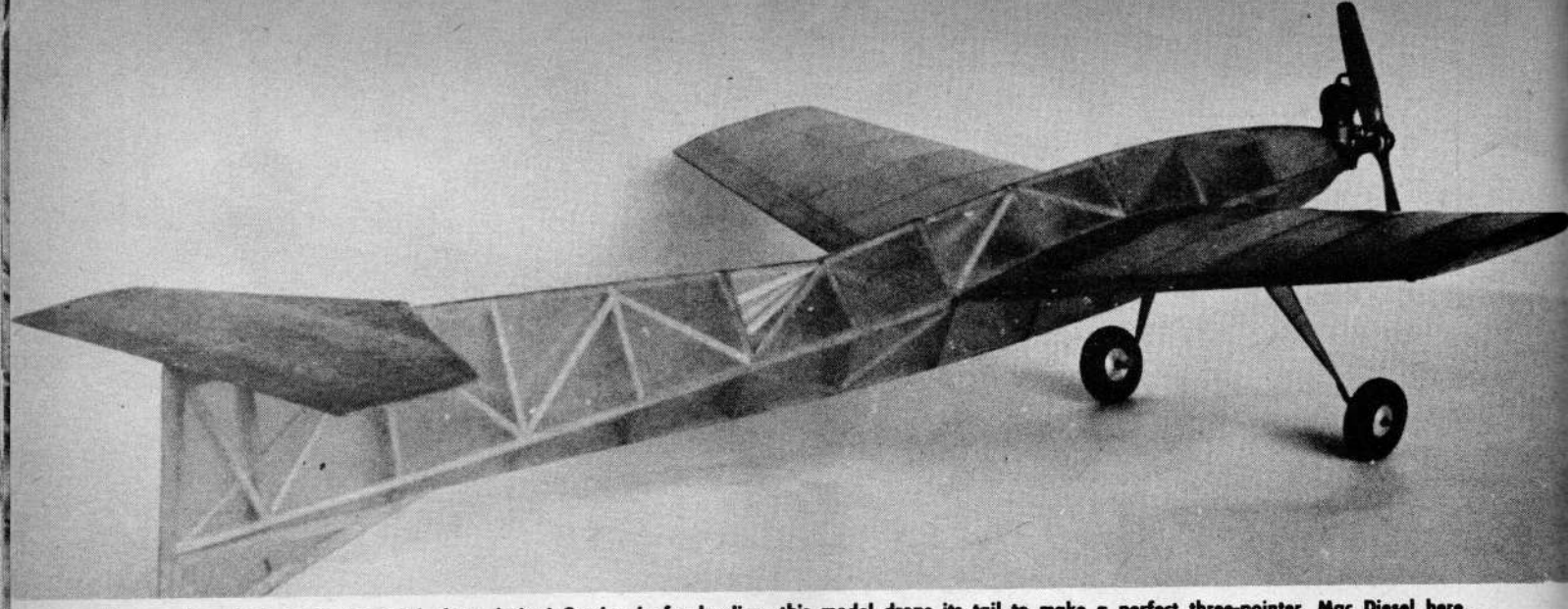
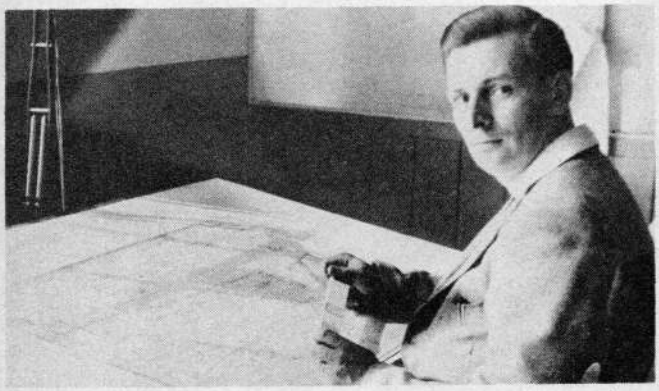
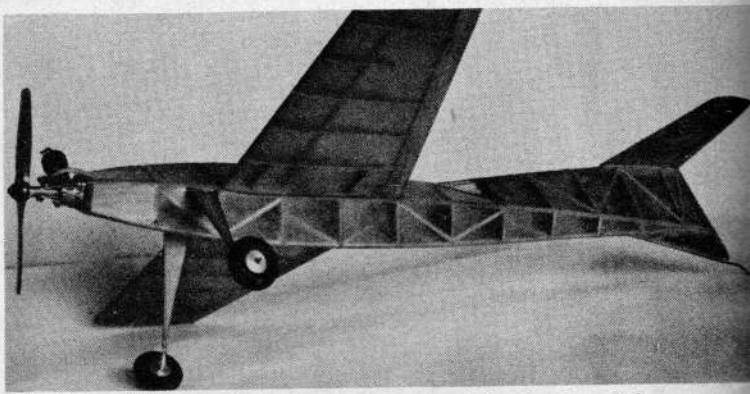


The new long look comes to model plane design! Coming in for landing, this model drops its tail to make a perfect three-pointer. Mac Diesel here.

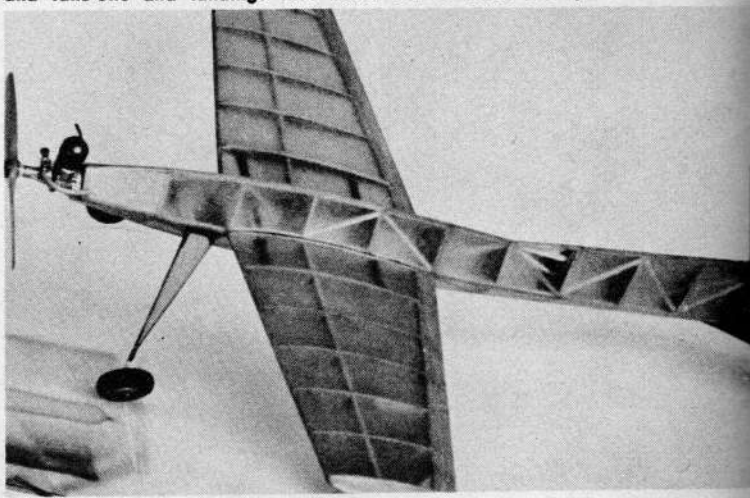


"Slip-stick" at the ready, Ray checks over final Humdinger drawings. Even if duration suffered, designer wanted zippy performance. Got it!



Odd underneath view provides interesting study of the shaping of the fuselage toward the rear in order to act as fin and rudder area.

Stubby wings and long fuselage give plane a fast arrow-like flight and take-offs and landings that never fail to thrill the spectators.



the HUMDINGER

By RAY BOOTH

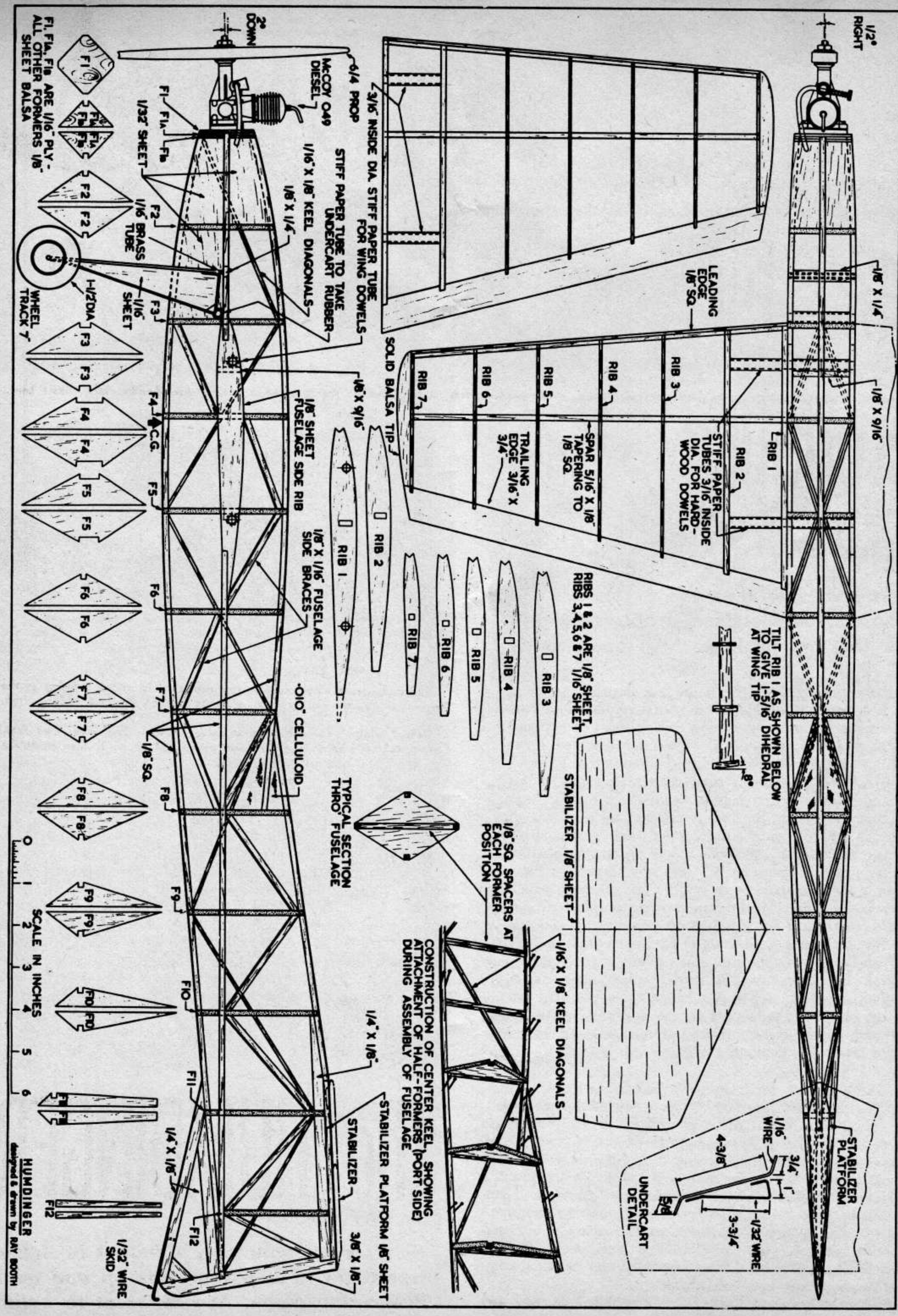
Here's something truly different in Half-A free flight, a ship that gets up and goes like racing plane. And different to build!

FOR some time the designer has had the urge to break away from the more conventional pylon models in an effort to produce an interesting free flight ship with snappy performance but not necessarily long duration, at the same time bearing in mind ease and simplicity of construction and, consequently, repair.

Properly trimmed, Humdinger will reward its builder with consistently zippy flights, with take-offs and landings which will draw murmurs of admiration from spectators. The landings in particular are a dream to watch, as the ship has a rather peculiar characteristic. As the model drops within 1 ft. of the ground during its glide approach, the nose rises slightly and the tail drops, resulting in a perfect three-pointer on a fairly smooth surface. This characteristic doubtless stems from the position of the stabilizer in relation to the wing, "ground effect" causing the wing to "balloon" and the tail to drop.

Construction of the fuselage is probably a little unorthodox and the following assembly procedure is recommended. Pin down over the full-size plan the ⅛ in sq. hard-balsa longerons at the top and bottom of the fuselage and, thoroughly cementing all joints, add the ¼ x ⅛ in. strips forming part of the under fin, the ⅜ x ⅛ in. fin and the ¼ x ⅛ in. strip which stiffens the stabilizer platform. Next, cement in place the ⅛ in. sq. spacers between the longerons at each of the former positions, as illustrated in the perspective view on the drawing. The keel diagonals, cut from 1/16 x ⅛ in. strip, can now be fitted into position, completing the center keel ⅛ in. thick.

While the keel is still pinned (*Continued on page 46*)



FULL SIZE PLANS AVAILABLE. SEE PAGE 51.

Swifty

(*Continued from page 43*)

the prop pulls a little bit downhill. This is called "downthrust."

Experiment by bending or twisting one wing tip so that its front edge is raised slightly. This will cause the model to circle. Breathing on the paper will hold the wing in a twisted position. A slight twist is quite effective; don't overdo it.

Bill of Materials

Two pieces— 1/16 x 1/16 x 36 hard balsa (or 1/16 x ⅛ soft); *one piece*—3/32 or ⅛ x ¼ balsa, 12 in. long; 18 in. of ⅛ rubber; *one* small thrust bearing; *one* 5-in. Kaysun rubber-powered plastic prop.

The Humdinger

(*Continued from page 20*)

down on the building board, add the half-formers for the port (left) side of the model, insuring that these are true and square with the top and bottom longerons in the plan view. The forward and aft portions of the ⅛ in. sq. side longerons should be cemented to the fuselage side rib *before* fitting to the half-fuselage assembled on the building board. When the half-fuselage is completely dry, remove from board and add half-formers for starboard side, followed by other side rib and longeron. The ⅛ x 1/16 in. flat side braces can now be fitted between F-3 and the TE of the built-in fin. The bottom of the cockpit window has a ⅛ in. sq. diagonal. Fill in the four sides of the fuselage between F-1b and F-2 with 1/32 in. sheet. Cement across the fuselage between the two side longerons the ¼ x ⅛ in. strip to which is bound and cemented the 1/16 in. brass tube for the landing gear.

The stiff paper tubes can either be purchased commercially or rolled around a 3/16 in. dia. rod or tube and the seam cemented. When dry, these should be fitted in their respective places for the landing gear rubber which passes across the fuselage and for the wing-joint dowels. Sheet lower portion of fuselage between F-2 and F-3. It is essential that these tubes be set parallel to each other in plan and front view. This can be checked by pushing a length of dowel through the tubes so that the dowel extends the same distance each side of the fuselage when the model is viewed from the front and from above.

The stabilizer platform and celluloid cockpit cover may now be added. If desired, a fuel tank can be built in to the space between F-1 and F-2, prior to sheeting in the first section of the fuselage. Similarly, the engine bolt heads can be anchored to the rear face of F-1b, if desired, to obviate the necessity for fitting access holes in the nose for attaching the engine. The fuselage structure is completed by the addition of the 1/32 in. wire skid in the underfin.

Wings are quite simple and straightforward, with the possible exception of the 3/16 in. inside diameter paper tubes, which require a certain amount of care when fitting to insure the same incidence and dihedral on each half-wing. Note that the inboard rib No. 1 is tilted at 8° to give the correct dihedral of 1-5/16 in. at the wing tip. The writer recommends that the wings be constructed by pinning down over the full-size plan the shaped and slotted TE. Follow this by pinning the ribs in their appropriate positions, then cement the ⅛ in. sq. hard LE into place. Allow to dry, then slide the tapered ⅛ in. thick spar into position and cement all joints. The tip is carved from solid balsa block.

The stabilizer is cut from ⅛ in. medium sheet. Three-inch wide sheet can be utilized if necessary by butt-joining (parallel with TE) the forward portion of the

stabilizer. Sand to the section shown in the side view.

The landing gear is made in two pieces and both legs are separate. After bending to the shapes indicated on the drawing, the two items of each leg should be bound and soldered together and the space between filled in with 1/16 in. sheet balsa. Finally, cover each leg with two layers of tissue and give two or three coats of clear dope to strengthen. The forward end of each leg (1/16 in. dia.) fits into the 1/16 in. brass tube and the shock rubber attaches to the 1/32 in. diameter wire and passes through the paper tube in the fuselage to the other leg.

After the entire model has been covered and doped (including the sheet stabilizer), fit the engine, landing gear and wings. Note that the engine should, initially, have approximately 2° downthrust and ½° right thrust. Next, cement the stabilizer to the top of the fin. To assist alinement, pins may be pushed through the stabilizer into the platform to hold stabilizer in its correct location until the cement hardens. Carry out a thorough check to insure that wings are free from warps and have the same incidence and dihedral on each side; also, that stabilizer is square to fin when viewed from front or rear.

The assembled model should be balanced to find its CG. If the model balances within ⅛ in. either forward or aft of the position shown on the drawing, no ballast should be necessary for initial test flights. If CG is *more* than ⅛ in. from the point on the plan, add clay to nose or tail as required. It should be pointed out that the CG position is not really as critical as the above figures suggest, as the designer's ship has flown successfully with the CG more than ¼ in. farther forward than the point indicated on the plan, It is, however, recommended that the limits of ⅛ in. be observed to simplify test procedure.

As will be expected, the Humdinger glides fairly fast, so test-glide over grass if at all possible. Trim glide bv warping TE of stabilizer slightly up or down, as required. When satisfied with the glide trim, you are all set for the first power flight, for which fairly calm conditions are best.

Sufficient fuel for about 10 seconds' engine run is all that is required during power trimming. With the engine throttled right back so that the ship will only have enough revs for level flight or a powered

glide, run forward and launch smoothly into wind, if any. A straight powered glide of about 100 ft. should be the result. If the ship tends to turn left or right, check that all flying surfaces are entirely free from warps. If nothing can be found which would cause a turn, adjust side thrust slightly to counter turn. When flying on about half revs, the ship should climb in gentle left-hand circles, with its own natural turn to left or right on the glide. Excessive turn on the glide can be corrected by fitting a trim tab to the rear of the fin or by carefully warping up the TE very slightly on one side of the stabilizer. In either method adjustments should be carried out a little at a time until the correct trim has been acquired.

Foreign Notes

(*Continued from page 33*)

import duty), Thai model enthusiasts look forward to bigger and better modeling in the future. Having no national model club at the present time, modelers in Thai capital, Bangkok, have found a happy substitute for week-end contest-going. A group of 30 or 40 modelers get together, hire a big bus, stack model gear on top and head 60 or 70 miles out of the city. Demonstration flights are given during the day which draw quite a few spectators and campfire games are held at night. Correspondent C. Kamonsiri thanks MAN for keeping up interest by encouraging new ideas and model improvements. "MAN is our best friend," he says. Who could wish for a nicer compliment?

Poland

As yet, RC is still something of a rarity on the other side of the Iron Curtain and particularly so in Poland. Recently, however, we received some details of a combined RC project by three Warsaw modelers. Spanning 74 in. and powered by a 3½ cc Diesel turning an 8 x 6 four-blade prop, the model is a cabin pusher with tricycle gear and twin fins. Rudder and elevator control are fitted and the all-up weight is approximately 4½ lb. An unusual feature is the large tankage of nearly a half pint.

Yugoslavia

Top Yugoslav modeler Emil Fresl, internationally known contest flier, leading European exponent of the Torp .15 in speed and free flight and co-builder of the Yugoslav Oskar Diesel motors, placed second in the annual Yugoslav parachute jumping contest.

Engine Review—Veco. 19

(*Continued from page 2*)

project above the crankcase and fit into an annular recess in the head with a gasket at the joint. The result is that the gasket is trapped and cannot blow out.

The combustion chamber shape cast into the head is substantially flat with a straight groove to clear the piston baffle and a long reach plug tapping which is offset toward the exhaust side. Six screws retain the head and four the rear cover, also recommended in the instruction leaflet for radial mounting.

The needle valve assembly and, in particular, the control knob, are built for practical service, having harpoon-type pressure rings for the tube connection, a strong spraybar which you can tighten up without fear of breakage and a control knob of large diameter with a finely serated ratchet device.

Handling and performance

Running the Veco is an uneventful business because it is a model of behavior with absolutely no vices. It looks as if it will go—and it does go—with very creditable results. The needle valve does exactly