

KNOCK-OFF WING TIPS BY MIKE WOODHOUSE

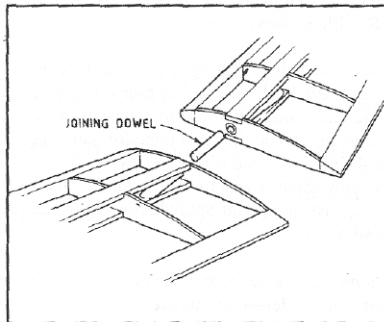
*This article is from the June 1984 issue of Aero Modeller.
This technique would be great for the detachable wings of
WWI biplanes, ed.*

*(Reproduced here from the December 2006 issue of Scale
Staffel Newsletter, Gerald Sullivan, Editor)*

The continuing problem I have had over many years of A/2 flying has been the breaking off of wing tips, the damage often being caused by dethermalising only a few feet above the ground or blowing over on runways.

I have sought various remedies from trying to create unbreakable dihedral joints which broke! Too weak joints which failed too easily! After a little thought I decided the solution could be in a detachable tip that could be fixed sufficiently strongly for flying loads but would shear off on a heavy landing.

I decided that wooden dowels would be strong enough to cope with flying loads. However, fixing the tip rigidly was the problem. Simply plugging on the tip was not sufficient. The tip would not stay in place on short wooden dowels. Trying to peg the tip in place was not successful and proved complicated as well as adding weight in the wrong place.

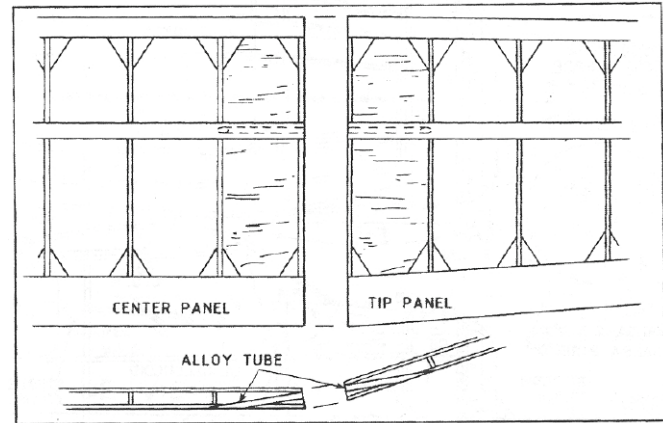


Taping of the joint was tried as a last resort and it worked! I was surprised at the strength of the joint engendered by the tape. In fact the tape was to prove too strong and held the tip too securely. By using tape the dowel could be reduced to a single slim wooden dowel to key the tip to the correct dihedral angle. The tape is then used to hold the tip to the centre panels.

I have tried quite a variety of different types of tape in an effort to find the best compromise of strength

in flight, yet weak enough to fracture on a heavy landing. I list below the taping methods I have tried.

1. Sellotape - not very good in the wet.
2. Masking tape - very strong, narrow strip is the best bet.
3. Scotch magic tape - very strong.
4. R/C trimstrip - very narrow needs careful fixing otherwise it can peel off.
5. Plastic covering film - cut into strips and iron on, a good compromise. However, difficult to apply as a field replacement.



Why not try knock-off tips on your next glider so that the next time a small lad says "the end's fallen off mister" it won't matter. One other advantage of the system is that it enables the incidence of tips to be adjusted. With a little packing the degree of washout in each tip can be varied to allow fine trim adjustment.