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R/C Call-Air SNOWCAR

By FRED SANFORD

• The Call-Air Snowcar is a "stand-off" scale model of a propeller-driven snow sleigh built during the fifties and sixties by the Call-Air Company of Afton, Wyoming. The original idea and outlines for this project came from an old issue of American Modeler. This Call-Air model has operated for three summers and winters on both bare ground and snow, and has provided me with many hours of trouble-free enjoyment. You will find that this project is low in cost, due to the fact that it is constructed primarily of pine with very little balsa used.

Although my Call-Air weighs in excess of six pounds, the performance is not impaired. By using a .35 to .40 engine for power, you will find the performance is superb.

Before beginning construction, purchase from your local lumber yard a 3/4 by 8 inch pine board, 12 feet long. Select a board that has straight grain and is free of warps. The board then has to be reduced in thickness for our purposes. This may be accomplished by using either a power wood planer or sawing the board vertically on a bandsaw. Most lumber yards are equipped to do this for you at a nominal charge. You will need two feet of 1/2 inch thickness (sometimes available locally) and ten feet of 3/8 inch thick material. After transferring the outlines to the pine, and cutting out the various parts (A Dremel Motosaw works well here) we are ready to begin . . .

CABIN

The cabin is basically a box built on a platform with formers and stringers added to lend the desired shape. By following these steps the cabin will take shape quickly.

1. Glue and nail (use 5/8 inch - 18ga. brads) the 3/8 x 1/2 cross pieces to the sides, and while the glue is still wet, nail this box to the platform. Square up the structure.
2. Install the 1 inch balsa nose blocks and 3/8 inch pine vertical nose piece.
3. Add the two main cabin formers, checking to make sure they are square to the platform.
4. Glue all nose stringers to the nose piece and front former, making sure they are horizontal to the platform.
5. Make up the rear motor mount bulkhead from 3/8 pine and 1-1/8 x 1-1/2 balsa blocks. If you have access to a table saw, use it to cut the bottom bevel. Attach this assembly with epoxy glue.
6. Use a 1/4 square soft balsa stringer, placed in the former notches to mark the notch positions on the rear block,

route these notches with a Dremel Moto-tool and a 1/4 inch routing bit.

7. Use 1/4 square hard balsa or spruce for the stringers. It will be necessary to boil the aft portions of the stringers for about 30 minutes in order for them to bend properly. Glue each stringer to the rear block first, and work forward.
8. Next, cut out the top stringers between the main formers and use them, with the hatch formers, to construct the hatch.
9. Add the 1/4 inch balsa filler pieces to form the rear window openings and the inside radius pieces for the side hatch windows.

10. Install 1/32 ply dash, 1/16 ply fuel tank tray, upper windshield block, and 1/4 inch ply nose gear mounting pad.

11. Sand the basic structure, fairing the stringers to the vertical nose piece and rear bulkhead.

12. Mount the 1/2 inch diameter birch axle with three wood screws after drilling the ends of the dowel for the 1/8 inch music wire axles.

Note: If you intend to use the model for wheels only, you may wish to substitute a sheet aluminum landing gear blank for the wood axle.

13. Form the engine mount from 1/16 sheet aluminum. Install mount with wood screws or blind-nuts and bolts, and add motor, using your favorite mounting method.

14. Add the Carl Goldberg steerable nose gear and shorten according to the plans.

15. Install a 6 oz. plastic tank on the plywood tank tray . . . vent the overflow through the bottom of the cabin. Eighth inch brass tubing is used to pass the fuel through the firewall and cabin floor.

SKIIS

The skiis are made from 1/8 inch Sig Liteply. Make the form from scrap, using the detail on the plans as a guide. Each ski is made from two laminations, the basic blank being 2-1/2 by 22. The blanks are boiled for about 30 minutes and glued together with white glue. Check for separation of the ply laminations after boiling, and glue if necessary. Clamp the assembly together, using the photo as a guide for clamp positioning (If all of this seems like a lot of work, why not try aluminum?).

Use the profile of the ski to form the bottom contour of the ski spines, which are cut from 1/2 inch pine. This is a good time to drill the necessary mounting holes in the spines. Next glue the spines to the skiis. Finish the tops of the skiis with dope and use several coats of polyurethane high gloss varnish for

the bottoms. This will give you a glass-like finish which boosts performance. Add the 1/4 inch angle keels made from 28 ga. galvanized sheet metal. The keels are attached with No. 3-3/8 inch round-head screws . . . note particularly the position of the front keel, as this location has been determined to give the best steering advantage.

The rear ski springs are made from a scrap of spring steel which was scavenged from steel package banding found at the lumber yard. The spring shackles and mounting plates are formed from 1/16 sheet aluminum.

DETAILS

Do not omit the 1/8 inch music wire rear ski stabilizers. They were added after the photos were taken and *must* be included. These stabilizers control toe-in, and without them, the rear skiis will not track properly. Also, do not omit the spring-loaded cable on the front ski, as this prevents the ski from "digging in." Another steel fishing leader is anchored to the rear of the front ski . . . this is positioned to allow enough slack for turning while at the same time preventing the ski from overloading the servo. I stripped a set of servo gears before adding this cable!

The radio equipment can be installed at this time. Position the gear as far to the rear as possible, in order to keep the nose light. Use a "Z" bend in the nose ski pushrod for servo protection. If your servos are not particularly strong, I would advise ganging two servos together, via a parallel jumper cable, for the nose ski. If you plan to use a vertical antenna for the receiver, epoxy an 1/8 inch brass tube in the cabin top for a music wire antenna.

FINISHING NOTES

I have built two Snowcars. One is covered with Silron while the other is covered with plastic film; both of these materials worked well, so the choice is up to you. The window coverings were made from clear acetate and attached with Sig 1/4 inch striping tape. I made patterns from vellum and then transferred the outlines to the acetate. Finally, the 1/8 inch music wire propeller guard can be added. Bend this to shape, using the plan as a guide. This handy item has saved my Call-Air from extensive damage several times (including 20 mph "rolls"!).

I have found that my Call-Air Snowcar has added new dimensions to what were formerly "no-flying" winter days here in northern Minnesota. I would be pleased to hear from any modelers who build a Call-Air. My address is Box L, No. 1, Onamia, MN 56359. Good Luck!