

# CURARE



Prototype of the Curare that won the 1975 Tournament of Champions and the \$10,000 award.

**BY HANS AND HANNO PRETTNER . . . continuing M.A.N.'s philosophy of the best we present the efforts of this famous father/son team who have made a career of winning most, if not all, pattern championships!**



Hans and Hanno (R/L) with the 1977 prototype of the Curare, will be in Las Vegas 1976.



Another view of 1977 machine which is finished in its usual fine manner, very colorful.

• We feel that the ultimate model design for international R/C aeromodeling competitions is the Curare. An extensive amount of research and testing has been accomplished over the last few years to develop the Curare design into what it now is. Our previous design, Super Sicrolly II, is the basis of the Curare. Several design parameters of the Sicrolly design have been retained, notably the elegance with which maneuvers can be performed. The Curare features improved crosswind performance and extreme smoothness in gusty high wind conditions. There is very little difference flying the Curare in windy or calm conditions. A pilot can fly the model through the FAI program or any other combination of maneuvers and not have to worry about correcting every maneuver, leaving time to perform exact maneuvers.

My answer to exact flying is straightforward. A pilot can only achieve round symmetrical figures when he can concentrate fully on performing the maneuver and not on correcting for aerodynamic errors just to be able to complete the maneuver. The result is not a compromise, but is a Curare!

This assurance is established by our many wins and top placing in world championships and international competitions from Las Vegas to the European meetings.

The Curare (Curare is a poison used by the South American Indians on their arrow tips) in the hands of a top flyer is a "fast piece of quite wonderful ammunition." Equipped with a Webra 61 Speed and Webra's tuned pipe silencer system very high speeds can be obtained with a low noise level of 78 db. A Simprop 7 channel contest radio is used because very high performance is required as well as three additional channels. Extra functions are retractable landing gears (MK type), combination dive brakes and flaps, and mixture control plus wheel brakes.

Retractable landing gears should be used in order to obtain full advantage of the aerodynamic qualities of the Curare. Also highly desirable is the combination dive brakes and landing flaps as shown on the plans. The excellent low speed performance of the Curare is further improved with the flaps. This is very important when flying off grass strips so the touch down speed is at a minimum to reduce any possibility of damaging the retractable landing gear mechanism. The flaps also stabilize low speed flight.

A new wing and stabilizer airfoil is utilized as well as a new idea in stabilizer dihedral. We are always being asked about the negative (anhedral) dihedral in the stabilizer. Many tests were performed to perfect the new design concept. It was found that the airfoil of the stabilizer was very critical otherwise opposite results were obtained. Wind tunnel tests showed that optimum stability under every weather condition could be obtained with the new system. Optimum low and high speed performance are now obtained. Landing performance

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was improved, but even a bigger advantage was obtained in the figure M maneuver since the oscillation after the stall turn was eliminated. Rolls were improved with the new elevator design too, much better than the Super Sicoly.

If you should think that the Curare is too fast for you, all one has to do is reduce the speed with a less powerful motor. The design has absolutely no bad flying characteristics to interfere with the beginner flyer. But to the competition flyer, we advise that you use an engine as powerful as possible so as to worry your competition.

As to the building of the Curare there are no short cuts. Previous building skills are necessary. Some building hints are offered, however every model builder has his own methods.

**BUILDING ADVICE.** The plan is organized so as not to cause any serious building problems. Please don't try to make any changes in the design or construction. There has not been a structural failure with a Curare.

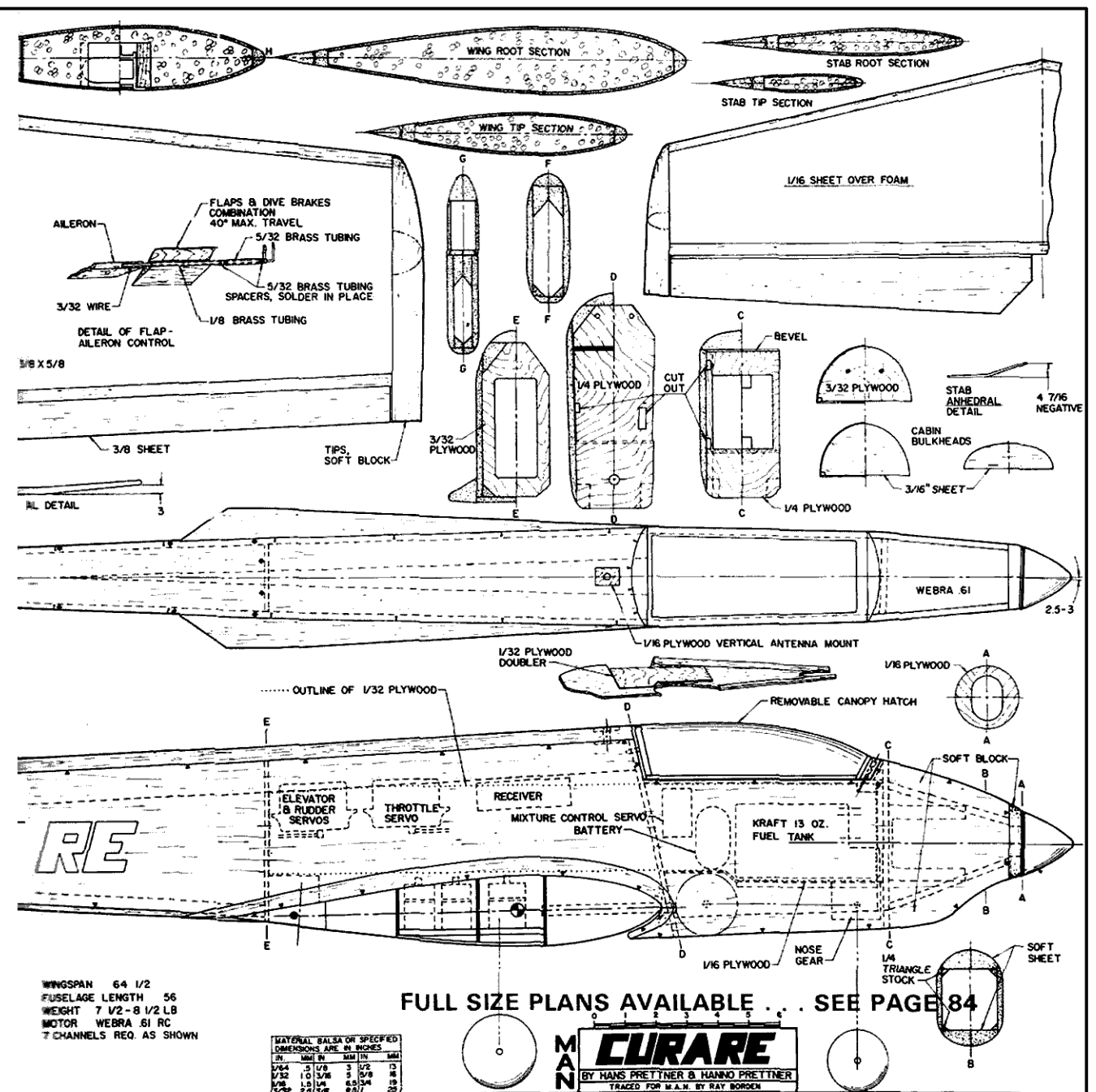
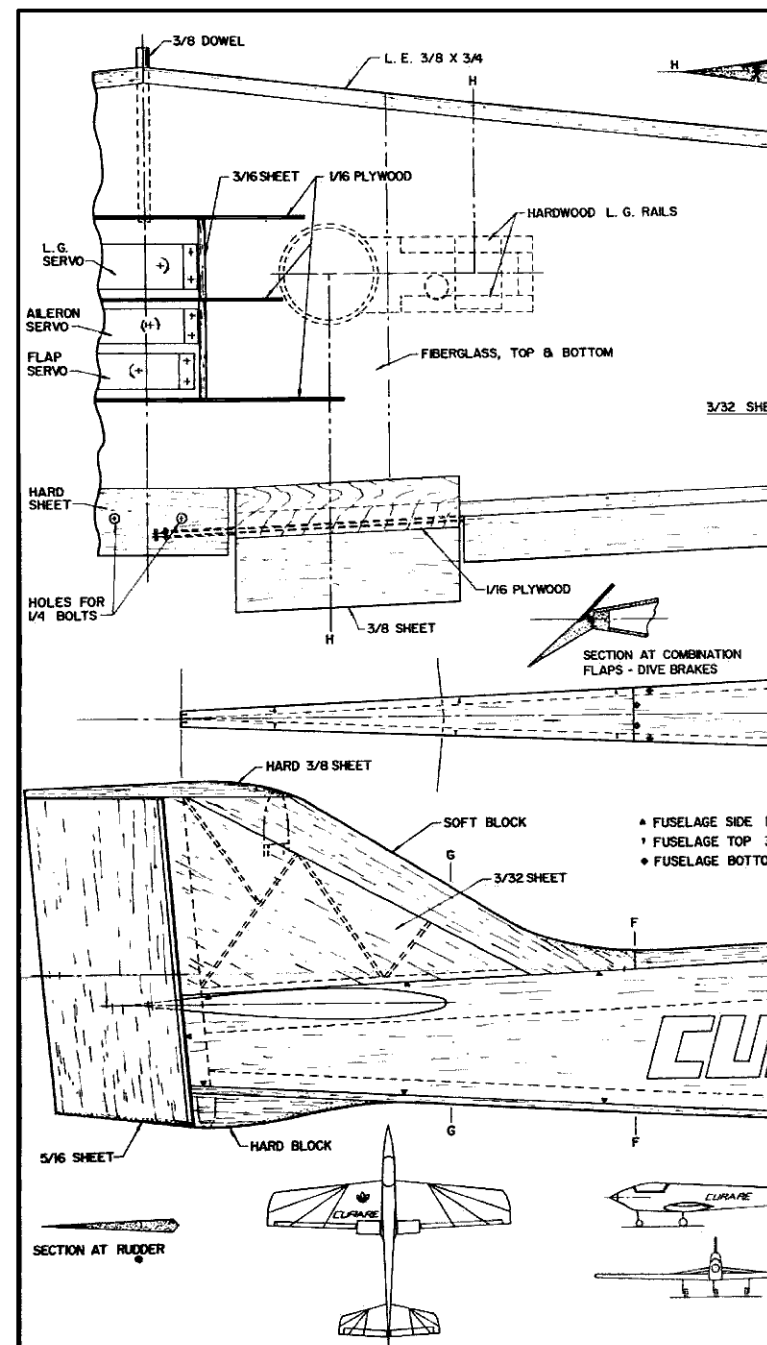
**FUSELAGE.** Try to hold all measurements and angles exactly and make sure that the fin is attached accurately to the fuselage. Carve and hollow the top and bottom blocks as shown. Use an aluminum motor mount so that minor corrections in engine thrust can be made later. The removable canopy hatch is recommended so that you can get quickly to the tank, batteries, and throttle and mixture servos. Sand the fin and rudder when attached to the fuselage. When the stabilizer is attached to the fuselage utilize the piece of string system to line it up (attach string to center front of fuselage and place end of string on stabilizer tip to see if tips are equal distance to each other).

**WING.** The most important thing in R/C flying is still a straight wing. Use extreme care when cutting the foam cores and covering the wing cores. The foam wing cores are highly recommended since they are very strong and also absorb vibration. The mounting of the landing gear retract system is also very easy. After joining the wing panels, put a wide piece of fiberglass cloth around the center section both on the top and bottom as shown on plans. When building the flap system make certain that the airfoil contour is not altered.

**STABILIZER.** The design as shown in the plan is the best available. The elevator response is very mild or soft yet still has a quick turning radius. The stabilizer is also out of foam. It may be more difficult to build because the airfoil is very thin. It can be built in a conventional manner as well as the wing, but the foam core system is best.

**LANDING FLAPS.** The linkage of the landing flap dive brake system uses a telescoping brass tubing bearing system. Watch that both flaps operate equal to each

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FULL SIZE PLANS AVAILABLE . . . SEE PAGE 84



Two close-up views of the Las Vegas Prototype showing engine mounting bolt holes th



the side of the fuselage (L) and the combination flap/brakes (R).





Handsome pilot with his equally handsome and very colorful Curare. Note the Webra pipe.

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other so that the model does not roll to one side. You can bring out the flaps in full power without the aircraft climbing. The sink rate during landing can be easily adjusted at will.

**FINISH.** The fuselage should be covered with silkspan or light weight fiberglass cloth. The wing and stabilizer are covered with Top Flite Super Monokote which gives a good finish in the shortest time. use a

color combination so that the top side is light in color and the bottom side dark in color for color contrast when flying.

**FLYING.** When you use a Simprop Contest Radio and a Webra 61 Speed with tuned silencer pipe system the center of gravity should come out perfectly. If different equipment is used corrections in center of gravity can be made by changing the location of the RC equipment. Before the first flight check for warps and controls in

neutral. Adjust side thrust so that the model will go up vertically without turning. When the loops are not straight add weight to the high wing tip. Adjustments can also be made in the elevators causing minor roll corrections.

Now it is only up to you and your training to achieve maximum "poison arrow" points. The Indians believed in Curare, modelers who want to win competitions should also believe in Curare. ■