

The first available day for test flying was less than perfect. A lesser man, (maybe that should read "smarter man"), would have waited for better weather. The clouds were out in full, the temperature was in the 60's and the winds were 25 and gusting to 35. When bolting the wing on, I had to kneel behind the car so as to avoid having the wing blow into the next county. Anyway, the time had come. I hit the throttle, and up she went. I mean up, and up with a passion. After 5 seconds I grabbed all the down I could get and finally stopped the climb at about 500 feet. There was no question that this was going to have climbing power, but how about the maneuverability?

A little left stick rewarded me with the snappiest little full roll I had ever done with any plane. At this time I thought it might be a good idea to find the dual-rate switch. After having set the switch to give a roll rate less than 5 rolls per second, turns were much better.

One of my primary concerns with this design was the slow speed performance since the wings were so small. I shut the motor down and before I knew it, I was flying backwards at about 15MPH. I couldn't tell if the plane was really flying slow, or if it was just the wind making it look slow. At any rate, my fears of excessive landing speeds would not be a problem today. I came on in for a landing after only 1 1/2 minutes in the air.

The ailerons were quite effective all the way down to the slowest landing speeds.

Subsequent flights have been made with 1000mAh battery packs and the performance is very similar to the 1700mAh packs except for a noticeably slower landing speed. I haven't tried any other props on the plane and with good reason. First, the plane's flight with a 1700ma pack is 3-1/2 minutes of pure thrilling performance, and secondly the plane likes the speed afforded by the 6 inch pitch. It can do most anything the gas version of this

plane can do, and in my opinion it does it better.

The plane has now flown a number of times at the gas fields and the response is always the same: "I can't believe that that's an electric!". At one field, I launched fairly far away from a large group of pilots. I guess they didn't see me launch it because one of them came out to the runway while I was flying to ask me if the plane was powered by an OS 15. He said that the guys were wondering since only the OS or an electric was that quiet. When I told him that the plane was electric he

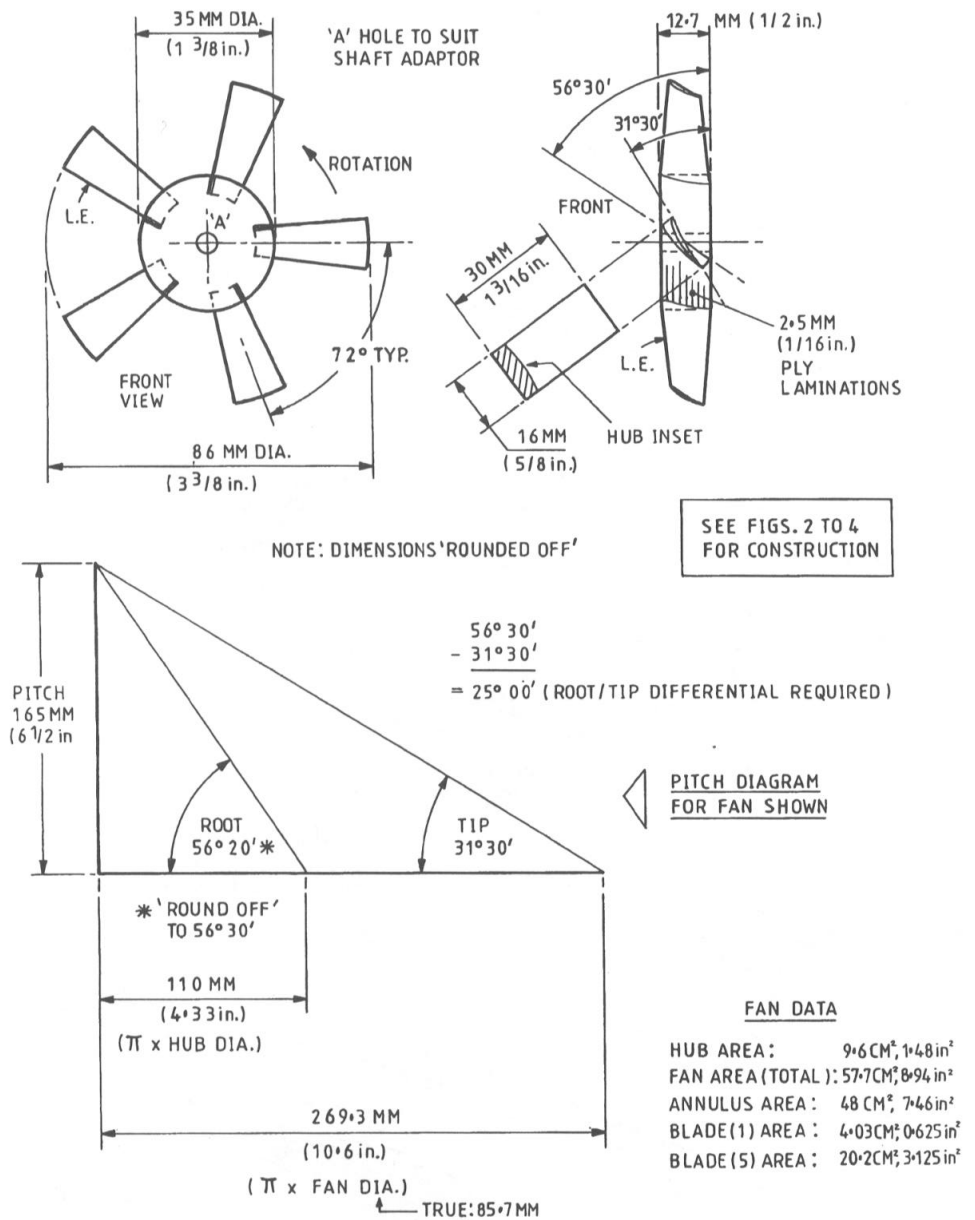


FIG. 1 : FAN DIMENSIONS/DATA

looked up in the sky as I flew by and said, "Wow! That sure is fast for an electric!"

As I think you can see, the plane filled the need to demonstrate electrics as capable, strong flying and practical R/C planes. God I love electrics! If you have any questions contact me at 333 Prestonwood, #605, Dallas, TX., 75081. Ph: (214) 235-1124.

### DUCTED FAN IMPELLOR FOR 'HOT' 540 MOTORS

By Ian Brown

from: Autumn 1995 Electric Flight U.K, editor Gordon Tarling, 87 Cowley Mill Road, Uxbridge, Middx. UB8 2QD, Great Britain

Aircraft modellers are great experimenters and although there are several very good fan units in production, there is always a place for the homemade fan.

This fan is suitable for a mid-fuselage installation, or as a podded unit. With a 'hot' 540 motor, it will produce in the region of 20 ounces of static thrust-plus. A model of around 350 sq.in. should have the right wing loading for a good performance. Obviously, weight should be kept down, and performance will depend on the prototype chosen, intake/exit areas, and how 'draggy' the airframe is.

The big problem with making a fan has always been the blades. Ply or fibre blades are difficult to form, and reluctant to maintain their shape. Plastic blades, when cambered and twisted, tend to develop an irritating flat at the mid-blade position.

The method shown in the following diagrams will provide both camber and helical twist, while ensuring that all blades will match perfectly.

When assembling the fan, it is best to do this on a flat, non-stick surface, so that the blades will 'track' correctly.

The same 'Polypipe' plastic plumbing tube can be used to make the motor mounting stators. When

experimenting with various fans, it is best to use a static 'spinner' fairing in front of the fan, supported on narrow stators or even three wire supports. This will prevent the balancing problems associated with attaching a large spinner to the fan hub.

The fan shown is just one of various permutations possible using plastic pipe for the blades. For example, a larger diameter pipe will give less camber, and a variation to the diagonal cut, less twist, etc.

The principal is certainly not new - aeromodellers

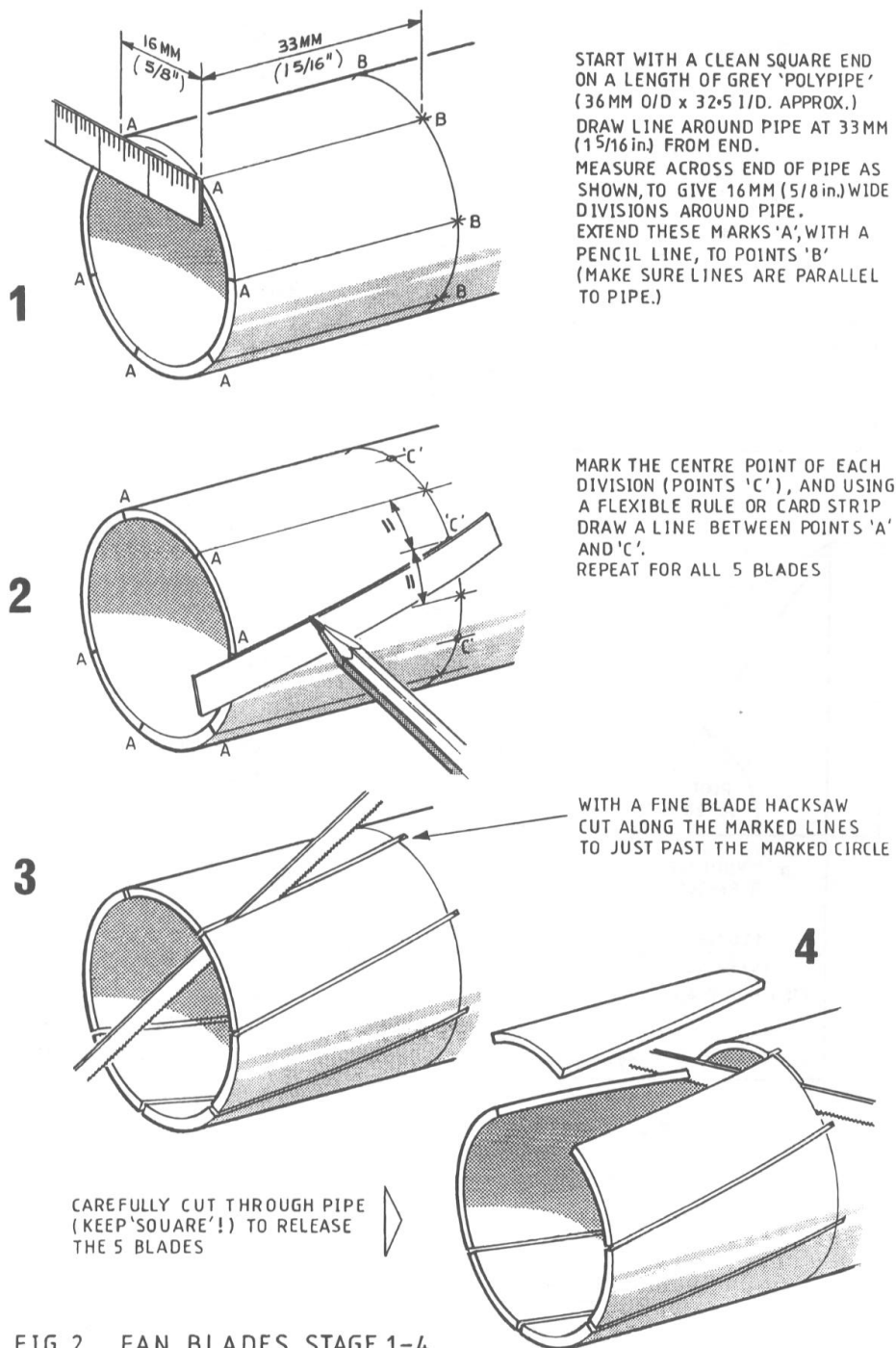


FIG. 2. FAN BLADES, STAGE 1-4

were binding bits of ply diagonally to treacle tins 'way back' The plastic pipe method means no 'forming' and no hunting for treacle tins!

So, that's it, may your 'whirly - bits' never fly apart! (Please Note that I have spread the diagrams for this fan over pages 6, 7, & 8. - km)

**Covering Small Models with Reynolds Colored Plastic Wrap**

BY Ken Bassett

from Silence Please, editor Fred Dippel, July 1995

Reynolds Plastic Wrap is a food grade film and is usually found in food supermarkets. It comes in 4 colors, Crystal Red, Crystal Blue, Crystal Green and Crystal Yellow. In my town, only the A & P carries the stuff and they don't always have all the colors. A call to the Reynolds Co. assured me that this is an established product and should be around for the foreseeable future.

Additionally, they advised that occasionally, other colors are available such as orange for Halloween. The colors are somewhat muted, however, they are intense enough to look good in all but the brightest sunlight.

The film has approximately the same weight as colored Japanese tissue and is easily applied with Balsa-Loc. This is the creamy white stuff sold by Peck Polymers and others to apply Lite Span covering. You must thin the Balsa-Loc with water just enough to get it to flow easily off the brush or else you will get a lumpy effect on all attachment surfaces.

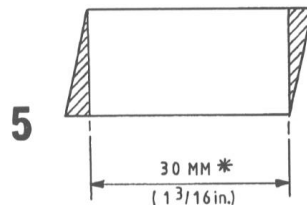
Apply the film to framework without heat. The reason for holding off on the heat is to make sure you don't have any tiny wrinkles trapped on the edges. When all looks good, use a very warm, but not hot iron to seal the covering. If the iron "grabs" or rolls the film, it is too hot. If you don't plan to shrink the covering it will hold on well enough using only the heat from your finger tips. Just rub slowly and gently to soften the Balsa Loc thru the film.

Shrinking the material is best done with one or two fast, low passes with a Monokote type blower on high heat. Do not linger or you will soften the Balsa Loc

and get edge creep-or worse, you will burn through and have to remove the stuff and start all over. If you have an accident you might try Toulene (available at paint stores)-it melts the stuff in seconds and the residue is easily scraped away, but some color dye will get into the wood. A wrap around, even if only 1/32" will practically eliminate edge creep and is a necessity when working with 1/20 stick.

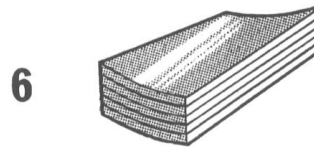
When fully shrunk, this material only has a gentle pull and will not warp light structures. Medium weight 1/20 sticks will not bow in if supported at least every 2 1/4 inches. Experimentation with other adhesives

FIG. 3. FAN BLADES, STAGE 5-7, SHAPING



THE BLADES WILL NOW LOOK AS SHOWN OPPOSITE. CUT AWAY SHADED PORTIONS TO GIVE DIMENSION SHOWN \*

NOTE: THE DIMENSION QUOTED ALLOWS FOR A 3/16 in. INSERT IN HUB, LEAVING A 1 in. BLADE

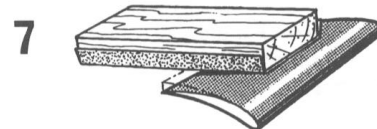


'STACK' BLADES AND CHECK THEY ARE ALL SIMILAR. SAND EDGES IF REQD.

BLADE SECTION-ENLARGED



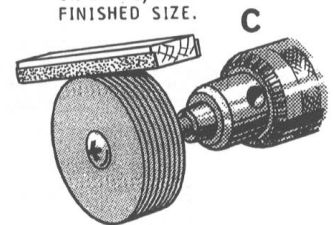
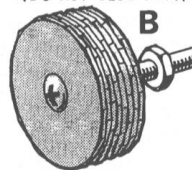
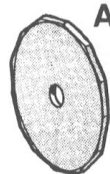
SHAPE BLADES TO AIRFOIL SECTION WITH MEDIUM 'WET AND DRY' PAPER FINISH WITH 'FINE' GRADE



ROUGH-CUT 8 DISCS OF 2.5MM (1/16 in.) PLY

SECURE ALL 8 DISCS WITH NUT AND BOLT (DO NOT GLUE YET!)

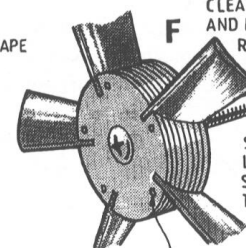
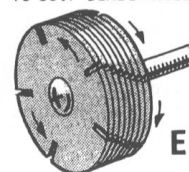
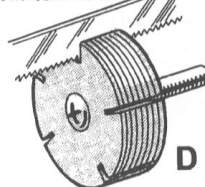
USING ELECTRIC DRILL OR LATHE, SAND TO FINISHED SIZE.



CUT BLADE SLOTS STRAIGHT ACROSS

SLACKEN NUT/BOLT, AND ROTATE DISCS TO SUIT BLADE ANGLE/SHAPE

CLEAN OUT SLOTS AND FIT BLADES. RUN 'CYANO' GLUE INTO SLOTS. REMOVE NUT/BOLT, AND SOAK 'CYANO' INTO LAMINATIONS. SAND BLADE TIPS TO SUIT DUCT. BALANCE ASSEMBLY.



OPTIONAL: DRILL AND PEG.

FIG. 4. FAN HUB AND BLADE FITTING