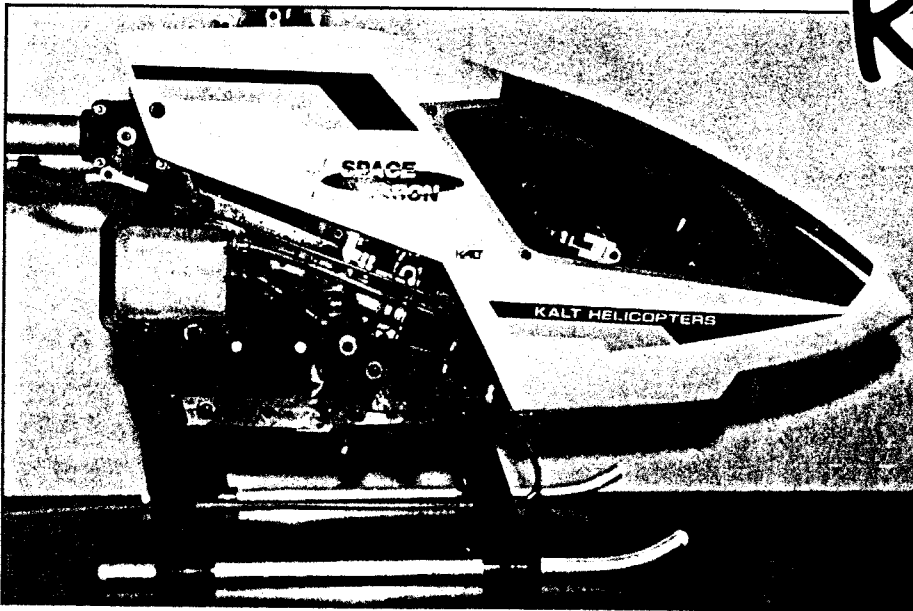


SPACE BARON

Revisited



Gyro can be seen here, positioned directly underneath the main shaft; note also the hole, which allows access to the on/off switch, cut through cockpit screen. Text has details.

Chris Handley

upgrades

Kalt's SB

expert blade is slightly longer than the SB blade with a slightly narrower chord; although slightly longer it is not long enough to stray into the tail rotor disc. Different types of wood laminations make up the construction of the blade with a dark wood central spar running its entire length; also supplied with the blades are two lead weights, two brass bushes and a length of white heat shrink covering.

The blades should be finished as per the instructions supplied and carefully balanced before use. As I had previously used the tracking decals on the first set of blades I cut out a couple of pieces of fluorescent strip and applied this to the tips. I have found that these blades seem to be well suited to this model giving razor sharp tracking and making aerobatics and autos very easy indeed.

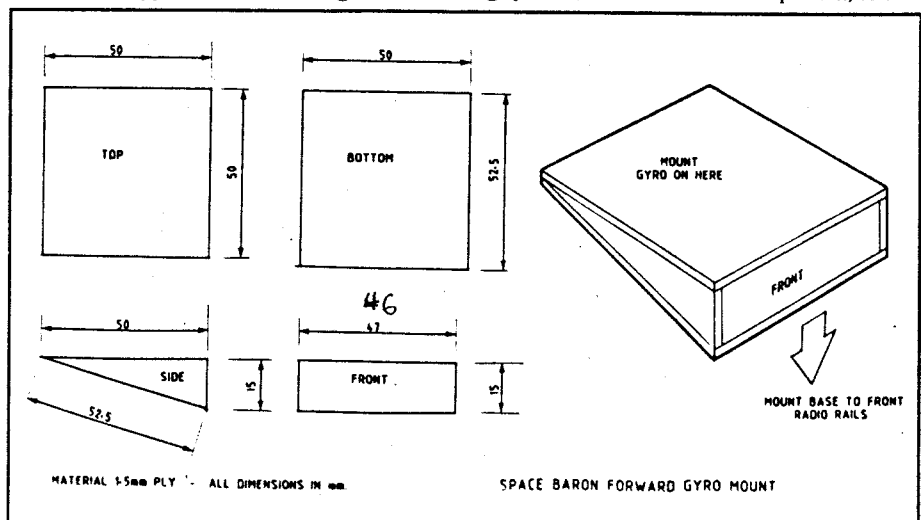
One of those annoying things which can occur with plastic mouldings during an arrival is the shearing off of a ball (so to speak). This happened to one of the rotor grips and, at a cost of £5 to replace it, is a

Those of you who are regular readers of this column will remember that I recently built and flew the Kalt Space Baron; I found that it was pleasant to build and equally enjoyable to fly although autos were proving a little expensive. At the time of writing the review I had only spent a comparatively small amount of time on the machine although it was enough to make some first judgements. Unfortunately for the Space Baron it was then placed on the shelf while I fiddled with the Morley 300, ate my Christmas pudding and kept my hand in with the Concept!

My impression from the previous times I had flown the Space Baron was that it flew nicely and yet I was sure I could achieve more from this neat little machine. You may recall from the previous notes that I was fortunate enough to receive a set of the revised blades from Perkins which sadly came to grief while attempting to stretch an auto. A matter of discussion amongst most modellers who fly models with weighed blades is how safe they are when subjected to a crash and whether the weight stays with the bulk of the blade or if it is thrown. The Space Baron blades certainly pass on this account with the weighted section removing with the blade.

Dashing blades!

While repairing the SB following this untimely arrival, my local model stores were not able to supply the revised type of blade so I opted to try some Concept Expert blades although they are somewhat more expensive. Both the Concept and SB share blades with a similar root section enabling the different types to be interchanged. The



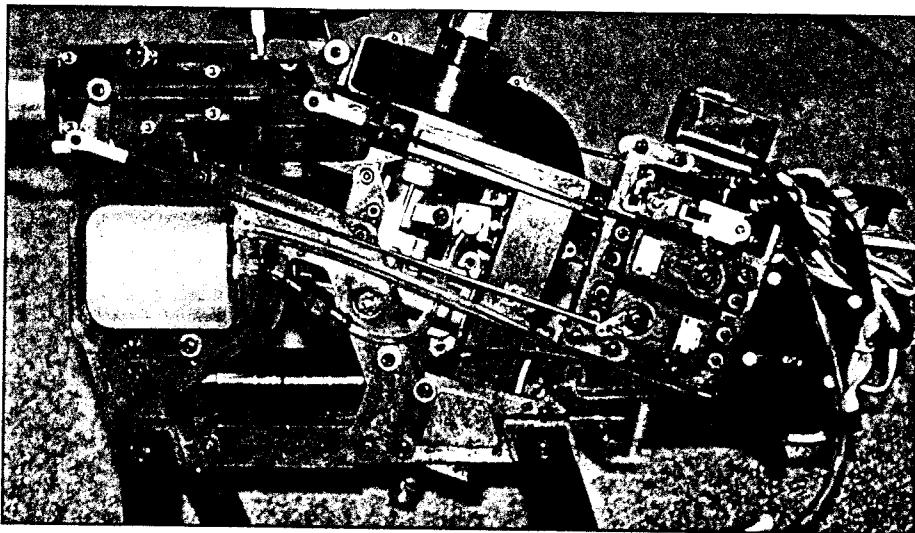
bit niggling to say the least. Fortunately Kalt have kept to their standard ball and link size with the SB which means that any of the moulded plastic balls can be replaced using the black Kalt steel balls.

When replacing the ball on the rotor grip, any remaining plastic which formed the stub onto which the bolt was moulded should first be removed using a small file leaving a smooth surface. This should then be drilled centrally using a 1.5mm drill. Then, taking an M2mm x 10mm bolt and nut, mount the ball so that it is first slipped onto the bolt followed by the nut which is

to either side of the lever to keep the head in a true state of balance). I made up a shim by selecting a small washer with a similar internal diameter to that of the fly bar thickness and gradually thinning it down by rubbing it over a piece of emery cloth to fit the space between the Hiller lever and seesaw. To fit the shim the flybar will need to be partially removed from the head and the shim slipped into position.

I have also found that, if the rotor head of the SB is pulled up and down while holding the machine onto a firm surface, a small amount of vertical shaft movement can

chaffing against the side frames, which eventually could result in the tank being punctured. A simple solution to this is to remove the cross-member which sits below the tank from its position by unscrewing the four self-tapping screws, and by giving the cross-member a sharp tug it can be removed from the side frames. From a piece of wing seating tape cut a couple of strips and apply these to the tank side of the cross-member. When the cross-member is returned to its position in between the side frames it should now grip the tank more tightly.



Battery was positioned directly below main shaft and gyro moved forward to obtain better c.g. Rx is mounted on top of servo block.

used to tighten the ball against the head of the bolt. The bolt should then be screwed into the rotor grip. If the bolt is mounted in this manner it will then be in a similar position to that of the original plastic one.

While on the subject of the blade grips, it is probably worth touching on the subject of the blade spindles and how tight the bolt which holds them to the finger plates should be. I have recently had a conversation with SB expert Dave Mandle about boom strikes on the SB and how easily they can be caused. He had had similar experiences with this and concluded that it was caused by flying with the blades and blade spindle retaining bolts too loose. By tightening everything up some of the slop can be taken out of the head and the head tightened up to remove some of the blade droop. As to how tight everything should be it is really a matter of experimentation and see what happens!

Slopping out!

After a couple of hours of flying the fly bar is showing signs of some slop creeping in which is enough to allow it to be pulled back and forth through the head. For peace of mind I decided to investigate this problem and try to remove some movement. The slop is caused by the Hiller control lever being able to slide between the two internal faces of the stabiliser see-saw moulding. To remove this movement from the head a shim needs to be added to one side of the Hiller control lever (ideally a shim should be added

to be detected. This can be very easily removed by repositioning the shaft stopper on the main shaft. The procedure for this is to first switch on the radio and operate fore and aft servo so that the bellcrank moves out of the way of the shaft stopper access hole. Then, by holding the machine up to the light or by shining a torch into the hole, rotate the rotor head until a set screw can be seen.

There are four of these screws spaced equally around the shaft stopper and all four will need to be loosened off. Once this has been achieved you will find that, by lifting the model by the head and gently tightening the set screws in a criss cross sequence until secure, the excess vertical movement can be removed.

I always find that it is best to align the four screws with the main blade and flybar axis which then means that you do not have to peer through the access hole - just insert the Allen key when the axis are in line with the hole. Do remember that it is wise to apply a small amount of thread lock to each set screw and that a little vertical slop is better than none at all...

Tank tip

The SB has a nice simple tank fixing where the tank is trapped between two loops to the rear of the side frames. To remove the tank from this position it only needs to be squeezed and released from the frames. Due to the nature of this type of fixture it does allow an amount of free movement which with vibration results in the tank,

Of c.g.s and gyros

In my initial review of the Space Baron I touched on the subject of the c.g. of this model when using a 1200mAh nicad pack. My thoughts on this at the time were that the model with the battery installed in the radio tray area as shown in the instructions appeared to be somewhat nose heavy. In the instruction manual there is no mention made of where the model should balance - this would be of great use to a novice although I suspect from the nose down attitude of my model that there is little chance of a tail heavy situation occurring.

As a general rule, if the rotor head is turned so that the main blades lie both fore and aft and the model is lifted by placing a finger either side of the rotor head and under the flybar, it should balance correctly. If the model is placed on the level and lifted as described, the rear of the skids should lift slightly before the front giving a slight nose down attitude. This was not the case with the review model so some form of modification was necessary to remedy this situation.

The gyro is mounted directly below the main shaft - the ideal place for a gyro to be positioned as it is placed on the model's vertical axis. With the 1200mAh pack placed at the front of the model a logical solution to the c.g. problem, apart from installing a smaller pack, is to swap its position with the gyro.

The repositioning of the battery requires the gyro mounting plate to be turned upside down; by doing this the gyro mounting plate base is raised to a suitable height for mounting the battery in this position. The underside of the gyro mounting plate, now the top, has three ribs running along its surface and I found that attaching the battery to this it was best achieved by using double-sided foam pads cut to fit between the ribs and doubled up to enable the battery to be stuck to it. When placing the battery onto the plate it should be positioned so that the non-lead end hangs over the rear of the gyro plate slightly more than the front or it will strike the engine crankcase when installed.

When replacing the battery and plate, the rear undercarriage joiner will need to be removed to allow the battery to be positioned with the lead passing along the side frame. Once in position the undercarriage joiner should be replaced which will then lightly trap the battery against the side frame joiner situated under the fuel tank.

When mounting the gyro at the front of the model a new gyro mount has to be made

to enable it to be placed onto the rails at the front of the servo block. If the plastic gyro plate is observed it can be seen that it is positioned so that it takes into account the forward rake of the main shaft. This needs to be designed into any gyro front mounting plate. I chose to make up a suitable mount from 1.5mm ply sheet (see **drawing**).

Once the pieces have been cut out they should be glued together using cyano and lightly sanded with fine paper. I chose to spray the completed mount with matt black paint, spraying a first coat which, when dry, should be lightly sanded with a final top coat being applied to achieve a good smooth finish.

The gyro mount can then be attached to the rails using double-sided foam tape with the gyro being attached to the mount in a similar manner. Once the gyro is positioned the leads can then be routed and tied for a neat installation.

In the previous article I touched on the subject of canopy vibration and a method of stopping this, other than balancing the machine carefully. The point I made previously was that, although the attachment method of the canopy was very clever, it did allow the canopy to vibrate and chaff against its forward mountings. I added two pieces of neoprene foam which were stuck to the inside of the canopy with self-adhesive foam pads. When the gyro is moved from its mid

to forward position the foam pads also need repositioning. The reason for this is that it is not advisable to have the gyro casing touching any part of the model's mechanics apart from through its base plate. The foam pieces should now be positioned at the 'chin' part of the canopy inside so that, when the canopy is slipped over the model, the foam pieces rub against the lower radio frame and plywood gyro mount.

A further point which is worth mentioning is that the canopy upper edges come quite close to the swashplate and judging by some wear marks on the canopy, it appears that the left and right cyclic balls on the plate touch the canopy at certain times. It is probably a wise precaution to remove two small half moon shapes in the canopy edges to clear the balls if the canopy is wobbled.

Hole cutting trick

When assembling the Space Baron the builder is required to cut a round hole in the canopy screen to allow access to the main on/off switch. I think it is worth mentioning how I cut a hole though the screen in a manner which I feel was both simple and accurate. First, place the canopy onto the machine and snap it onto its mountings, then take a large steel washer which has a large enough hole through which a suitable switch

finger can pass, and fasten it to the outside of the screen. The washer should be positioned so that it is in line with the switch and I found that sticky tape was ideal for holding the washer in position.

Taking a suitable metal handled modelling knife (a scalpel is ideal), heat the blade until it is red hot. This should then be run around the inside edge of the washer cutting a round hole through the screen as it goes. When the washer is removed it will leave a neat round hole through the screen with rounded edges to the plastic which does not need finishing.

While writing this month's column I could not resist putting some more air time on the Space Baron; unfortunately for the SB while executing a low roll it ended up digging up a substantial piece of my local airstrip. This time this unfortunate mishap required a complete strip down right back to the main gear and, although it was annoying to have to strip this model down again, it did give me a chance to appreciate how cleverly designed and engineered it is.

It would perhaps appear from this month's column that I'm being very critical of the Space Baron and its construction. I feel I must stress that this is not the case at all and that these modifications are an account of how I have tailored the model to suit my taste and flying style.

