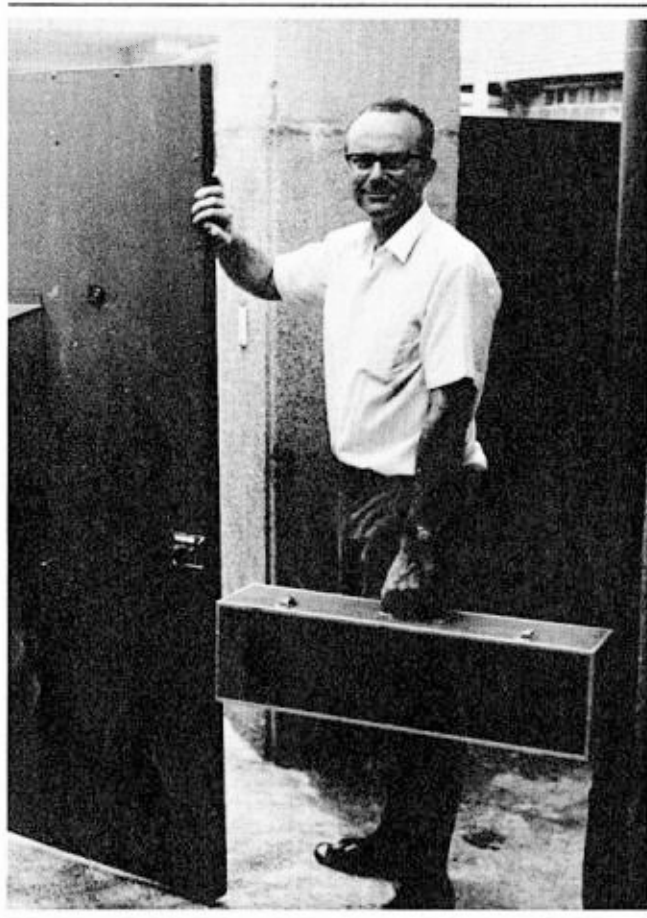


FULL-HOUSE RC MODEL FOR THE TRAVELER
 FITS IN ITS OWN CASE ALONG WITH TRANSMITTER,
 FUEL, BATTERIES, AND TOOLS. STUNTS LIKE CRAZY.

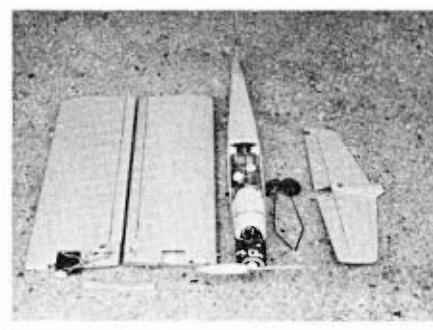
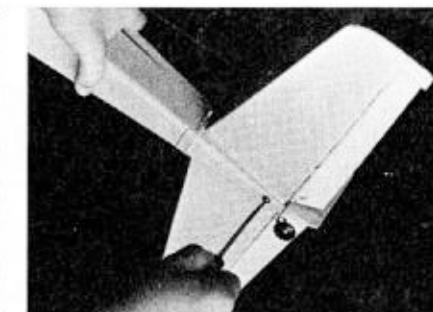
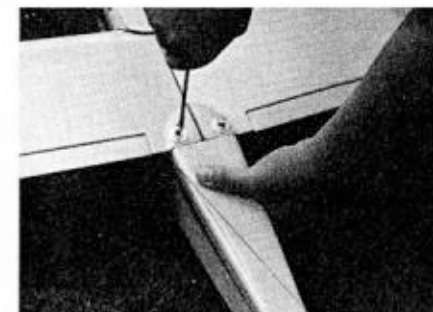
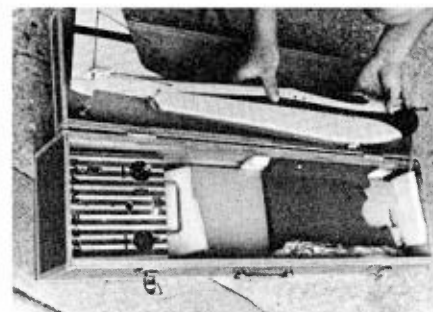


Pegasus

Late in 1969, when flying was being edged out by chilly winds and the building season, the Japanese manufacturers' show (Toledo-type) was held in Tokyo. This is a yearly affair during which makers of goodies for the hobby present their latest lines. As usual, action was fast and furious with a full day of flying and static displays done up in bright colors. There seemed to be more activities than in other years, and it was a maddening choice whether to devote more time to booth-peeking or the outside flying events.

The latter won out and most of my time was spent watching the planes and RC cars perform their best. It was during this splash of excitement that the Pegasus came on the scene to stop the show. The loudspeaker (loudhailer to

by LARRY HOFFMAN



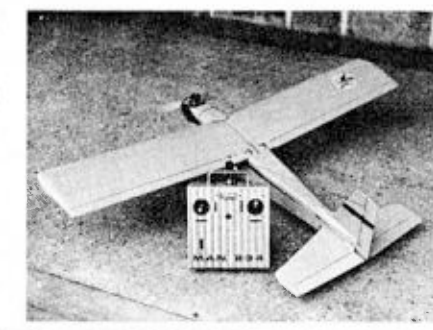
Box holds each part securely, a loose transmitter would quickly ruin the plane. Lots of foam padding too.

Two-part wings are quite unusual, but properly designed, are amply strong even for stunting.

After joining dowels and camlocks, mount the wing and add additional strength in the center section.

We don't know why the forward part of the stabilizer is secured by rubber bands, but rear part is held by a screw.

Ready to fly at last. It is definitely small, quick, and maneuverable. Its O.S. 09 provides plenty of power.



you British readers) announced the Hinode Denko Co. had a new idea in airplanes, and out stepped a couple of chaps, one carrying a smart-looking case complete with wood grain design and metal edging. Looking more like something for a gun or fishing enthusiast, it was about thirty inches long and eight to ten inches around. The case was placed on the ground, the cover opened and out popped the Pegasus! In a matter of a few minutes the plane was assembled, fueled, started, taxied and carried aloft to go through the FAI schedule—like the sleekest of stunt ships.

After two or three minutes of crowd-pleasing, the plane landed, taxied up to the box, was taken apart and the two gentlemen left the pit area with plane, transmitter, fuel, battery and accessories neatly stored in the case—a most impressive display.

Since then I promised myself the pleasure of building and flying that little

cutie, as the 09 engine is a favorite of mine. (Between my son and me we must have almost a dozen around the house.) And so it was with more than usual anticipation that I recently found myself in need of a new project, after running through my available supply of birds due to a faulty switch and lousy piloting. The thought of the Pegasus again came to mind. The following covers the general construction from kit parts, with mention of changes I made to the original design and a few flying characteristics.

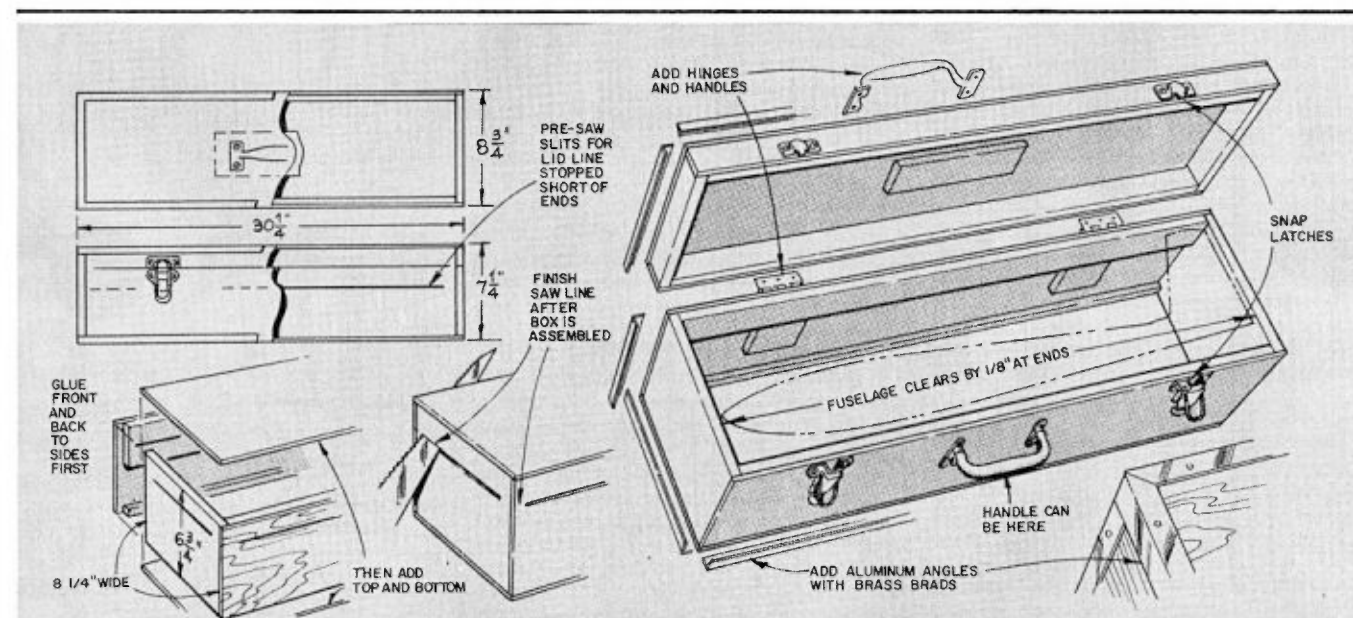
Construction

Starting first with the body, epoxy together the engine (hardwood) bearers F-1, ply formers F-2 and F-3, ply wing seats F-10 and balsa strips F-15 for maximum strength. When the epoxy has completely cured (overnight curing time is the best), put the balsa sides F-8 and balsa doublers F-11 in place with white

glue, making certain the body sides are perfectly aligned with the plan before the glue dries. I use a clip to temporarily hold the tail ends together while drying. When using clothesline clips or the like to hold balsa parts together, first slip a scrap piece of thin hardwood or balsa between the balsa surface and the clip to prevent indentation.

When the glue has set, install F-4, F-5, F-6 ply formers and F-7 hardwood. Looking at the cross-sectional views it can be seen that the corners of the formers are beveled—to allow the triangular balsa strips F-13 and F-14 to fit in place and provide a platform for the top and bottom body covering. Glue in F-13 and F-14 and sand down to match the edge of F-8 body sides. Top body covering, F-26 thru F-30 inclusive, can then be fitted and glued. Hold off on the bottom covering, F-24 thru F-30 in-

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clusive, until the landing gear hardwood block is installed.

The landing gear block, F-22, is held in place with epoxy, as are the thin ply hold-down pieces F-21 (one to either side of F-22). When the epoxy has set, measure F-23, hardwood blocks, for position over F-22. Note that the holes in F-22 are staggered and the landing gear wire will come through them at slightly different positions in respect to each other (see body top view). After marking these hole positions on both F-23 blocks, groove them accordingly and epoxy in position over the landing-gear block. Before the epoxy has had time to completely harden, fit the landing gear to check alignment of F-23. Wipe excess epoxy off the landing-gear wire after removal, and let everything dry overnight.

Bottom balsa covering can be applied starting from F-24 working toward the tail. At this point a note of caution must be injected since the type of radio equipment and fuel tank one uses dictates the next steps, and any modifications should be made before gluing F-17, F-18 and F-16. I found that my tank and battery pack would not fit easily in the space provided. The tank is 75cc (2½ oz.), shaped similar to the one shown in the drawing. Because the bottom part is lower than the neck line, the GE battery I used with my Controlaire system did not fit. Trying to squeeze the battery in with the servos and receiver will foul up the weight balance. It is most important to keep as much weight forward as possible. I therefore had to modify the tank.

By applying heat in increments to the lower portion of the tank until the plastic softens, it is possible to then press it against a flat, smooth surface and reshape it slightly. Hold this position a few seconds to allow the plastic to cool. Care must be used not to apply too much heat and a thorough air pressure (or water leak) test must be performed after making this modification. It might take a couple of tries to give the tank the proper degree of size reduction to allow both tank and battery pack in the same space. During these heat-and-try runs I had the battery packed in foam and sealed in a plastic bag. This gave me a size mark to shoot for so the finished product would fit properly. Of course, the other way out is to use a smaller tank.

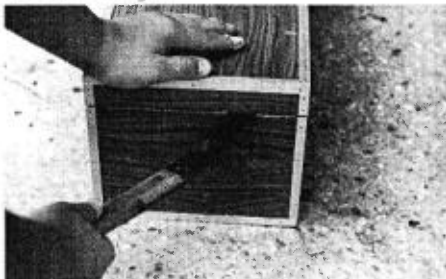
At this stage of construction, the fin, ply nose piece, hard balsa filler F-19 and hatch cover F-20 can be put in place. Leave final sanding and shaping of the hatch cover until the wing is complete so that it may be sized properly. Tail-wheel assembly will be installed later.

The engine is mounted next and the system shown on the drawing is quite simple to use; however, I prefer the hidden nut system. Be certain to measure the engine prop nut to extend slightly out from the nose piece, F-32. F-17, F-18 and F-16 can now be glued in place. Do all shaping and sanding on

the body at this time, except the hatch cover.

The horizontal stab is laid out directly on the plans over waxed paper. After all basic pieces are glued together the planking is laid on. In the kit, the width of the planking was insufficient to reach from leading to trailing edges, therefore the scrap pieces cut from the angled leading edge were used to fill the gap at the apex. Sand the ends flat and glue on tips. Add the elevator and sand to final shape. I used small plastic hinges instead of the thread hinges shown on the drawing—two hinges to each elevator half, first beveling the leading edges of the elevator to allow for travel. Fit the horizontal stab in the slot at the tail end of the body and carefully measure for center positioning. I lightly marked the underside of the stab in pencil after determining the exact center. Remove the stab, then cut away the lower tail section of the body that connects to the stab, on a slant, from the body. I used an X-acto saw and found it easy to get a straight cut. The piece just removed is lined up with the pencil marks and then glued to the bottom of the stab.

While this is drying, the hold-down block F-34 can be installed. First trim F-12 just forward of F-7 so that F-34 fits snugly. (White glue can be used here.) When the stab and bottom section is dry, sand the slanted end to fit flush. Make a hole in the stab, centering over block F-34. The size of the hole depends on the screw size used—a 3mm screw (1/8") works just right. Drill and tap the block for screw size used. Brush a little leftover epoxy cement into the hole and after it hardens, run the tap through again. This gives a nice fit and added strength.



When making the box, cut the corners with a saw after rest of assembly is complete.



Author's son brings the model home. He tried inverted flight on his first RC flight which was with the Pegasus.

Drill a hole for the hold-down peg and fit with a bamboo or hardwood peg. Final shaping and rough sanding of the stab is next. Then add rudder, steerable tail-wheel assembly and V-3. Sand V-3 to shape.

The only difference in making the wing for the Pegasus is that the two halves are not joined and a spar box must be made. Otherwise, the construction is quite simple and like most wings. Start by marking the spars to the plans and gluing all ribs except W-1. Notch and glue in place the W-2 rib and fit W-4 hardwood spar strengthener. Glue the two ply braces W-8 to form the spar box sides and then add W-1. The end of W-8 is slanted to form a dihedral of five degrees.

Try not to get any glue on the inside of the spar box, or W-7, the hardwood center spar, will not fit easily. Leading and trailing edges are then marked and glued in place. Add W-15 and W-9 (both ply) and wing positioning pegs. Then install the guide pegs to W-1 to keep the wing halves properly lined up when assembled. Brass ferrules were used in the guide peg holes to prevent wear.

Next, fit W-7 so it is not too tight nor too loose in the spar boxes. Mark one end and the corresponding spar box opening so that the center spar can be installed the same way each time. Once again, let me warn about using too much glue when assembling the spar

box, as an excess can make it difficult to fit W-7. Two pieces of sheet balsa are added to W-3 spars between the second and third, and between the third and fourth ribs for added strength.

Cover the wing sections with balsa sheeting. The kit provided narrow sheets of balsa that required two sheets for each major surface. I first glued the four pairs of sheets together on a flat surface, over waxed paper—this gives a smooth glue joint—then the newly-made wide sheets were glued onto the wing section, held with clothespins. Wing tip pieces, aileron horns and ailerons are added and the two halves sanded to final shape. Cut out an area of the sheeting to fit the aileron servo. I used S-4a servos and

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found them just the right size for this small wing. Scraps of hardwood and screws or one-touch tape can be used to secure the servo in place. The servo is installed after finish is applied. Measure pushrods between servo and aileron horns. Add W-16 balsa pieces to top surface of the wing and sand to shape. Cut holes for camlocks or use hold-down bolts (the former is shown on the plans).

Sand the hatch cover to final shape and go over the entire plane with fine sandpaper. Apply your favorite finish but keep in mind the weight—the 09 engine is not the most powerful mill in the world for full-house birds!

Loosely fit your radio equipment in place to get the CG as shown on the plans. A slightly nose-down balance does not detract from performance. Install the equipment using your favorite means of securing servos. In the case of the S-4a servos, I glued two 1/4 in. ply pieces across the width of the body and mounted the servo tray directly to this. With the battery pack under the tank, the receiver should have plenty of space just forward of the servos. Measure and install pushrods to rudder and elevator.

Flying

Although a bit difficult to make a good Top Hat, an 09 delivering full power will pull the Pegasus through the sky at a pretty fast clip. Initial flights should be made by hand-launching since ground loops with the tail dragging is common. With practice and a little wind to keep it steady, ROG's are possible. Trim to zero on all controls and let the little beastie go!

After my first flight I had to reduce the throw on the ailerons and elevator to a minimum, since too much throw made the plane look like a 40-powered pylon racer. I got the hang of it after a few flights and was making touch-and-goes with ease. My son then took the controls and proceeded to fly inverted, without my help—the first time with any radio-controlled plane! At slow

speed, at altitude, and with the nose way up, it is still quite controllable for short distances before finally falling off. At medium speeds the Pegasus will slow-fly across the field as easy as falling off a log. Spins are not too tight and are very slow.

The box the plane is packed in is also a kit and is quite simple to make. Since the box was designed to fit the manufacturer's transmitter, it might be necessary to make alterations to the sizes shown to compensate for one's own transmitter. Most of the propo sets around will probably fit, however. My Controlaire transmitter just makes it with the antenna removed. Foam rubber packing between wing halves and body will prevent chafing. When time permits, I expect to fit a small box to the inside of the cover to hold tools and a pint or so of fuel—more than enough for a day's flying. Starting battery and accessories can be worked into the various spaces available, making the entire package a complete flying system in one box.