

Powered by an .049 engine and constructed with a profile balsa fuselage and carved/sanded Styrofoam wing, it's a great, rugged trainer.

HAWKER HUNTER ⁴⁸⁵

A VERY SUCCESSFUL British fighter of the 1950s, the Hunter has served admirably with the RAF and other nations (including Denmark, Holland, Peru, Sweden, and Switzerland). Powered by one Rolls Royce Avon turbojet that develops 10,000 lb. of thrust, this craft flies at 700 mph on the deck and has a ceiling of 53,000 ft.

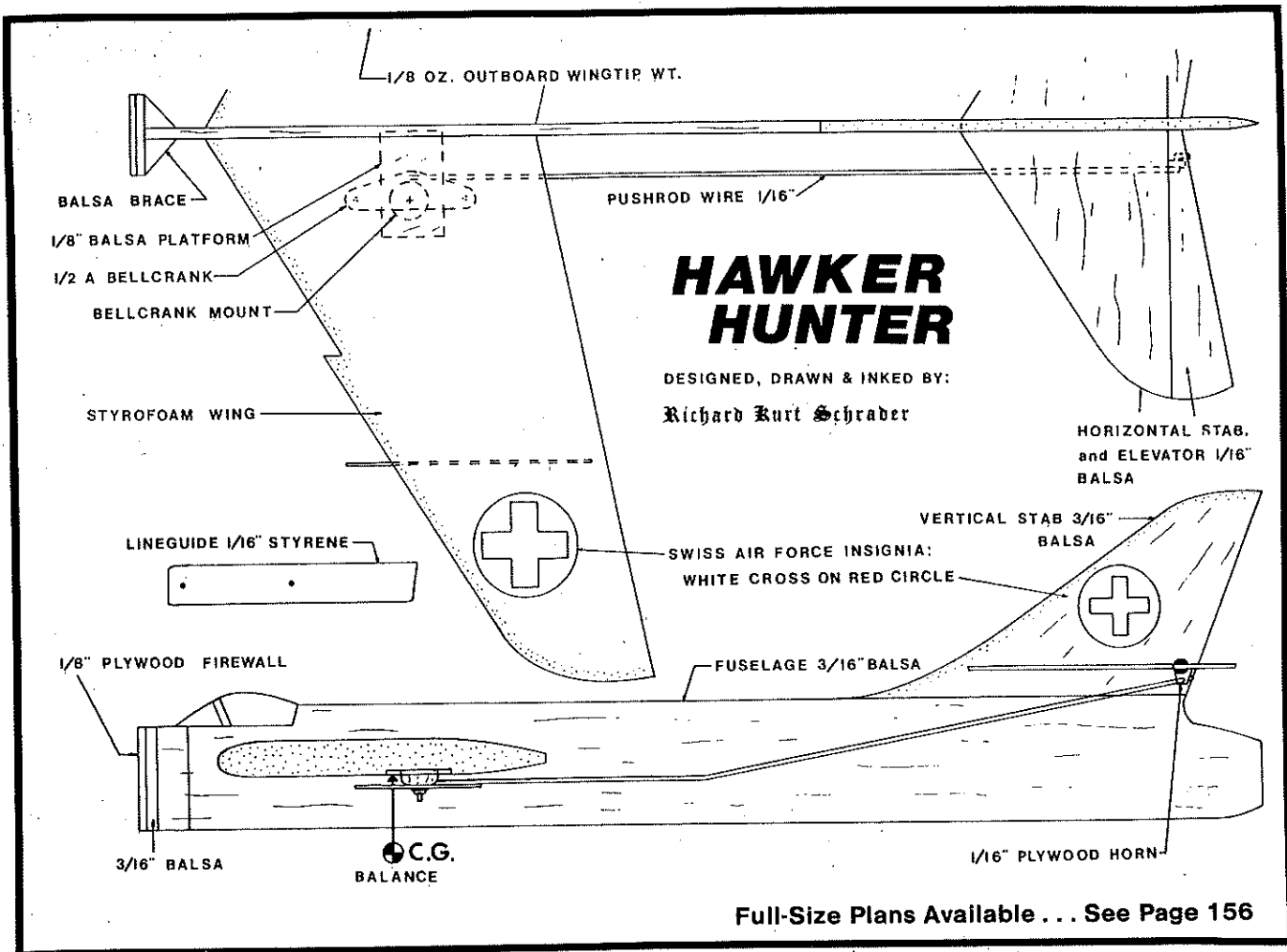
A good looking airplane by virtue of fine engineering and clean lines, the full-size Hunter has a wingspan of 33 ft., 8 in., a length of 45 ft., 10 in., and a gross weight of 24,600 lb. The leading edge extensions provide extra stability and give this design its excellent flying qualities. The RAF's

This is a sleek, simple-to-build little Control Line plane that can take hard knocks and keep flying. For 1/2A engines.

■ **Richard K. Schrader**

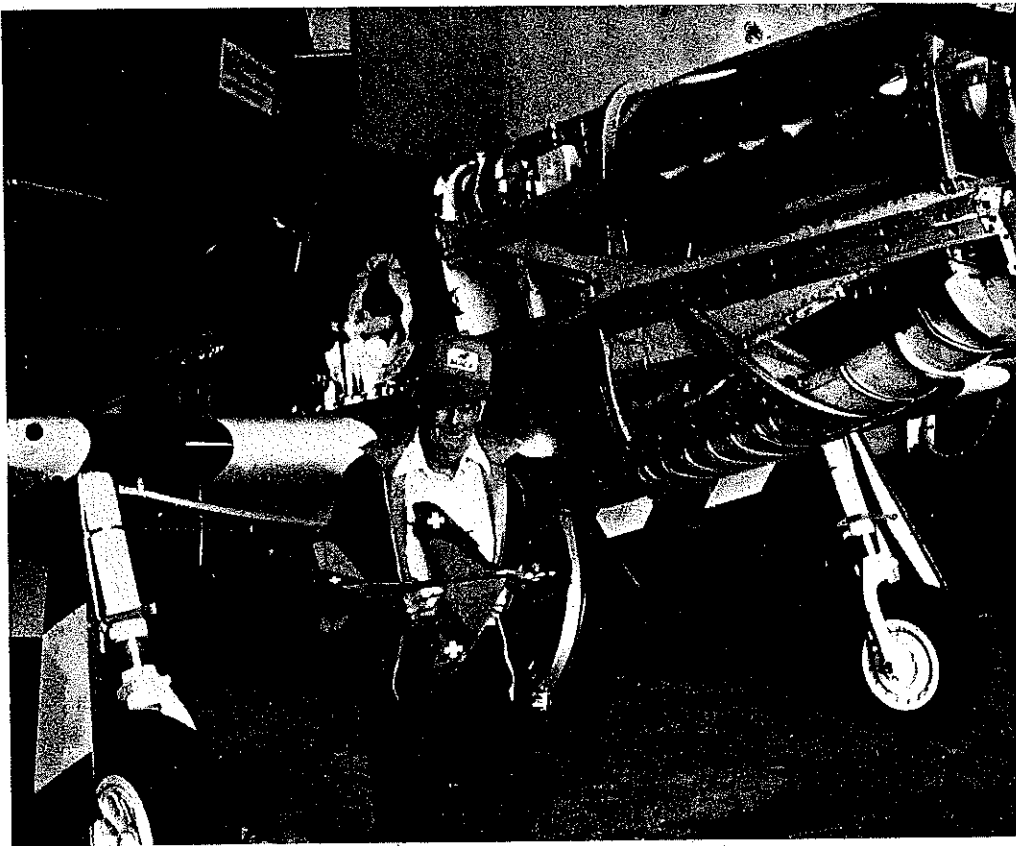
Black Arrows aerobatics team used this fighter in their air shows, the sight of 18 Hawker Hunters flying overhead being quite a visual experience.

The model of the Hawker Hunter is powered by an .049 engine, and because it uses a Styrofoam wing, it is highly impervious to crash damage. Easy and inexpensive to build—and able to withstand mishaps with the ground—the Hunter is also a fine, stable flier. It offers an enjoyable time in the flying circle for both the beginner and experienced pilot. Also, like its full-size counterpart, it looks nice in the air.



Construction. The wing is made from sheet Styrofoam which can be purchased from a department store (the author bought his at a Bradlees). Try to obtain Styrofoam close to the thickness shown on the plan in order to minimize the amount of sanding that will be needed. Trace the outline of the wing onto the Styrofoam, and then cut it to shape with a hacksaw or an X-Acto knife. Sand to the airfoil shape shown, but be careful, as cutting and sanding goes very quickly on Styrofoam.

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Left: The author's friend, Everett, shows how to launch the model by hand. Hold the fuselage, run 20 to 25 feet, and give it a brisk toss. Step quickly to the outside of the flying circle to avoid the model as it comes around smartly. Right: Here, Everett displays the model Hawker Hunter with one of its full-size predecessors in the background—a P-51 Mustang. Photo taken at the Cape May County Airport.

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even more so. The rules specify an increase in minimum wingspan of 4 in. for monoplanes and 2 in. for biplane, changes that should produce some very interesting, competitive models.

The Champs would not be possible if not for the dedicated Free Flight modelers, family members, and others running the show. The list of people involved in staging this extravaganza is impressive. However, three people deserve special mention: Contest Director Bill Stroman and his two youthful assistants, teenagers Kim and Cynde Waddell. Never in the history of this event has there been a threesome who did so much for so many with so little confusion and so much enthusiasm and willingness to help. It is difficult to find the words to adequately describe their untiring efforts and the great appreciation expressed by the fliers for their remarkable performance.

Those who attended the 15th Annual U.S. Free Flight Championships can be proud to have been a part of the extraordinary competition. Congratulations to all the winners. To those who flew and didn't win a trophy, yours is an opportunity to reflect and to redirect thoughts and efforts to improve—and to accept the challenge to compete next year. It is a challenge worthy of your time and effort. In the meantime, *think Free Flight!*

Hawker Hunter/Schrader

Continued from page 67

Cut the fuselage from 3/16 sheet balsa, and cut out the section where the wing will go. The vertical stabilizer is cut from 3/16 sheet balsa and then glued to the fuselage. The firewall is made from 1/8 plywood; then it is epoxied in place with 3/16 balsa support braces.

Cut the horizontal stabilizer and elevator from 1/16 sheet balsa. Cut out the slot in the vertical stabilizer; glue the horizontal stabilizer in place, attaching the elevator to

the stab with cloth hinges (or any other method you prefer). Glue the 1/16 plywood horn onto the elevator. Sand the edges of the fuselage, vertical stabilizer, horizontal stabilizer, and elevator.

Install the wing into position, and glue it with epoxy used liberally. Cut out a notch in the Styrofoam for the 1/8 sheet balsa platform, and epoxy this and the ply bellcrank mount in place. Glue on the line guide, which can be made of 1/16 balsa or styrene plastic. Add 1/8 oz. of weight to the outboard wing tip; this helps prevent the model from rolling toward the inside of the flying circle.

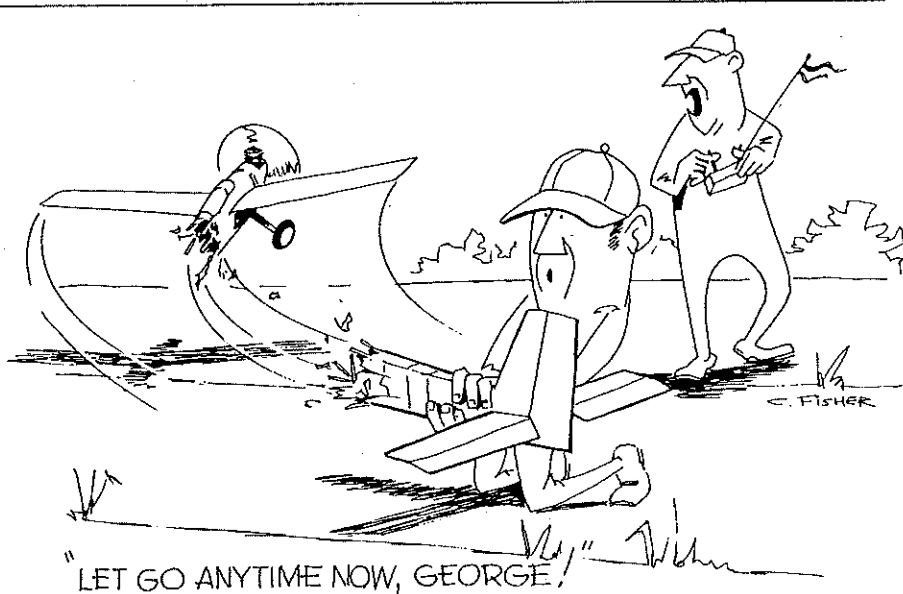
Finishing. Brush a coat of clear dope onto the fuselage and balsa tail surfaces only (do not allow the dope to touch the Styrofoam!). Let the clear dope dry for 24 hours before applying color. The model shown in the pictures was finished in Swiss Air Force colors: gray undersides with dark green and dark gray on top. If you can spray on the color, that's best as you can put on a thinner

coat to keep the weight down; however, brushing (as I did) is okay. I used Aero-gloss polyurethane paint, two coats on the fuselage and one on the wing.

The cockpit area of my model was masked off and painted light blue. The Swiss Air Force insignia, white crosses on red circles, was cut from MonoKote Trim sheets.

When the finishing is complete, install the bellcrank and bend the pushrod wire to fit so that it gives an equal amount of up and down elevator movement. Mount the engine with wood screws.

The balance point on the plan indicates (with a full fuel tank) the most forward limit of the center of gravity (CG) range. The most rearward limit is the bellcrank mounting screw. Within this range, balance forward for maximum stability and rearward for maximum maneuverability. (Balance the model by holding the fuselage between two fingers at the balance point; when correctly balanced, the model will sit level



when finger pressure is released. Add weight to the nose or tail as necessary to achieve the desired balance point.)

Flying. Hook up the control lines (26 ft. long). Check the AMA rule book, pages 17 and 18, for recommended line-ending methods. Make sure that the elevator moves freely in response to control inputs with minimum tension on the lines. Don't fly near overhead power lines!

On takeoff, have your helper hold the model by the fuselage, run 20 to 25 feet, and launch the model into the air in a level attitude. On landing, anticipate when the fuel is about to run out, and fly the model level at about shoulder height. When the engine quits, let the model glide to a landing, applying up-elevator just prior to touching down.

Should an unfortunate crash take place, you will be amazed at how resistant the model is to damage. In the event of a really bad crash which breaks the wing, there is no reason for dismay. With 5-min. epoxy, right there on the field, you can glue the wing pieces together, and the repair will hardly even be visible.

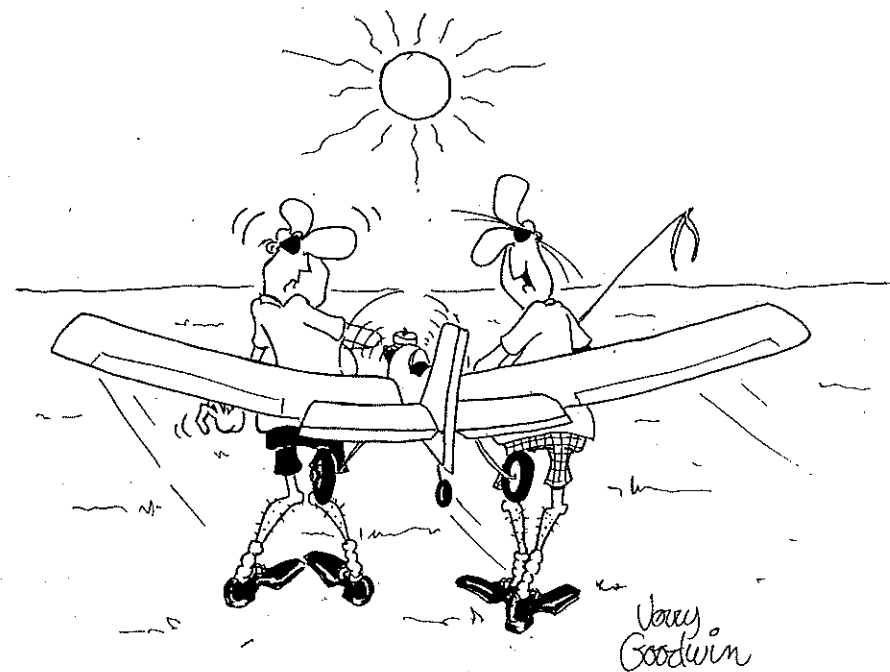
In closing, let me say a few words about my friend, Everett, shown in the pictures. He is one of the kindest, most caring people I've ever met, and he does not let his mental retardation (a term that doesn't exactly seem right for him) interfere with his bonafide interest in aviation or in his willingness to help out. His is an example from which all of us can learn and benefit.

CL Scale/Boss

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model's elevator when a cloth or paper covering is to be applied.

Scale documentation source: Over the weekend of May 18-19, 1985 I had the pleasure of attending a model airplane static show that was put on at the Cradle of Aviation Museum located in the old Mitchel Air Field, Hangars Three and Four, Garden City, New York. The show was put on by the Nassau Flyers and L.I. Condors RC model airplane clubs in



HEY, THERE IT IS!

cooperation with the museums' volunteer staff and had over 150 RC, FF, and CL Scale models on display. The show, which helped draw several hundred more visitors than normal for the weekend, was the first of its kind at the museum and is expected to be an annual affair from now on. While I enjoyed seeing all the models on display, I was more interested in the museum from a scale documentation standpoint and would like to pass on the following information to all modelers in the immediate New York City—Long Island area (or any who might be visiting here).

William Kaiser, Commander, USN (Retired), served in naval aviation during World War II and is now the museum's curator. He indicated that the museum is open to the public only on Friday, Saturday, and Sunday, and admission is free. The basic reason for the weekend-only opening is that the museum is staffed by community volunteers who not only oversee activities during visiting hours but also engage in the maintenance and restoration

of the full-scale aircraft in the museum on other days during the week.

The museum contains quite a number of planes that would be of interest to Scale modelers for scale detailing. Planes on display cover aviation from the Wright Brothers era to present day jet fighters. Of course, many of the planes on display are those that had part in shaping the history of aviation on Long Island, making it the "Cradle of Aviation." Planes on display include "The Spirit of St. Louis," the actual plane flown around the country on the 50th anniversary of Lindbergh's famous flight as well as several planes built by Grumman and Republic Aviation Corporations. Among these planes are a beautifully restored P-47, a Blue Angels version of the F11A Tiger, F9F Cougar, F-84F Thunderstreak, and F-105B Thunderchief. Some of the older vintage planes include the Jenny JN-4, Thomas Morse Scout S4C, and a PT-22. All these planes (and more) are available for extensive picture-taking and examination for scale

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