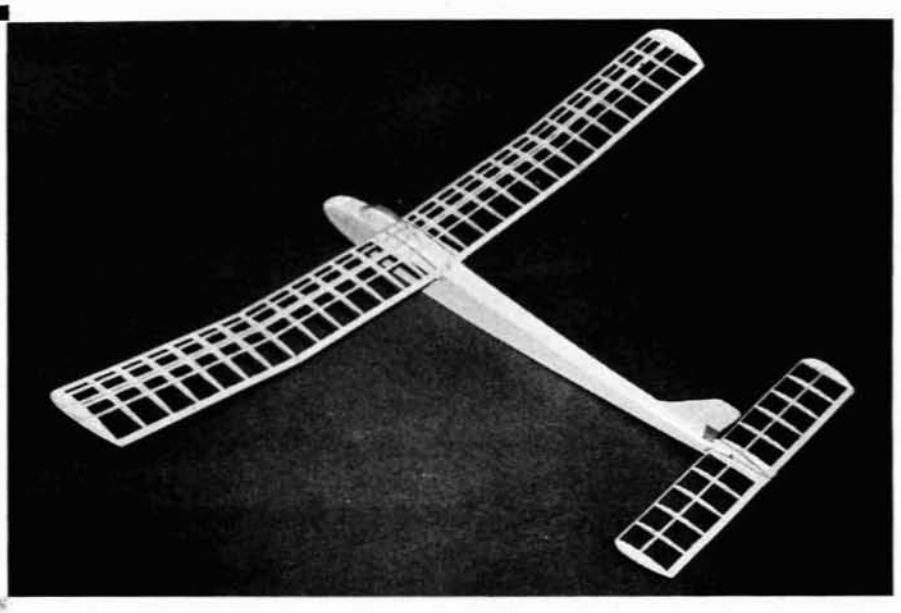
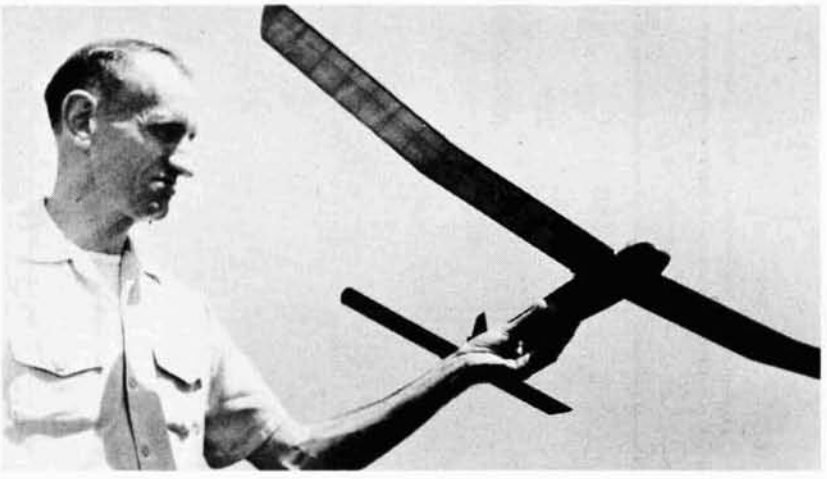
Latest in the FM series of beginners' models is this efficient A/1 glider

AEROGULL

by Clarence Mather



Right: This framework shot gives some idea of the neat construction. Below: The author spent many hours designing to come up with the simplest approach possible without destroying flight efficiency. Flights proved excellent and the model went over the hill.



This small handful is an ideal way to get started flying towline gliders. The autorudder and stable design layout make "Aerogull" an easy ship to flight adjust and tow.

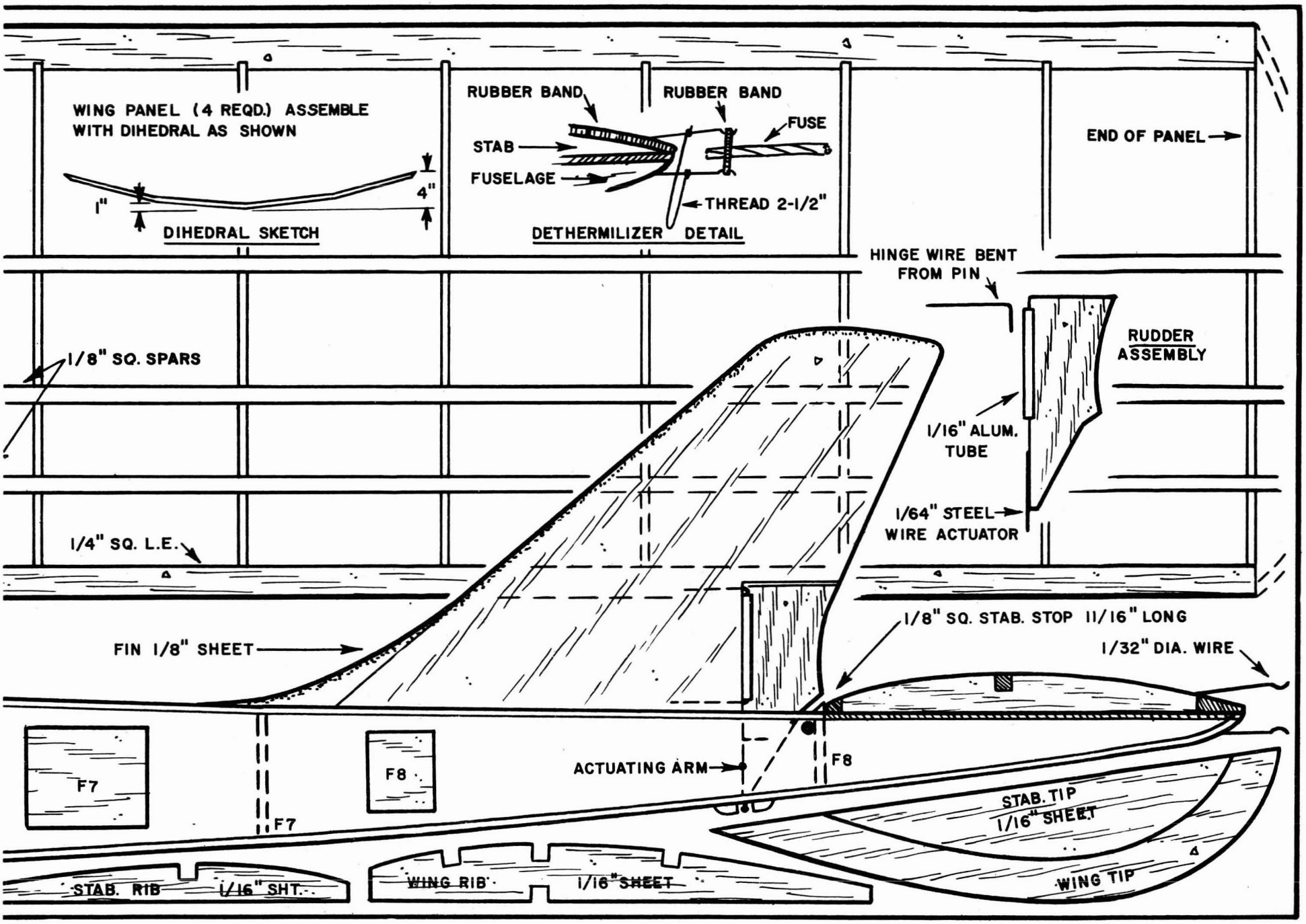
● This A-1 class towline glider combines high performance with the new look in aircraft. Yet it has the straight wing and box fuselage so desired by most of today's modelers. The Aerogull has an autorudder that pulls straight during tow and flips to the right during the glide for a circle. This device is essential so don't simplify construction further by leaving it off!

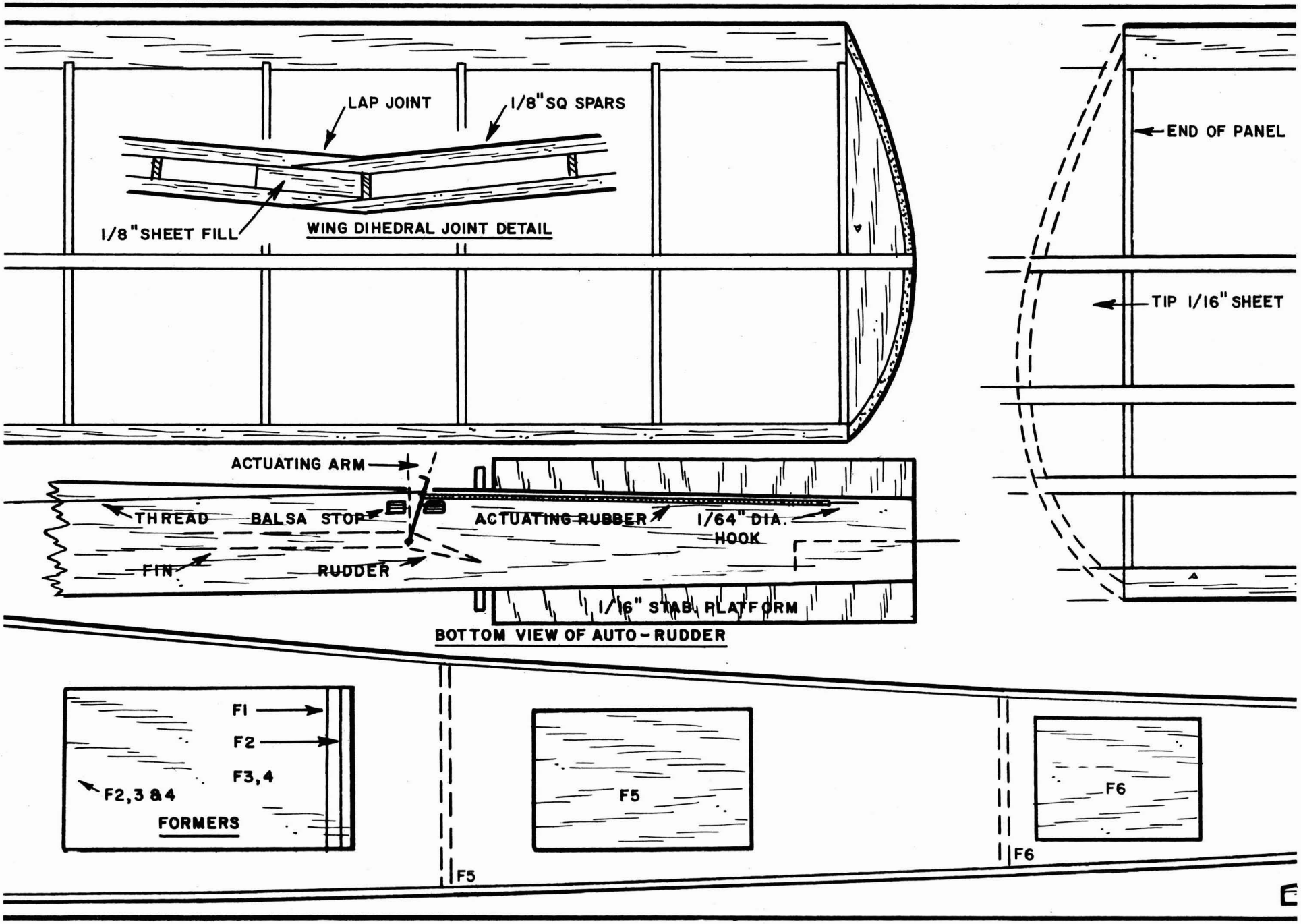
Towline gliders are fun to fly but require skill and practice on towing to gain full altitude and a smooth release. They are ideal cold weather models since there are no props to rap numb fingers! Frozen lakes, such as we have here in Michigan, make fine flying fields and allow the combining of modeling with ice-skating for real sport.

The plans are full-size so no redrawing is necessary. Assemble the plans on a flat board of soft wood such as redwood. Read the text and study the plans thoroughly so that the assembly procedure is completely understood.

The wing and stab are built first since they are needed to balance and align the fuselage. Carve the leading and trailing edges to rough shape before assembling the panels. To form the stab ribs cut thirteen pieces 3/8" by 2 7/8" from 1/16" sheet. Assemble in a stack and pin together. Trace the rib outline on each and carve the stack to conform. Notch just enough so the spar makes a snug fit. Place wax paper over the plan and cement the pieces together. Apply a coat of cement to each edge of a joint and allow it to be absorbed by the porous balsa. Then apply

(*Please turn to Page* 26)


WING PANEL (4 REQD.) ASSEMBLE WITH DIHEDRAL AS SHOWN
1"
4"
DIHEDRAL SKETCH
RUBBER BAND
RUBBER BAND
FUSE
STAB
FUSELAGE
THREAD 2-1/2"
DETHERMILIZER DETAIL
END OF PANEL
HINGE WIRE BENT FROM PIN
RUDDER ASSEMBLY
1/8" SQ. SPARS
1/16" ALUM. TUBE
1/64" STEEL WIRE ACTUATOR
1/4" SQ. L.E.
1/8" SQ. STAB. STOP 11/16" LONG
1/32" DIA. WIRE
FIN 1/8" SHEET
F7
F8
ACTUATING ARM
F8
F7
STAB. TIP 1/16" SHEET
STAB. RIB 1/16" SHT.
WING RIB
1/16" SHEET
WING TIP



(Please turn to Page 44)

AEROGULL

(*Continued from Page* 11)

a second coat and join the pieces. Hold the parts in place with pins stuck alongside of the pieces. The cemented panel should remain pinned to a flat surface for at least twenty-four hours.

The wing is made of four similar panels and then assembled with the dihedral as shown. Do not install the wing spars until the four panels are joined. Fit the lapped joints carefully and precoat at least twice with cement on all wing joints.

Unusual looking is this DH Fox Moth scale entry by J. H. Humphries of Ontario. 48 ozs. with K&B .15.

Cover the surfaces with Japanese tissue. Each wing panel is covered separately. Cut the tissue somewhat oversize and apply a liberal coat of dope to the outside edges of the panel. Lay the tissue in place and pull the edges gently to remove the larger wrinkles. Trim the excess tissue and shrink by dragging a wet finger lightly over the paper. As the paper dries observe the panels closely and twist out any warps. For finishing mix four ounces of dope, four of thinner, and twenty drops of castor oil thoroughly. For butyrate dope use commercial plasticizer such as Slick rather than castor oil. Brush four coats onto the paper, again twisting out any warps that tend to appear. If one persists apply a liberal coat of unplasticized dope and twist the panel opposite the warp.

Cut the fuselage sides accurately to insure the proper incidence angles for the wing and stab. Lay one side flat and cement the nose block and F-4 in position. Add the other side making certain that it is directly above the first. When dry install the rest of the formers and the dowels for the wing and stab rubber bands. Sheet the rest

of the fuselage, grain crosswise, but leave bottom areas at the nose and rudder open. Observe the double sheet at the tow hook and cement this solidly. Install the wing platform. Set the wing in place and attach with rubber bands looped over the dowels. Make certain that the wing is square with the fuselage and key in position. Use small pieces of 1/16" cemented to the bottoms of the leading and trailing edges next to the platform. Set the stab in place. If one side is high in regard to the wing, trim a sliver from that side of the fuselage. Cement the dethermalizer wires in place and then the stab platform.

Cut the fin and rudder to shape and streamline the leading and trailing edges. Groove the front of the rudder to admit the tubing. Scratch the tube deeply with a razor blade so the cement can "catch hold." Cement the tube in place and cover the rudder with tissue. Slip the short ends of the bent pins into the tube and stick the pins into the fin as shown. The rudder should move freely. Cut a slot in the top of the fuselage so the rudder can slip down into position. Locate the actuating arm so that it just misses the bottom sheeting. Bind and cement securely into position. Cement the fin to the fuselage perpendicular to stab and lined up straight down the fuselage. Sheet in this area and install the actuating rubber band hook. Locate the forward arm stop so the rudder is lined up with the fin and rear one so the rudder is about ¼" to the right.

Now for the towhook. File grooves into the tube, bind to a hard balsa strip and cement well. Bend the wire hook and insert the other end into the tube. Bend the end over so that the hook can

(*Please turn Page*)

Carl Perkins poses with Ed Christenson's win in the Jr.-Sr. event at the Nats. Ship is a Taylorcraft.

move about ¼". Cement very securely in the precise location indicated on the plan. Cover the fuselage by doping tissue to the wood. Be careful not to get dope into the towhook or rudder tubes —this might cause binding.

Cement pieces of lead to the rear of the nose block until the model balances exactly as shown. This requires an ounce or more of lead so cement well. Complete the sheeting. Connect the towhook to the actuating arm with strong thread, preferably nylon, so that the rudder is straight when the hook is fully extended. Connect the actuating arm to the rear hook with a thin rubber band and with just enough tension to pull the towhook back. Cut the bottom of a commercial bubble canopy to fit over the wing and fuselage. Cement only to the wing.

The model is ready for testing, which should be done in very light breezes or calm air. Hand-glide by launching directly into any breeze in a slightly nose down attitude. Use just enough speed so the model floats when released. If it noses up and stalls place a shim under the leading edge of the stab. Strips cut from a post card about ¼" wide work fine. If the model dives shim up the trailing edge. The model should glide away smoothly in a large right circle.

Obtain 164 feet of towline and a reel to store it on. Eight pound test fishing line will do and one of the inexpensive fishing reels will hold it. Tape the reel to a small handle and use the unit for towing reeling in the line immediately after release. Tie a loop in the end of the line. Tie a piece of silk about ten inches square a few inches below the loop.

Use about twenty feet of line for first tows. Line up directly into any breeze. Pull the line tight and have an assistant release the model as you run into the breeze. As the model noses up reduce speed somewhat to maintain a safe climb angle. The stronger the breeze the less forward motion required. As the model near the peak of the climb increase the speed again. When it is in a level gliding attitude reach up quickly producing slack in the line. Air resistance forces the loop off the hook and the model glides away. If this is done too soon it stalls off, so hold the model extra long until you are certain gliding altitude is reached.

If the model should veer over sharply in a turn putting a large strain on the line throw the handle up immediately. This is especially important as the wings can be ripped off otherwise. The actuating arm stops are adjusted if necessary, so the model tows straight and glides in right circles about 150 feet in diameter. We strongly recommend much practice before towing in strong breezes—under extreme

Paul Gilliam receives a trophy from the pressmen at the Nats. He's "World's Best Mother-In-Law."

conditions it will be necessary to move with wind!! The model pictured tows well and has a floating glide so the dethermalizer is necessary.

JET ACE

(*Continued from Page* 14)

motor mount has its front portion tapered to fair into the fuselage and is then cemented in place.

The undercarriage is bent up from .022" wire. Add a pair of light plastic ¾" diameter wheels before the final bends at the ends of the legs are added.

Attach the wire legs to the fuselage with plenty of cement, and when this has dried add the leg fairings sanding them to a streamline section.

The wing is built up of six separate parts, right and left front plane, right and left rear plane, and a pair of wing tips.

Start by joining the tips to the front planes and sand the surfaces to a roughly airfoil section. Make sure that you produce a right- and left-hand pair.

Now, cement the front planes together onto the mounting, checking that the joint is in line with the fuselage. Note that the front planes have no dihedral or twist. To ensure this it is recommended that the aircraft should be placed upside down on a flat surface so that it is resting on the front planes, place weights on the wing tips and support the fuselage so that the wing tips are parallel to the center-section.

The rear planes are now fitted between the tips and fuselage tail. Note that these surfaces twist, decreasing their incidence towards the fuselage. Do not cement the trailing edges of the rear planes to the fuselage, this will allow the edges to be slightly warped to allow flight adjustment. The short cuts in the trailing edges just inboard of the fins simplify this.

Finally, the fins should be cemented in position checking to ensure that they are in line with the fuselage.

A thin coat of silver dope may be applied but excessive painting should be avoided in view of the weight involved. The original weighs in at one ounce ready to fly.

The mounting clip of the Jetex 50 motor is attached to the mounting block by by means of a pair of fine wood screws.

Load the Jetex unit with a pellet and check the center of gravity of the airplane. The model should balance level when the wings are supported on a line passing through the end cap of the jet unit. Add weight in the nose or tail to achieve this.

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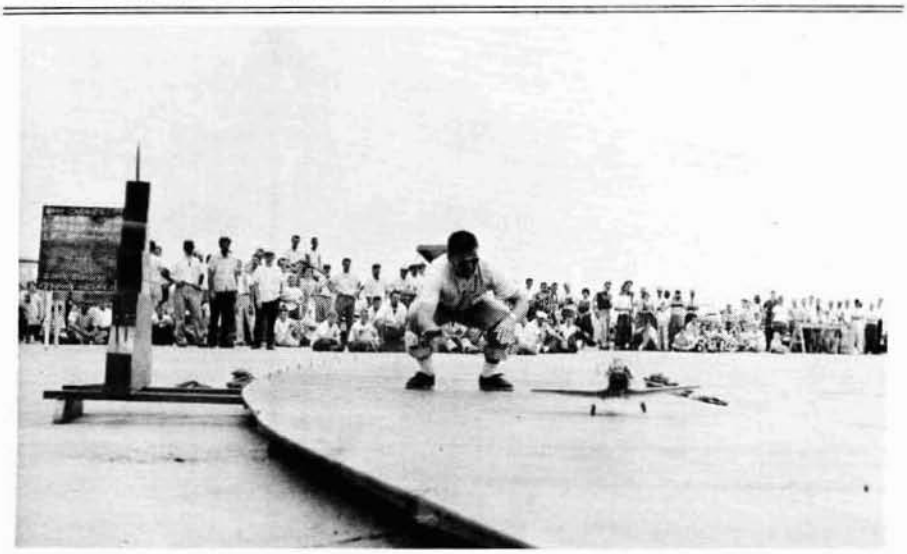
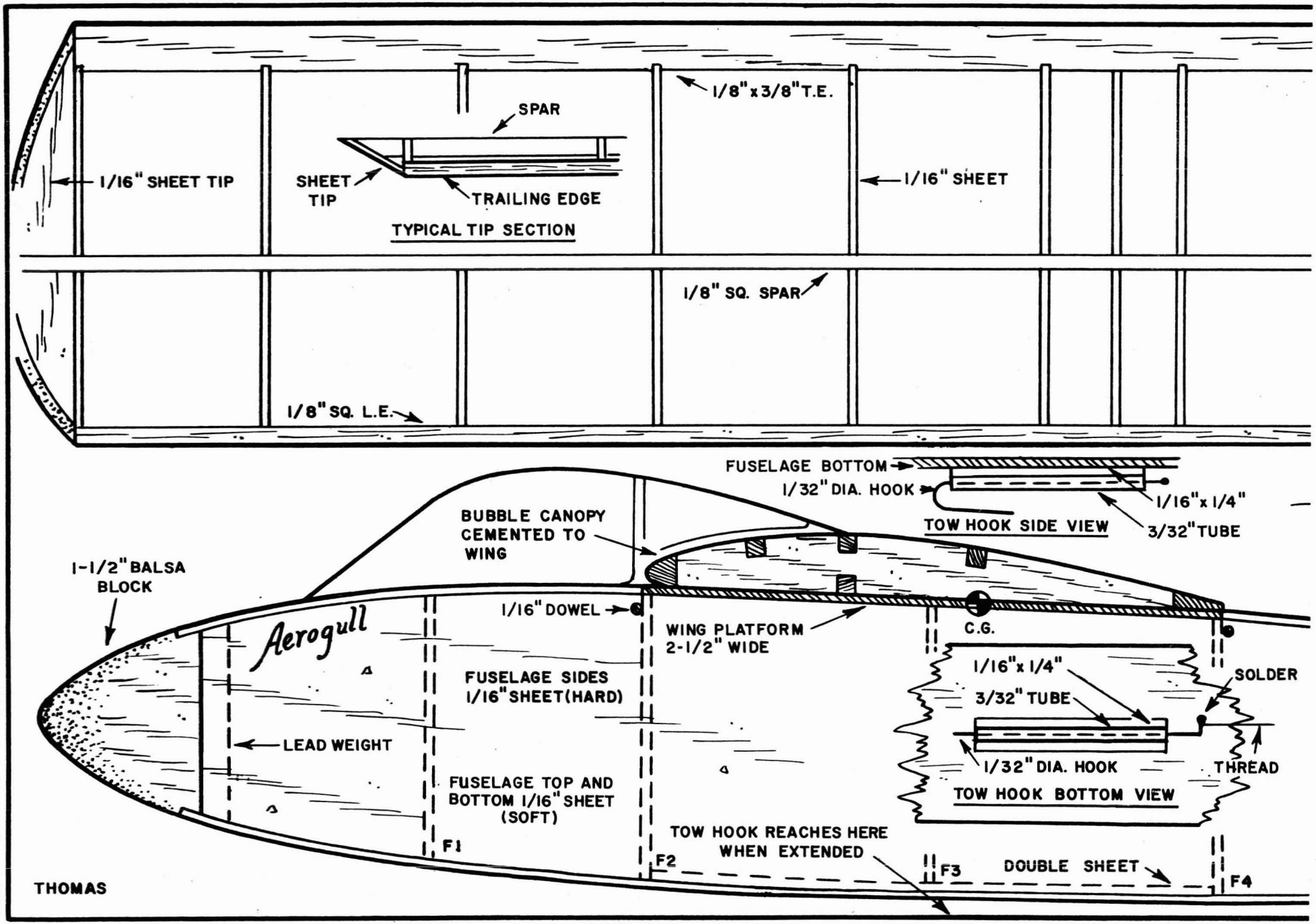


John Smith launches Dawson McQuillan's Dauntless Carrier entry at the Nats. Ship has McCoy 60.


1/8"x3/8"T.E.
SPAR
1/16" SHEET TIP
SHEET TIP
TRAILING EDGE
1/16" SHEET
TYPICAL TIP SECTION
1/8" SQ. SPAR
1/8" SQ. L.E.
FUSELAGE BOTTOM
1/32" DIA. HOOK
1/16"x 1/4"
TOW HOOK SIDE VIEW
3/32" TUBE
BUBBLE CANOPY CEMENTED TO WING
1-1/2" BALSA BLOCK
1/16" DOWEL
WING PLATFORM 2-1/2" WIDE
C.G.
Aerogull
FUSELAGE SIDES 1/16" SHEET(HARD)
1/16"x 1/4"
SOLDER
3/32" TUBE
LEAD WEIGHT
1/32" DIA. HOOK
THREAD
TOW HOOK BOTTOM VIEW
FUSELAGE TOP AND BOTTOM 1/16" SHEET (SOFT)
TOW HOOK REACHES HERE WHEN EXTENDED
F1
F2
F3
DOUBLE SHEET
F4
THOMAS