W3MH review

KALT

30 BARON

tony wright

Introduction

This is a new model from Kalt, but it does apparently share a lot of parts with the legendary Space Baron beloved by many. I always look forward to reviewing a new model, particularly, as in this case, where I haven't owned one of the previous marques. As a reviewer it's very easy to overlook an odd part or quirky assembly because `it's always been like that', so a fresh look at an old name has some definite advantages.

Although this is nominally a `30' sized model, it looks bigger than average. A quick comparison against the ever present Shuttle ZXX shows that it is larger by a few centimetres in every key area. The extra size should aid stability and visibility, and of course, this model is available in electric and 4 stroke versions too so presumably the extra size helps to accommodate the bulkier 4 stroke motor. It would seem to lend itself to the fitting of a `46' size two stroke as well, something that interests your editor more than a little!

The kit is packed quite conventionally in a bright yellow box and in common with a lot of other manufacturers, Kalt do supply a set of Allen keys, but in spite of regular references to `Kalt Tight' and `Kalt grease' in the manual, neither is supplied.

Manual

Kalt provide a 100 page manual with good diagrams and plenty of advice about setup and safety. However, it is one of those manuals which in certain areas requires a knowledge of model helicopters to understand what it is trying to tell you, in which case you don't need to read the manual anyway. A complete novice to the sport might need a degree in Jinglish (Japanese English) before embarking with the 30 Baron as his or her first model. The diagrams are of excellent quality though, so in the limit there's little need to read the text.

The quaint English is quite entertaining at times, with an `a' being widely used when a `the' is required, for example, "When fitting a nipple into a tank...". One of the better ones, under the page entitled "Linkage of a (the!) Pitch Control" says, "Move a throttle (pitch control stick) up and down. If

a pitch lever is tense at the lowest (slowest) position or at the highest (fully high) position, decrease the operating angle of a servo motor by manipulating the rudder angle adjustment of your transmitter". In fact, the phrase `rudder angle' is sprinkled fairly liberally throughout the setup section of the manual, whether describing the throttle, collective pitch or indeed, the tail rotor...

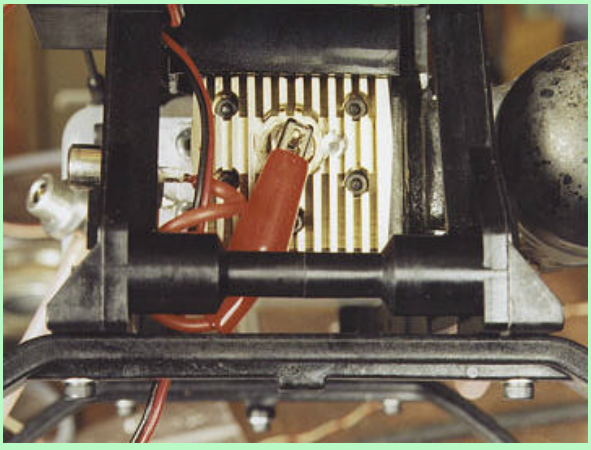
But it's a comprehensive document, all the information is there and it's generally unambiguous, with very clear drawings and setup procedure for the radio installation section.

Chassis

The servo mounts accept Futaba servos and would accept JR too with no problems, and a very unusual point worth highlighting is that Kalt supply a full set of M2.6 x 12mm screws and washers to mount the servos. A very good feature, as most manufacturers rely upon the use of the servo manufacturer's screws and they don't always fit the pre drilled holes. There is some slight distortion present in the mouldings at the front, but once screwed together this disappears and didn't cause any assembly problems.

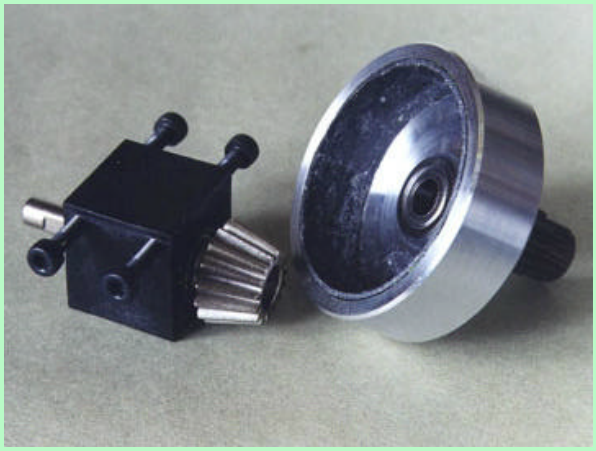
Transmission, Engine and Fuel Feed

The bulk of the transmission is located forward of the mainshaft, with a vertical engine, head forward installation providing easy access to the glowplug. Easier than most in fact, as in keeping with a lot of modern designs the fan shroud is very short. This (I will admit freely) is one of my `hobby horses', and in view of the alleged heavy cooling requirements in helicopters by comparison to fixed wing, I don't understand why designs like this don't provide a shroud to cover the whole length of the cylinder head cooling fins. I'm not saying that the cooling is inadequate on the 30 Baron, only that it must be better with a full length shroud that ensures the air travels the full length of the fins. I'll wait and see what it performs like in the air before going any further! :-)



The clutch pinion on the Baron has 9 teeth and with the 88 teeth on the main gear this gives a ratio of 9.778:1. As a comparison, the ZXX runs a ratio of 9.625:1. For those of you who can't be bothered to reach for a calculator, a head speed of 1800 RPM will mean an engine speed of 17600 RPM in the Baron and 17325 in the ZXX, so there's not a great deal of difference. The Baron tail drive is taken from a bevelled section on top of the main gear with 69 teeth driving a 15 tooth steel bevel gear. Tail drive ratio to head speed is thus 4.6:1.

The clutch bell should last for ever as it has a wall thickness of about 3mm, obviously very



Substantial clutch bell, steel pinion and a very wide main gear

substantial. However, the clutch itself is quite thin at 7 mm. It's 38 mm diameter, and quite light at 47 gm with the Torrington (one way bearing) fitted. The model uses quite a small fan at only 49mm diameter, other models in this class appear to be about 53 mm diameter. It's fixed to the flywheel with 4 countersunk socket head screws, not crosshead screws as shown in the manual.

The tank is unusually large at 290cc, and is held firmly between the two halves of the chassis. It's a sort of Maltese Cross shape and projects beyond the chassis sides, and fore/aft too. Both the feed and the vent are easily accessible with the tank in place, something which other manufacturers would do well to copy. The clunk fitting is ingenious too, using a rubber grommet fitted into the feed hole, with the clunk assembly pressed in. It's very unlikely that this will leak.

With tools in hand...

I chose to use a fairly well used Irvine 36, a perfectly common motor, but the aluminium flywheel wouldn't fit this as it is designed to fit motors with flats ground onto the shaft. The Irvine is not listed in the manual as being a suitable motor, but the SC32H and 36H are and they don't have flats on the crankshaft either. I believe an alternative flywheel is available, but what a hassle to have to get the alternative part when you are heavily into building the model. I think Kalt should produce a more universal method of mounting the flywheel to the motor.

Tank feed is easily accessible, but can cause fuel feed problems. Ingenious grommet for fitting (below) works very well.

The solution for me was to machine out the flats in the pulley and fit a bush with the correct sized hole for the Irvine crankshaft, a special washer is also needed to locate to the front bearing. Because this system does not provide a positively concentric location of the flywheel it took much fiddling to get the pulley to run true. After at least 6 tries I got the runout down to 2/10's (that's 2/10 of 1/1000", or .0002", .005mm) and I'm not going to touch it again!! I wouldn't guarantee that an engine with the flats machined on the crankshaft is going to be much better. By far the best system will use a tapered split collet, requiring only different collet ID's to adapt to various motors. This virtually guarantees concentricity and a secure grip too.

The 30 Baron comes with a built in 6mm hex top start which a Hirobo wand will fit - there isn't one in the kit of course. The assembly is easy to build up, but the top bearing was slightly loose in the plastic block. I doubt this will cause any problems, and it

The flywheel won't fit the Irvine 36, but an alternative is available. Lower picture shows the one way start bearing in the clutch

may well tighten up when installed in the chassis. It can't come out of course, as it is located by the top start adapter. I chose to fit my own plain 8mm spigot adapter instead of the female hex supplied.

The assembly is mounted in slots in the chassis, but the mesh to the main gear is not quite close enough, even with the assembly fully against the

end of the slots. It is just `acceptable', but wear may increase the backlash to an unacceptable level. The tail drive bevel gear is also mounted in a

Plain 8mm spigot start system, more fully described by David Parnham this month

bearing block, but the chassis uses holes rather than slots here and the mesh is definitely on the loose side. It would be possible to slot these holes to improve the mesh - maybe later!

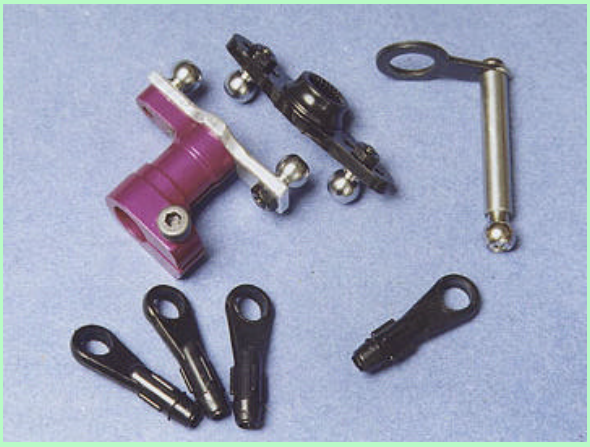
Oh dear, a problem or two

Following the sequence in the manual, the clutch and engine are fitted at a fairly early stage. About this time it became quite obvious that the clutch bell was not running true, although it's not easy to see this until the unit is installed in the chassis with engine installed too. It looked like the tapped hole for the pinion to screw into had been machined off centre, and in this case the bell was running out by about 10 thou. However, it's perfectly easy to get on with the rest of the model and the Baron was being built over the Christmas period, so the assembly was put to one side until the UK Importers, J Perkins, could be contacted. It's very easy to drop the main gear and fit the clutch/start assembly and engine later on.

I called Perkins on December 30, who asked me to send the parts back for `by return' replacement. We sent them the same day for guaranteed delivery on December 31, but the new parts didn't arrive until 10 days later. By this time we'd had three different excuses from Perkins, including a variation on the age old theme of "The cheque's in the post". In the meantime, and being a naturally cautious person, I made sure that Perkins `by return' service didn't hold up the build of the Baron by borrowing the relevant parts from a friendly retailer who had a Baron in stock.

The Baron chassis is only a few millimetres wider than your average 30 machine, but the throttle linkage has to run outside the chassis so a very long throttle extension arm is required, about 25 mm in fact. This highly offset drive caused the barrel in the Irvine carburettor to jam rather than rotate. Being an old carb, I'm quite prepared to believe that a new carburettor would be better, but this doesn't really overcome the problem. I think that a lot of carburettors (unless they are ballraced, and I've only seen that on 60 sized carburettors) could have this problem. Irvine kindly sent me a new carburettor, but because I felt that the problem could re-occur at any time I fabricated a push pull linkage which has so far performed correctly.

It might be possible to overcome the problem by refitting the servo underneath the radio tray and getting a linkage between the cooling shroud and the chassis, but the gap between the shroud and the chassis is only a few millimetres so the lateral movement of the barrel may preclude this approach. I recommend you check this linkage very carefully. In this case the barrel only jammed closed, but if it jammed open the consequences could be quite serious.



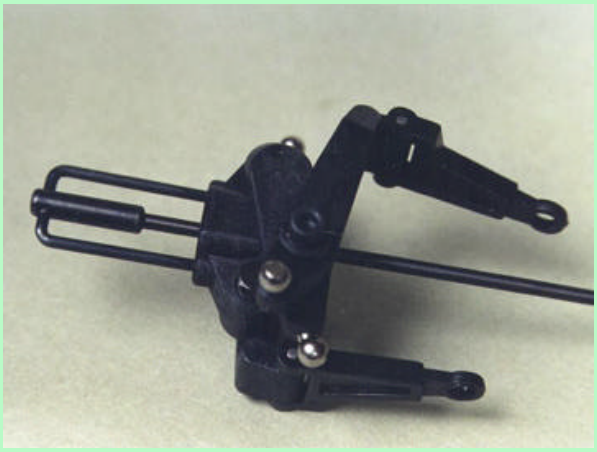
Original extension arm shown top right, closed components top left

Rotor Head

The head is of the through spindle type, probably the most prevalent method these days of holding the blades together in flight. In this the through (or feathering) spindle is 5 mm diameter, with an M4 thread cut onto each end. The feathering spindle passes through two rubber dampers (or dumpers if you are using the Kalt Japanese to English dictionary, patint pendyng) and has a blade holder

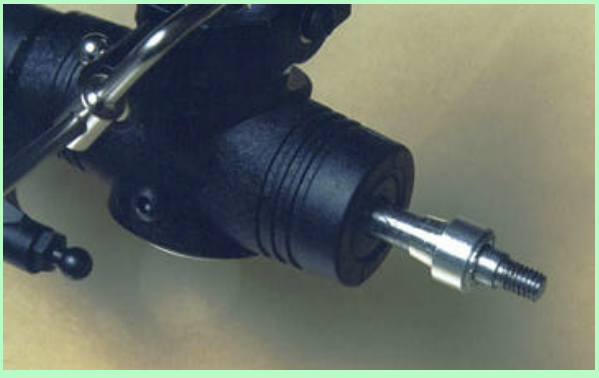
on each end. The blade holders have two axial ball races each, and no thrust race. They are a slide fit on the bearings and each holder can be slid in and out with a positive click; they'll be held out by centripetal force during flight of course. All the balls on the head are metal, and the paddles are controlled by two `L' shaped Hiller Arms. Because the Hiller Arms have to be positioned independently they are quite fiddly to set up. The paddles are 95 x 45 mm, quite thick at 7 mm and with a blunt leading edge, they weigh 23 gm each. There's lots of flybar movement, about 200mm at the tips, translating to about 46 degrees total travel.

The mainshaft is hollowed and slotted for the collective pitch mechanism which runs up the centre. It's a substantial piece of metal at 10mm diameter, but because it's only about 190mm long and has a 5mm hole up it, the weight is only 82 grams. Most of the bearings in the transmission are shielded, in fact the only open bearings are in the tail. This should increase the lifetime of the main transmission by a worthwhile amount.



To change collective pitch, the mixer base is moved up and down the mast by the rod which passes through the length of the mast

Aluminium damper collars spread the load on the grommet type damper rubbers



The Mixer base uses hexagonal head M3 screws to hold the mixing arm pair in place and these are very difficult to start in the hole. It's best to use a spare capscrew first as `inline' pressure can be applied more easily.

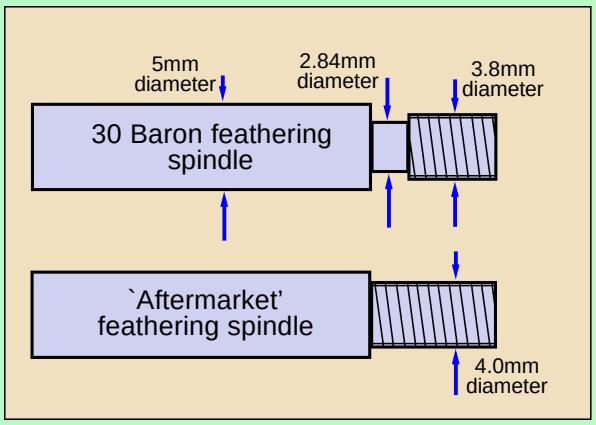
There are a number of areas on the machine which use long M2 cross head screws, the fore/aft cyclic pitch rocker (elevator lever, part # 34065) for example uses 2 x 25mm x 2mm screws. These are quite easy to damage and/or bend as they are very tight to screw in and not hardened. Similarly, the pitch rods which screw into the mixer base are also very tight, it's easiest to hold the rod in a soft jawed vice and screw the mixer base onto the rod.

Conventional swashplate has very little slop and is firmly located in the final installation

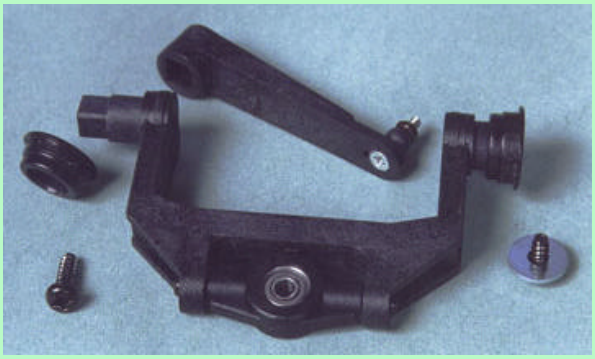
Seesaw arm is plain bushed but shows commendably low slop. The balls on the seesaw have three alternative positions for different response. by way of two holes on one side and one on the other. The seesaw has to be removed and turned over to use the other holes

Assembly is straightforward, but the blade holder races will need packing with grease during assembly. The feathering spindle has tapered collars which press into the damper rubbers, which may well make them last longer. The spindle itself was poorly made, with a double crest on the M4

thread which reduced the diameter to 3.8mm, well undersize. The spindle is also heavily undercut behind the thread to 2.84 mm diameter, when it could be 3.3mm diameter, the root diameter of an M4 thread - see the diagram and picture. I was concerned about this as a possible failure point and when I was given a new spindle by a colleague, with a full M4 thread right down to the shoulder, I decided to use that instead. If Kalt see fit to supply this spindle one has to assume that it is more than adequately strong; I'm just the nervous type, and you can make your own decisions...



Below: The collective pitch arm, with plastic sideframe bush on the left. Note also the countersunk screw in the pitch lever, top



Collective pitch mechanism in place. Note how close the lever is to the chassis

Early on in the instructions the plastic flanged bearings for the collective pitch yoke have to be glued into the sideframes. I did so, but found later when the chassis was fully assembled that this lever was far too tight. The bearings needed some light trimming inside to allow the yoke spigots to rotate freely. It's easier to do this if you haven't already glued the bearings in, so I would suggest you leave these loose until setting up the linkages.

This latest version of the Baron uses a fore/aft rocking lever mounted to a plastic yoke which clamps around the top of the chassis halves. I managed to strip the thread (M3) in the yoke, possibly due to overtightening while trying to get rid of the slop in the pivot. However, the thread depth is not great and I was concerned that this could be a weak point, so I used a simple cutter to cut a counterbore on the inside to accept a steel nut.

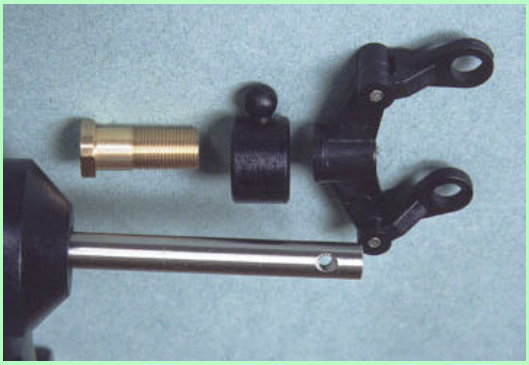
Fore/aft cyclic control lever, it mounts to the ring shaped `lever bracket'

... which doesn't have much thickness for the screw to go into. A counterbore and steel nut is rather more secure

The collective pitch arm has the actuating lever (pitch lever #34024) mounted on the right hand side of the chassis. Kalt do note a possible clearance problem between the projecting 2mm thread and the chassis, advising the builder to file the thread flush with the nut. I still felt there was a possibility of the nut catching on the chassis, so I countersunk the lever from behind and used a countersunk screw to provide a completely flush fitting.

On the left, the brass tube used to push the tail guides in square and right, the tail rotor gears.

The majority of balls in the kit are of a bright finished stand off type and very good they are too, particularly with the excellent Kalt links, but one oddity here is that a plain black ball and separate spacer is supplied for the pitch lever. The Kalt links just won't go onto these balls, in fact it's likely that the lip of the yoke will turn inwards instead of snapping over and on. I can't imagine why this odd ball (or oddball...) is used in the kit, especially as it's no good! I scrapped it and fitted a spare standoff ball I'd got in my spares box. Strange though, and irritating if you don't have any spare balls and yokes.



Brass bushed tail slider, with pivoting links, dual ballraces too and below, the very substantial tail drive coupling

Once assembled there's still a good deal of slop in the mixing lever base, and while trying to adjust this I noted that the outer arm fixing screw, a 12mm M3 cap, was only screwed into the inner, plastic, arm by 2.5mm. This is very short and the screw was far from tight. Kalt do warn against overtightening, because that would simply lock up the plastic bearings. I am concerned that this screw and it's opposite number represent two chances of a failure. I'll have to report more on this next month, but in the meantime I would advise caution in this area. One of my colleagues suggested gluing the screw into the inner mixing arm with cyano and I would certainly consider using a screw cut to 13.5mm to get the full depth of engagement in the 4mm thick arm. Oddly, the other screws that hold the inner arm to the mixer base are perfectly satisfactory, with about 6mm of engagement.

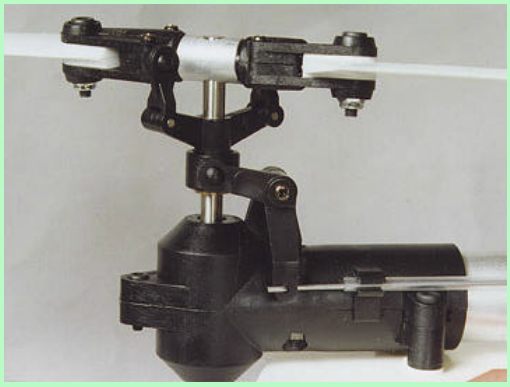
Boom and Tail

The tail drive is a conventional wire of 1.8mm

diameter with two plastic supports which need to be positioned inside the boom. The picture shows the brass tube that I used to ensure that they went in square. On the first model I ever had, a Concept 30, this type of bearing was prone to moving along the boom, thus allowing the wire to thrash around and scale tiny flakes of aluminium off the inside. Naturally these migrate into the front bearing on the Concept. I didn't fix these guides in place on the Baron because I have a CF tube drive to fit later and I wanted the bearings to be easy to remove. When I do this I'll be able to tell you if they moved, unless they let me know earlier! :-)

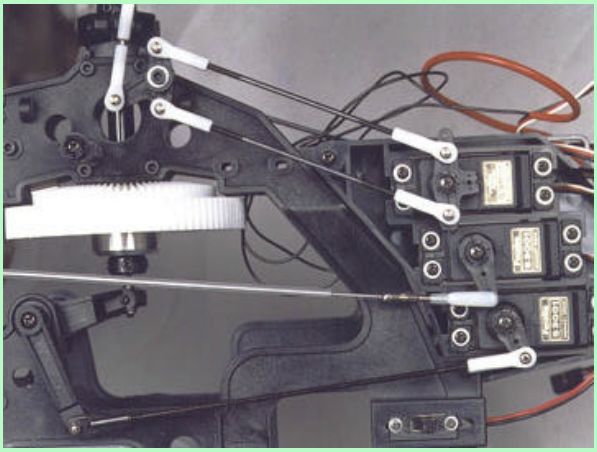
There's plenty of ballraces in the tail gearbox, 10 in all, including two on the pitch slider which also has swinging arms to operate the blade holders, a good feature. Plastic bevel gears take the drive from the wire and translate it to the 5mm output shaft, these seem to run with a lot of backlash showing as a tip movement of about 50mm. The two halves of the gearbox are held together with 3 x 2.6mm screws,

The hub is locked to the shaft with M3 grubscrews, which also serve to retain the bearings



just right and no excess weight. This nice rear end (if you'll pardon the phrase) is rather overshadowed by a terrible plastic tube and wire tail control which starts at the bellcrank on the right hand side of the tail and crosses underneath the boom, passing through the boom stay clamp and ending up in the middle servo mount location on the front LEFT hand side. This is completely crazy as there is a spare hole in the servo tray in exactly the right position (the middle position) on the other side, the right hand side, the same side as the bellcrank. Clearance between the arms is tight but possible, so I couldn't resist moving the servo to the right hand side. I did try the installation as described in the manual, but the right hand side fitting gives a far smoother control. There's still plenty of flex in the tube and wire though and this can't be described as a tight linkage. The plastic tube has a tendency to move fore/aft, and could jam the bellcrank if it slipped rearwards, so I bound it in place to stop this.

Finally on the tail, the bellcrank is held in place by another of the rapidly becoming famous soft M2 screws. I sheared this, not while tightening it, but when removing it at a later time. The holes here and on the elevator lever mentioned earlier are really too tight. The cure in this case is very easy, just drill through with a 1.8mm drill (err, before you shear the screw) and run a caphead M2 screw or tap down the hole. Then a 16mm screw can be used, driven through easily and secured firmly with a nut on the top side.



Above, the modified tail rotor servo position and right, the sheared bellcrank screw

Blades / Canopy

The UK version of the kit is supplied with a set of wooden blades with several laminations. This set were straight and parallel and only required the lead strips to be glued in, followed by balancing and covering with the clear heat shrink tube supplied. There are no brass bushes for the blade bolts and the instructions warn against exceeding 1700 rpm. In this respect they probably can't be considered suitable for blatting around the sky. I won't dwell on the blades as it seems likely that only UK purchasers will get these, but it's worth noting that the lead strips had obviously been cut on a guillotine last sharpened in the year dot, as the ends were badly distorted and needed reshaping to get them into the slots. The blades were way out on spanwise balance too (8mm different) and needed 5 or 6 M4 washers

Cutting the grommet holes in the canopy

Large lumps have to be cut from the original moulding, but it's pretty easy to do

sunk in at opposite ends to get them right.

The canopy is very simple and is made of what I can only describe as `soapy plastic' - like the old Concept canopies. Unless you want to go to a lot of trouble preparing the canopy, this pretty well precludes a paint job as ordinary paint won't stay stuck. The decals are a bit mediocre, but then, very little looks great on a white canopy! The canopy is fixed via a clever clip at the bottom and onto special clips at each side. This has worked well, but I do have a conversion to fit as shown here, definitely more elegant and quicker. The final weight of the canopy complete was only 150 gms.

Radio Installation and linkages

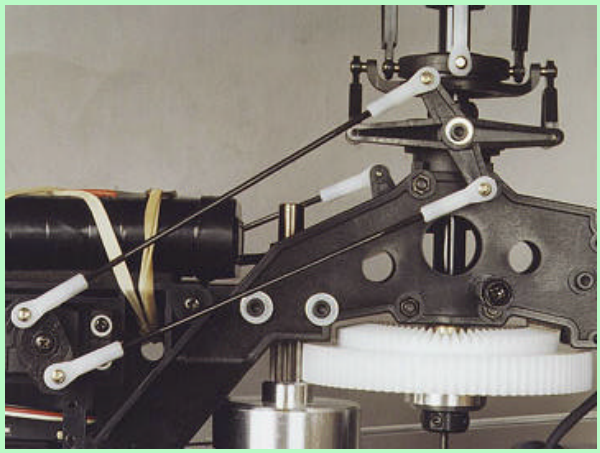
The manual covers this part of the installation in some detail, devoting a full page to each of the controls. The pushrods are 2.0mm diameter with 2.3mm threads rolled on, and finished in a durable black varnish. This larger diameter thread is a good feature as the change from a 2mm rod to an M2 thread on a more conventional rod can produce a high stress point.

Handed Kalt links - the right hand one here shows the back, which goes onto the ball and has a rim around the edge

The white Kalt links are of very good quality with a positive snap action when fitting or removing. Because the plastic is quite a hard mix, a decent pair of ball joint pliers is almost vital. The links have one slight disadvantage in that they are handed, limiting them to a full turn of adjustment. This is sometimes too coarse, particularly with the closed loop controls.

About the only tricky part of this installation is on the elevator closed loop linkage. The elevator arm is wider than the servo arm so the two pushrods are not parallel, but must maintain their correct line of action to the servo disk - the elevator crank already has this angle built in, but it's a bit of a fiddle getting the ball mounting holes in the right place on the disk. The manual covers this well, but doesn't give any hints as to how to mark and drill the disk accurately.

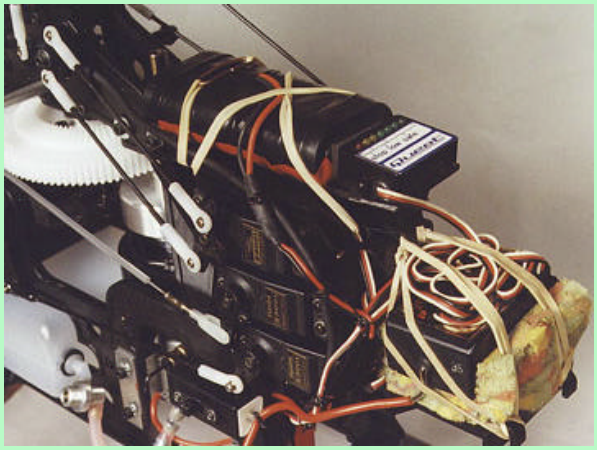
Up to the swashplate; on the left the roll linkage and below, the right hand side of the 30 Baron showing the fully closed loop elevator linkage



There's plenty of room up front to mount the radio equipment with several combinations possible. I use an 1800 mAH pack weighing 214gms, so the overall balance was a bit nose heavy and required the pack to be well back. I would expect that a lighter battery would get the balance pretty well spot on the mainshaft. There's a separate gyro mount at the rear of the chassis between the

Nice looking head, but watch out for the linkage clash shown at left. If you are using the outer ball position on the seesaw this may not happen

Below: In this case the heavy battery (1800mAH) needs to be mounted rearwards, but the radio area is versatile



sideframes, and useful hooks moulded into the chassis constrain the wire in it's tortuous journey to the rest of the gear at the front. Another of those odd black metal balls was supplied for the throttle arm, and immediately consigned to the bin...

Moving up to the head linkages, it was quite easy to achieve about 20 degrees of collective pitch. I say about, because the mixer slider unit is pretty sloppy and the pitch is difficult to measure accurately - this mixer slider is probably the worst aspect of the head. About this time I got fed up with getting sore fingers and stopped to make a ball link driver to fit my electric screwdriver, made life a lot easier.

Build Summary

In a formal kit review, it is important to follow the instructions and use the original parts with one exception, that of safety. For example, the tail control linkage is too flexible but it doesn't compromise safety. The short screws holding the outer mixing arm to the inner are, in my opinion, a potential failure area, so I have made modifications which I will describe fully next month. I've no wish to find out what happens if the outer arm comes off in flight leaving the associated blade completely uncontrolled...

The final weight ready to fly was 3088 grams (6 pounds 13 ounces), including blades and the battery referred to earlier at 214 gms. It seems likely that the use of a lighter battery could get the weight down to 3 Kg (6 pounds 10 ounces). This is very creditable, especially as the machine is a bit bigger than the average 30 and could take slightly longer blades and a bigger motor. Incidentally, the machine was weighed on digital scales accurate to 3 grams so I'm confident of that figure.

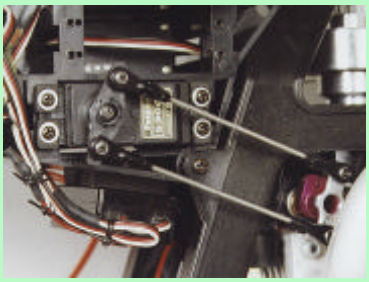
Most of the areas criticised are `transient', meaning that once it's been fixed, it's fixed for ever. But it needs experience to recognise a potential problem and an average beginner may not have this. If you are new to the sport and are contemplating getting a 30 Baron, do try and get an experienced helicopter flyer to help you.

One other comment relating to the myriad of cross head screws. Over the years I have built up a good selection of screwdrivers, but none of them fitted Kalt's screws properly. There are standards and specifications for screw slots and it would be nice if someone could give Kalt a copy...

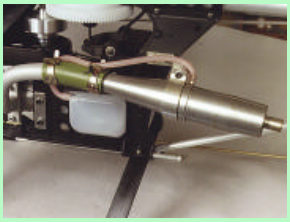
In the longer term, it's much more important how the machine wears and how it performs in the air. Hours of good flying and a creditable performance will easily outweigh a poor screw fit or some irritating build problem, so let's move onto the flight performance and see if the 30 Baron gets to stay with the Editor for a while or gets passed on to one of the unsuspecting contributors...

Flight tests

If you have read any of my previous reviews, you'll know that I always get the model hovering in the back garden first. There's so many things to go wrong that being 10 metres from the workshop has definite advantages! In this case the throttle extension kept jamming closed, stalling the servo and bending the arm. So back to the workshop for a quick modification. First I tried an extension throttle arm machined from solid, but as noted earlier, I finally converted the linkage to a closed loop system. I was also finding the pipe to be too peaky, so I removed that and fitted a standard dustbin type, though this did need an extension to allow it to clear the chassis.



Although fiddly to set up, the closed loop throttle linkage has worked well



Even with an extra inch of aluminium tube inside the silicon joiner, the pipe (left) was too peaky. The dustbin silencer isn't pretty, but it works fine!

After a tank and a bit in the garden, it was off to the proper flying field a couple of days later for some real testing. The model felt quite vague around the hover, due I believe to the slop in the mixing base and associated arms. This is the sort of upgrade part that one might want to fit almost immediately as it doesn't make it easy for either a beginner or a more experienced flyer. The beginner will forever be over controlling the machine (more than usual, even) and the experienced flyer will hate the vague feeling due to the lost movement. I made some modifications within the first hour of flying the 30 Baron to tighten up the mixer base and arms, with a worthwhile improvement in feel and as noted earlier, I'll cover that next month.

Apart from this, the model immediately felt comfortable. I've put a couple of hours on it already, and it's got a good tail (using an ordinary Futaba 154 gyro and S3001 servo), though again, it's obvious that the flex in the tail pitch control rod is preventing a good lock. With the standard kit blades and the Irvine running on the dustbin silencer, climb out is brisk if not spectacular, and it's got a fair turn of speed. I'm also pleased to report that there were no discernible vibration problems, the fuel in the tank was completely steady and there was no tail shake - always a relief

with a new model. I found the cyclic response to be on the soft side, but I haven't yet explored the maximum cyclic throws, and the ball on the flybar carrier is still in the mid position. Using the outer holes will provide more paddle input to the blades, so I'll do that before next month's report.

The biggest surprise came with autorotations; even on the 84 gram kit blades the Baron just seemed to float on and on, and although it's not in the 60 class, autorotations with this model are a very enjoyable experience. Just as well really, as I fell into the classic trap of thinking there was enough fuel in the tank for one more circuit and of course, there wasn't. Because the tank is shaped like a cross, and the feed is from the right hand side, the clunk won't go to the right hand side of the tank. One deadstick auto later, and I was able to determine that there was at least 1/4" of fuel still in the tank, very deceptive.

In fast forward flight, the Baron shows good fore/aft stability, due in part to the cyclic arrangement where the elevator control gets two balls (one front, one back) against the roll's single ball on the right hand side of the swashplate. There is a slight pitch up when dropping into an auto, but it didn't require much forward stick to control. All in all, it's good to fly and feels nice.

Summary

This kit begs the question, "Is it too cheap?". There are areas which need attention almost immediately, and some safety issues which are of concern. I believe these would be solved with a little more money put into the model (by Kalt, I mean!) and bluntly, more sound engineering, most notably on the mixing arms and feathering spindle.

Baron's have been around for a long time and there are many flying successfully throughout the world - presumably there are tricks which all you old hands know, do please email me with your comments! For the experienced flyer, the 30 Baron represents a good base to build on, but a beginner may have problems if there isn't a ready source of expert advice.

On flight performance the model scores well, and the kit is good value for money (taking the simplistic view), but the concerns expressed earlier mean that the model scores a lower mark than would otherwise be expected on the `W3MH marking scale', a 6. I am expecting to be able to solve the problems described quite easily, so they have to be put into the context of a good flight performance and considerable potential for development.

So do buy one, but be prepared to spend extra time on the linkages, and some money almost immediately on upgrades. By next month I will have fitted some upgrade parts, and put much more time on the model. Don't miss it...

tony wright