FLIGHT

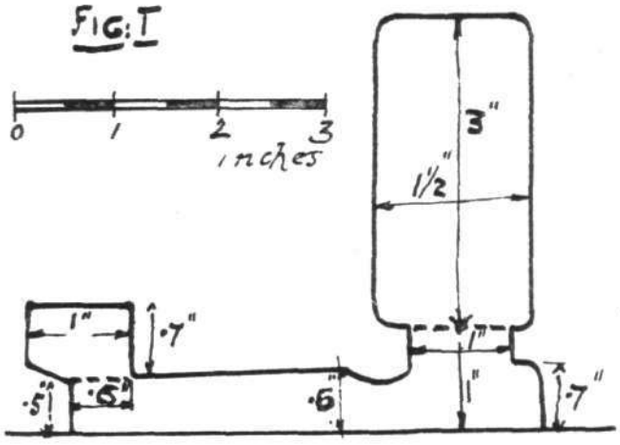
# Models

ALL communications in connection with this section should be addressed to the Model Editor, *Flight*, 44, St. Martin's Lane, London, W.C. Correspondents are requested to write on one side of the paper only.

## Paper Model Aeroplanes in the Making.

By ALAN H. CURTIS.

So much has been written on the theory of paper aeroplane flying and of the "whys" and the "wherefores" that I think a few notes on the actual construction and flying of these interesting models would not be out of place. It is all very well to lay down a theory,




but it is another thing to make the machine prove it in practice. The following is a short description showing exactly how to make a practical paper aeroplane that will not only give a faithful representation of a real machine but will also make good flights.

I find the easiest type to explain is the "Parasol" monoplane.

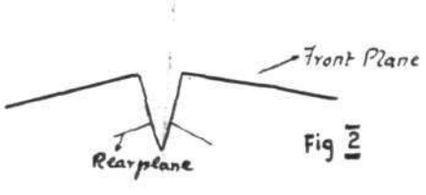



Fig 2

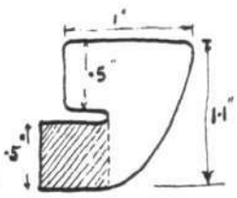



Fig 3

Firstly, as to the materials required: Some stiff paper (preferably Windsor and Newton's "Drawing Cartridge Paper," which can be had in 6*d.* blocks, 10 ins. by 7 ins., containing 20 sheets, which will serve to make as many models); a small piece of $\frac{3}{16}$ in. square wood; some Gloy or paste.

Take a sheet of paper and fold it in half and trace out the outline of the monoplane as shown in Fig. 1.

Now cut this out, rounding all corners and bending where shown so that we have the machine as in the front elevation, Fig. 2.

Now it is necessary that the planes be kept together at the top. For this purpose cut out a rectangular piece of the same paper, 1½ ins. by 6 ins., and after rounding corners, paste this across the top of the planes.

The next thing to fit on is the rudder. Cut out the outline therefore as seen in Fig. 3.

Now paste the shaded portion on both sides and place rudder in position, at the rear of the body, between the two layers of paper.

If the machine was flown in this condition (provided it was weighted), the planes would buckle up. To prevent this take another piece of paper and fold it as before, and cut out shape indicated in Fig. 4, folding where shown and sticking on to the body and wings as in Fig. 5.

This should be fixed on so as to give a very small dihedral angle, *i.e.*, the planes must be practically flat.

Now we are ready for the chassis and weight. The writer has found that a visiting card is very serviceable for the former. Fold it in half and cut out any form somewhat similar to that shown in Fig. 6, and bend as in 6*a* (front elevation).

The two sides can now be separated by cutting along the fold from A to B.

Next cut off a piece of $\frac{3}{16}$-in. square wood, 3 ins. long, and make a slit in the centre of one end $\frac{3}{4}$ in. long, and, after placing chassis in position (one half on each side of body), fix weight over it, and this will keep it in place. The construction of the model is now finished.

It is advisable to give the planes a slight camber by the leading edge, but no angle of incidence, as, in the writer's opinion, it is of no use for a model in which no power is exerted.

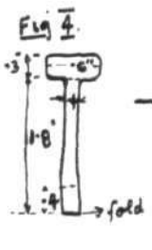
Fig. 7 shows the finished model.

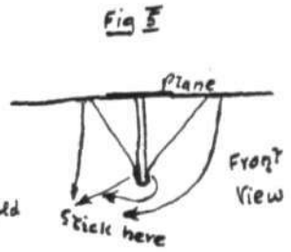
If the machine has been constructed as shown it should make very good glides, *but on no account should it be thrown, but gently released from the hand with a slight forward motion.* I find it best to launch the models from a window of my house which overlooks a field; then I can get quite long and steady glides. After a few experiments with this type, the beginner will soon be able to make tractor biplanes, Taube or other monoplanes, or Dunne biplanes, using the same method of construction, but in the case of the biplanes substituting struts instead of the under bracings or "load wires" as described. Working on these lines I have made many different types up to about 1 ft. in span, and on one of my tractor biplanes I fitted a small carved propeller with some success. It certainly added considerably to the model from an appearance point of view.

Should anyone fail to induce the monoplane to fly, the author of these notes would be pleased to forward one of his own make, post free.

Lastly, a few hints on flying these particular models.

1. Don't throw away a model because it won't fly the first time. Try different weights and positions of same, and tune it up.




2. Rather have too much *head* weight than too little. In the latter case the machine will be unstable; in the former it will fly fast if the elevators are adjusted.

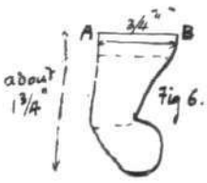
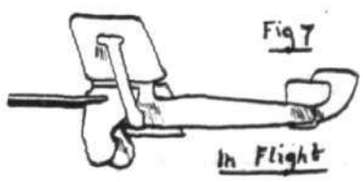



Fig 6.

Fig 6a.




3. Camber only serves to stabilise the machine. Contrary to theory, it does not increase the lift on these machines (they have no power), but rather tends to decrease it.

4. Don't expect your model to "loop the loop." It will not do so unless thrown against a high wind. That is not gliding.

5. Don't fit useless accessories; they simply hamper the machine's progress. A chassis is all right, but there is really no need for wheels.

### An Enquiry.

A reader at Manor Park wishes to be put into communication with another worker who may have designs for a model aeroplane driven by a compressed-air engine having a cylinder of 24 ins. by 3 ins. diameter, to drive a 12-in. propeller. We shall be pleased to send on any communications to our correspondent.