

Ready to commence flight.



Guillow DC-3

Dennis Andreas

Pt-2

There has been a lot of work taking place since our first part of this build. Obviously the framing had to be finished, but there was also a lot of time invested in installing the radio equipment, motors and getting the airframe covered. Since the DC-3 is considered a display model, and its bones are that of all of the Guillow's kits, it just needed a few adjustments. As was mentioned last issue, weight is the biggest enemy of any flying model aircraft. To that end we have lightened areas wherever and whenever possible.

Removing weight from the airframe is very important, but as we add the radio control equipment, motors and battery, the model needs to be able to support that weight while flying. A great product for light weight strength is carbon fiber. A few pieces of carbon fiber strip fixed in place with a drop or two of cyanoacrylate is perfect for the DC-3. The areas this will be added to are the top and bottom of the wing's main spar and also along the trailing edge. These are high stress areas and a little carbon fiber adds a lot of strength.

The servos and motors chosen for the DC-3 are from some well-used Gemini Micro Flyers. Our friends at Daron sell these, but there are many manufactures of micro size radio control equipment available that will work just fine.

Motor mounting was a straightforward task. Starting with the basic Guillow's design, some additional pieces of balsa were used to get the motors centered in the cowl. Once lined up to my satisfac-

tion, the motors were then glued in place. As a precautionary measure, two degrees of down thrust was added to each motor when they were mounted. Once the airplane has been trimmed, should the down thrust not be needed the motors can easily be

shimmed to zero.

Although not absolutely necessary, but to make installation and future maintenance easier, the wing was made removable. This is a pretty standard feature for most models. Four 4-40 size nylon screws and tapped wood plates are used. As a last modification, the center section of the bottom of the wing is covered with 1/64 plywood for added strength. To help with balance, the rudder and elevator servos are mounted as far forward in the fuselage as practical. Even though this requires long pushrods to the control surfaces, it makes the previously mentioned installation and maintenance easy.

Thin music wire was used to make torque rods to control the ailerons. Small pieces of balsa were placed against each of the wing ribs where the torque rods passed with the grain running 90 degrees to the wing's rib. Using the wire as a drill we made guide holes through the ribs. The holes were then reinforced with a drop of cyano for the perfect bearings. Odd by today's standards, this arrangement only requires the use of one servo to drive the ailerons. This means less weight and simplified wiring.

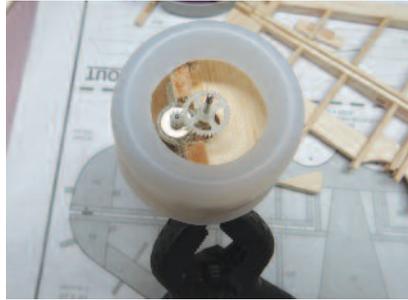
With the airframe complete it's time to finally sand and cover our masterpiece. For an airframe of this size, the preferred method is to use silkspan, thinned white glue to adhere the covering and a spray



Due to the numerous compound curves present on the DC-3 it needs to be covered in sections, but the instructions that come with the kit describe the process in detail and will walk the builder through the process.



The DC-3 is engineered primarily as a display model, so to convert it to a flying model requires a bit of strengthening. To do this without adding much weight, strips of carbon fiber were adhered in place.



There are numerous small motor options available to the consumer. The ones selected for this model were salvaged from two micro size aircraft that had been damaged beyond repair in separate crashes.



For ease of installation and future maintenance along with helping to achieve balance without the addition of unnecessary weight, the servos were mounted as far forward in the fuselage as practical.

bottle filled with water. Although not often seen anymore, I've been doing it this way for well over 40 years and it's almost fool proof.

First cut the silkspan about one inch larger than the area to be covered. Mix some white glue with water using a 2:1 ratio. Thin it enough so that the mixture brushes on and flows smoothly. Apply thinned glue only to the outer perimeter of the area to be covered. Next lay the silkspan over the area and give it a light spray of water. This allows the silkspan to expand and be pulled taught. Once satisfied, give the same outer perimeter another brushing of the thinned white glue over the top of the silkspan. With its multiple curves, the DC-3 needs to be covered in sections. All of the information needed is detailed in the instructions.

With the model covered, the silkspan needs to be sealed before painting. The easiest way to do this is to apply two mist coats of clear lacquer from a rattle can. Don't worry if the covering sags a bit during this step as once it has completely dried the covering will

be nice and tight. The sprayed lacquer will also help adhere the silkspan to the rest of the airframe adding additional strength.

Thousands of DC-3s were produced and hundreds are still flying, so there are a myriad of choices. The supplied decals are from Eastern Airlines' "Silver Fleet" so the color was set to silver.

There are a number of scale vacuum molded pieces that Guillow has supplied. To help prevent tail heaviness, the vertical and horizontal stabilizer's tail fairing was omitted, but spare stringer material was used to form the area. Also, the Landing gear's wire covers were left off but will be added after the maiden flights.

We have a number of final details to take care of, but because of editorial deadlines, we will need to end it here. The finished model along with many additional photos and video of the maiden flight will be on the Hobby Merchandiser Facebook Page. Guillow airplanes have been introducing, educating and entertaining modelers for 80 years, and the DC-3 is no exception. **HM**

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