

# CHERRY BOMB



**C**herry Bomb, a term with perhaps little significant meaning for younger modelers, but one that brings back fond memories for many fellow members of the "over the hill gang." Who can forget the Big Boomer, the granddaddy of all audio pyrotechnics, the M-80 of its day. With its deep roar, which was easily distinguishable from the "snap, pop and crack" of less potent fireworks; the "legislated out of existence" Cherry Bomb still remains as a term synonymous with raucous power or high performance.

The R/C aircraft which is the subject of this article is aptly named. Under full power and moderate control surface throws, it is a real "boomer." It is fast and responsive, yet smooth, with a roll rate somewhat akin to a flying corkscrew. With reduced control surface rates, it becomes a far more docile aircraft and well-within the flying capabilities of any intermediate level sport flier, who is a thoroughly proficient four control function flier. Obviously, the Cherry Bomb is not a beginner type aircraft! It is a fast flying sport-type aircraft.

The design of the Cherry Bomb was precipitated by an urge to produce a high performance sport aircraft, with good flight characteristics, that would be a bit different, be easy and quick to build, inexpensive, and one possessing a military appearance. Being a hand launch type, it can be easily flown from any type of open area and its high performance with a conventional .19 size engine will put most of the present .40 to .60

**The 'Cherry Bomb' is guaranteed to put a "little zest" back into your sport flying activities and also is an airborne attention getter!**



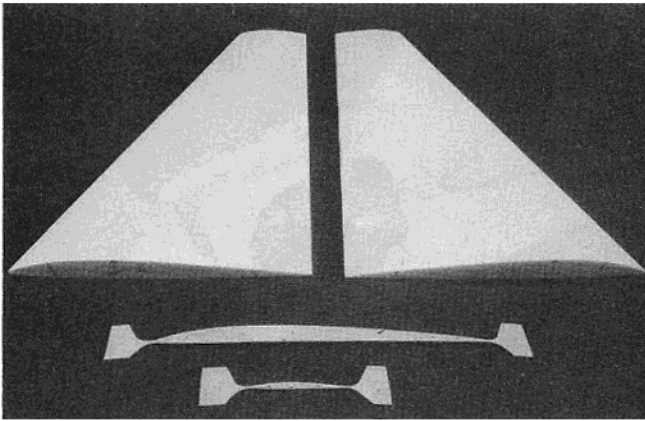
**BY BOB WALLACE**

size sport type aircraft to shame. The key to obtaining optimum performance, however, is in keeping it light. Our Cherry Bomb weighed 41 ounces ready to fly, with standard size servos and receiver and a four ounce fuel tank. We did opt for a 100 mah battery pack instead of the normal 450 mah pack, in order to reduce weight by several ounces.

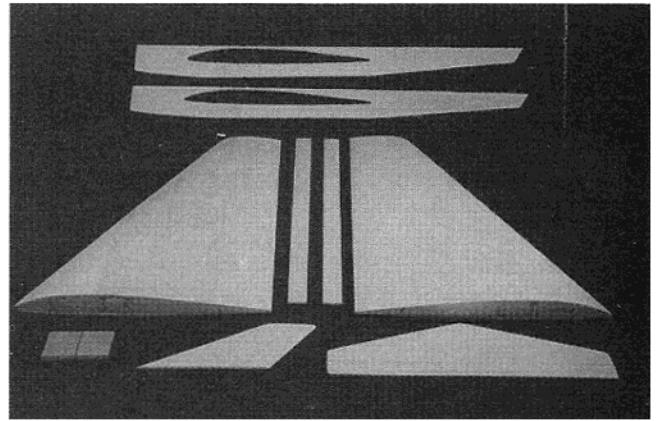
## CONSTRUCTION

The only construction phase that could be defined by some as being somewhat difficult is the cutting of the foam wing cores; due to their rather sharp taper. The foam cores shown in this article were cut by the author with no problems, however, this step is simplified if two people do the cutting with each person operating one end of the hot wire cutting bow. Foam is inexpensive, so it is no great loss if you ruin a piece or two in order to obtain a set of good cores. The core cutting templates shown in the photo were cut from scrap pieces of plastic laminate (Formica). They can also be made out of 3/32" to 1/8" plywood or 1/16" aluminum. Half of the secret to obtaining good foam cores is to use good smooth templates. Be sure that there are no burrs or rough spots on them which will cause the hot wire to "hang up" and produce a ridge in the foam core. It also helps to slightly radius the template edges and to wax them prior to use. I use an old candle for this purpose.

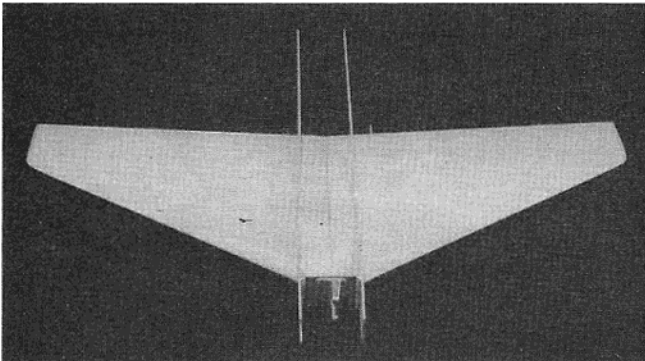
For those modelers with no foam cutting experience, RCM offers an excellent book,



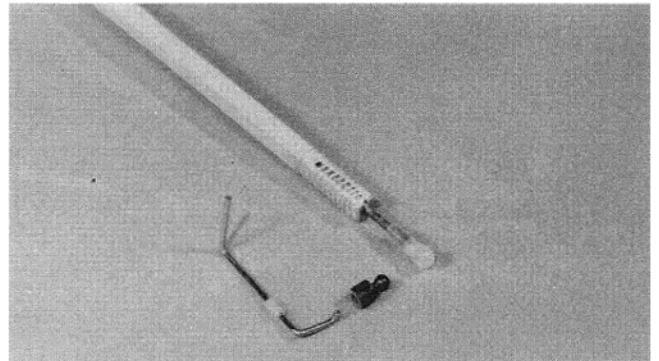
Completed foam cores and cutting templates that were cut from Formica.



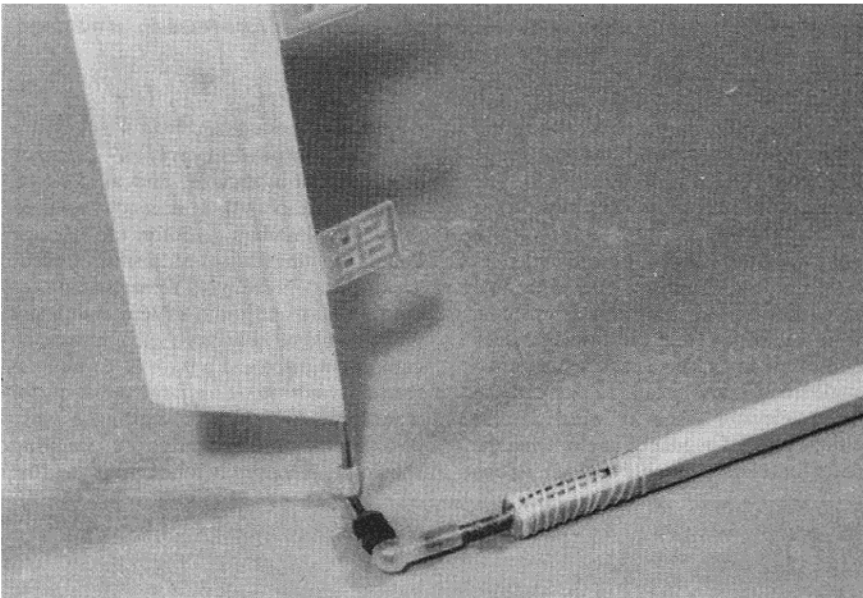
All the basic components needed to build your 'Cherry Bomb.'



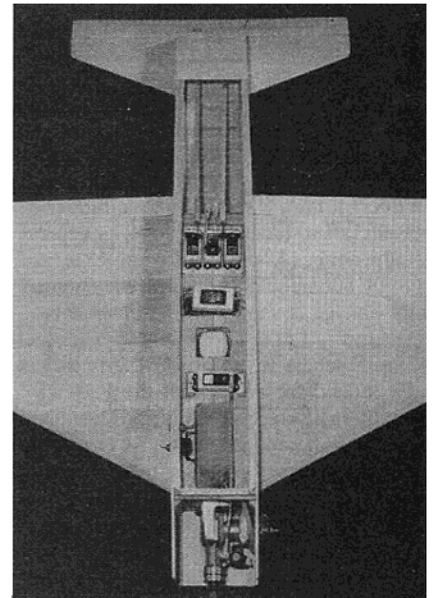
Wing panels are joined and the model is then assembled right on the wing.



Internal rudder linkage components using Du-Bro ball link.



Completed rudder linkage shown attached to rudder.



Bottom view showing Authur's well-planned equipment layout. 100 ma battery pack used to save weight.

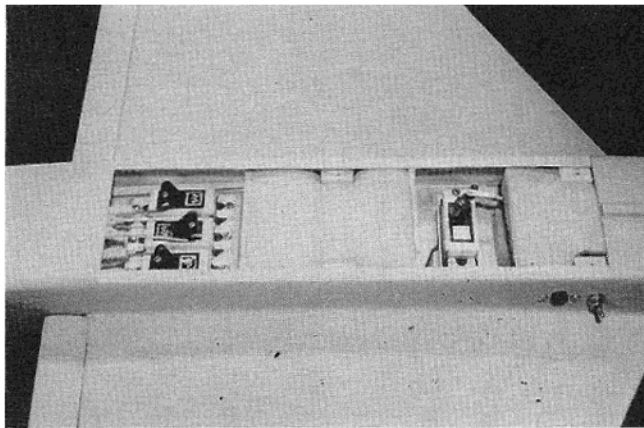
which covers all aspects of cutting foam cores entitled "Foam Wings"; priced at \$4.95. (See the RCM Anthology advertisement elsewhere in this issue.)

As we mentioned, the Cherry bomb is not a beginner type aircraft, so our outline of the construction sequence will be just that, an outline, and not a step-by-step of detailed instructions.

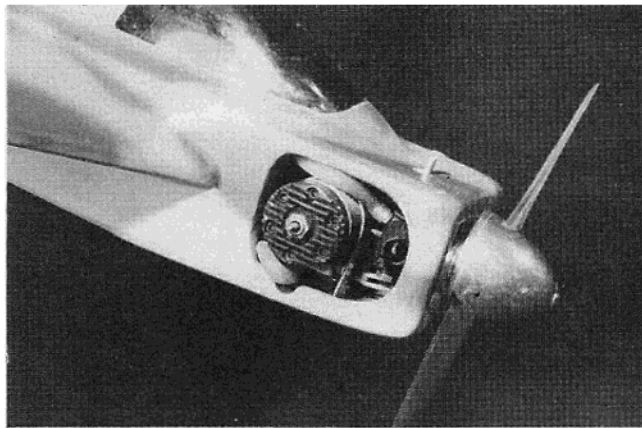
#### Wing:

We will start by assuming that the foam wing cores have been successfully cut. The cores are covered with 1/16" balsa in the conventional manner. We used 3M (6060) spray contact adhesive for this assembly phase. The balsa leading and trailing edges and tip plate blocks were then glued in place. After sanding each wing panel to the

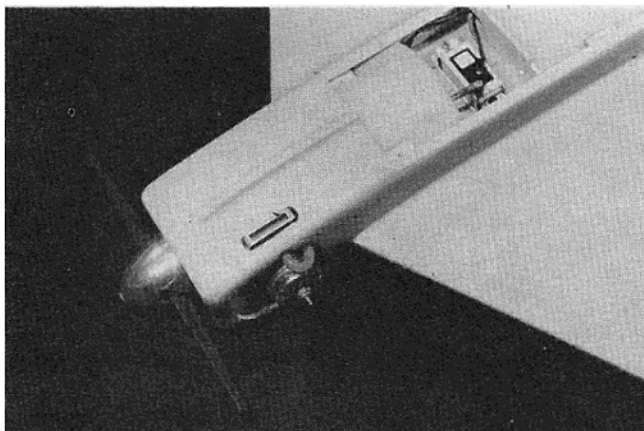
indicated airfoil, the two panels are joined together. The dihedral angle of the wing is obtained by simply joining the two wing panels with the top of the wings laid flat on any true surface. The taper of each wing panel then produces the correct dihedral angle. The wing center section joint is then covered with a 6" wide strip of two ounce fiberglass cloth and resin (top and bottom).



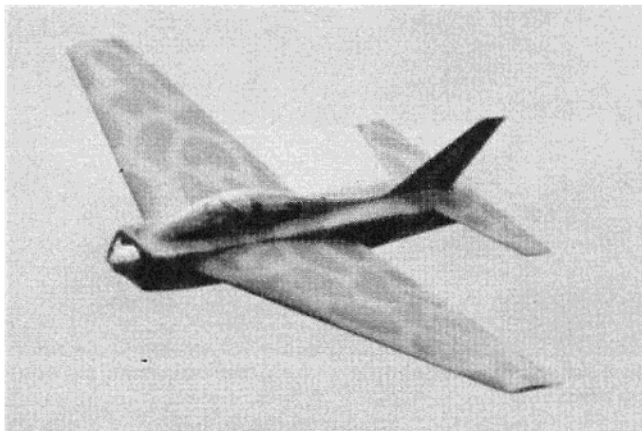
Bottom hatch removed giving access to all servos. Note ample foam around receiver and tank



Side mounted K & B .19 gives it a sleek look up front.



Exhaust is blown out the bottom via a Du-Bro Mini Mufflaire.



A close fly-by which could be mistaken for a Russian jet making a low pass.

#### Tail Surfaces:

All tail surfaces are cut from 3/16" medium hard balsa sheet. We elected to use an internal horn assembly on the rudder of our aircraft in order to improve its general appearance. A conventional external control horn could be used. The internal horn linkage is shown on the plan sheet.

#### Fuselage:

The fuselage is essentially a box that is built around the wing. Cut the two 1/8" sheet balsa fuselage sides out and slide them onto the wing and into place. Cut out the 1/4" plywood firewall and drill the

necessary engine mount, fuel line, and throttle cable holes. Install blind nuts for the engine mount on the plywood firewall. The fuselage sides and plywood firewall are carefully aligned so that the sides are straight and true with the firewall butted up against the leading edge of the wing and positioned so that a 0° - 0° engine thrust line will be achieved. Glue the fuselage sides and firewall in place. The fuselage 1/4" triangle stock is now installed along with the stabilizer/elevator assembly which is also positioned at 20° incidence angle. Glue the vertical fin/rudder assembly in place. At this

point it is suggested that the fuel tank, radio system component pieces, control pushrods, throttle cable, and ailerons be installed (see photo). It is much easier to make these installations before the fuselage bottom sheeting and access hatch are added. The cut-outs in the wing center section for the fuel tank and radio system equipment wells should be only large enough for each component piece and a layer of cushioning foam. Avoid removing large areas of the wing section which could weaken the wing. A little thought and advance planning should be exercised before cutting the fuel

### CHERRY BOMB

Designed By: Bob Wallace

#### TYPE AIRCRAFT

Sport (High Performance)

#### WINGSPAN

36 inches

#### WING CHORD

9 1/4" (Avg.)

#### TOTAL WING AREA

342 Sq. In.

#### WING LOCATION

Mid-Wing

#### AIRFOIL

Semi-symmetrical

#### WING PLANFORM

Tapered Leading Edge

#### DIHEDRAL EACH TIP

5/8 inches

#### O.A. FUSELAGE LENGTH

27 inches

#### RADIO COMPARTMENT AREA

(11 1/2" x 11 1/2" x 1 1/2")

#### STABILIZER SPAN

14 inches

#### STABILIZER CHORD (incl. elev.)

3 1/4" (Avg.)

#### STABILIZER AREA

52 1/2 Square inches

#### STAB AIRFOIL SECTION

Flat

#### STABILIZER LOCATION

Top of Fuselage

#### VERTICAL FIN HEIGHT

3 1/8 inches

#### VERTICAL FIN WIDTH (incl. rudder)

4 3/4" (Avg.)

#### REC. ENGINE SIZE

.19 Cu. In.

#### FUEL TANK SIZE

4 Ounces

#### LANDING GEAR

None (Skid Only)

#### REC. NO. OF CHANNELS

4

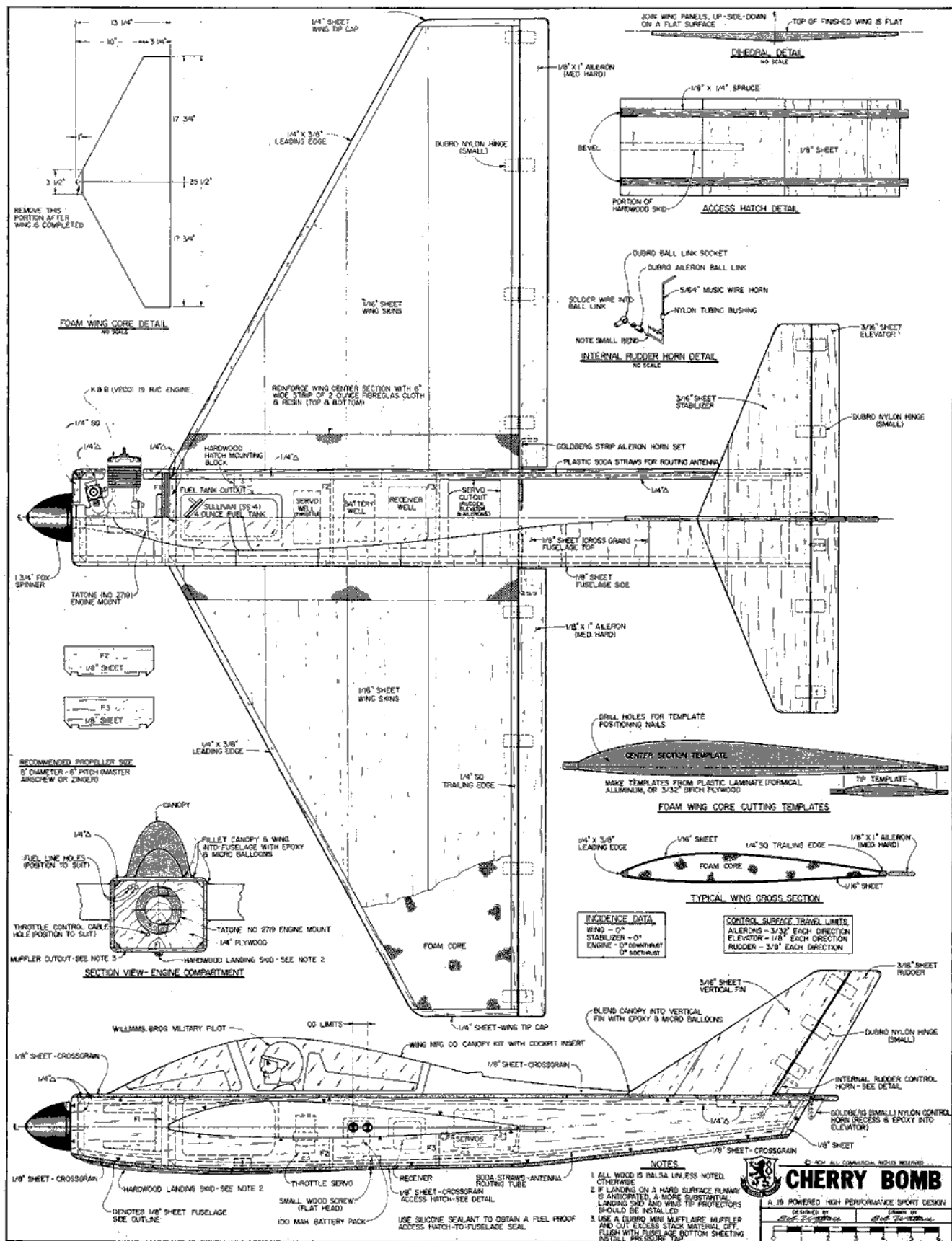
#### CONTROL FUNCTIONS

Elev., Ail., Throt., Rud.

#### BASIC MATERIALS USED IN CONSTRUCTION

Fuselage ..... Balsa, Ply & Hardwood  
Wing ..... Balsa & Foam  
Empennage ..... Balsa  
MG. (Rudder, Tail Fin) ..... 44 lbs.  
Wing Loading ..... 17.2

\*Varies — components recess into wing



tank opening and equipment wells. The wells for the battery pack, servos and receiver, do not penetrate the wing top sheeting. We used a standard size radio system, except for the 100 mah battery pack, which was used to keep the weight to a

minimum. (Our Cherry Bomb has been deliberately put through every violent maneuver possible — “figure nines” excepted — and has not suffered any structural problems.)

The top and bottom sheeting, access

hatch and landing skid, are now installed. We used a hardwood skid on our aircraft as all of our flying is done from grass fields. If you contemplate flying from hard surfaced fields, a more substantial skid arrangement

would obviously be advisable. The engine and mount are now installed. Remove only as much of the fuselage side as necessary in order to allow for engine installation and removal. The engine compartment should be reinforced with 1/4" triangle stock and, after removing the engine, it should be entirely sealed with either polyester resin or thinned epoxy. We used a Du-Bro Mini Mufflaire muffler with the excess stack material removed so that it extended flush with the fuselage bottom sheeting. The entire aircraft is now shaped and sanded to the outlines shown on the plans. The wing and tail surfaces are lightly filleted into the fuselage with epoxy and micro-balloons. The streamlined Wing Manufacturing canopy is now added along with any desired cockpit detailing. The canopy is also filleted to the fuselage with epoxy and micro-balloons and blended into the vertical fin.

#### **Finishing:**

Our entire aircraft was finished with K & B primer and R & S camouflage enamels. The insignia and decals were sealed with a coat of K & B satin clear epoxy. The decision to use Russian insignia was prompted by it being late on a Sunday night, and the only Super MonoKote trim sheets in our possession were red. It was either going to be of Russian or Japanese origin and stars won out over circles.

As mentioned, our ready to fly (less fuel) Cherry Bomb weighed in at a modest two pounds nine ounces. The indicated aft C.G. point should be adhered to, especially for initial flight testing, along with the suggested control surface travel limits.

#### **Flying:**

The maiden test flight of our Cherry Bomb proved to be a bit exciting, as it became quickly apparent that the aileron and elevator travel limits were far too excessive. Subsequent flights with a sharp reduction in the travel limits of the ailerons and elevator were an absolute joy! All hoped for inflight characteristics were met. The Cherry Bomb hand launches very easily and is a stable, groovy type aircraft, that is also responsive. It is fast, surprisingly so for an aircraft powered by a sport type .19 size engine. The old reliable K & B (Veco) engine that we used was more than adequate as a power source, and also easy on the "fuel budget."

If you are a competition or sport flier, who has become somewhat jaded with the conventional sport aircraft types, the Cherry Bomb is guaranteed to put a "little zest" back into your sport flying activities. Needless to say, the Cherry Bomb is also an airborne attention getter! □

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