tioning the gear and the wheel-pants keeper. Solder securely. Cut a piece of ¼" scrap balsa to fit between the gear wires, and cement in place. Sand to airfoil shape and cover with silk.

Tack cement the 1" x 2½" x 33" soft balsa fuselage top block in place, and carve to shape. Remove and hollow to ⅛". Insert the flaps in the fuselage, slide the wing in place, and cement thoroughly. Install flap hinges to the wing, cement stabilizer in place, hooking up the pushrod as shown, recement the top into place, and plank across the bottom. Cement the rudder on, and the flap and elevator fillets.

The cowling is made from a 1" x 2½" soft balsa block, and a ½" x 2½" block, which are cemented together to make the required depth. Carve to shape, and hollow to ⅛". Plastic balsa fillets are formed around the wing and flap fillets, and stabilizer elevator fillets, working to shape with your finger.

Cover the wing with silk and clear dope until all the pores are filled. The rudder, stabilizer and elevator are covered with Silkspan, as this will pick up less weight in finishing.

Brush two heavy coats of wood filler on all exposed wood parts, and then sand back down to the wood. Apply two or three coats of clear dope to the rest of the model and sand lightly. The whole model can now be color doped and trimmed to your taste. When finished, cut the bubble canopy to fit and, using a few pieces of masking tape, stick to fuselage, running a fine ribbon of cement around the edge. If you wish, dummy exhaust stacks may be added to dress up the nose.

Pick a fairly calm day to test fly, and for the first flight use only ¾ power. Don't try to be fancy until you are familiar with how the model responds. You will find it to be extremely groovy, and very easy to handle, but it can also make square corners really square.

I like a fast flight with plenty of pull on the lines, so I use the silver restrictor in my Torp, but if this is too fast for you, change to the green restrictor.

A word of caution. If you are flying in a strong wind, open up those maneuvers because this model really moves.

Foreign Notes

(*Continued from page 7*)

layer control and one solution here is surface spars to intercept the covering sag behind the leading edge. Australia's Jim Fullarton used them on his 1958 Australian Nationals winning Wakefield and gives them the credit for the model's excellent glide. For the benefit of the sceptics, Jim quotes the example of the dimples on a golf ball . . . put there for the same purpose because manufacturers discovered that the dimpled ball could be driven farther than a smooth one. . .

CZECHOSLOVAKIA

Czechoslovakia is expected to present a really strong challenge in the FAI free-flight gas World Championship event this August at Cranfield, England. For this and other FAI f/f and teamrace events, the State sponsored Model Research Center at Brno which was responsible for the last year's World Champion speed engine, is producing appreciable numbers of a high-performance Diesel known as the MVVS type 2.5/1958.

The engine shows some changes from the prototype unit described in our May column and the exhaust stack is now at the side instead of behind the cylinder. Claimed output is .310 brake horsepower at 15,800 rpm which, if generally representative of stock models, would definitely put the MVVS on a par with the Oliver. The motor has a bore and stroke of 15 x 14 mm. (.5905) x .5512 in.) giving a displacement of 2.47 c.c. or .151 cu. in. and weighs 5 oz. It is of the front rotary type with twin ball-bearing shaft.

SWEDEN

Winter flying on frozen lakes is quite the thing in Northern Europe. Times are often surprisingly high. In the Annual Swedish Wintercontest held at Norrtalje there were 120 entrants and the top two in Wakefield both exceeded the five-flight maximum score. Winner in A2 was well-known Rolf Hagel, also with a perfect five-flight score of 900 sec. Gas event went to free-flight expert Hans Friis with 845 sec.

WEST GERMANY

We hear that the German OMU radio-control manufacturers have taken over production of Stegmaier's 8-channel vacuum-actuated radio-control equipment. . .

Rumored from Webra: two new motors in the .15 and .20 cu. in. classes named, respectively, Comet and Bully. . . . Hobby shops are now accepting orders for the Webra-built Ruppert Twin, latest provisional price of which is approx. $60.00. . .

The German RC Nationals, separate from the free flight and control-line contests, was to be held at Darmstadt, July 1-2.

Simpl-Simul

(*Continued from page 23*)

ing the centering crank to 1/4" or less permits high rubber tension to be used for snappy action yet does not excessively limit actuator motion. A pulley on the centering crank helps to hold the rubber band in place and reduces friction to prolong rubber life.

Crank Stops: Positive limiting of crank throw makes centering tension and actuator voltage non-critical. With fresh batteries, the crank drives quickly and provides very effective up elevator since the crank dwells momentarily on the stops between pulse reversals. As the batteries taper off, crank swing slows up and limiting is accomplished more by the rubber tension than by the stops. Up elevator becomes less effective, but the transition is gradual. Ample warning is given over a period of several flights; in fact, many fliers obtain extra flights by simply reducing rubber tension slightly to loosen crank action. Good system voltage tolerance is indicated by the fact that with three volts nominal actuator power reliable operation down to almost two volts is normal.

Tail Crank: Details of a deBolt Champion model installation are given (Fig. 5), but crank shape and size will vary with different models according to the factors of: distance between torque rod and elevator centerlines, location of torque rod above or below the stabilizer, the amount of control movement desired. In any case, the crank throw should provide neutral elevator when the crank is displaced 40 to 50 degrees from the center or neutral rudder position. In different models, this may require an elevator yoke above, in line with or below the elevator trailing edge. After bending the elevator yoke to obtain neutral elevator with the crank at approximately 45 degrees from center, correct proportional action is automatically provided and more or less elevator throw is then obtained by adjusting the elevator yoke to ride the crank nearer or further away from the elevator pivot. Rudder yoke may be either ahead of or aft of the elevator yoke, but allow for the fact that the latter slides slightly fore and aft on the crank during operation. Avoid using wire heavier than .040" for yokes as too much mass requires