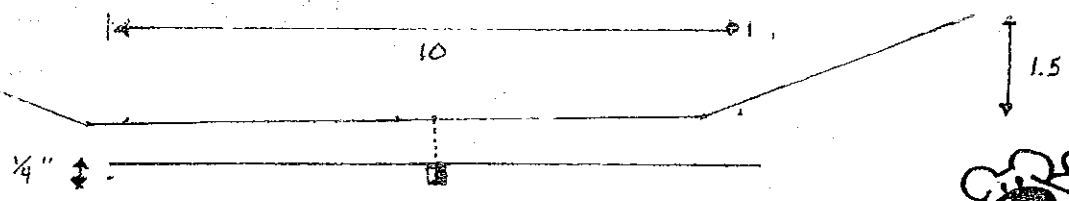
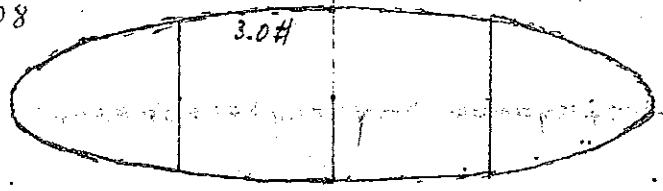
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RIBS	.022 x .045	4.8#C
STAB		
SPAR	.015 x .030	3.7#
RIBS	.015 x .030	4.8#C
PROP		
SPAR	.060 x .045	5.1#
	.030 x .030	
BLADES	.008	

STICK		
MOTOR STICK	.095 x .150 (F)	3.5#
	Y .145 (C)	
	X .105 (E)	
POST	.050 DIAMETER	7.3#
BOOM	.040 x .070	6.0#
	.030 x .025	

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WING	.105
PROP	.102
FUSE ASSEMBLY	.167
TOTAL	.374g

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