1911 EASTBOURNE

DON SRULL'S .020 POWERED, 25" SPAN VERSION OF THE EASTBOURNE MONOPLANE IS AN IDEAL FIRST SCALE PROJECT. EASY TO FLY ON PULSE RUDDER OR GALLOPING GHOST.

After reading about the New Testors 2.4 volt, lightweight superhet receiver, I began toying with the idea of trying one out in a little scale airplane. Coupled with the new Adams baby magnetic actuator and a pair of 225 m.a.h. nickel cadmium cells, you have a superhet proportional rudder system for **under** 3 ounces! Owen Kampen's "Skampy", featured in the January RCM, was a neat little semi-scale racing bug using this system. I thought a slower flying and lighter wing loading airplane might be a little easier to fly, and also more suitable for small field use. In addition, I've always enjoyed scale models, and since they can be as easy, or easier, to build than the usual sport model, – why not? I'm not speaking of competition scale models, of course, – these do require a substantial investment in time compared to any size or type of sport model.

I had recently built several free flight (what's that?) indoor scale models of the little-known 1911 Eastbourne Monoplane. They varied in span from 12 to 24 inches, and all flew extremely well; in fact, considerably better than was expected. These models were inspired by an H. Warner and H. Osborne plan shown in the 1964-65 Frank Zaic Year Book. The Eastbourne is a relatively "standard" monoplane of the 1910 era, resembling, in many respects, the Bleriot-types of that period. In addition to its rather nice flying characteristics, the Eastbourne has another feature which makes it a very attractive period subject from a modeler's standpoint, and that is its very simple, straight-forward landing gear. Not as colorful, perhaps, as the wood-and-wire conglomerations of skids, skiis, and wheels found on many aircraft of this era, but much simpler to build on a small model.

A 25 inch span version eventually materialized, having about 120 square inches of wing area. In order to achieve the slow, easy flying characteristics desired, a wing loading of 8 to 9 ounces per square foot was set as a goal. At this weight, the reliable and inexpensive Cox Pee Wee .02 would easily haul the airplane around. A 3 ounce radio system meant that about 5 ounces were left for the airplane - a fairly easy task, provided reasonably light balsa is used and the finish is kept within limits.

The prototype was completed, and due much more to luck than science, the weight, sans radio gear, was slightly under 5 ounces. Even with an antiqued paint job yet! Pulse rudder flying was really smooth – especially when the Pee Wee was over-propped with a 6x3 Cox nylon vintage propeller. Very slow, scale-like flights, never getting above 75 to 100 feet in altitude, with a minimum of steering. Sort of free flight (there's that thing again) with periodic rudder commands – just enough to land back at the launch site. It couldn't do the stunt pattern, but a heck of a lot of fun for a minimum of radio complexity.

The next step was to install and try a miniature GG system. The advantage of GG for small scale models is quite different from the larger, hotter planes. Since a relatively low powered scale airplane can't stunt anyhow (curses on anyone who would snap roll an Eastbourne, even if it could), why bother with elevator anyway? Simply because these little ships are meant to be seen while flying, the pitch trim capability of GG allows you to fly them with a safe margin of power, and at eye-level. Rud-

der only airplanes tend to climb when adequately powered, and a ship of this size can't be fully appreciated at too great a distance. Also, GG allows a more accurate and much smoother landing capability.

The new relayless commercial GG systems, while having been reduced in size considerably, still weigh about 7 ounces (the weight of our whole airplane!). Therefore, the Eastbourne, if GG is desired, will require a miniature "home-built" system such as described previously in RCM.

Dave Robelin's neat little "Pipsqueak" GG set-up in the April 1966 issue, or our lightweight system described with the Curtiss Junior in the February 1967 RCM will do nicely. The homebuilt actuators shown in these articles will also work very well relayless, and at lower weight, if desired. Simply add a transistorized switcher, such as the AOSM kit from Ace, and a single battery supply will power the whole thing. This is the set-up I used in the prototype GG Eastbourne shown in the photos.

Since the weight of a GG version will probably be 1 to 2 ounces more than the rudder only version (ours weighed 8.1 ounces ready to fly), the compact R/C airplanes and has generated a lot of undue criticism against the smaller sport flyers. So please, be weight conscious – use reasonably light wood and don't beef up the structure much more than shown: To be sure, the design wasn't stressed for straight down crashes or cartwheel landings – the idea is that these things will rarely happen if the wing loading is kept down.

Secondly, the Eastbourne is a very simple, basic model. To be honest, it will look like an every day flying box without at least a few of the scale details suggested on the plans. The really very simple finishing touches – the rigging, the balsa pilot, the fake spoke wheels, and the fake cylinders – don't just add to the looks, they are the looks. So, even if you usually skip these final details, give them a try on your Eastbourne and I'm sure you'll be much more satisfied with the finished product.

Now, for a few construction notes. Build the wing first as it is required in the fuselage construction. Construction is straightforward, but don't forget the eight pieces of 1/16 O.D. aluminum tubing which are required as pass-thrus for the rigging.

The fuselage sides are cut from the fuselage rear where the stabilizer will be fitted makes this an easy job at this time. If you are using the Baby Adams for pulse rudder, install the standard piano wire torque rod and tail surface follower system, rather than the more usual pushrod set up. On this particular model this seemed to be the easiest, least conspicuous approach due to the rear fuselage size and the shape of the tail surfaces. Either system can be used, however.

Next, cut out the tail pieces from light, **straight** 3/32" sheet. If you are going to use pulse rudder you can cut out the elevator, attach it with soft wire, and use it as a trim tab. Sand smooth and glue the tail surfaces to the fuselage. When dry, give the entire airplane 2 coats of thin dope. Lightly sand the airframe and cover the whole thing, including the fuselage and tail, with jap tissue or lightweight silkspan. Now you can glue the removeable fuselage piece to the wing center section. Give the entire plane 3 or 4 coats of thin dope, or until the paper is sealed. Spray a very light coat of color, if desired, at this time. We used Aerogloss camouflage tan and it looks pretty good. Prior to color-spraying, we added some details, like cowl separation lines

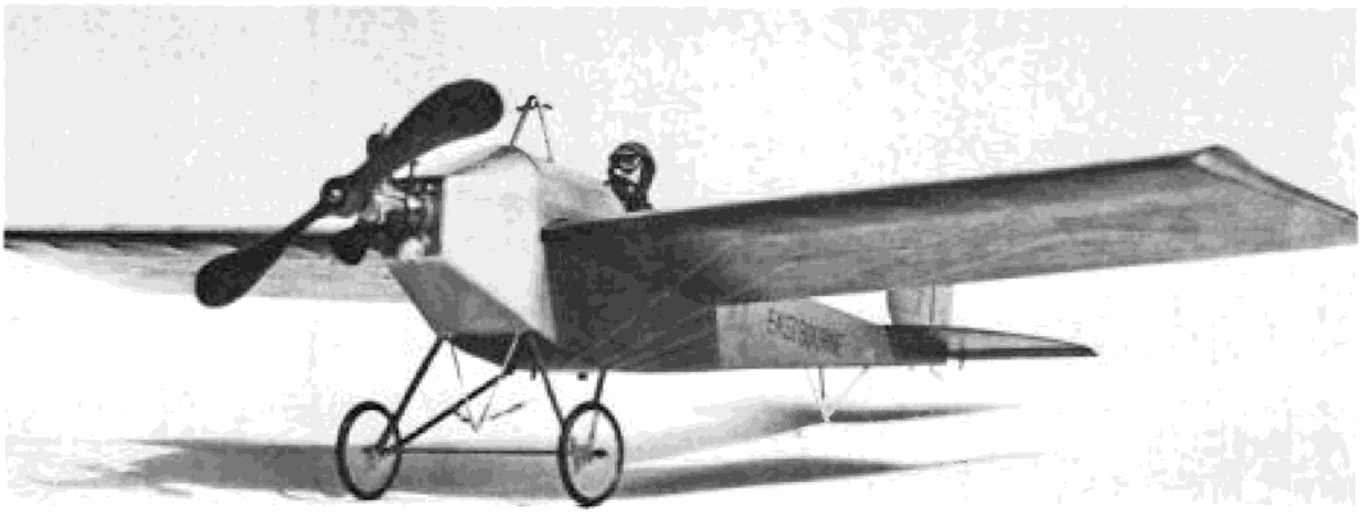
6x3 prop may not fly the little plane decently. We went down to a 5¼x3 nylon prop which proved to be just about perfect. In no case use a smaller prop, or you will have a tough time keeping the little rascal from performing stunts it wasn't meant to do.

Before passing along some building tips in getting your Eastbourne put together and airborne, we would like to recommend a couple of things. Firstly, all models and especially these little bugs are very sensitive to weight. An overweight model of this size will be a very poor, erratic flyer. More power will be needed to sustain flight, making control a lot tougher, and the glide will be fast and brick-like. I believe this is one of the most common problems of

1/16" sheet and the 3/32" square longerons and uprights are attached. Cement in the indicated 3/32" sheet gussetts and the 1/16" sheet nose doublers. You can now bend the landing gear and cabane pieces from piano wire and cement to the proper formers. Next, join the fuselage sides with the formers, and sheet the top and bottom as indicated. Carefully cut out the fuselage center section in which the wing will fit. A very sharp piece of double edge razor will do a neat job. Next trim the removed fuselage section to fit the top of the wing center section, but do not attach to the wing yet. We'll do these after covering is completed. Sand the fuselage well and then install your actuator and torque rod system. The hole in

and the name, in India ink. We also glued jap tissue numerals to the wing and tail. The color dope then was barely fogged on, over everything. Result – very light, kind-of-neat antique finish. Finally, mask off the nose area, and dope this aluminum. The cockpit "hole" is painted dull black.

The rigging can be added now, and is quite simple. Attach the wings by means of a couple of small rubber bands; not much tension is required here because the rigging will do most of the holding. Tie a length of 6 lb. monofilament leader to a small lead-out clip of the safety pin type. Attach the clip to the bottom cabane and thread the monofilament up through one of the inboard pass-throughs, through the



upper cabane, down through the other inboard pass-through and so on until one side is completely rigged. Don't pull the rigging too tight, just so it's snug. Also, don't forget the two little 1/8" lengths of 1/16" I.D. aluminum tubing at the upper cabane fitting and the removable clip – these tubes will help "gather" the rigging lines at the cabanes and make for a neater installation. Repeat this process for the other wing panel.

Since there are no suitable commercial wheels available (to my knowledge) of the size required, you will have to make your own. The two types shown on the plan are ultra-simple, and either will look quite good. The method of attaching the wheels shown on the plan is very effective in absorbing even the hardest landing shocks without deforming the main under-carriage structure. It's also easier to build than a completely integral, soldered unit would be. Bend the tail skid pieces from 3/64" piano wire, solder and attach as shown on the plan.

A little balsa pilot, with a mustache trimmed from one of your old dope brushes will add a lot of class. The two phoney cylinders will turn your Pee Wee into a reasonable facsimile of the little three cylinder engine that hauled the Eastbourne around in days past. We made ours out of five discs of 1/16" balsa, alternated between larger thin cardboard discs. The lower cylinder section is cut from 1/4" balsa and the whole thing trimmed and sanded to shape. Finally, seal well with clear dope, and finish in black and silver dope to match your real Pee Wee cylinder. Trim and epoxy to the crankcase.

Now for flying, **if** you have the courage to risk the little jewel! Normally, I don't believe in test gliding R/C models, but the rudder only version should be light enough to use this approach if you like. After checking everything, like C.G. location, no warps, etc. just fire it up and go. For the first flight, you **should** use a 6x3 nylon prop. If your engine is a little sick, or your fuel not hot enough, the worst that will happen is a long powered glide. Try a little hotter fuel before going to the smaller 5¼x3 prop. What you should try for is the fuel-propeller combination that will fly your Eastbourne with a slow gentle climb. If you get a fast climb and/or looping tendencies you've got too much power. Keep trimming between these initial flights with **little** tweeks of the elevator tab to get a slow, powered climb, and a fairly flat glide at just about the same speed. The touchdowns when trimmed right are very soft and non-bouncy. Hope you enjoy the Eastbourne as much as we have. Happy Flying!

Bill of Materials

Light balsa unless otherwise specified.
(2) 1/16" x 3" x 36" sheet
(1) 3/32" x 3" x 18" sheet
(1) 1/8" x 3" x 18" sheet
(2) 3/32" x 3/32" x 36" strip
(4) 1/8" x 1/8" x 36" strip
(1) 3/16" x 3/16" x 36" strip
small pieces of 1/16" and 1/8" ply
1/16" piano wire
3/64" piano wire
5" of 1/16 O.D. alum. tubing
1" of 1/16 I.D. alum. tubing