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The BADACO Mod. 180R-3 & 5 brings simplicity to multi-channel operation. All relays, tubes, and reed bank are individually SHOCK MOUNTED. Complete receiver is housed in crash resistant and dust proof aluminum case. Idles .9 ma. Goes to 5 ma. on signal. Range 3 miles plus. Mod. 180MC control box (\$21.95 5 ch. \$18.95 3 ch.) JUST PLUGS IN. TO our 180T TRANSMITTER. SIMPLE to tune, SIMPLE to use, DEPENDABLE. Custom built.



3 ch. \$84.95
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Complete

Dependable & Simple to use. Audio Tone operated for maximum dependability. Stable operation over wide battery voltage range. No "C" battery required. Weighs only 3.3 oz. complete with NEO-MATIC relay (enclosed), tubes, leadout cable. Relay change 2.5 ma to 0. Fully tested, adjusted, & GUARANTEED. Completely wired for quick, easy hookup to any type escapement, servo, or actuator. Order today and bid RC radio trouble good by. See your dealer or order direct. Send check or money & we pay postage—or send 1/4 cash with order, balance C.O.D. FULLY GUARANTEED.



Weight 3.3 oz.
Range 2 miles
No "C" battery required
\$24.95 complete

The BADACO Mod. 180T transmitter with exclusive "Scotchman Plug" operates either Tone or Carrier. "Scotchman Plug" in — an AUDIO TONE transmitter; "Plug" out — a carrier transmitter. Write for information on Multi-channel control box. Small, hand held, launch your own model when flying by yourself. Complete—tubes, crystal, antenna. **\$34.95** less batteries



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Dealer & Dist. inquiries invited

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Housed in Rugged Plastic Case Follows fast pulsing Lowest Battery Drain of any Receiver on market Only 50 Ma "A", less than 1/2 Ma. "B". Reliable—no "touchy" adjustments Relay current rises up to 3 Ma. on signal TINY 1 1/2 x 2 1/4 x 1 3/4 in. WEIGHS 2 oz. including relay. 7,000 hrs. Transistor life, very long tube & battery life. Sensitive—better than 3 sq. mi. range (w. Gyro X-mitter) Transistor not damaged by hardest landing! **\$19.45** Factory wired & tested with RELAY only

GYRO RADIO CONTROL TRANSMITTERS. 27,255 Mc. Most POWERFUL 5 Watt TRANSMITTER—LOWEST PRICE. Famous 3 Tube MAC II circuit, with GYRO MAGIC TUNING INDICATOR. Completely Tested, includes: 91.2 ft. sect. Antenna, Remote "Clicker," Keying Switch, \$23.95 Meter, Beatz Cabinet 12x7x6. MODEL X3. MODEL X1 w. 2V Storage btry. charger, Vibr. pack \$39.50 RADIO CONTROL TRANSMITTER & RECEIVER KIT—271.4 mc. Band—License Free. All Parts & Diag. (less tubes & crystal) to build Powerful 5 Watt Transmitter Unit \$9.95 4 2-Tube Receiver w. SIGMA RELAY, wound coils, \$12.18 Hi-Impedance EAR PHONES, NEW \$2.18 LORENZ 2-TUBE RECEIVER KIT w. Tubes & Relay \$13.95 SIGMA 4F RELAY: 8,000 ohm, \$4.25; M. C. Escapement \$3.95 "RADIO-CONTROL HANDBOOK" \$2.25; Book "TRANSISTORS" \$2.00 CRYSTALS: 27,255 Mc. Peterson ZSA \$3.95; HOLDER .15 RELAY CONTROL—w. Sigma 10K Relay, Hi-Impedance Audio Choke, Thermal Switch, Alnico Magnet, Neon Lamp, etc. 1.25 Electronic STROBOSCOPE—Stops motion—110V AC, Complete. 18.95 TINY ELECTRIC MOTOR Oper. from Flashlight Btry. 1.00 TRANSCIEVER CABINET 12x7x6 w. HANDLE 2.85 MINI VIBRATOR SUPPLY 5V, input 90VDC, 30 MA. 1.45 TUBES: 6X4, 6X5, 6A4, 3A4, 1A4G, 6X4; TRANSISTORS .99 2-GV CHARGER KIT \$4.95; New Diode .35 Storage BATTERIES: Mini 6V, NTG \$2.45; 2V 270 M. 2.75

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(after those cross-sticks dry, please) where they are cemented. Next, rubber bands bring the front ends to the proper spacing and the nose former is cemented in place. Of top importance in this stage is having the boy cut out top and bottom stick at the same time to insure uniformity.

The only other possible difficulties involve wing dihedral joint, covering of the upper back body (use a few cheap sticks to flatten complex curves into plane surfaces), and the sanding of the TE's of the wing. For this, use a 6 in. square to prevent humps and lumps but your real difficulty will be in getting your student to remove enough wood: the youngster usually gets tired of sanding long before the wing has been properly shaped.

Only clear dope was used on Sparky, as on the towline gliders later, but an original touch can be applied to each model by cutting the builder's name from contrasting colored tissue and doping the letters to the wing.

The grand project of the course—the \$1 T-Craft—requires no special instruction, actually being fairly easy to build. It may be used as a FF gassie trainer with any Half-A engine.

And now the prospective model shop instructor can take it from here, with plenty of room for his own innovations.

Jumbo . . .

(Continued from page 15)

Several additional models were built to experiment with various wing areas, control surface areas, wing sections and tail moment arms. I found that the stability of the design seems to depend very little on the CG, with the airplane becoming more maneuverable and sensitive the farther the CG moves to the rear. I would recommend, however, that the builder experiment with nose and tail ballast until he finds the CG location he likes best for good all-around performance.

The culmination of all the experimentation is represented in the Jumbo version shown here. The original model is entirely covered with colored silk with bright yellow wing and tail center sections and bright red tips. The fuselage is covered with two layers of silk and is doped red. A clear finish coats the wings and tail for weight reduction but appearance would be improved and performance should not suffer much if a full color finish were applied to the entire model. The model may be powered by any .49 to .65 engine. A hot .35 would probably give sufficient power if weight is kept low with a light-weight finish.

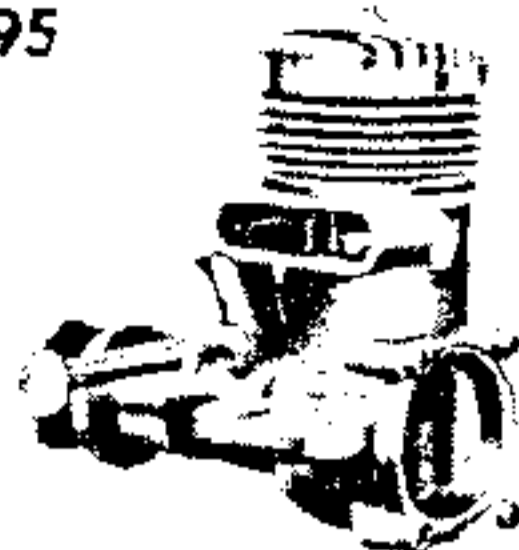
If a racing .60 is used it will probably be necessary to use a restrictor in the intake to boost fuel suction. A regular needle valve assembly must also be used in place of the racing type. A pair of Walker pressure tanks are the best bet for a racing engine like the McCoy .60, as even running is assured and no restrictor is needed. If a regular wedge tank is used, it must be mounted with its center line exactly level with the spraybar, otherwise tight maneuvers will be accompanied by very poor running.

Start construction with the fuselage. This is carved in two shells, top and bottom, from two medium soft pieces of balsa measuring 1 1/2 x 3 x 36 in. On each piece, first trace the outline of the top view of fuselage. After sawing these out, trace the side outline of the upper and lower shell on each shell and saw to shape. Next, round off each shell and hollow out. A large, half-round X-Acto gouge is satisfactory for this. Leave about 1/4 in. wall thickness. Use oak, maple or birch

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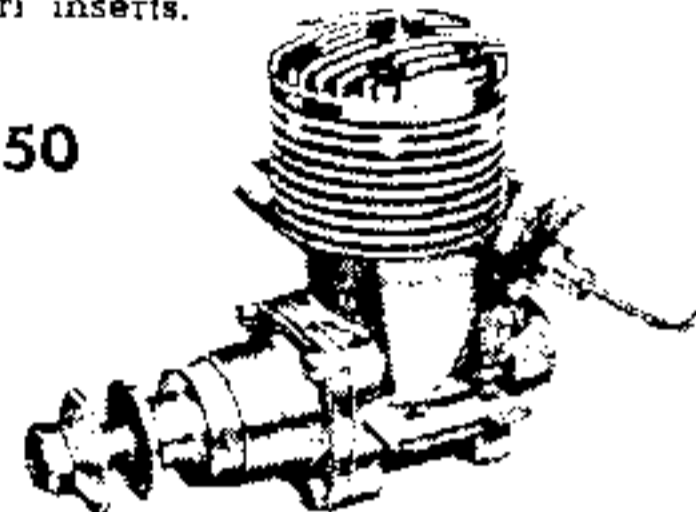
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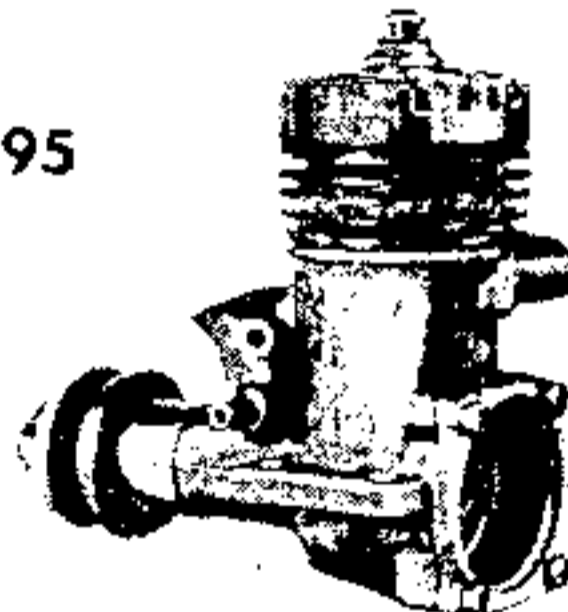
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