

Hobbies & Helis



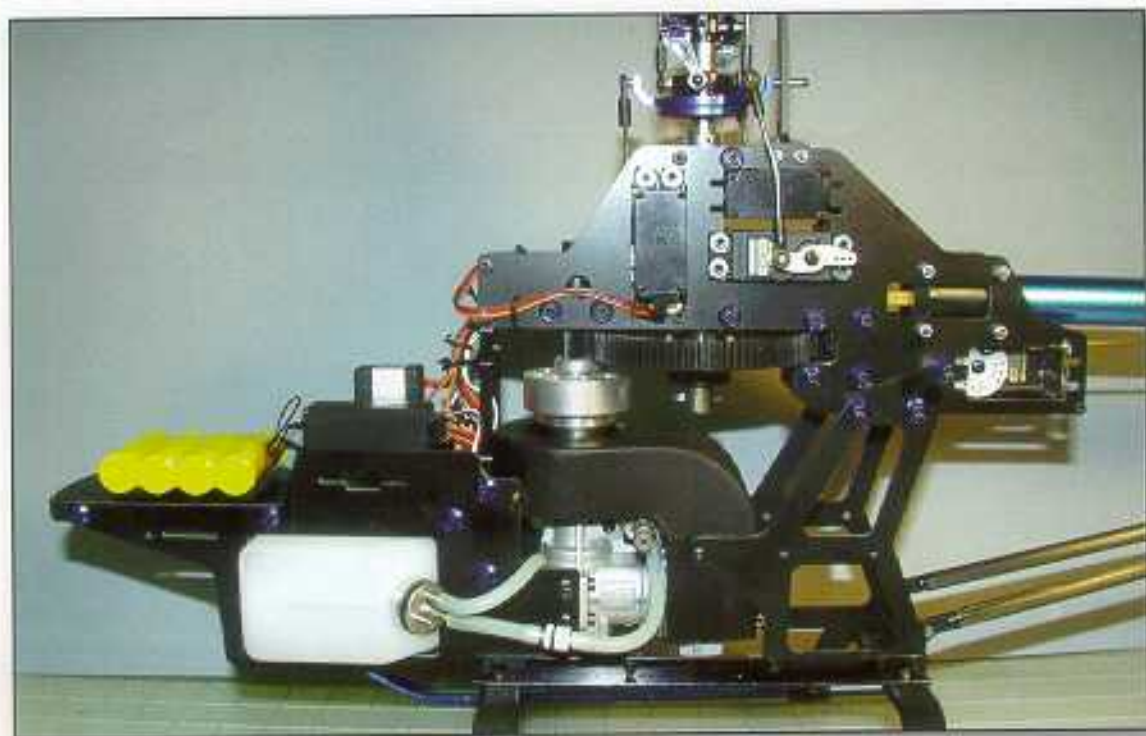
Quick Learner

If you've been in the hobby for any length of time, you've probably heard of a company called Hobbies & Helis, located in Coopersburg, Pa. For years Hobbies & Helis was the US distributor for TSK helicopter products. Today, HHI specializes in their own line of helicopter parts and accessories as well as their proprietary line of helicopters called; Quick. During a conversation around a year ago with Irwin Siner, president of Hobbies & Helis, he disclosed his plans to release an all metal CCPM high-tech 30-46 helicopter at a comparable price of a 30 size plastic machine. As promised, a new metal helicopter named the "Quick Learner" arrived at a price of only \$299 - less main rotor blades. The Learner is a 6-10 composite side framed helicopter loaded with pretty CNC machined aluminum components. As you look over the kit, it has the appearance of a 30 machine that someone loaded up with

every anodized after market part available.

The Learner is packaged somewhat similar to other kits: Construction is completed in steps with numbered bags of parts and associated hardware. A minor draw back in construction is the fact that there is no printed instruction manual. Instructions are burned on a CD in PDF format. If you don't have a computer, you'll have to take the CD to a Staples or such to have them read and print the instructions. Using the CD was a set back for me, it felt like I was building the machine with a handicap. There were many areas in construction that drew blanks, since they were not shown or clearly detailed. Anyhow, Irwin assured me that they would make the necessary changes to the CD manual, and a printed set of exploded views would be available in future kits.

Mike Mas



Left side: Shows the servo layout. Note fore-aft cyclic and tail rotor servo have been reversed in mounting direction. Servos are mounted to the outside of the frames - instead of sandwiched between the frames as suggested.

CONSTRUCTION

Construction is begun by assembling the G-10 sideframes with the bearing blocks and the tail rotor drive transmission. During the first construction step it's apparent that the Learner has quality components. The main shaft bearing blocks have a professional tapered look and are black anodized. The T/R drive components were equally as impressive.

The next step calls for two servos (cyclic & tail rotor) to be installed and sandwiched between the side frames. I choose not to do so, since I'm not too crazy about disassembling the entire helicopter to change out a servo - especially a tail rotor servo, which are more prone to failure. At a slight sacrifice of servo position, I found that the servos could be installed afterwards by mounting them on the outside of the side frames. Be prepared to spend a little extra time fishing the hardware to secure the servo. The main frames are completed after installing the crossmembers - front tray, and lower frames.

Next, the 10 mm main shaft and drive gear are installed. The clutch lining is installed in the clutch bell with either JB Weld or epoxy. The bell is then pressed into the dual bearinged block. The Learner comes standard with a Torrington bearing in the clutch so the start shaft runs free of the clutch after starting.

The cooling fan is assembled to the hub, then installed

on the engine with a collet type mounting system. On our machine we choose the OS Max 32 engine. Be sure to use a wood dowel to jam the crankshaft when tightening the prop nut. After installing the fan, be sure to obtain minimum runout with either a dial indicator or a pointing device. After mounting the fan shroud in the frames, the engine is installed on to the engine blocks.

The lower frame rails are installed followed by the landing gear. For some reason the struts must be marked and drilled to fit the lower frame rails. The fuel tank is next assembled with its stainless steel hardware and installed in the frame set.

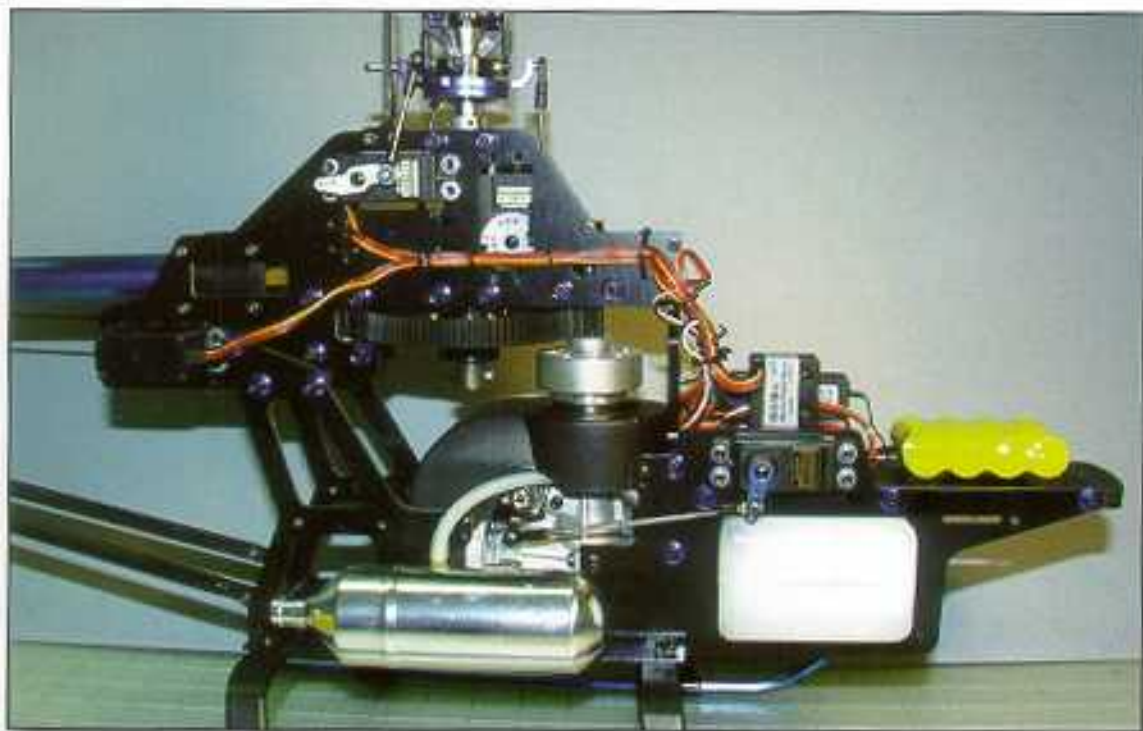
TAIL ROTOR

The tail rotor transmission is next assembled to the tail tube, however I did find a few problems during assembly of the tail rotor.

1) I recommend that you use a washer as a spacer on the the four M-3x6 cap head bolts (see photo) that secure the sideplates to the tail tube. The hardware is a bit long and does protrude into the tube and could contact the belt causing premature failure.

2) The fit of the two tail rotor bearings in the side plates are too loose. I would recommend that you either 5 minute epoxy or CA gel the bearings in place.

3) The set screw used to tighten the pulley to the T/R shaft needs to be replaced with a deep (long) set screw to



Right side of the Learner showing servo layout. Hatori Muffler (30HNS-2) for Ergo 30 worked fine. By reversing the T/R servo direction, and mounting the receiver on the upper tray area, I needed no servo wire extensions.

properly secure the pulley to the shaft. The recess is so deep in the shaft that it causes the short set screw to barely thread in to the pulley.

4) The horizontal and vertical fins are secured to a bracket which snaps to the tail tube and then is PK screwed (metal screw) to the tube to secure them in place. I highly recommend that you do not use the PK screw, since it will penetrate the tail tube and could damage the

belt. Another problem with using a screw is - it's too permanent for a belt drive system that needs periodic adjustments. Each adjustment would require re-drilling of the tail tube. Quick needs to come up with a clamping type fin holder that can be easily loosened and adjusted back and forth on the tail tube. As a temporary fix, I just 5-minute epoxied the brackets to the tail tube. Make sure you have the belt properly tightened, and the tube



First step in construction of the Learner. Note the quality of the bearing blocks and machined all metal tail rotor drive components.



Shown is the OS 32 with fan and steel clutch. Be sure to indicate your fan hub for minimum offset.

supports in place. So far, it seems to be working fine.

5) On my machine, I installed the tail rotor servo facing the opposite direction of what Quick recommended. My reason is; by turning the servo (servo wire facing cabin) it allowed me to hook the servo direct to the receiver without a wire extension, as well make for a neater installation.

The tail pitch slider, ball bearing pitch change lever, and idler pulley are all CNC machined and blue anodized. The stuff looks and works great. The double bearing T/R blade holders and hub come already assembled. When mounting the tail rotor blades be sure to install the spacers inside the holders.

MAIN ROTOR & DRIVE

Next, the main rotor drive and rotor head is assembled.

The Learner swashplate is a piece of work. It's 10 mm - all metal - with an anodized black upper and blue lower section, it looks sharp. The all metal "washout" is two toned as well and fully bearinged.

The main rotor head is CNC machined and uses a single axle assembly. A "palm brake" is machined into the main hub. The blade holders are plastic/fiber construction with dual bearings in each blade holder. The standard Learner kit does not come with "thrust bearings" however, due to the weight of the 30 size blades, it won't be a problem. HHI does offer a thrust bearing package for those who would like to install them. The rotor head and flybar assembles in just minutes - I found no surprises other than Quick needs to supply two mini washers between the flybar

Great looking machined parts of the Learner. I like the two tone color arrangement of the parts.



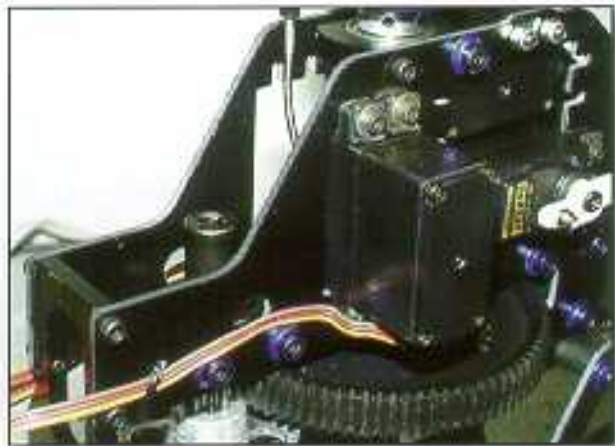


Break down view and construction of the main rotor head. The Learner uses a single axle type design. A "palm brake" is machined into the hub block.

Nice looking tail rotor box and slider assembly. Note the use of the idler pulley and a ball bearinged pitch arm. Note washers under the 3mm sideplate bolts to prevent them from entering the tail tube and possible damaging the belt.



Note simple modification to the tail rotor. The servo is turned 180 degrees from the recommended position. This allowed the servo lead to reach the receiver without an extension. Also note the clean appearance. Carbon push rod was long enough to accommodate the change.



Above illustrations shows the two installations of the cyclic servo. Shot on the left is the Quick recommended method and on the right is my recommendation. Aside from a much neater appearance, this method will avoid possible damage to the servo lead during engine starting. You will need to increase the length of the pushrod to accommodate the change.

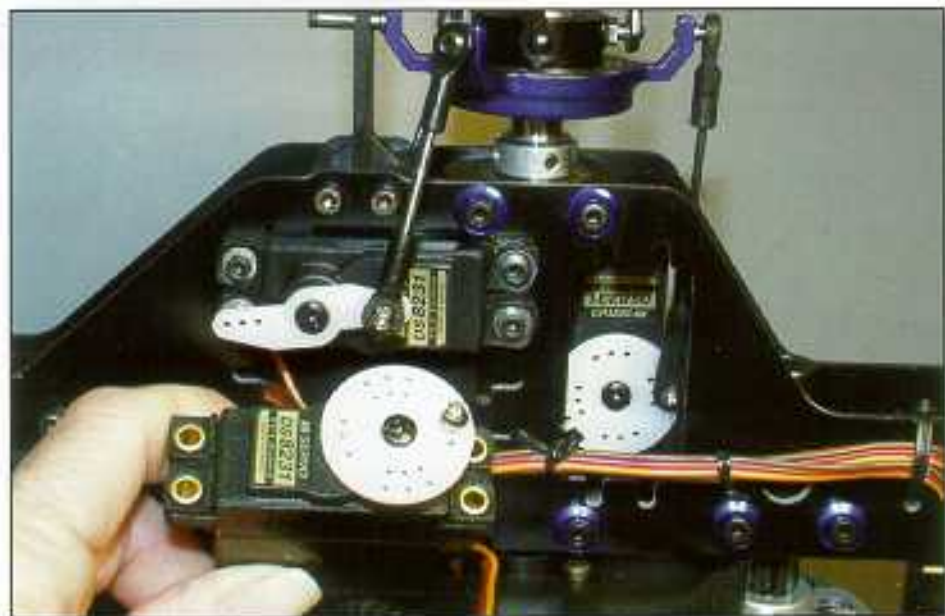
control arms and the seesaw hub. I would have liked to have seen a larger diameter flybar. All the Learner pushrods are oversized and stainless steel with the exception to the tail rotor pushrod, which is carbon fiber.

Although not mandatory, I would recommend reversing the suggested mounting direction of the fore/aft cyclic servo, somewhat like we did on the tail rotor servo. By changing the mounting direction, it faces the wire lead down instead of up. This would prevent possible damage to the lead during starting or should the starter accidentally

slip off. In addition, this allows much neater and safer routing of the wire lead. The machine is mechanically completed by assembling the stainless steel pushrods. Even though a gyro platform is provided close to the main shaft, I elected to install the gyro in the cabin area. For servos, I had a set of JR DS8231s around so I installed them on the cyclic and tailrotor. Watch your batteries and any binding, since the digital servos will deplete your battery pack quick.

After the normal finishing chores: receiver, battery,

While not detrimental to flight characteristics, since this is a trainer helicopter, the rearward angle of the two rear pushrods, and a straight angle forward rod will cause a slight differential in the CCPM mixing, since the arc of all three servos are not the same. Perhaps in a future revision of the frame set by Quick, the servo could be rotated 180 degrees and moved aft 1/4" which would offer a straight shot to the wheels as shown.





gyro, Hatari muffler, etc., the Quick Learner was for the most part completed and ready for some pre-flight checks. I used my standard Mas Technique set-up of 9-0-9 which worked great.

For the final touches, I'm happy to say, the Learner is supplied with a high quality fiberglass canopy. The canopy is finished off with a flawless white gel-coat that needs absolutely no painting - just install the decals and you're ready to go.

FLYING

The best way to describe the way the Learner flies is: it feels somewhat like a cross between a TSK and a Gold Shuttle, I used to have. The Learner is light and extremely responsive, thanks to the short push rod lengths and digital high speed servos. Even though I prefer a weighed flybar paddle for a trainer helicopter, I found the Learner had a nice soft feel in hover. Upstairs it had ample cyclic control.

CONCLUSION

For the most part, other than the niche of the CD instruction manual, the Quick Learner went together with little effort. The Learner is a nice machine for the modeler who wants the looks, performance, and long life offered by an all metal machine. Don't forget, the Learner kit does not include any main rotor blades. So

you'll have to add the cost of a set of blades to the kit price. In a way, this might be a blessing - since it offers the modeler a choice of low cost wood blades for learning, or composite blades for the more accomplished pilot. On our kit we used a set of Hobbies & Helis "Quick" fiberglass 550 mm symmetrical blades (GO1010). Might not be a bad idea for Hobbies & Helis to offer the kit with both (wood/fiberglass), and without blades.

As you look over the Learner kit, they really cut no corners. The kit is high quality throughout, somewhat like you would expect from perhaps a TSK kit or equivalent. The best feature of the Learner kit is it needs absolutely no upgrades. Everything rides on metal and ball bearings. Another plus is - the kit is priced right. When compared to some other hybrid 30-size plastic kits, you could go home with the kit and some change to buy your engine.

For Further Information

Hobbies & Helis
201 South 3rd St. & Rt. 309 N.
Coopersburg, PA 18036
610-282-4811