

Safari

Saab Supporter

MILNER-SMITH

SCALE MODEL

cu. in. MOTORS

FUNCTION R/C

THE Saab MFI-15 Safari (or Supporter if you like military colour schemes) has developed over the course of nearly twenty years from the *Bolkow Junior*. Designer Borg Andreasson went for simplicity of manufacture, avoiding complex curves but still producing an aircraft of undeniable character. I have tried to do the same with my model.

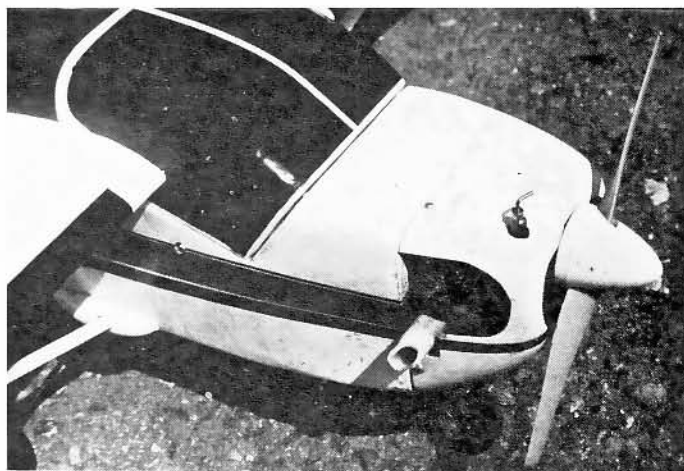
THE AIRCRAFT

The *Safari* has rarely attracted much attention outside flying circles. But it can claim one brief moment of glory, in a development form known as the MFI-9 Junior it made the world's headlines during the 1969 Biafran war. Six Swedish pilots led by the late Count Gustav von Rosen carried out a series of daring low level attacks against Nigerian airfields. Skillfully exploiting the element of surprise the tiny 130 m.p.h. MFI-9's caused havoc among the jet fighters on the ground and then vanished back into the jungle.

The military lessons learnt from these tactics helped in the development of the *Supporter* which can carry rockets or bombs or missiles and has gone into service with the Pakistan and the Danish airforces.

My own introduction to the *Saab Supporter* came during a very wet filming session at the 1974 Farnborough Air Show. Having dashed for shelter under the large delta wing of the all-weather *Saab Viggen* complete with tripods, cameras and a muttering camera man, we discovered that for some reason the *Viggen's* wing is full of little holes which let the rain drain through. And besides which the height of the wing forced us to bend double so

Right: two prototypes were built by the author, this, the Safari model, had 'home-brew' silencer. Second model was fitted with scale silencer leading out below the nose. Black iron-on film is used for cabin windows.



that the rain could run straight down inside one's collar. When the next downpour interrupted filming I headed for a more dignified shelter which happened to be the *Supporter*. Well, to cut a long story short I stayed dry and got a good chance to study it in close up. From then on I've been hooked on Saab's little military trainer.

The technical problems of the large cockpit and the high tail seemed (at the time) to make it unsuitable as a radio model, but I came across some pilot notes on flying and performance of the MFI-15 and they were so full of praise that I knew that I had to build a model somehow. By the time Farnborough 1976 had come around I'd a basic plan and a lot of good intentions. After another good look at the parked *Supporter*, now in the colours of the Royal Danish Air Force, and a short chat with the Saab-Scania sales staff my mind was made up. My wife hardly saw me for the next few weeks, but a month after Farnborough my model of the *Supporter* first flew. And it's been flying ever since.

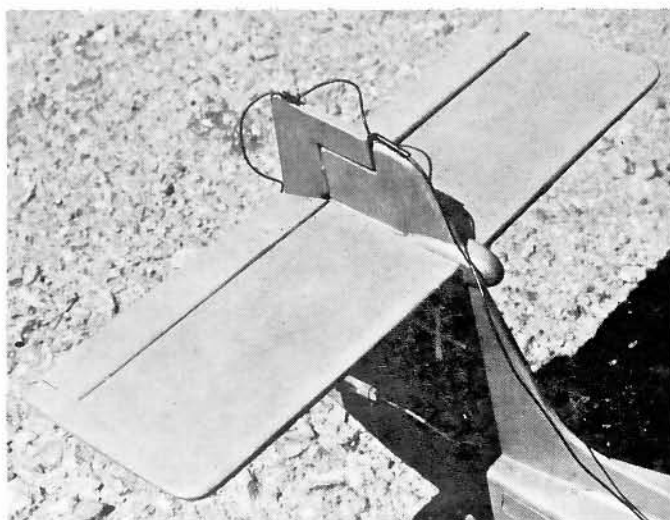
THE MODEL

The basic outline of the model is to scale except for two changes which hardly show. The wing root leading edge cut out has been omitted on the plan as with my first model. I did in fact put it in on the next one, but as you can see in the photos, it's difficult to judge whether it's there or not, and so not worth the constructional hassle it causes. The other deviation from scale is an increase in tailplane area by about 15 per cent.

Construction

Fuselage. Each side is made from one sheet of 1/8 in. x 4 in. medium balsa. Butt join the extra piece needed (with Zap or equivalent) before cutting out the shape. Then laminate with 1mm ply from front to F4. Don't forget

Right: tail section of *Supporter* prototype, added scale detail of this model included the tail fairing, as shown on the plan. Aerial passes through rubber tubes glued to top of fin and rudder.



that there's a right hand and a left hand side! Try to build in the curve at the front (see fuselage top plan) at this stage as this cuts down internal stresses where the fuselage takes most knocks, but the curvature is small and it's not essential. But it IS essential to prebend the fuselage at F4. Do it on a hard flat surface which has a straight edge... I'm allowed on the kitchen formica work surface for this... Use a hardwood block and press down with gently increasing force. The wood will crack, but unless you're using rather brittle balsa, it will remain in one piece.

I then held each side over the plan top view and Zap'ed it at the correct angle. Additional strengthening in this area as per plan prevents this joint becoming a potential weak point. I know it works because in the course of a zero height loop at maximum speed I took the whole nose off my prototype recently and that joint didn't even crack. I rebuilt the nose within a week and it's as good as new. But I digress...

Make the bottom cut out for the tank position in F3 but not the side cuts (if you haven't pre-curved the fuselage side as you'll need the whole strength of F3 when gluing F2). Glue F3 and F4 to one side, checking that they are square. Add the other fuselage side and check again for square. Add F2, F5 and F6. Add the cross-grain strengtheners behind F4 using white glue. Sheet cover the top rear fuselage from F5 not forgetting fin support plate at the tail.

Finish the tank cut-out and add F3A. Complete the tank bay top with 1/4 in. sheet.

Build the fin at this stage incorporating the elevator Bowden cable. Sand the fin to shape with the fairing and glue into position, leading the cable up through the fuselage with enough cable to reach your servo installation between F3 and F4. The rest of the construction is straightforward.

continued on page 65

Full size copies of this plan shown here at 1/7th scale are obtainable from R.C.M.&E. Plans Service. Price £1.85 inclusive of V.A.T. Please quote plan No. RC/1330 and allow 15p post and package.

Wing

I made my first wing in foam because it simplified all the construction problems. The second one was made with ribs and sheeting to prove the plan, but I would recommend foam construction every time if you can manage it.

Whichever method you choose be sure to reinforce the centre joint with glass fibre tape. It will all be hidden under the cockpit so you won't have to spend time making the joint look beautiful.

Covering

I used heatshrink film on the prototype – and it's still going strong a year later. But if you're interested in the military version then it's going to be a sealer and paint job.

I've tried several coverings on the cockpit and in my opinion shiny black heatshrink film gives the best effect.

Installation

The sheer luxury of all that space between F3 and F4 for the radio gear will appeal to anyone who's spent days trying to squeeze three servos a deac and the Rx into a space where you can't even fit your finger. The only problem is that there's probably too much space – so plan a firm fixing for your gear. I find easy access to the Rx for crystal changing is a real pleasure.

Engine

Any reasonable .19 will power the Safari as long as it isn't overweight. Try to manage a side mounted engine if you can to save the top line of the cowl. The fuselage is wide enough to enclose the whole engine for scale fans so ensure you do not encourage cooling problems. The cooling air exit hole must be larger than the intake. I use an HB 20 with HB's scale type silencer which brings the exhaust out

underneath in the almost scale position, and keeps the muck underneath too. But a dustbin type silencer is just as effective and there is plenty of room for home-built ones if you feel inclined.

Flying

I'll resist the temptation to describe the many compliments I've had on the *Safari's* flying qualities – they certainly owe little to my abilities as a pilot – and will remain as objective as I can.

The finished model, ready for fuel, should be about 3 lb. 10 ozs. – (but mine, oil soaked and much repaired, has crept up to 4 lbs. 2 ozs. and it's still a pleasure to fly). My faithful HB-20 swings a 9 × 4 to give a reasonable turn of speed and pleasantly smooth flying.

Elevator ½ in. up and ¼ in. down.

Rudder 1 in. left and right.

Aileron ½ in. max either way.

The *Safari* flies well on three channels (ailerons, elevator and throttle) but you lose half the aerobic potential without the rudder. Let the speed build up on take-off. You'll get away with it if you haul back hard on the stick, but a gentle pressure will produce a perfect smooth climb out. Once at a safe height and trimmed out you can really get started. The 6 oz. tank

will give you something like 20 minutes flying so there's plenty of time to experiment.

The *Safari* will do anything in the book which doesn't rely on brute power and then it's got some tricks of its own. The large rudder makes stall turns a speciality; the spin is fairly hard to initiate, but once induced is fast and furious. Recovery takes about half a turn with centralised controls. The stall is smooth and the wings stay level. The lack of tip stall makes life very easy. You can even manage a passable side-slip with a bit of practice. I've rather gone off low level aerobatics since the nose removal incident but, when it is *safe* to do so, low slow flying is my favourite pleasure. I've got away a hundred times with flying which would have written off a 'normal' model. Keep a little power on during the landing for a perfect touch down.

about the designer . . .

George Milner-Smith has been building scale models from his own plans for twenty years. In spare moments between building and flying he works for a television news programme. He makes films about aircraft whenever he gets the chance and has used R/C models for television programmes on many occasions.

Safari is not as close to the trees as it appears, telephoto lens on camera tends to distort distances. This model No. 1 banking steeply on landing approach.

