



Photo above shows the author in typical British flying gear with his Pegasus, photos below this page and next show it doing its thing!

# ITALAIR





Here we see the Pegasus on a typical take-off, plenty of power and the plane is airborne in a few feet, clean business-like rotation.

**BY DENNIS TAPSFIELD . . . very timely article for a twin electric powered semi-scale of the popular Italian sport aircraft, by timely is meant the rapid growth in use of electric power.**

• If you have thought, up to now, that an electric powered R/C model aircraft is a glorified sailplane wallowing around like a wet sponge, you are in for a pleasant surprise with the "Pegasus." This model is the second of a line of electric twins, and will do most maneuvers associated with a "25" powered single-engined machine of similar size and weight. The model is quite docile, controls are as responsive as you want to make them, the roll rate can be quite fast, spins are entered very crisply, and recovery is instantaneous on neutralizing everything. Inverted flight is good, the model having very little tail-down attitude. Taxiing is a snap with a steerable nose wheel, take-offs on a reasonably smooth surface are fast, followed by a lively climb-out, and landings are quite slow and easy.

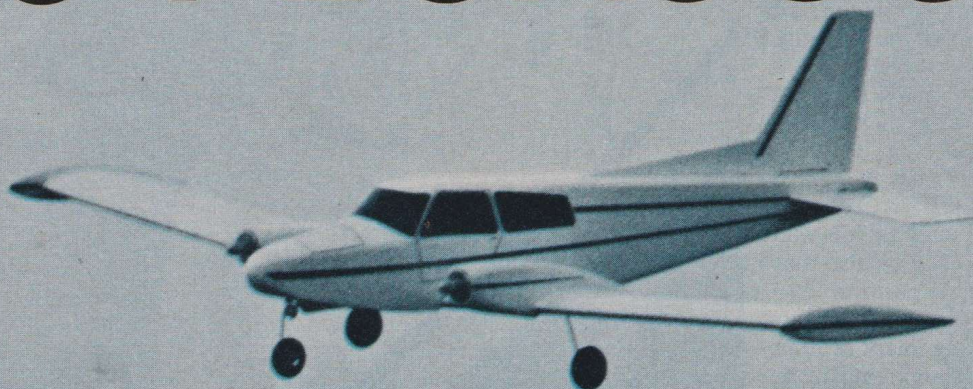
The model is powered by two Mabuchi R.S. 54 (Cyclone 15's) (M.F.A.) or (Astro

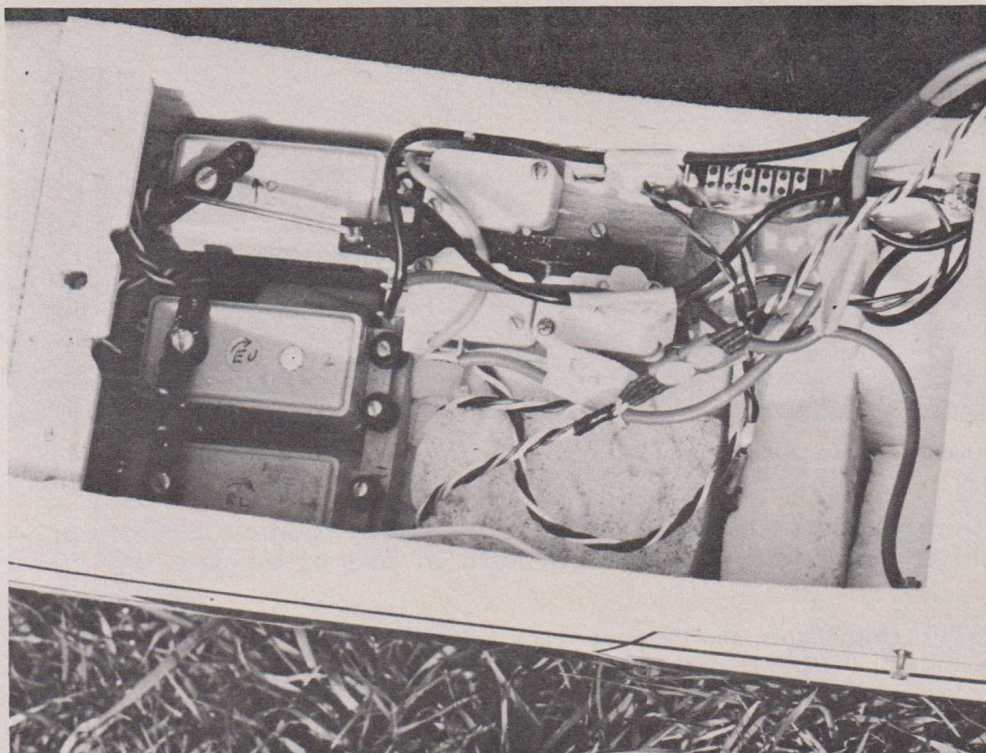
05's) electric motors, and the power pack consists of 9-1.2 A.H. fast charge nickel cadmium batteries. You can use eight if you prefer to, giving a slightly less lively performance. The motors are switched by using the throttle servo to operate three micro-switches on a slider system; the three positions being: 1-off, 2-both motors in series, 3-both motors in parallel. The series position provides enough power for cruising flight, and will just about maintain altitude, but only uses about one-half the current that full power demands. Flight times are in the 5-6 mins bracket.

The twin motor configuration brings with it certain advantages. Firstly, the facility of series-parallel switching provides not only a form of power control, but also avoids a sudden discharge surge from the batteries to static motors; this in itself not only lengthens battery and motor brush life, but

gives a slightly longer flight time. It is also well-known, that provided an airframe is clean aerodynamically, the available power from the two motors is better utilized than by combining the power of the two into one motor in a single engine configuration. However, enough said on the theories; if you have read this far, you are probably sufficiently interested to build one. Remember to choose your materials carefully to compensate for the unavoidable weights of the equipment; the airframe on the prototype covered, with u/c, ready to fit the radio, power pack and motors weighed in at 18 ounces! (all up weight 66 ozs). See if you can do better. I've written before, "Add more lightness for a livelier model." It was never truer than for electric powered model airplanes. A bonus with electrics: A flame-out is virtually unknown! So fly it like a single!

# F-20 PEGASUS





Plenty of room in the cabin area to accept all of the electronics that operate machine.

### ITALAIR F-20 PEGASUS . .

**WING.** This is a very straightforward structure using my favorite method of a "D" box and produces a really light and rigid wing; the only thing to remember is to put the motor wires in, or cords to pull them through, before you close the "D" box, or you'll be sorry! I use P.V.A. white glue for the glass tape center strips, I find it quite satisfactory, and easier to film over. Hinge the ailerons with film.

**NACELLES.** Cut out the side panels, be sure that the profile matches the wing: complete the boxes, and glue in the motor tubes, sand to shape when dry.

**FUSELAGE.** A simple box structure, cut the sides out of matching 3/32" sheet balsa, glue on the 1/4" x 1/4" longerons and the wing seating reinforcements. Fit and glue in formers Nos. 2, 2a, & 3, allow to dry, then draw tail ends together, trim the longerons to enable the sheet sides to meet at the tail end and glue; when dry, add former No. 1, followed by the small formers in the tail end. Complete the structure to the drawing.

**TAIL UNIT.** All parts are made from 1/8" balsa sheet and is very simple. **DO NOT FIT TO FUSELAGE YET!**

**COVERING AND FINISHING.** Cover the wing with iron-on film, be sure that it is well stuck down where the nacelles fit, also that the wires or cords remain in position.

Cover the nacelles with film, place in their correct positions on the wing, mark around the outside with a ball pen, and remove the film from the wing within the area of the marks, to ensure wood to wood glue joints, then glue the nacelles in position with plenty of P.V.A. white glue. Cover the wing tip tanks with film, leaving an area clear for

gluing to wing tips.

Cover the fuselage completely with film, use Fablon or similar material for the windows, and film for decoration and trim.

Cover the tail plane and elevator, leaving the area within the fuselage uncovered for gluing. Do not hinge the elevator yet, slit for Mylar hinges.

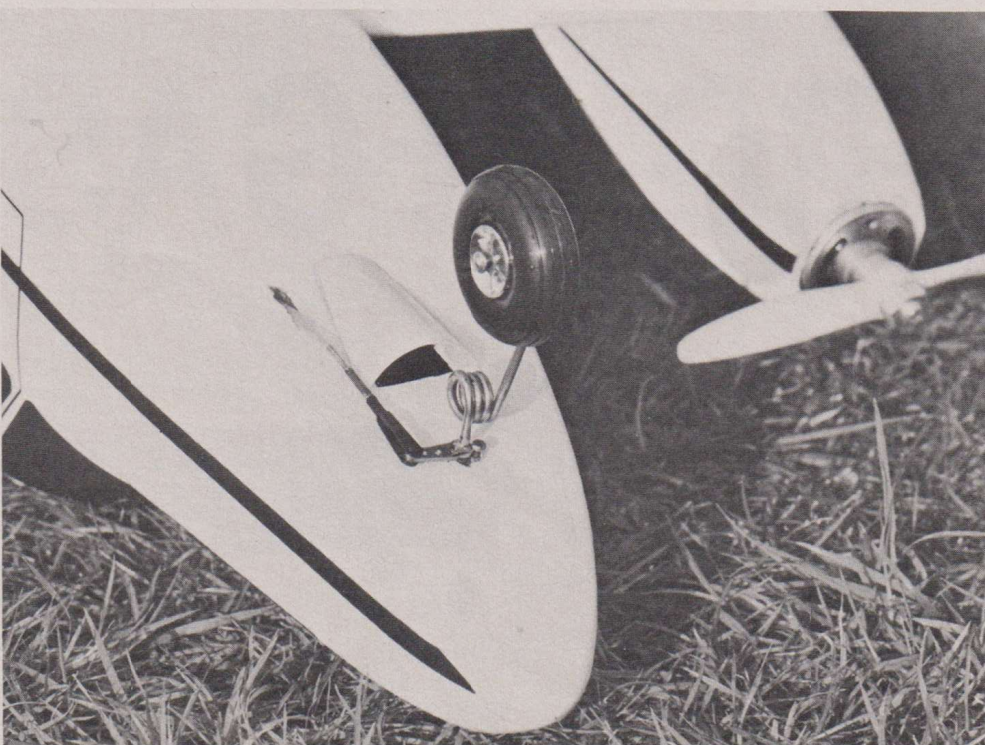
Cover the fin completely, leaving the area within the fuselage uncovered for gluing, cover the rudder, slit for Mylar hinges, and hinge the rudder.

Sit the fin in position on the fuselage, mark around it with a ball pen, and remove

the film within the area for gluing.

Assemble the tail as follows: Slot the elevator through the fuselage, followed by the tailplane, maneuver the hinges into position, and epoxy. Glue the tailplane into the fuselage. Glue the fin into position, making sure that it sits onto the top of the tailplane and that the whole unit is square. Install elevator and rudder horns and push rods, and install the radio and all the other goodies, making sure that the C.G. is correct. I use a 250 nickel cadmium battery to save space and weight, mounted under the servos. Set control movements as per plan, you can reduce them slightly if you prefer a really docile performance to start with.

**FLYING.** The model appears to have no real vices, all controls respond well right up to touch down, so assuming you have range checked your radio, not forgetting to run the motors at the same time to ensure that they do not interfere with the radio, (this is a rare problem but better safe than sorry!), you're ready to fly. If all is well, with the balance point of the model correct, and all the controls responding, choose a smooth take off strip, (close mown grass is okay) switch on the motors, hold her straight while she gathers speed, and fly her off. You will be surprised at the model's agility and silence. (Your neighbors will love you!) Landings are easy, I usually chop the power and bring her in dead stick. She glides well, and properly handled, will touch down like a feather. If you want to go round again, you can, providing you've not exhausted your batteries! It would be a good idea to try some approaches early in the flight to get the feel of the model, touch and goes with twins are usually reserved for the brave or the stupid, but no need to worry with this baby! ●



Steerable nose wheel installation is quite typical, note air intake to keep things cool.