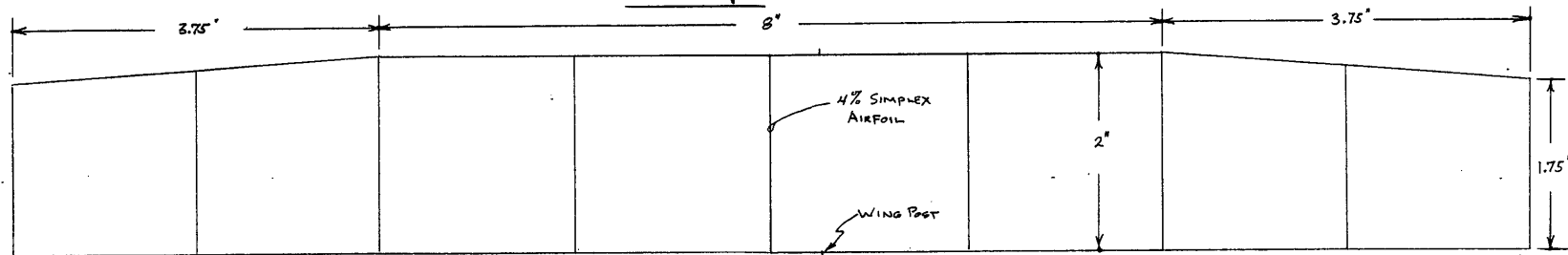


WART

A-6 By Gary Hodson REVISION #1 12/10/04

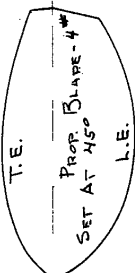


BEST TIME: 10:18, 7/29/03
 MOTOR: 3/02 TAN II, .86 GR X 18" LONG, 3660 TURNS

WING TIPLET - SEE BELOW

C = 3.75"

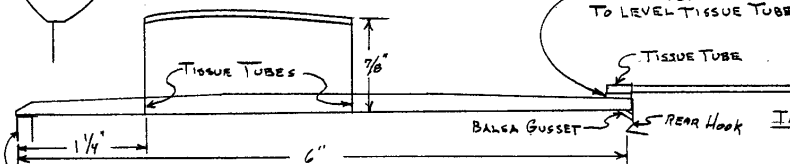
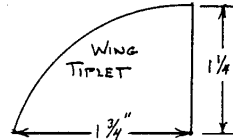
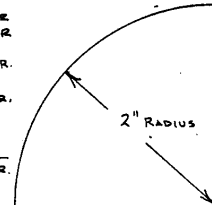
B = 7/8"



MOTOR STICK: .070" WIDE X .190" HIGH - TAPERED TO .160" BOTH ENDS
 8"

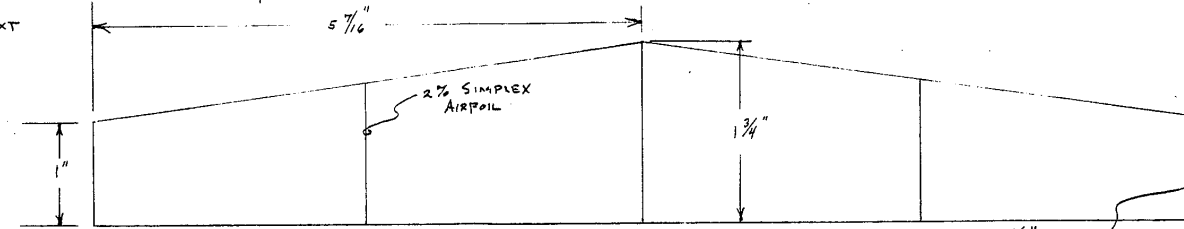
WING: SET AT 0° INCIDENCE
 TRIM BY ADJUSTING STAB.

TARGET WEIGHTS:
 MOTOR STICK - COMPLETE = .22 GR
 PROP - COMPLETE = .23 GR
 BLADE - .08 EA
 WING - COMPLETE = .42 GR
 BARE FRAME - .21
 TAIL ASSEMBLY = .33 GR
 BOOM = .08
 STAB (BARE) = .12
 TOTAL = 1.20 GR.
 1.20 GR MINIMUM ALLOWABLE



TAIL BOOM - 8 1/2" LONG / 1/8" X 1/16" TAPER TO 1/16" X 1/16" / 6"

MICRO X (TBR-1) BEARING - SEE TEXT
 0° DOWN / 1°-2° LEFT THRUST
 TRIM TURN BY TILTING STAB.



HORIZONTAL STAB.

NOTE: RAISE EACH TIP 1/8"

WART (A-6) by Gary Hodson First Place Kibbie Dome 2004, USIC 2004

Originally, A-6 was conceived by Clarence Mather in southern California as simple a club event. The concept spread rapidly across the USA until today it is among the more popular events (with the largest number of entries) at the USIC. It is essentially an entry level duration event. The rules are basically:

- Rubber powered.
- 30 Sq. In. Max projected wing area.
- Maximum projected area of the stabilizer is 50% of the wing area.
- 1.2 gram minimum weight, less motor.
- 1/16" X 1/16" minimum strip wood size.
- 1/32" minimum sheet wood thickness.
- Ribs may be 1/16" X 1/32" minimum.
- 6" maximum prop diameter. Prop blades to be flat. I.E. No camber or twist. 1/32" thick sheet minimum.
- 6" Max. motor stick length, measured from the thrust bearing face to the apex of the rear hook.
- Covering material to be tissue paper or condenser paper. No plastic film.
- No "high Tech." materials such as carbon fiber, boron, etc.

The A-6 is easy to build, sturdy by indoor standards, good for teaching indoor trimming techniques, small enough to be easily transported and flies well in small gyms as well as large sites. (A perfect next step from the Delta Dart – Ed.) By specifying only wing area, rather than wing span & cord, experimentation is encouraged. The same is true for tail boom length & tail surface area.

Wart

Named after my cat who liked to help me build airplanes. For several years the **Heart of America Free Flight Association** (Kansas City area) has selected the A-6 to be its "official event" for our annual club championship. As a result, we all have been focused (some would say obsessed) on improving our A6 times. We fly a lot of ¼ motor flights & share information on what works & does not work. This design has evolved from our shared experiences & has won at both the USIC and the Kibbie Dome.

Best time: 10 minutes, 18 Seconds, 7/28/03, Kibbie Dome, Moscow, ID

The plan contains most of the information you need to build a competitive plane. Following are a few details of the construction not shown on the plans:

Thrust bearing: I order thrust bearings from **MicroX (part #TBR-1)** unbent (flat). This allows me to bend them to suit my requirements. I want a relatively large stand off (7/32") between the prop shaft & motor stick in an effort to prevent the knots that form as the motor unwinds from snagging on the motor stick. The rear hook is also 7/32" from the motor stick for the same reason.

Motor Stick: The large stand off mentioned above results in a lot of bending force so the motor stick needs to be very stiff. I test my motor sticks for bending as described by **Larry Coslick** in his EZB articles in **INAV**.

Motor: The 10 Min., 18 Sec. flight was made on an 18" loop of **March 2002 Tan II** rubber, weighing 0.86 grams.

Wing Ribs: You could eliminate some of the wing ribs to save weight, but they help me maintain the airfoil shape when I cover with wrinkled condenser paper.

Covering: The flight surfaces are covered with wrinkled condenser paper to minimize warping as the paper shrinks over time. The condenser paper is wadded up into a tight ball, flattened out & ironed between two sheets of newspaper. It is attached with rubber cement diluted approximately 50% with naphtha, brushed onto the frame. If necessary, the cement can be reactivated with naphtha until the paper is positioned to your satisfaction.

Wood Selection: I find the stiffness rating of **Tim Goldstein's Tru-Weight Indoor Balsa** to be particularly helpful in selecting wood for specific applications. Light, stiff wood for the 1/16" wing & stab spars keeps the surfaces warp free & allows more weight to be built in to the motor stick where it is required for stiffness. Also, a stiff, light tail boom is essential. Light weight prop blades are important, but their stiffness can be lower. In order to build down to the 1.2 gram minimum weight, it is important to have a reliable source of excellent wood.