

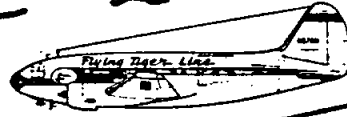
NEWSLETTER

DATE: Thursday, April 10, 1980

TIME: 7:30 - 10:00 p.m.

PLACE: Clear Lake Park Bldg. and NASA/JSC

PROGRAM: Inspect the Gossamer Albatross (Note: there was a feature story in the Aug. '79 Model Av. on this bird)



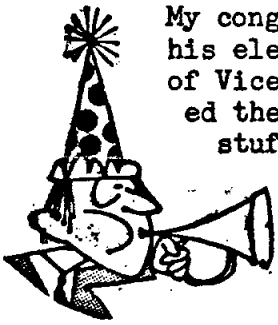
PREZ'S CORNER

(by Dave Thomasson)



The Gossamer Albatross man-powered English Channel crossing aircraft will be on display at NASA, Bldg. 9A from 9 a.m. to 3:30 p.m., Monday thru Friday 4/3/80 to 4/28/80. Now here's the biggie: we are going to visit it at the next meeting! Plan is to meet as usual at 7:30, discuss business and Model of the Month. Then at about 8:15 we will pack up and caravan over to JSC and Bldg 9A. I am told that Don Fisher is sort of coordinating this and will be our "host". So, be on time for the meeting. This is a great opportunity!

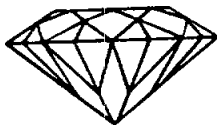
My congratulations to Dick Centnar on his election to fill the vacant office of Vice-Prez. Dick has already started the ball rolling on future program stuff!



I was on the field the other day and noted a plane minus landing gear. When asked what happened, the intrepid pilot replied, "Those ----- yellow boxes moved over into my path as I was landing." Makes a good story, almost as good as mine: "That pile of brush on the south side of the field reached out and grabbed the plane."

ANNOUNCING PROGRAM

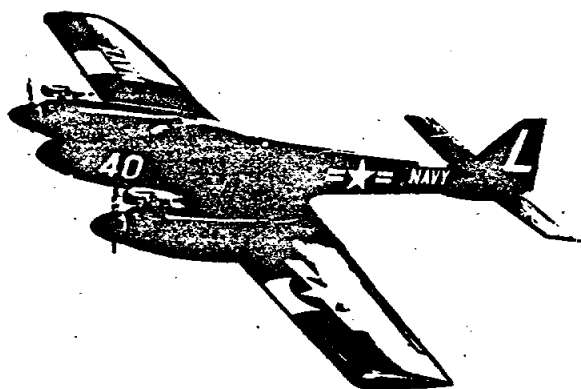
My thanks to Gil Symons for getting the Shuttle-747 film that was shown at the last meeting. (You're a real jewel, Gil!!)



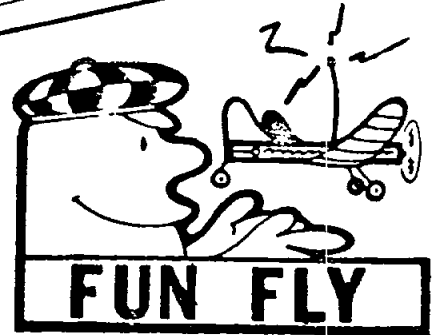
SYMONS

Remember, guys, we have a club contest coming up on April 5th; so practice your Poker Hand landings and your Egg Timer flying....

I hear through the rumor mill that a PICA Duellist twin is very nearly ready for its test flight. (Just one??) Hope we get to see it as a Model of the Month! Some one of these days I may get finished with my Bridi Shrike Commander. Can't really recommend it as a good building project. Too many parts don't fit, foam cores cut undersized, and rather sketchy plan details.



As the Prez sez, get with the FunFly!!!! On Sat. April 5th the field will be abuzz with the Poker Hand and Egg Timer Speed Trap events just for you. The rules were mailed to you last month and you should have been out there getting in practice! So let's all come out and support Ken White's valient efforts to upgrade our flying skills.



At Last!

SAFE HOT-WIRE FOAM CUTTING SYSTEMS (PART II)

by Saverio (Mike) Gaudiano

The electrical shock hazard inherent in simple line-operated power supplies for hot-wire foam cutters was discussed in the Feb.'80 Newsletter. Also covered was a simple way to eliminate the hazard through the use of a transformer which isolates the user from line voltage. In Part II, specific details on how to build your own safe hot-wire system will be covered.

Most .60 sized pattern and scale models have a total wingspan of six feet or less. Therefore, a bow which will cut cores at least half that length is necessary. Actually, a bow which is about 10% longer, or 41", is best because it insures that you are always operating in the part of the wire that is uniformly hot.

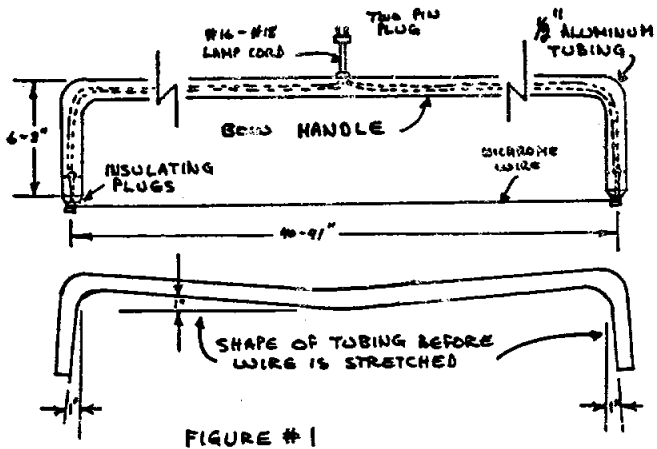
The bow handle should be reasonably light and 6 to 8" away from the wire. It should also be stiff enough to hold the tightly stretched wire and have some means of being electrically and thermally isolated from it. A piece of 1/2" hard aluminum tubing makes an ideal handle and the same size of steel conduit makes a good low-cost substitute. The latter is readily available and can be formed easily with an electrician's conduit bender. A good source of prebent aluminum tubing is old lawn or pool furniture. I made my present bow from 1/2 inch tubing which was rescued from a



rescued from a

(Continued other side)

discarded TV snack table. The legs were trimmed with a hacksaw and made into a bow by epoxying the ends together with a short piece of tube in the center that added both stiffness as well as strength (see Fig. 1 for construction detail).



To insulate the bow handle from the wire you can make tapered plugs out of hardwood or maybe phenolic and press them into the ends of the tubing. An 8-32 machine screw through the center of the plug will serve to anchor the cutting wire and permit connection of the electric wires. The wires can be dressed inside the tubing to exit at the center of the handle for a neat installation. The plugs can be made by filing or sanding on a large piece of dowel which has the machine screw through it and is being spun by a hand drill (see Fig. 2).

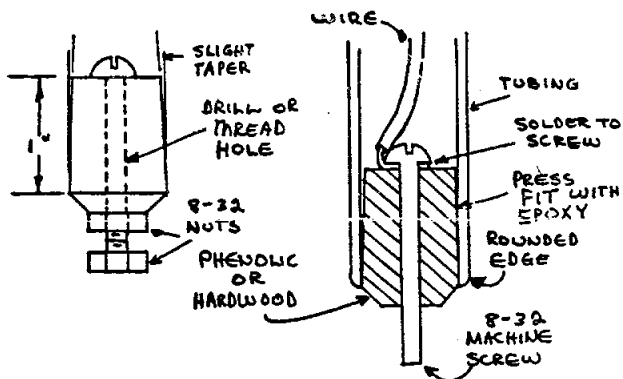
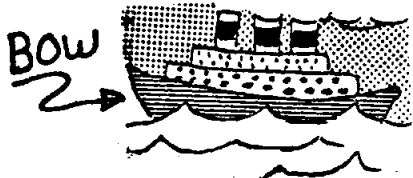


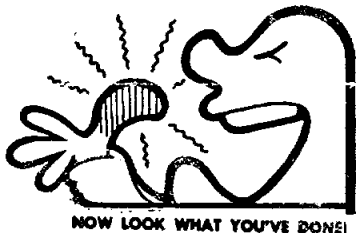
FIGURE #2

Nichrome wire, an alloy of nickel and chrome, is the best type for foam cutting because of its relatively high resistance and good mechanical properties when heated. The wire is available from RCM or Wing Manufacturing and I can assist a builder who has difficulty in finding it. I use 20 gauge wire which is 0.032" in diameter and has a cold resistance of 0.639 ohms per foot. Other types may have different characteristics and will require an appropriate adjustment of the power supply.

Previous experimentation has shown that the wire must be heated between 128 C (262 F) and 229 C (444 F) for optimum cutting. These T's correspond to 10.5 volts at 4.5 amps and 13.5 volts at 5.5 amps for the wire size and length perviously mentioned. Fortunately, there are a number of low-cost transformers which will fulfill this requirement.. The type I chose



was a Stancor HRT-202 which costs about \$15.00 and is available from local electronic piece-parts suppliers. It has taps on the primary winding which allow you to vary the output voltage in steps as well as two separate secondary windings which can be paralleled to provide the required current. Select the tap which suits your cutting speed by trial-and-error and then permanently connect to it. As an alternative, you could connect a single pole multiple position switch to provide some variability. If you want infinite voltage control, you must incur the added expense and complication of a variable auto-transformer or solid-state dimmer control. The autotransformer will provide a somewhat higher than line voltage at maximum



rotation which may be an advantage with a long cutting wire or with a wire that has higher resistance. The solid-state dimmer control will start abruptly at about 1/3 of its rotation: the device does not operate

well with inductive loads such as transformers. This amount equals about 5 volts out of the transformer which is enough to cause the wire to be hot, but not hot enough to melt foam. Several possible schematics are shown in Fig. 3 to enable the builder to suit his needs. Be sure to house the transformer in an enclosure to protect the user from 115 volt connections. Most of the hardware necessary to construct the opere supply, except the transformer, is available from Radio Shack and specific part numbers are included where possible.

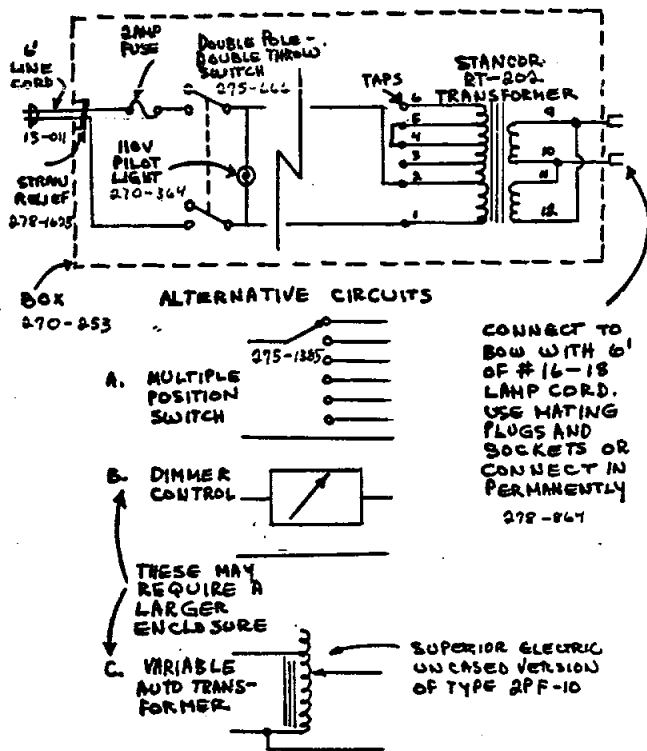


FIGURE #3

