

# BEACH'S FLYER

By MIKE BEACH  
and JIM KLOTH

● There is an old saying in automotive circles, "Give an Englishman a piece of sheet metal and he's bound to do something stupid with it!" Maybe this applies to balsa too. Actually, M. L. "Mike" Beach of Twickenham, England, is a rather exciting person. He is a full scale pilot of no small ability. He shares in the ownership of several full size airplanes and vintage (pre-WW II) sailplanes which are flown at air shows and rallies in England. He is a member of the British Tiger Club, their Aerobatic group, and is currently building a full size replica of an SE-5. He was featured in a BBC-TV ten minute sequence doing a comedy aerobatic routine. He has also designed and built several successful ignition model engines. He hasn't forsaken models, but limits his participation to their Vintage (Old Timer) events.

I became acquainted with Mike through our mutual interest in engine collecting. Sent along a picture of me launching my 1928 Don Burnham Twin Pusher in response to some pictures which he had sent. He sensed my interest in backward flying models and described his Beach's Flyer. I couldn't resist something this strange so asked for the plans. He responded with the drawings and construction details, but I filed them away for awhile. The mood to build something different struck again finally and my version started taking shape.

It is simple and easy to build by following his instructions. I used Hobby-poxy I throughout, and finished up with 3 coats of clear dope to seal the wood. Only change which I made was to use 1/4 x 1/4 spruce crosspieces fore and aft of the forward stab, with a longer piece centered on them and extending beyond to act as rubber band hooks to hold the stab in place. I also added a wire skid to the nose and a pair of skids beneath the bottom wing to protect it from the concrete runways and taxi strips on the fields where we usually fly. I chose a Mills P.75 diesel for power with the standard Mills tank. First flight attempts proved Mike to be right... the damned thing did fly despite the caustic comments of my flying companions that day. Tweaking (it is a British design so must be handled in their manner) the right lower wing tab up about 1/8 inch produced a gentle left turn and this was all the adjustment that it needed.

The Mills tank didn't allow much of an engine run, so I added angle brackets to a Perfect 1/2A tank and mounted it, with the pick-up tube at the bottom, between the mounts. This gives a longer engine run and more interesting flights. No matter what Mike says, the glide is nothing to write home about. It would need a "Taft Trash Mover" to do any

kind of soaring. But then, it is only a fun flyer, to amaze and amuse your friends.

Starting is best accomplished by grasping the mounts in one hand from above and reaching up from below to flip the prop with the other hand. I chopped up a few fingers before I worked out a launch method. What seemed to work best was to hold it in one hand by the inboard struts, aim it up about 20 degrees... and shove. Allow plenty of room around the launch site as it does climb slowly.

Mike and I used small diesels for power, but I suspect that any of the Cox Reed Valve .049's would do the job too. Maybe it is a good place for a fugitive from a plastic ready-to-fly. A suitable ply firewall type adapter could be epoxied between the engine bearers.

I've had a ball with my Beach's Flyer. Wish that I had a flying field nearby so that I could crank it up more often. It sure is an attention getter... people aren't really sure which direction it flies until you crank 'er up and chuck it into the air. It created quite a stir at the Lake Charles Nats, just sitting in the Old Timer's booth. Northrop saw it there, and you know how he is about Bipes...

Now I'll bow out and let Mike tell his side of the story,

"Some while ago, when browsing through some books at Beaumont Aviation Literature, I was tempted into buying a pre-Great War book on aeromodelling. I've always had a suspicion that some of the early designs could be made into simple unusual models and thought I'd try out something on this line. After scribbling on the backs of envelopes for a while, this layout showed up, which looked promising. It is loosely based on the type of design flying before 1914.

"I made a small balsa glider on these lines and it flew beautifully, so I decided to press on with a 36 inch span, all sheet version. When this was finished, I selected the right size motor by the time honoured method of throwing it across the sitting room while making engine noises. After making all the noises from a Bambi to a McCoy 60, I decided an E.D. .46 cc Baby would be just right.

"Flight tests proved what I suspected, it *really* flies. After a few trimming hops, the second flight was a five minute thermal flight. As shown on the plans, it should fly just about straight off the board and must be one of the simplest models that has a real performance. If you want to savour all the thrills of early aviation, just get a few sheets of balsa, spare a few hours from the Telly, put your cap on backwards, and throw your "Flyer" skywards.

"Construction: Edge-glue two sheets

of 36 x 3 x 1/8 balsa together for the bottom wing, and repeat for the top wing. Lay the bottom wing down, score and crack upwards at the dihedral joints, put temporary blocks under the wing tips to hold the dihedral angles and glue the bottom spruce spars over the joints. Don't attempt to bend the tips of the spars together yet. Glue on the 1/8 inch wing spacers. Make the dihedral angle in the top wing by scoring and cementing, then glue to tops of wing spacers. When this is dry and *not* before, bend the tips of the bottom spars together and bind with thread. Glue top spars to top wing joints and let dry thoroughly. Make sure the bottom wing is fastened down securely to the building board, then flex the tip of the bottom spars up and put a temporary 1 inch block under the tip. Now bend the top spars down and glue and bind securely to bottom spars with thread. This is rather important, as it sets all the incidence correctly, and if you neglect it, it just won't fly.

"Make the front stabilizer from 1/8 inch sheet and glue it at the correct dihedral angle. Make and glue in place on top of bottom spars a thin ply platform so the stabilizer can be retained with rubber bands. This will save a lot of damage as the stab is rather vulnerable. Glue motor mounts on the bottom wing to suit motor and glue in the between-wing braces to sides of motor mounts and top wing. Run over all the joints with cement and glue strips of cement-soaked 1 inch bandage over all dihedral joints. Clear dope and fuel proof as necessary.

"Trimming: All angles and incidences should be right and to get a good glide, all that should be necessary is to add weight to the forward tip until the ship balances between 5 and 6 inches forward from the leading edge of the bottom wing. There is a fair latitude in the CG position, but don't make the mistake of taking off front stabilizer incidence and moving the CG back... it won't work!

"When the glide seems all right, try a short power flight and watch for any turns that seem to be tightening up. This is the one point that is a little tricky and needs watching. If this does develop, cut a slit in the lower right wing tip, viewed from behind, so that you have an aileron about 1 x 4 inches. Bend this up or down to correct the turn. It only needs a little movement and this seems to be the best method for trimming turn direction on my model.

"I would suggest that you don't overpower this design, as it seems to be an essentially slow flying layout with a surprisingly good glide. Treat it more as a powered glider. Put your name and address on it and be prepared for some cross country running."