

Repairs to ARF models. Brian Green

Apart from breaking my thirty year old prop which really hurt, the damage was not that great, the leading edge was crushed and splintered, the upper and lower wing skins were shattered and the bottom spar was cut through.

The first step is to cut away any damaged wood both top and bottom back to where the structure is sound. A straight edge or steel ruler and a sharp knife blade do the job. Any internal damage needs to be repaired next and do not feel the need to replace damaged balsa with ply. If the required balsa wood size is not available in the scrap box or to save the cost of thicker wood if you have to buy it, laminate thinner sections together to make up the size. This will be even stronger than the original part. For example, on the Yak the entire repair could have come out of one sheet of 2mm wood. And for repairing spars and leading edge strips, use angled cuts to join the new and old wood, as butt joints on wood end grain are the weakest way to join wood. There was enough structural integrity in the damaged wing panel so that jiggling up the panel on a flat surface to avoid building in any twists was not required.

Once the internal structure is repaired its onto the wing skin repair.

Strips of masking tape are then placed around the outside of the damaged area and the cut lines extended onto the masking tape. A suitable sized piece of balsa sheeting is then taped over the damaged area. By aligning the ruler with the marks on the masking tape the cut lines can be then be marked onto the balsa sheet. Remove and place the balsa sheet onto a cutting surface and cut to oversize some 2mm outside the marked lines.

Next tape the sheet in place on the wing and with a sharp knife cut the underlying wing skins using the new piece as a template. Now you should have a piece of wing skin that pops into place in the cutout section. Once the fit is good, use thick cyano on wing ribs and other internal structure and with the replacement skin in place, use thin cyano around the edges. For any gaps in the edges use thicker cyano.

Repeat the process for the other side and clean up with a sand and its ready for covering. This is where the cost really comes in. The Yak had four colours in the damaged area, yellow base and white, blue and pink trim. I had some white film in the scrapbox but needed the other three colours. Of course if you don't care that much about the appearance any coloured piece of film or trim sheet could be used.



The damaged top of the Yak wing



This is the wing bottom damaged area.



The masking tape is applied and the damaged skin cut away in line with the cut marks.

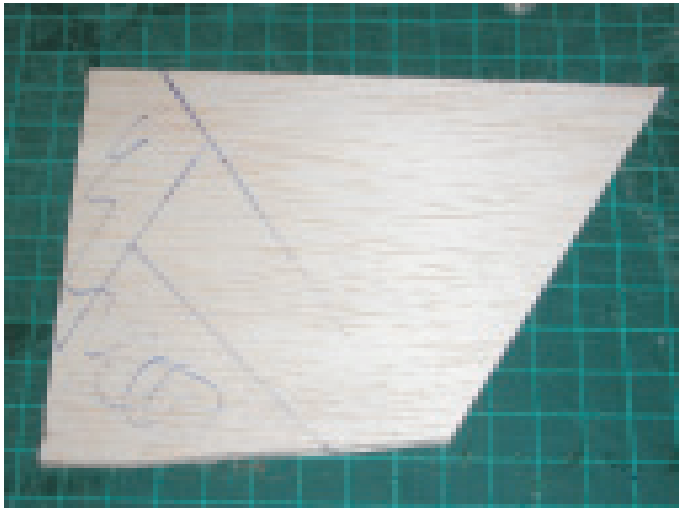


The replacement wing sheeting is taped in place and the cut lines transferred onto it.

REPAIRS TO ARF MODELS

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The sheeting is placed on a cutting mat and cut to slightly oversize. These cutting mats are cheap and available from craft stores and are invaluable for this type of work. And the knife blades last a lot longer as well.



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The replacement sheet taped in place ready for the underlying wood to be cut away. When carefully done the new sheet simply pops into place.

passing look you would not even see the repair. It took just a couple of hours of work and in the air the Yak performed as before. The grass was still growing so a longer takeoff run was allowed for.

Even self adhesive shelf paper can do the job.

CM Pro models are covered in Profilm and I was able to buy yellow and blue Pro Trim that matched the Yak colours. This was cheaper than buying Pro Film and the remainder could be used for trim on other models. For the pink, the closest match was Solartrim from Hawthorn Hobbies even though there were several pinks in the Profilm range. The covering material cost was some \$52 but I had plenty left over.

After covering the repair was hardly noticeable. If you just gave the Yak a



Left is a close look at the repair and above the assembled Yak. I know its been damaged but you have to look closely to see it.