UH-1B Huey Cobra Instruction Manual

Predator Gasser Mechanics

The UH-1B Huey has more than earned its place in the annals' of aviation history; it's having become the very symbol of the Vietnam War. As early as 1952 the Army's equipment development guidelines called for a state of the art helicopter fro general utility missions. Bell was awarded a contract to build and test this model which began in 1954 with the first flight. Century's UH-1B is a newly designed version of the full-size Bell UH-1B, manufactured by Bell Helicopter. This fuselage is manufactured with high quality epoxy fiberglass with a clear windshield. Every little detail improves the appearance of your UH-1B helicopter. Features such as the three dimensional panels and hinges makes this model virtually indistinguishable from its "big brother" Pilots at scale contests prove this again and again

Specifications

Length 56" Body nose to body tail
Width 10.75" Body only
Height 10" Body only
Weight 11 to 15 lbs. with (Gasser Mechanics) and Radio equipment.

Century Helicopter Products

Before you begin Construction

Before beginning construction of this model, make sure the mechanics that will be installed have been test-flown and are operating satisfactorily. The motor should be adjusted and running properly, the throttle and pitch curves should be correct, and if a governor is used, assure that it has been correctly set and is operating to your satisfaction.

Dismantling of the "pod & boom" mechanics will require the removal of the tail boom assembly, (including the boom braces), the canopy support dowels, and possibly the receiver and battery tray (depending upon how much space you wish to have for a scale cockpit). Remove the landing gear, as it will be replaced by the one included in this kit. Assuming that you have removed the main blades, it will be helpful to remove the fly-bar and install a short rod to hold the linkage in place. It will be much easer to fit the mechanics with the fly-bar removed. Remove the tail gear box from the boom and set it aside for now. Install the flex cable adapter onto the transmission replacing the original shaft adapter. Do the same on the tail gear box. Now that the mechanics have become a rather compact unit, we are ready to proceed to the next step

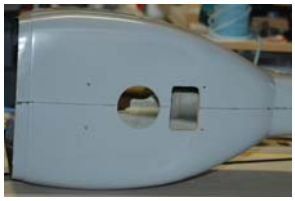
Now open the box, inventory your parts to make sure you have all the pieces. When this is done, take all of the fiberglass parts to your bath tub. Using dishwashing soap, warm water and a soft brush, scrub the inside surfaces to remove any mold release products from the fiberglass interior. This step is very important, because the <u>mold release will prevent bonding of anything that you attempt to glue or bond to the inner surface of the fuselage.</u>

Thoroughly dry the moisture from all fiberglass parts and now you may begin. Each step in the construction process must be carefully planned to prevent enclosing parts that need to be glued or bonded to a surface, before they have been bonded. *(We call that building yourself into a box).*

Installing the helicopter mechanics

1) Test fit your stripped down mechanics into the fuselage body. Carefully make the necessary cut out to allow the mechanics to rest in the desired position with clearance for all push rods or other moving linkage. If you are using Predator Gasser mechanics, you will not need support rail beneath the floor board (F1)

2) With the mechanics still in position slip the floorboard (F1) into place in the fuselage along with the mechanics and mark with a pencil the location of the mechanics base onto F1. Remove the mechanics and floorboard from the fuselage. Mark the location of F1 on the fuselage so that you will have a reference mark to install it.
3) Now that you have the approximate location of the mechanics base marked onto F1, you can now carefully center the base on F1, locate the mounting holes for the landing gear and locate the cut-outs for cooling and the motor shaft that extends below the base plate.
4) Drill the mounting holes, make the cut-outs, check the assembly for proper fit. Once satisfied that all holes and cut-outs are correct, then Epoxy F1 into the fuselage using the reference mark that you previously penciled onto the fuselage.
5) With F1 epoxied into place drill through the bottom of the fuselage, the mounting holes and make corresponding cut outs for cooling and motor shaft in the bottom of the fuselage. Don't forget a cut-out for you exhaust. You can now mount your mechanics with the landing gear. *(It's starting to look like a helicopter)*

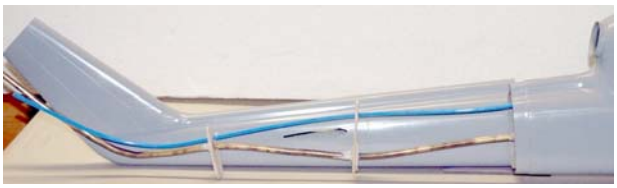


6) Proceed with the balance of the wood work inside of the fuselage body F3,F4,F6, and F7. It maybe helpful to cut and 1.250" hole in F6 that will align with the rotating crank shaft on the bottom of the engine. You must also make cutouts for cooling and exhaust.

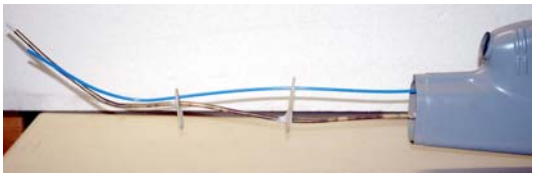
7) Test-fit bulkhead F5. Install the aluminum mounting brackets onto the side of the mechanics and use a 1/16th drill to pre-drill screw holes into F5 *(because it's difficult to reach the mounting screws in F5)*. Now is the time to install and glue your flex push rod cable housing for the rudder through F5.

Installing the Tail Rotor Drive & Rudder Control Rods

1) This kit includes a 3/16" i.d. brass tube and a 1/8" diam. Flexible cable to be used as the drive line for the tail rotor. Additional recommendations are to lubricate the cable well during the installation and re-lubricate every 10-12 flights.
2) *You will save the continuous lubrication process if you substitute a .253"i.d. brass tube and a .250"o.d. Teflon tub placed inside as a liner. You will never have to remove the flex shaft for lubrication*
3) No matter what size brass tubing you may choose to install, your first step before bending it into the shape needed, will be to anneal or soften the tubing so that it will not kink as you attempt to bend it. Using a propane torch, heat the tubing cherry red in one spot (be careful not to melt it). Continue to move that redness all the way to the end of the tubing. Allow it to cool normally (do not cool with water). You will find that the tubing now bends easily without kinking at the bends. If you are using a Teflon liner, insert it into the brass tube before you bend it.
4) In a previous step we installed the Cable adapter onto the transmission shaft to allow us to attach the flexible cable. Find a short 2" piece of 1/8" steel rod and secure it into the adapter. This short rod will assist you in aligning the shaped brass tube (aka, Stuffing box)
5) Bulkheads F5, F6, F7, F8, F9 must be installed. Those bulkheads are pre-drilled to accept the pushrod for the rudder control and the flex drive for the tail rotor. Re-drill those holes to fit whatever size stuffing box that you intend to use. You might find it helpful to slightly enlarge the push rod holes so that the pushrod will slip thru easily. Do not install F5 at this time.
6) Fit F6, & F7 into the center cabin (rear portion). With a pencil, <u>mark their locations</u> on the outside of the fuselage. Lay your pre-shaped stuffing box along side of the fuselage and transfer those markings onto the stuffing box with a sharpie or magic marker. You will use those markings to attach the bulkheads to the stuffing box prior to insertion into the fuselage. Installing the stuffing box is a tough job and may be accomplished in several ways. I found it easier to install F6 & F7 in the fuselage and glue them in. Now insert the stuffing box from the rear through F7 & F6 and onto the 1/8" rod in the shaft coupler. This will properly align the shaft with the stuff box. Glue the stuffing box in place on these two bulkheads.



7) Bulkhead positions have been marked onto the stuffing box in the previous step. Fit them into the tail boom. Remove them from the boom and glue them to the stuffing box at the marked locations. Your assembly should now look like this……



8) It is now possible to slip the tail boom over the entire assembly. You may need to lightly sand F8 & F9 to an exact fit. Do not glue the assembly into the tail boom until you have cut the stuffing box, the rudder control cable and the flex cable to their correct length for attaching to the tail rotor assembly.
9) Using one (1) screw only attach F5 to the aluminum angle brackets attached to the frame of the mechanics. Slide the mechanics ino the fuselage and install at least two landing gear bolts to hold it exactly in place. Tack glue F5 into position. CA may be used for tack gluing only.
10) With F5 now tacked in place remove the single screw, remove the mechanics and permanently epoxy F5 into position.
11) It is now time to slip the tail boom in position sand F11 to fit.. you may now begin to cut the stuffing box to it's exact length to accommodate the tail gear drive box. The hole in F11 is not large enough to fit a small section of the Predator Gasser boom. Either manufacture an adapter such as this …… or find an alternative way of using the mounts on the tail gear box to support it.
12) Final step before mounting the tail gear box is to measure and cut the flex shaft to length, lead solder the end (to prevent unraveling). Be sure to leave a little extra length on the flex cable.
13) Secure the rudder control housing into the proper position and now you may permanently attach the tail boom to the center body.
14) You are now ready to install the gear box and attach your rudder control cable. Installing the gear box may present a slight problem, but there is a remedy.

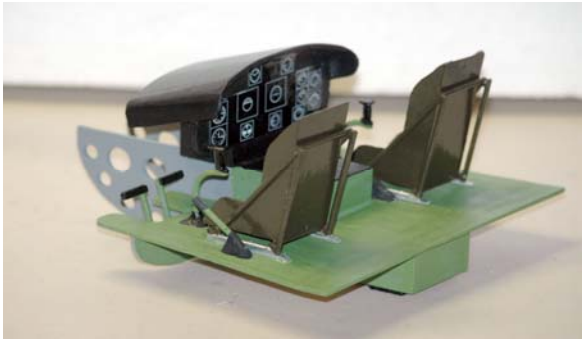
Installing the Tail Gear Box

1) You will find that the hole in Former F15 is somewhat smaller than inner diameter of the Predator Gasser tailgear box housing. You must either find an alternative way to mount the gearbox using the mounting ears with some sort of self-fabricated wood attachment or you may have a friend who owns a lathe to machine you an adapter such as this one

The use of this adapter makes mounting the tail gear box "duck soup". It fits into the gar box as well as into former F15. It is secured into the gear box the same way as the tailboom, and it may be secured into F15 by drilling and tapping a 3mm screw hole and inserting a 3mm screw on each side of the tail upright. The adapter also provides support for the flex stuffing box.

2) Now that the tail gear box has been installed, center the pitch slider, cut your rudder control cable to length add the clevis, and line everything up.

3) **You're done with the mechanics**. If you wish you may start building yourself a cockpit, or your scale helicopter will look very empty in the front. Here is a sample of what can be done…



Fly Safe & Fly Often…..Enjoy your scale model.