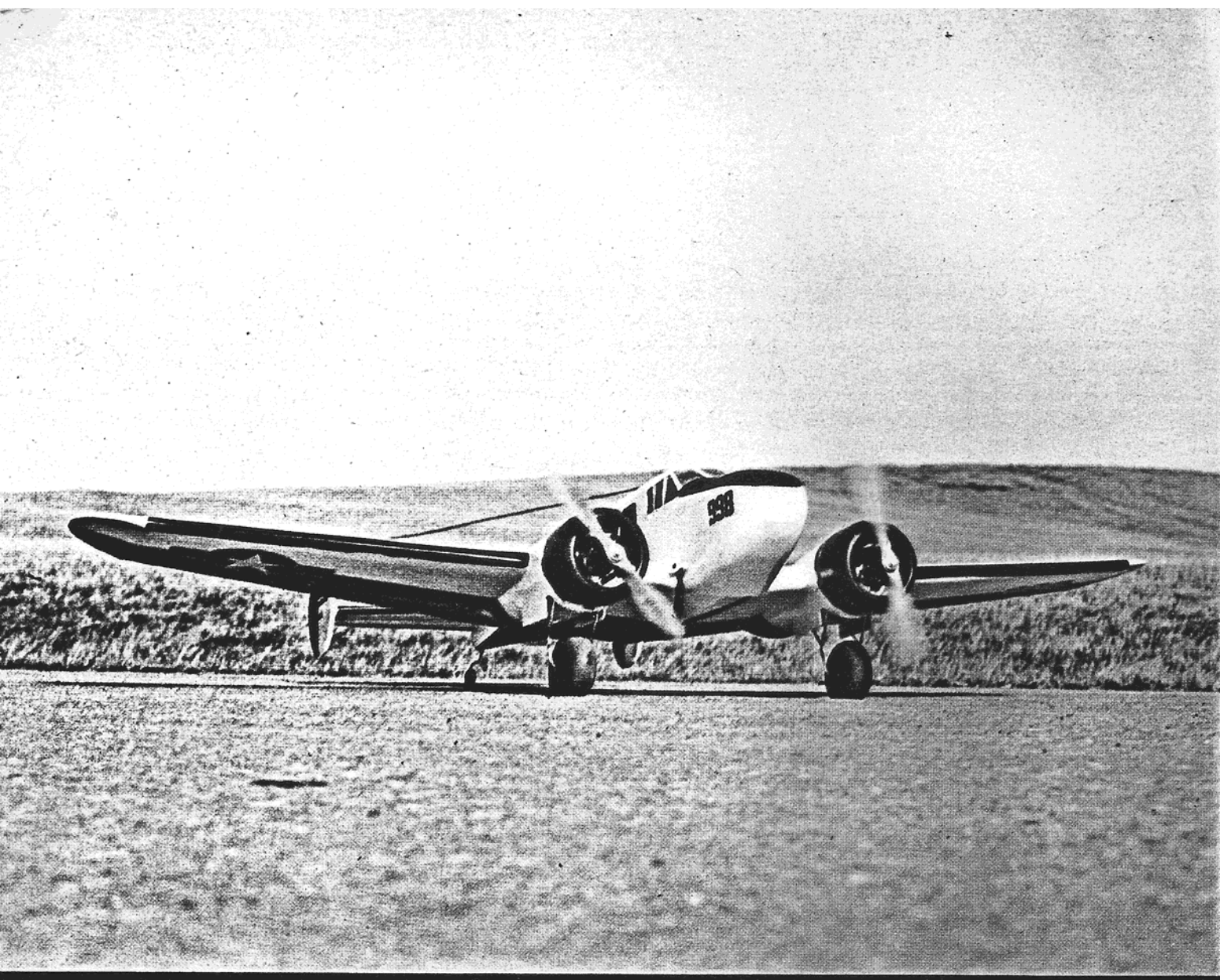


BEECHCRAFT C-45

By BRYCE PETERSON

FIRST FLOWN IN 1937, OVER FIVE THOUSAND SAW SERVICE IN WORLD WAR I I. TODAY, DESIGNATED BY THE NAVY AS THE RC45J, THE TWIN ENGINE BEECH C-45 IS STILL IN SERVICE AS A LIGHT TRANSPORT.

For years, I have admired this bird. To me, it is actually ugly on the ground with its round monster-like forms sticking out in front and those rudders hanging on the end of a big flat elevator. In the air, however, these ugly lines seem to transfer into a graceful form of beauty with dynamic symmetry, the oversized front area acting like the commander continuing gracefully back with its swept wings to the unmistakable guidance of the twin rudders - so as it should be - this one is meant for flying. It flew for the first time way back in 1937 and is the oldest design still current. During World War II, 5,204 were delivered to the armed forces for all kinds of service. The U.S. Navy version RC45J is still in service today usually covering light transport duty. If aircraft designs had a Hall of Fame the C45 certainly belongs up front.

After discussing my desire to build the Beechcraft with my friend, Capt. Jan Sakert, he whetted my appetite by sending me a set of photos from Kaneohe Bay, Hawaii. These pictures solved my paint scheme in a hurry. First, it is military (love those stars and stripes). Second, it is white and red (my favorite colors). Who but the Marines would paint a military aircraft so attractively?

I needed one more kick in the pants to get started, and that came about when Andy Williams came to town for a show. It was early in the morning and I was sipping coffee in my backyard. Here came Andy in his brand new Model 18 at about 700 feet and right over my head. Five minutes later another and another and another - his whole darn show had Beech 18's and they provided the impetus to send me to the workshop that very morning.

Can I build and fly this model, you say to yourself? After all, it's a twin. Yes, you CAN! It is just a box fuselage and foam wing with a few frills on it, and if you can perform touch and go's with a feeling of security you should have no trouble with the Beechcraft. I say this because you are sure to encounter single engine landings and a mistake here could mean disaster.

The little ship was designed for the new 10 ounce mini rig and I do not recommend the heavier control systems because of the heavier wing loadings. I am using only three servos in mine - elevator, motor and coupled aileron and rudder. The total flying weight is four pounds. It is all you need for complete control so why add more?

Let's start CONSTRUCTION with the fuselage.

Cut the 1/8" sides and front doubler from a good grade of soft balsa. Prepare 3-Fl's and 1-F2 spacer and glue in place upside down on a flat table. Add the 2 noseblocks and tailblocks, keeping everything in line. Tack glue 2 spacers in the wing saddle - will help keep it in line. Cut the windshield pattern from soft thin aluminum and set in place by hand. This gives you patterns for the cabin top, etc. Sheet the top and bottom as per plan and sand to shape, so what could be easier? So you thing it is too flimsy and you want to beef it up in the rear? Remember there is no screaming vibrator up front and we are not building this ship for crashes but for flying.

The tail comes next and a quick look at the plan should explain the linkage to the rudders. Everything should work smoothly before sheeting the top and bottom. The plastic tubing can be found at most Five and Dime Stores at the Garden Section. Be sure to use epoxy to secure the rudders for strength.

WING

Both tips are raised 3 5/8" for dihedral. Hot wire the foam panels and join in the center with epoxy. Add the 1/4" leading edge and 1/8" trailing edge to protect the foam while working on the tips and throttle linkage. Cut a groove in the foam to fit the throttle linkage and glue in place. If Cox 15's are not used be sure to measure distance from center of wing to center of throttle. Sheet with 1/16" balsa using a good hard grade where the engine nacelle connects. Ailerons and tips will complete your wings.

Engine NACELLE and Landing Gear

Cut 2 each N1, N2 and firewalls. Set wing on a flat table over drawing paper. Using the plan, draw some straight lines where things should go and mix a batch of epoxy. Cut 16 1/2" x 4" strips of glass cloth and start putting things in place. Use the glass cloth strips around all joints and leave overnight to set. The landing gear comes next. After the first 90° insert the wheel and make the second 90° bend. Mount the gear to N1 and N2 to make a hinge. The rear portion floats on "G" pad and gives a nice shock absorbing effect.

If Cox 15 R/C's are used, the throttle will bump into the firewall and a cutout must be made. I solved this problem by using 2 florescent light starter cans. Rough up the aluminum cans with sandpaper and epoxy and place in the firewall to make room for the throttles.

COWLINGS

With a band saw, cut two rings as per plan from 2" thick balsa stock. Prepare the plywood sanding pattern and round the outsides. After the cutouts for the cylinder have been made, saturate with epoxy for strength and fuel proofing. Next, prepare N4, 5, 6, and 7. Be sure to reverse one of the N5 and N6 patterns because they go on the other side. N5 and 6 are 1/8" oversized to allow custom fitting around wing. Glue all joints generously. Be sure to mount your fuel tank and complete the throttle linkage before securing N5.

Coverite was used for the finish and works well around joints and adds strength to the structure.

Both throttles fasten to the same point on the servo and are adjusted separately for accuracy.

FLYING AND BALANCE

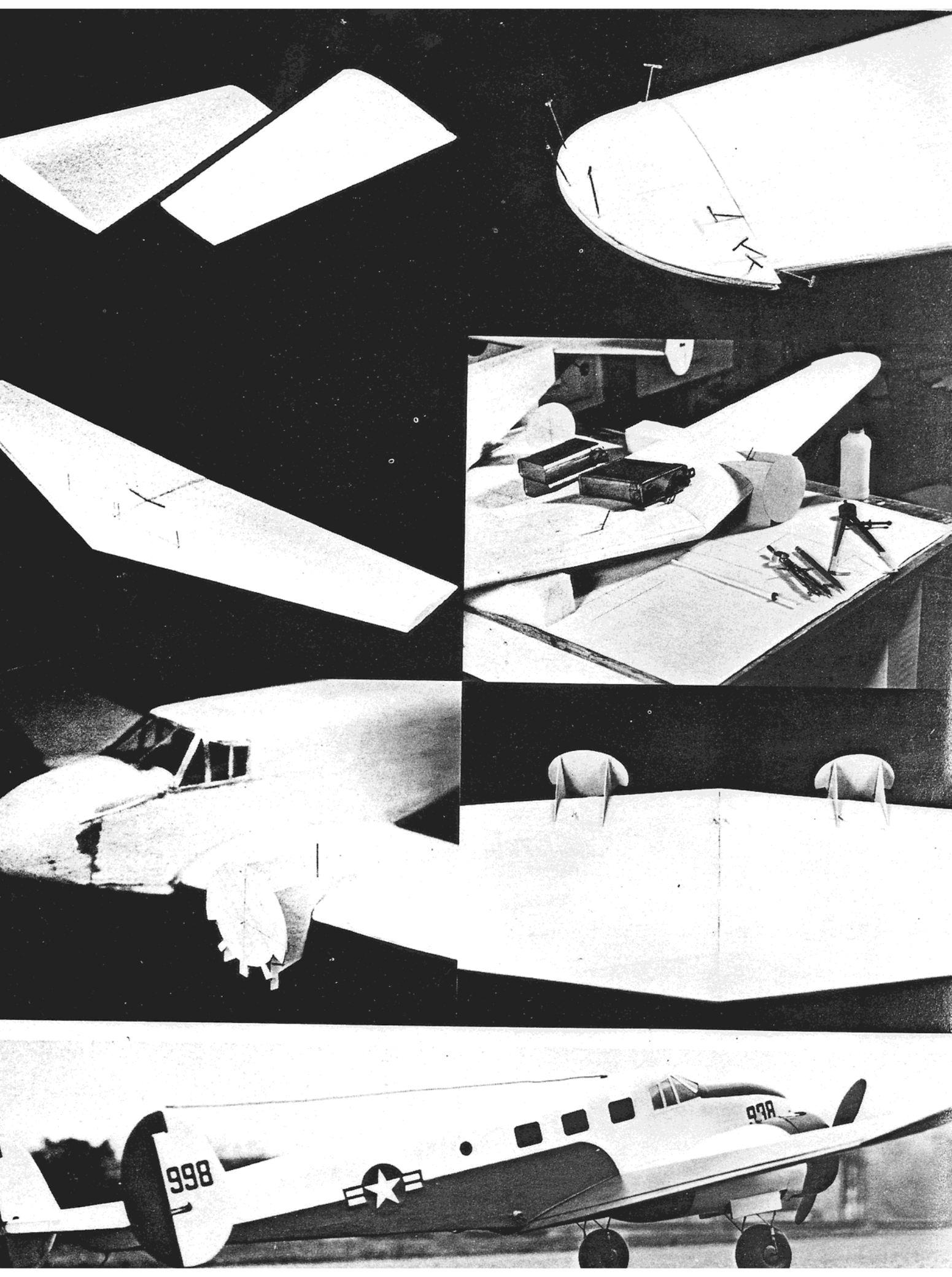
The c.g. is a little forward to create a nose heavy trim. This little twin will jump straight up in the air if you don't watch it. So don't PULL it off! Once in the air, retard the throttles about 1/3 for scale appearance around the field. No one expects 4 point rolls or 1,000 foot loops. Just fly it around and your friends will love it. It will skid a little on one engine but not seriously enough to worry about. Landings are straight on, well over the stall point. The big stab and twin rudders really pay off here so what more could you ask for in a design?

CAUTION

Break in your engines before you fly. Don't lose an engine on the first flight because of laziness.

Don't make it too heavy. Its stability and forgiveness is due to its light wing loadings.

If the little "Beech Bug" has bitten you like it did me, don't be afraid of it because it is a twin. Just stack your wood and cut out two instead of one and remember you still have a separate rudder for each engine so give it a go, sports fans, and let me know how you make out.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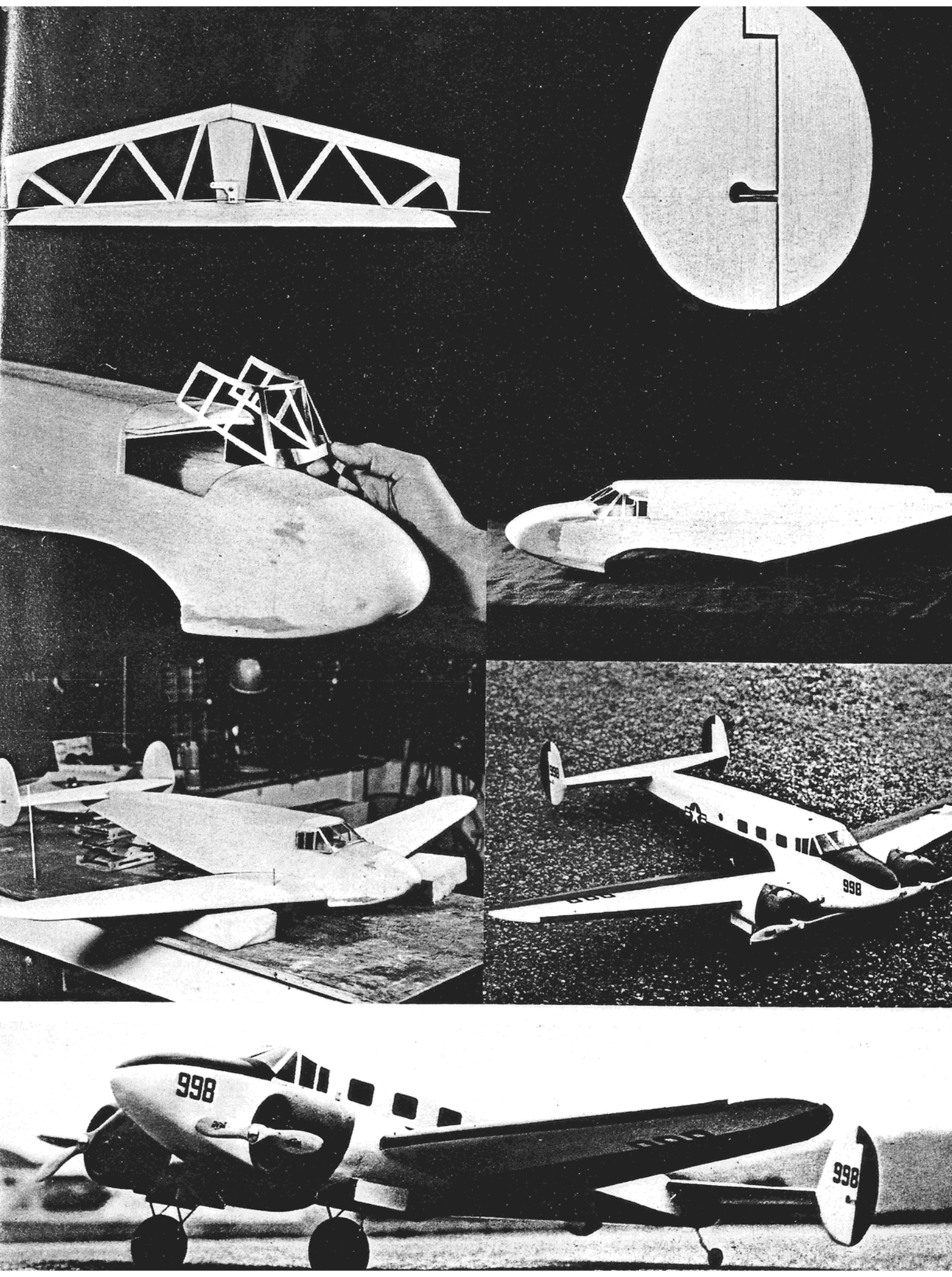
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