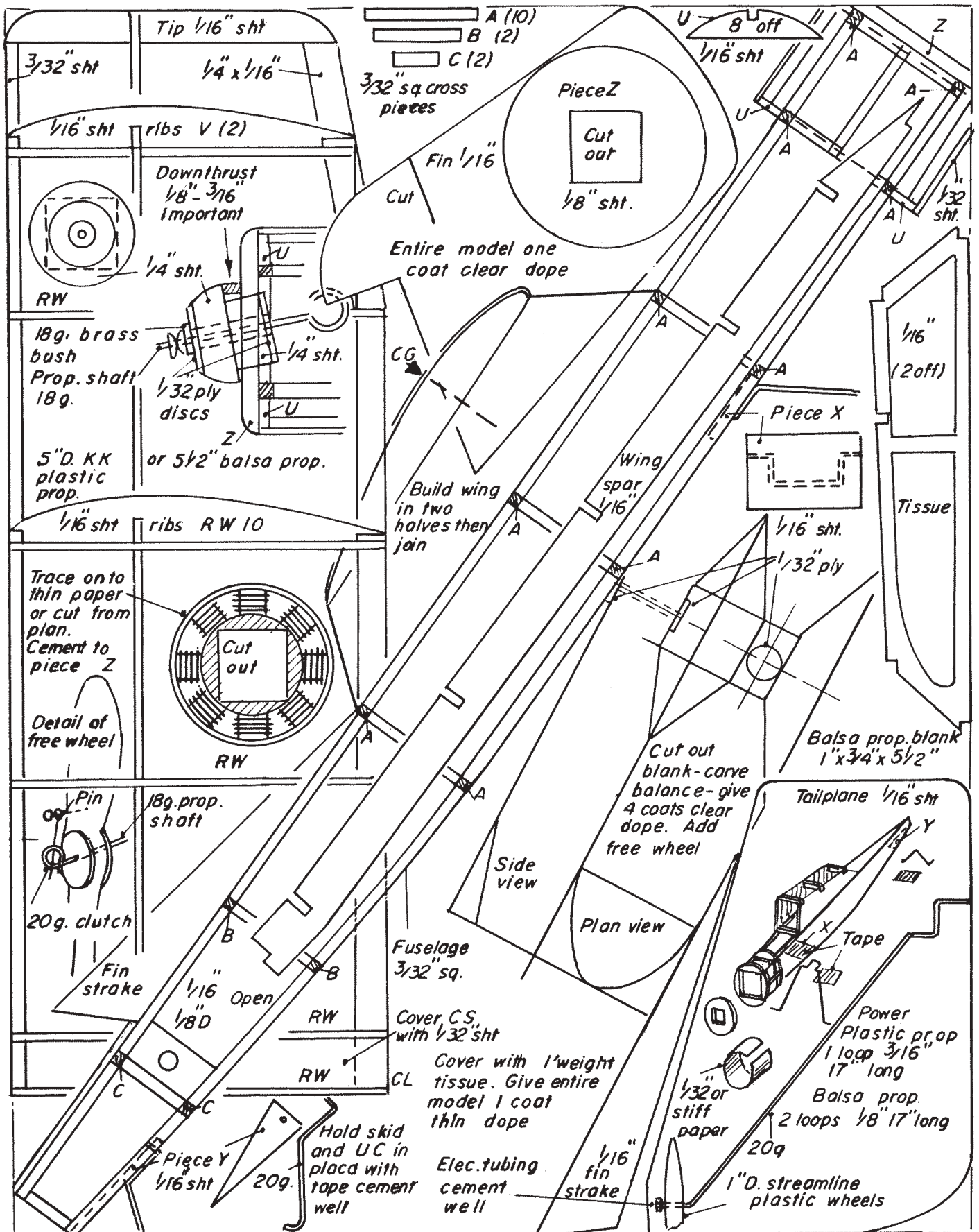
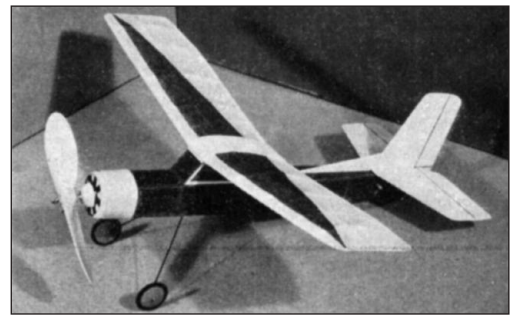
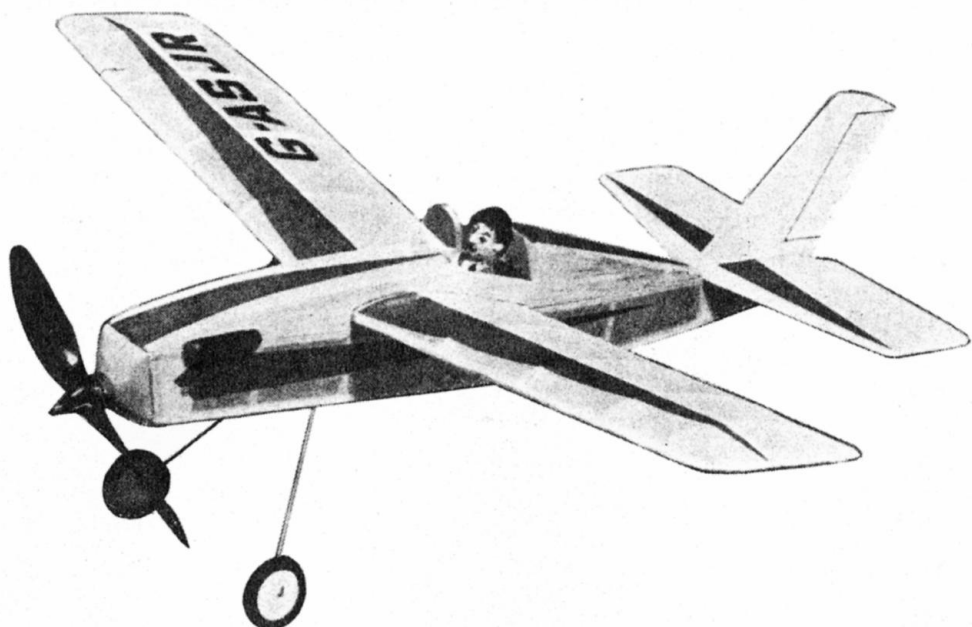


Mini Master



'STARDUST'

Good flying
and good looks
can go
together! Ray
Malmström
invites you to
build this special
M. M. model



MODEL aeroplanes built for duration flying are often criticised for not looking very much like real aeroplanes. On the other hand, those that are faithful replicas of real aircraft are usually difficult to build and tricky to fly. However, 'Stardust' is a compromise between the 'duration' and 'scale' models, and is known to aeromodellers as a sport or semi-scale type model. It combines easy building and good flying qualities, with the look of a real, light aeroplane.

With a pilot in the cockpit, engine cylinders and the wing in the fashionable shoulder-wing position, you could easily mistake 'Stardust' for the real thing as it climbs skywards. If you wish to build this super little model, full plans and instructions are given here.

Build two fuselage side frames over the plan, one over the other. Use greaseproof paper between the frames and over the plan to prevent them sticking together. Remove the side frames from the plan and join with cross pieces A, B and C. Add reinforcing sheet pieces D at the nose and the rear peg anchorages E. Accurately cut out two incidence pieces and cement in position. This must be done carefully.

Bend the undercarriage wire in a vice and then cement it to piece X. Secure the wire in place with a piece of thin linen or silk cemented over the wire, then add the wheels. Next construct the nose block as shown in the 'easi-build' sketches. It should be a good push fit in the front of the fuselage.

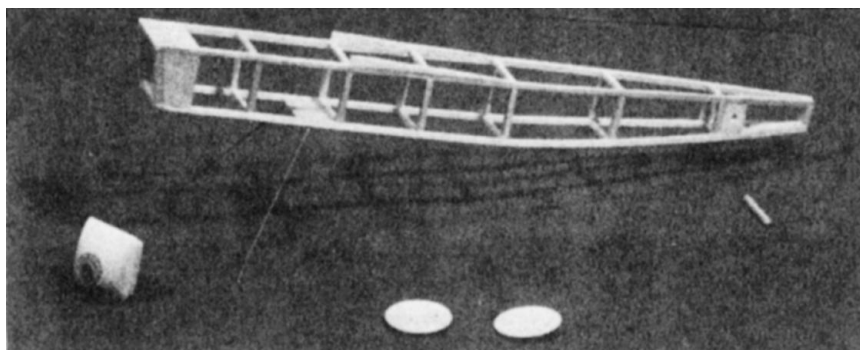
Now cover the fuselage with lightweight tissue, using balsa-cement as the adhesive. Spray on water and allow to dry and tighten, then give one coat of clear dope. Add the tailplane and fin in that order. These should have been given a coat of clear dope first. Pin all doped parts including the wing panels to a board, raised on small blocks of balsa to avoid sticking, while the dope dries. This avoids the possibility of warping.

Build the wing as shown. Join the two panels by the centre ribs. Cover with lightweight tissue, water shrink and give one coat of clear dope. The centre section is left uncovered. The wing is then firmly cemented to the incidence pieces.

Now cut out the two decking pieces from $\frac{1}{4}$ th sheet and cement to the top of the fuselage. Add the cross pieces and cover the top with $\frac{1}{2}$ nd sheet. Give the completed top decking a coat of clear dope. Put a small piece of $\frac{1}{4}$ diam. dowel rod through the holes in pieces E. Assemble the propeller on the driving shaft as shown, finally forming the driving hook. When the nose block/propeller assembly is in position, the propeller driving shaft should *point downwards* when viewed from the side. This is most important.

Add the cylinder blocks and wind-screen. Trim your 'Stardust' with coloured tissue doped in position. Never

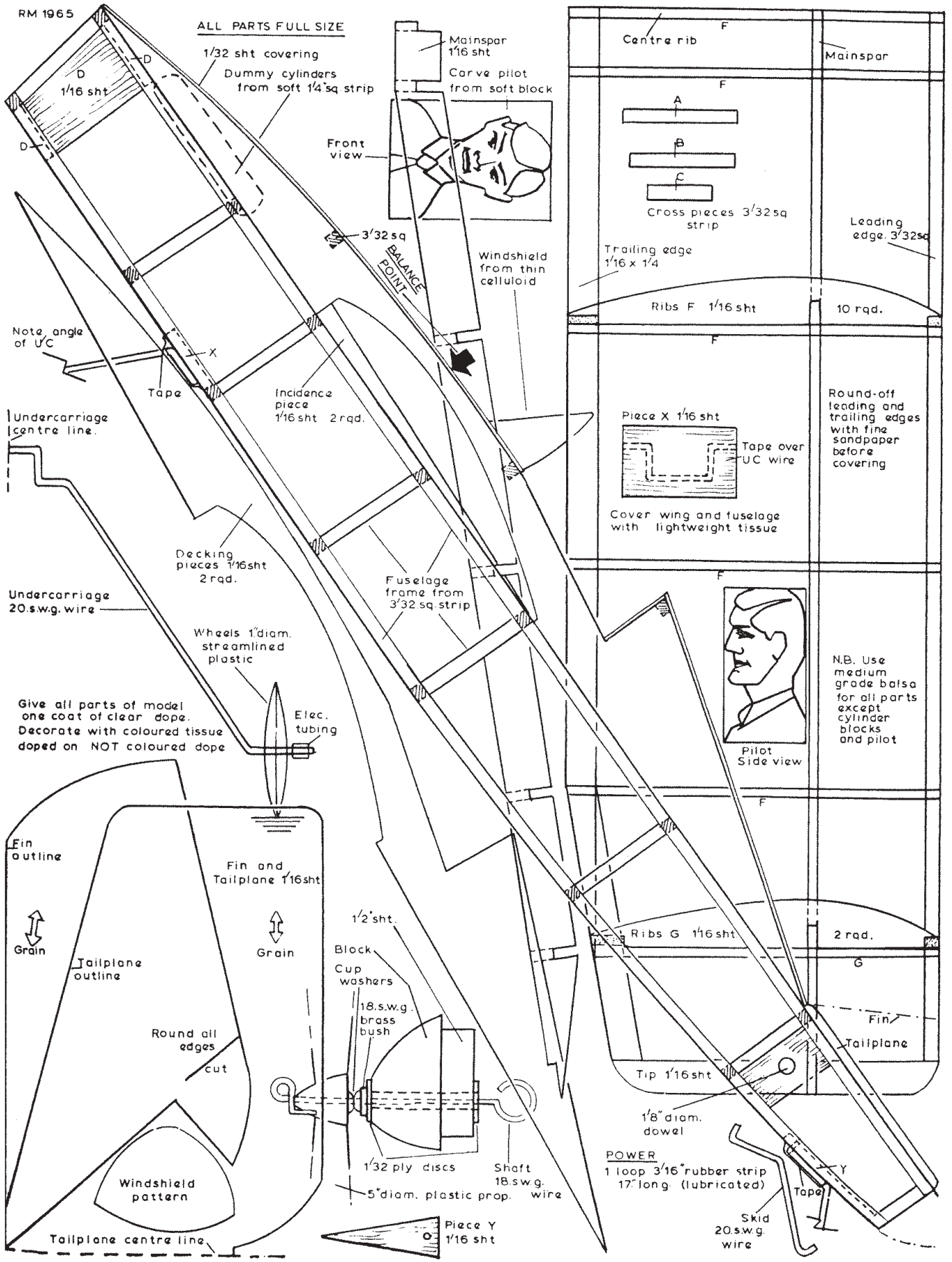
The basic structure of 'Stardust'—simple and strong!



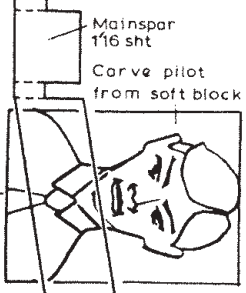
Continued on page 46.

RM 1965

ALL PARTS FULL SIZE

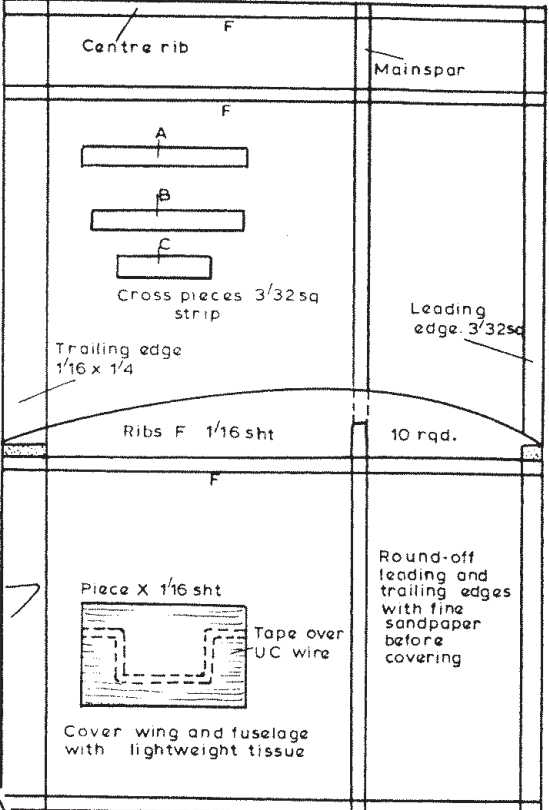


1/32 sht covering
Dummy cylinders
from soft 1/4"sq strip



Front view

3/32 sq
BALANCE POINT



Note angle of UC

Undercarriage centre line.

Undercarriage 20.swg. wire

Decking pieces 1/16sht 2rad.

Fuselage frame from 3/32sq strip

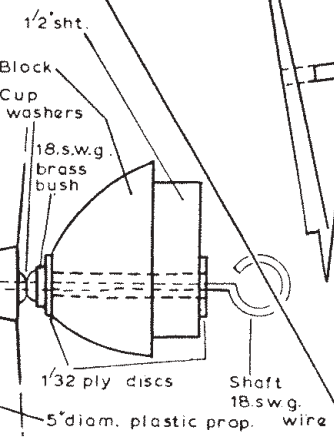
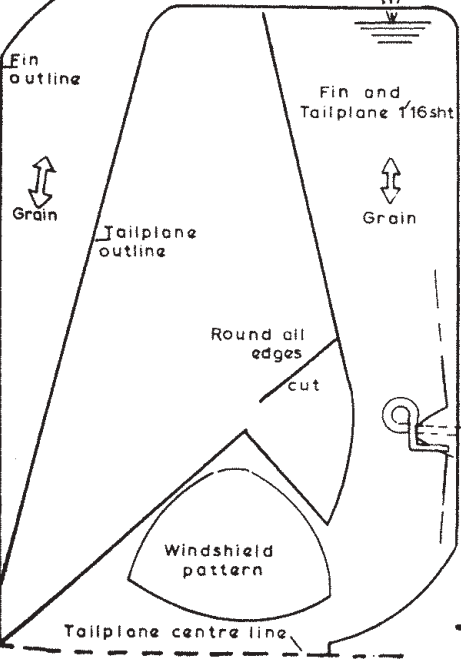
Wheels 1" diam. streamlined plastic

Give all parts of model one coat of clear dope. Decorate with coloured tissue doped on NOT coloured dope

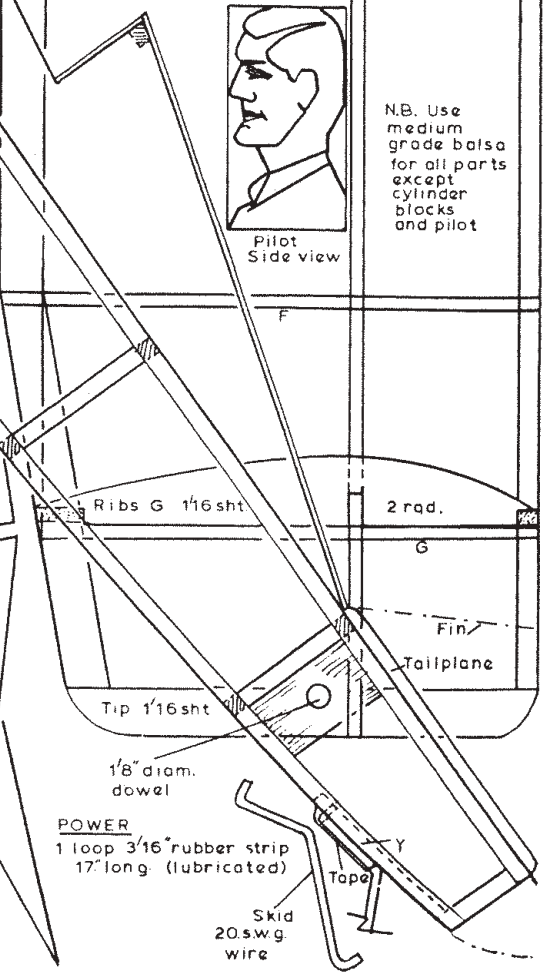
Elec. tubing

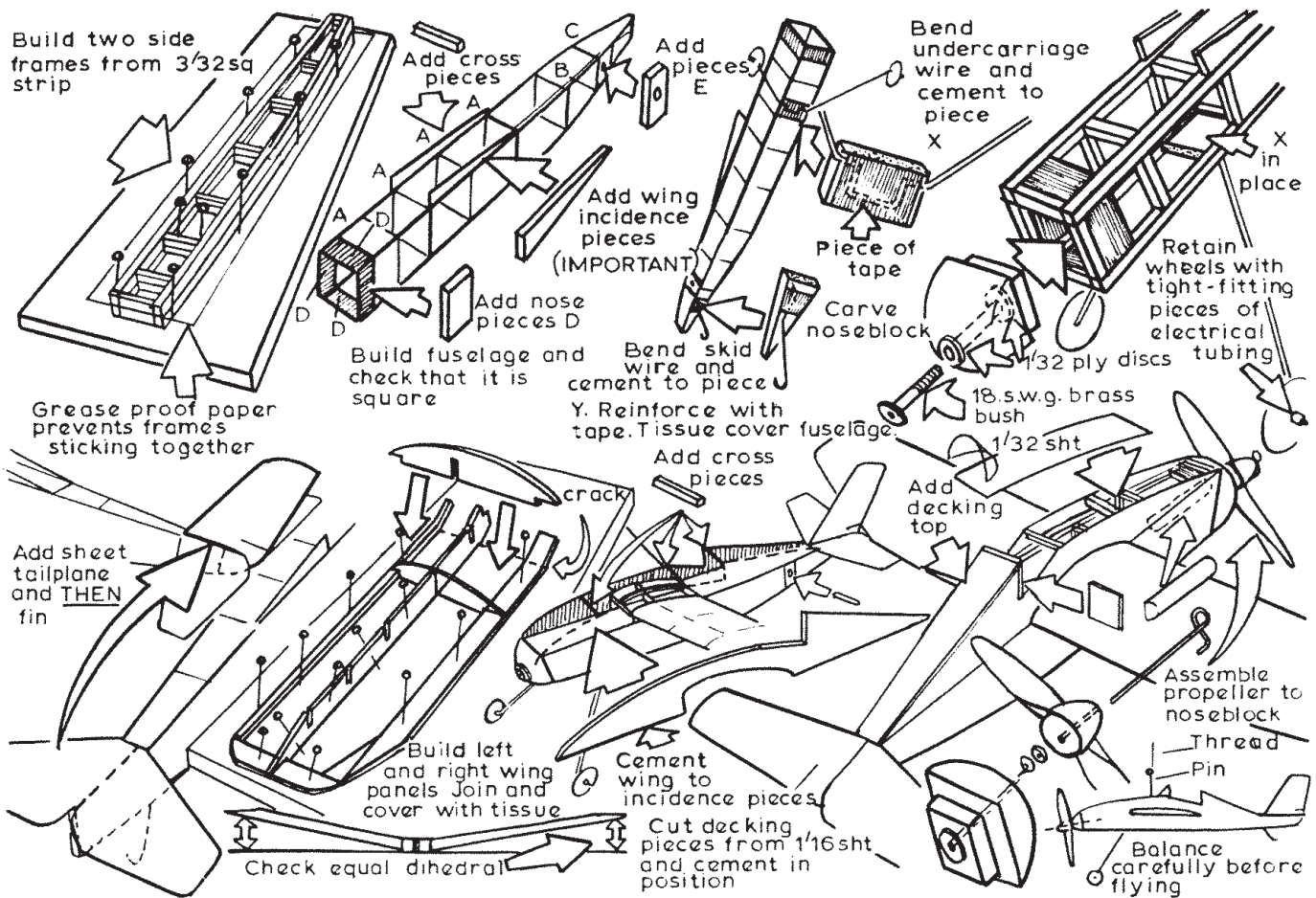


N.B. Use medium grade balsa for all parts except cylinder blocks and pilot



Piece Y 1/16 sht





use colour dope on a small rubber-driven model—it will increase weight far too much. Take 34 inches of 3/32 rubber and tie into a 17 inch loop. Rub on some rubber lubricant (4d. a tube from your model shop) and install the motor in the fuselage. The rear end is held by the dowel peg and the front end is slipped over the propeller drive shaft hook.

Finally, carve a small pilot head and shoulders and paint with poster or powder colours. Cement the pilot to

Materials required

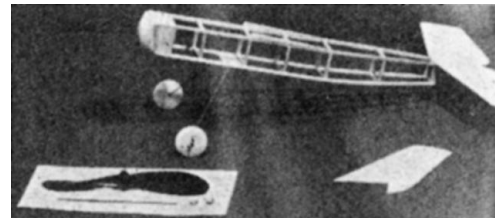
- 6 strips 3/32 in. by 3/32 in. by 36 in. balsawood
- 1 sheet 3/32 in. by 3 in. by 36 in. balsawood.
- 1 sheet 3/32 in. by 3 in. by 12 in. balsawood.
- 1 strip 3 in. by 1/4 in. by 1/4 in. balsawood (soft).
- 1 block 1 1/2 in. by 1 1/2 in. by 1 1/2 in. balsawood.
- 1 block 1/2 in. by 1 1/4 in. by 1 in. balsawood (soft).
- Small piece of 1/4 in. sheet balsawood.
- Small piece of 3/32 in. plywood.
- 1 Sheet lightweight tissue.
- Coloured tissue for trim (to choice).
- 12 in. length 20 s.w.g. wire.
- 16 in. length 18 s.w.g. wire.
- 1 18 s.w.g. brass bush.
- 1 in. length 1/4 in. diameter dowel rod.
- 1 small piece of thin celluloid.
- Small piece of silk or linen.
- 1 K.K. 5 in. diameter plastic propeller.
- 2 cup washers.
- 2 1 in. diameter streamlined plastic wheels.
- 34 in. 3/32 in. wide rubber strip.
- 1 tube balsa cement.
- 1 tube rubber lubricant.
- 1 bottle clear dope.

the wing centre ribs inside the cockpit. He really does add the final touch of realism to your model.

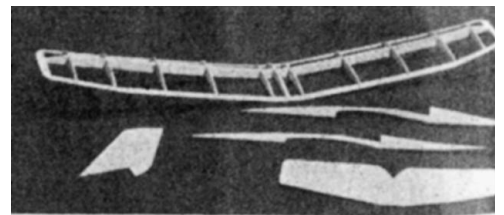
Flying the model

Balancing the model from the point shown is vitally important. Very small amounts of lead or Plasticine may be added to the nose or tail to correct balance. When properly trimmed, glide test the model over long grass on a calm day. Gently thrust the model forward from your hand and watch its flight path. It should glide straight and land about 12 to 15 feet in front of you. If it turns to one side or the other, bend the trailing edge of the fin very slightly in the opposite direction. You can now try a power-flight.

Put about 200 turns on the propeller and launch the model into wind. Do this gently and never throw it. If the nose rises and the model falls backwards on its tail and then dives (stalling) add a small strip of balsa (3/32th square) between the top of the nose block and the fuselage. If the model dives gently, bend up the trailing edges of the tailplane about 3/32th of-an-inch. Correct steep turns by bending the fin as described above. Maximum turns, with the motor in your 'Stardust' well-lubricated, are about 650. Take my word for it, 'Stardust' looks and flies well!

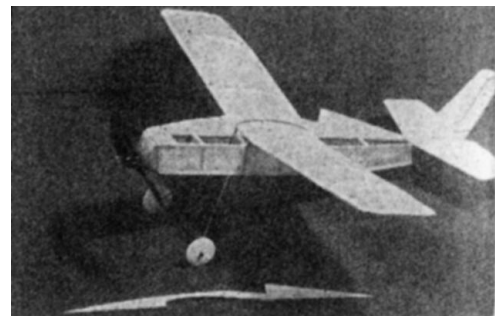


Fuselage of 'Stardust' ready for tissue covering



Above: The simple wing structure provides rigidity

Below: Wing positioned and one decking piece in place



Ray Malmström's "Model'n Tip"

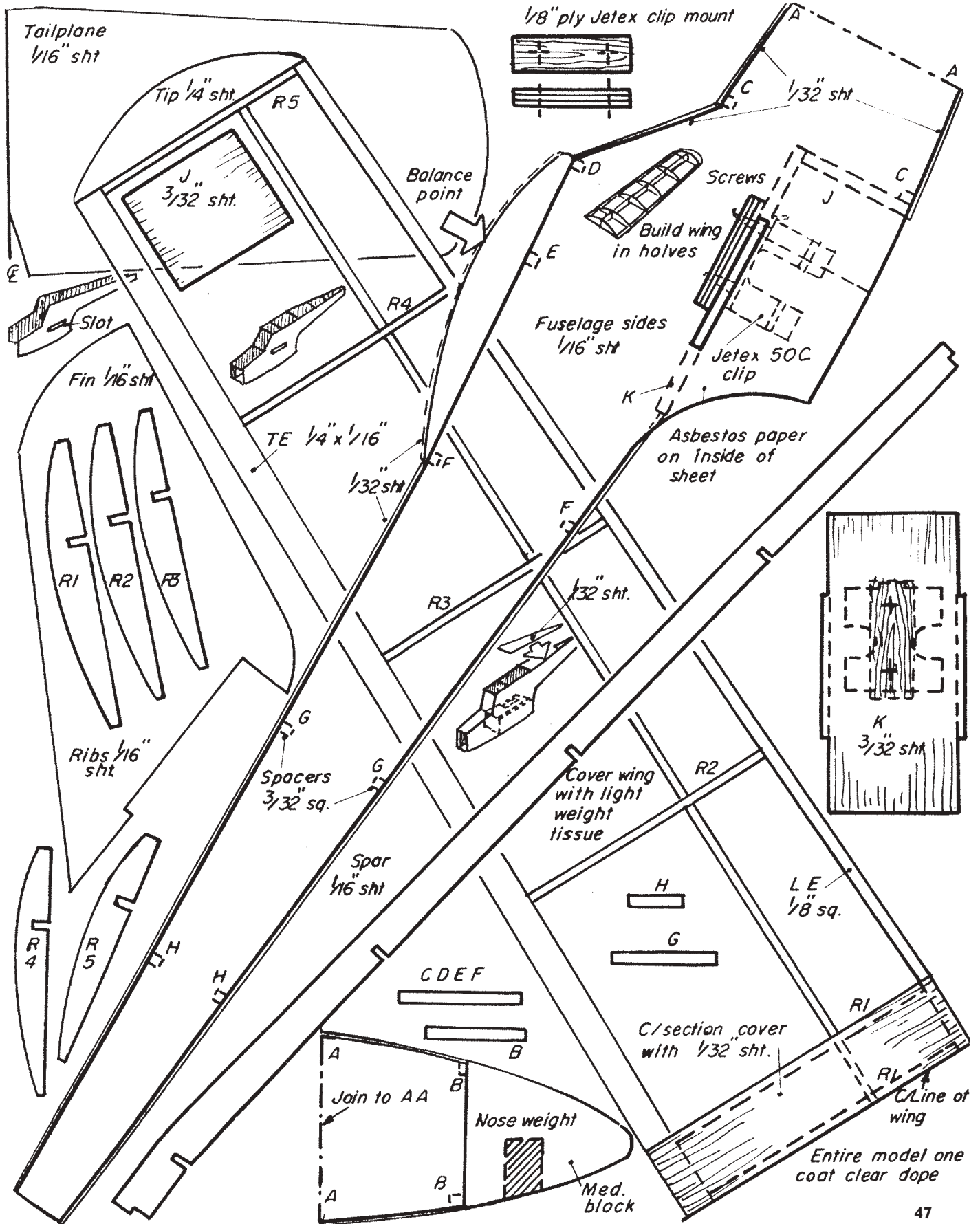
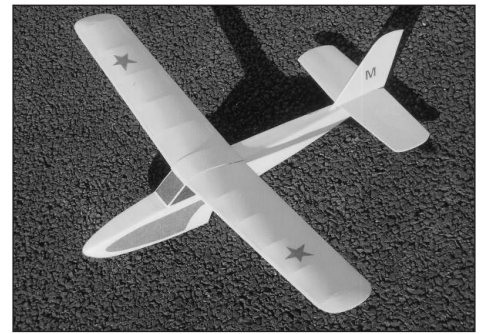
SILENT FLIGHT

Jetstream

It seems a great pity that rubber and Jetex type models have almost vanished from the aeromodeling scene in the past few years. Killed by the diesel and glo-engines, the noise of which has threatened the very existence of our great hobby, it is high time rubber and Jetex models returned to our flying fields, and we enjoyed once more the real flying fun and thrills these models can provide. No noise, and therefore no objections from local councils, farmers or the public – so let's start a new and glorious age

of aeromodeling – with every exciting kind of rubber or Jetex powered model! On the subject of Jetex models. Two tips: Never light a Jetex unit with a match, use a piece of smouldering balsawood or string, or dethermaliser fuse. Matches usually ignite more than the wick! Secondly always test glide your Jetex model with the motor in position but unloaded. This way you ensure a heart warming glide at the end of the power run.

To get you started in the art of "silent flight," we are presenting this month *Jetstream*, a simple to build jet-model powered with the Jetex 50C motor. Use medium grade balsa throughout, and make sure your fuselage is square, and your flying surfaces free from warps. As always, balance your model carefully. Test gliding and flying should be over long grass on a clam day.

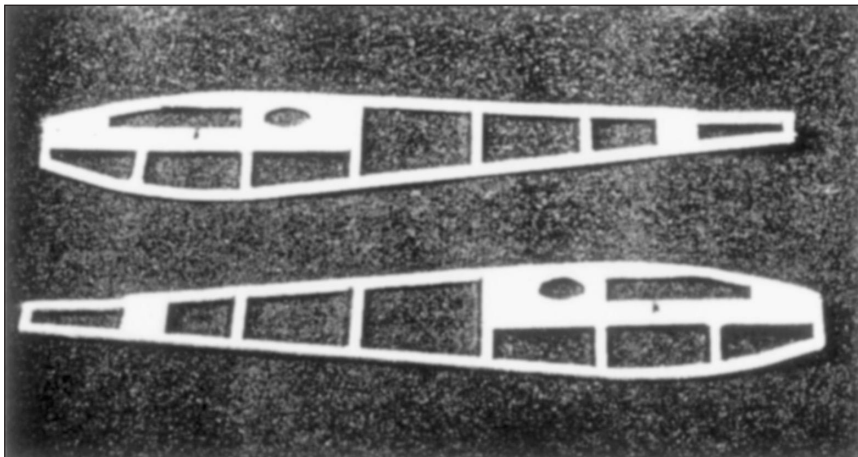


THE AVRO-F

Build this first-ever cabin aeroplane exclusively modelled for Meccano Magazine by Ray Malmström



(Above) The completed model of the Avro 'F' ready to fly. (Below) The two fuselage sides are identical and therefore can be built at the same time for identical size and shape.



ALL of us owe a great deal to those gallant men who started out, over half a century ago, to conquer the air. The model we are presenting this month is a scale model of the Avro 'F', which first flew in 1912 and was designed by A. V. Roe. Its span was 29 feet, length 23 feet, loaded weight 800 pounds, and it was powered by a 40 h.p. five-cylinder 'Viale' engine. Also, it was the first cabin-type aeroplane in the world. Our model Avro 'F' does require a little skill and care to build, but it flies well and will capture for you some of the excitement and suspense of those early days of flying.

The stages for building the Avro 'F' are shown in the 'easi-build' sketches, so we are confining these instructions to advice on the trickier stages and to notes on test-flying your model.

When adding the sheet cabin sides to the fuselage side frames, make sure the outline of the wing rib is accurately drawn on the cabin sides. This outline will assist you when you assemble the wings to the fuselage and to line up the wings at the correct incidence angle.

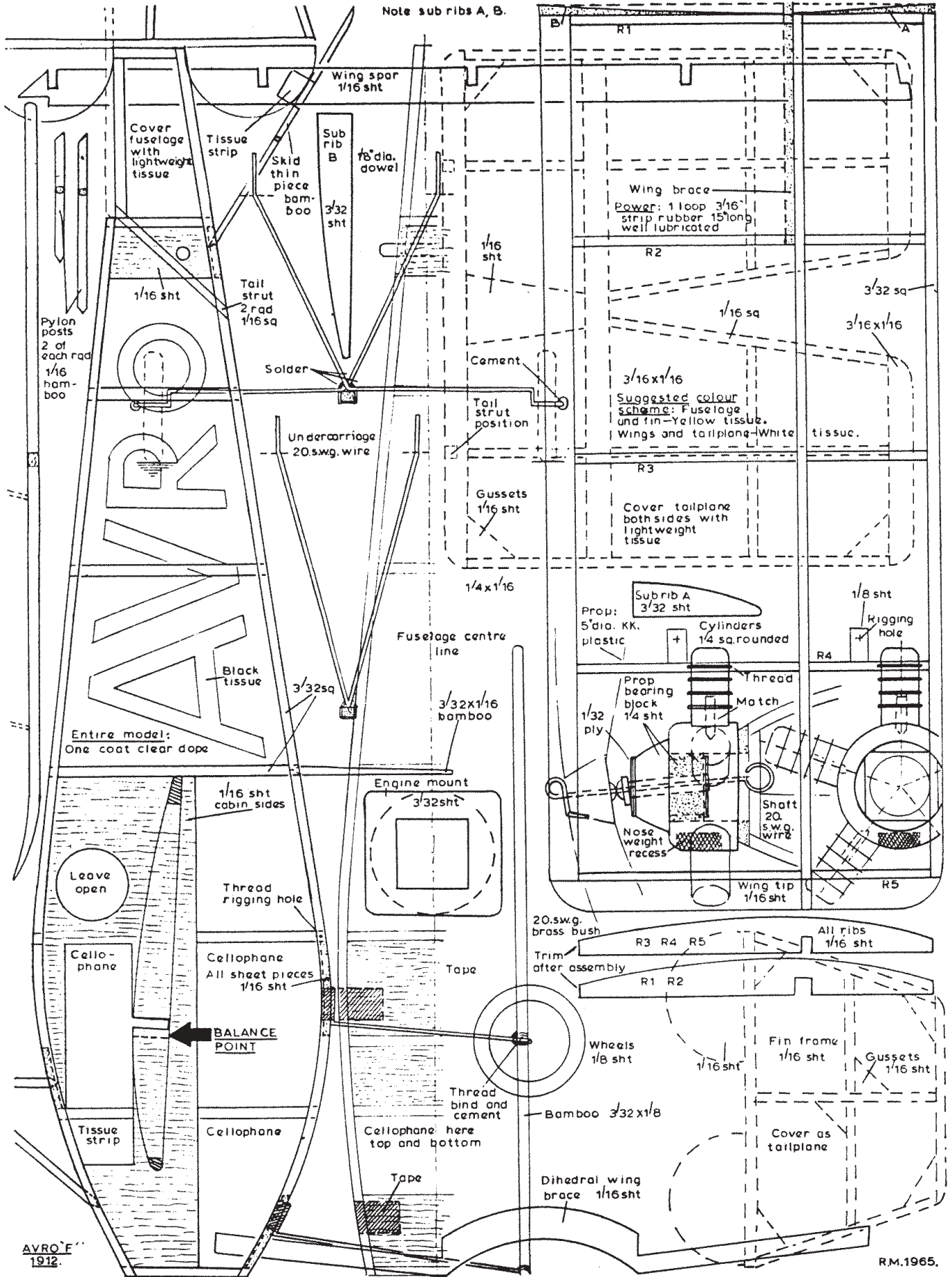
Cover the fuselage and fill in the cabin windows with thin cellophane. Use lightweight tissue for covering, water shrink and give one coat of clear dope. Do this before cementing the tailplane, fin and wings in place.

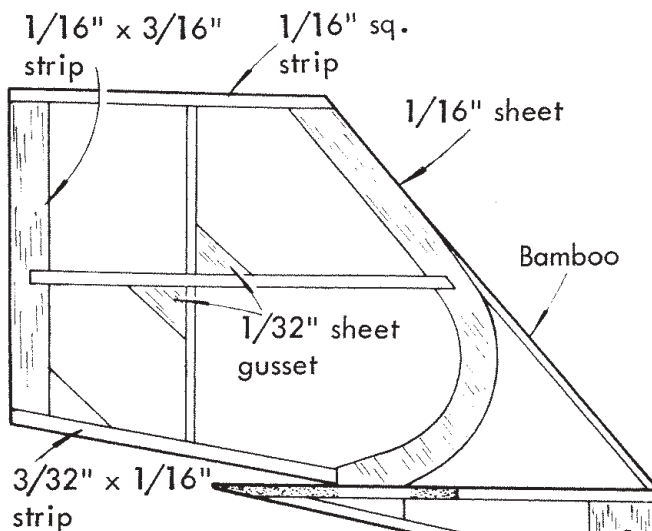
Before binding the bamboo central skid to the two undercarriage 'V's, moisten the front $\frac{1}{4}$ inch and bend up gently. Around the thread binding rub a coating of balsa cement. Build the two wing panels as shown. You will need a tracing for the port wing panel. When covering, leave the inner underside panel open. This will help you to make an accurate union between the wing main spar and the wing dihedral brace.

The correct dihedral

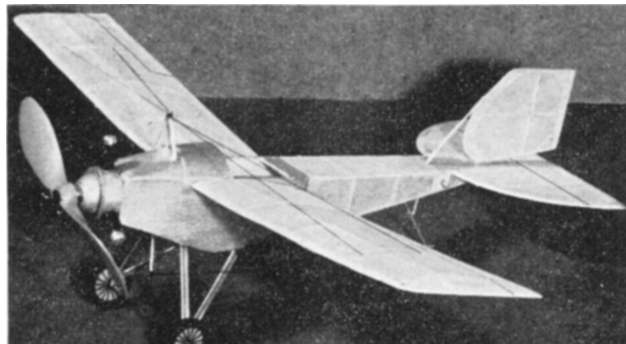
After the wings have been assembled to the fuselage, check that there is an equal amount of dihedral under each wing tip. The inner underside wing panels may now be covered, shrunk and doped. The wing bracings, so characteristic of these early aircraft, may be omitted if desired, but the original model has made dozens of flights without damage to the thread bracing and there is no doubt that the bracings add much to the 'old timer' look of your Avro 'F'.

Note that the 5 inch diameter K.K. plastic propeller has the cone of the spinner filed off. Very few early aircraft had the refinement of a spinner over the hub of the propeller. By the way, a 5 inch diameter balsa propeller fitted with a free wheel clutch, would increase the duration of flight. One important point, check your construction frequently, using a set square. Also, use coloured tissue on your Avro 'F', not coloured dope, as this adds too much to the finished weight of the model. The engine should have the crankcase painted silver, the cylinders black and the cylinder heads silver.

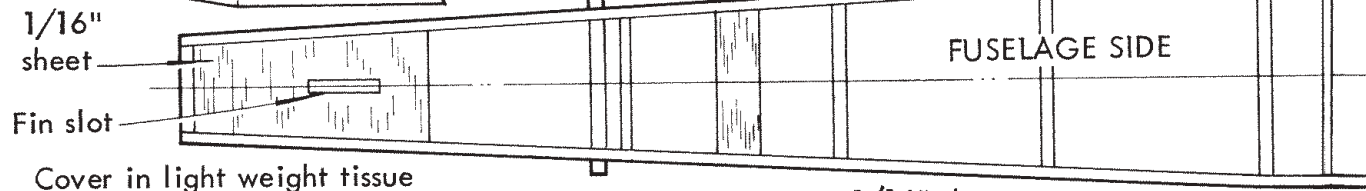
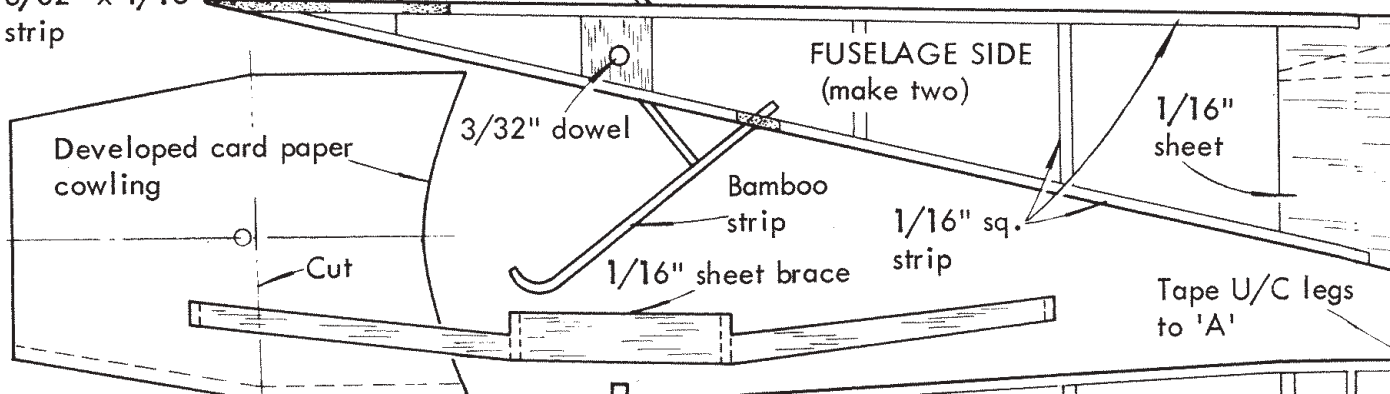




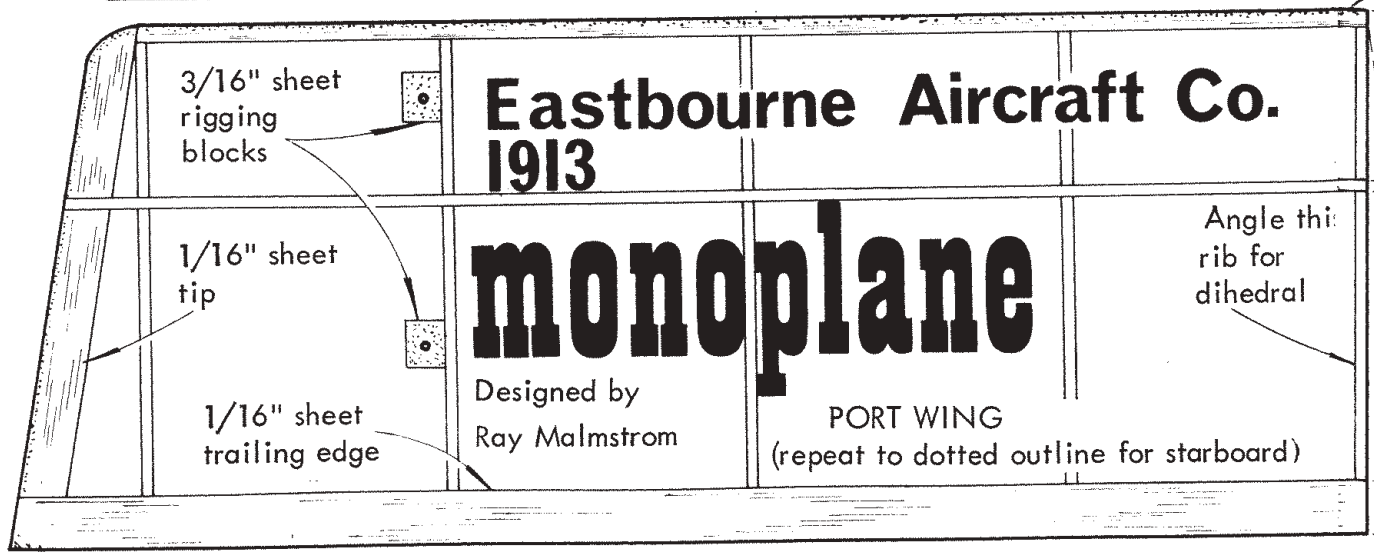
A wee scale rubber flyer from Ray Malmstrom



Us
K.
pr
15
str
lul



Cover in light weight tissue and apply one coat of clear dope

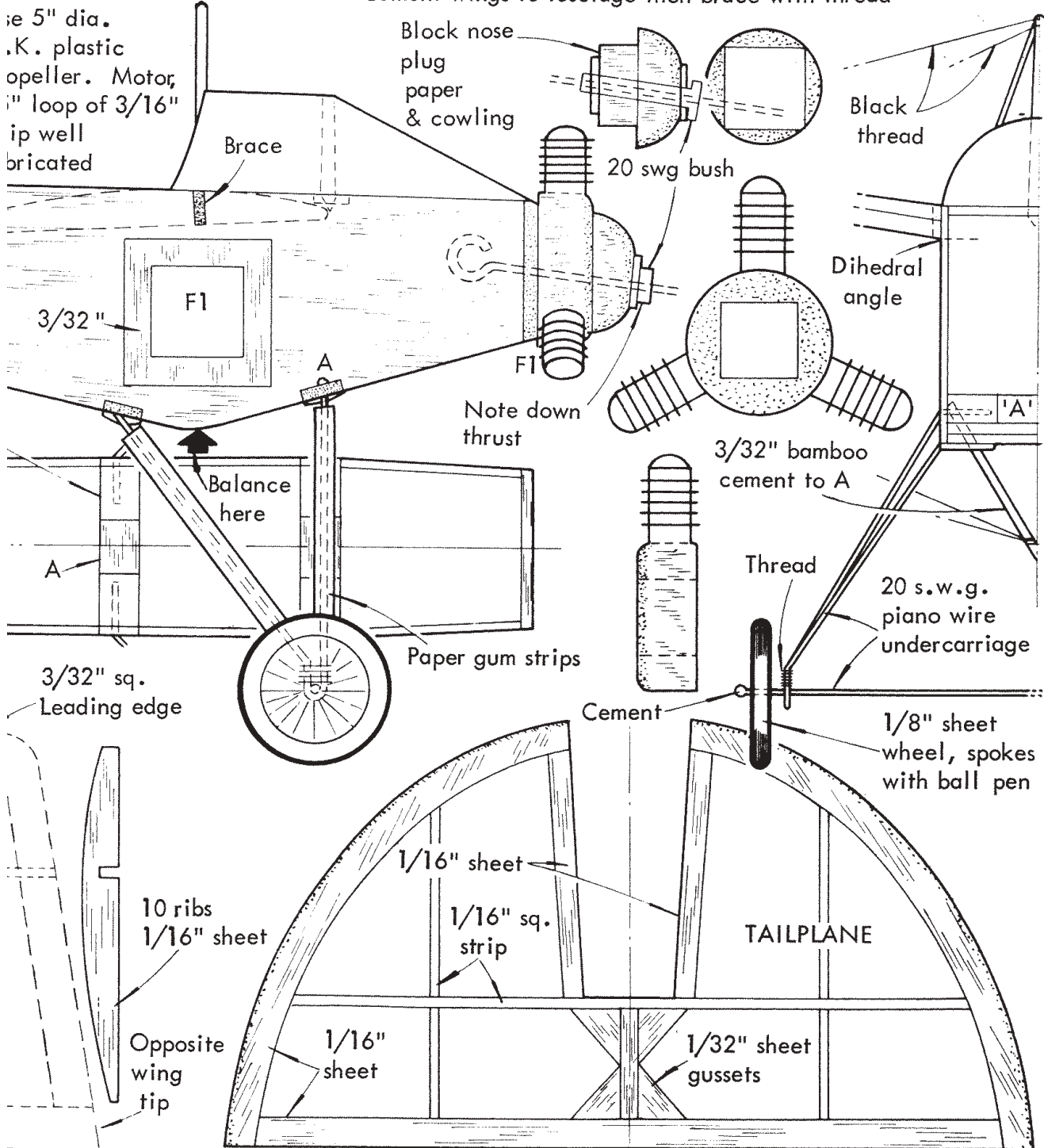


Here's a real vintage aeroplane, and one that despite its obvious suitability as a model flying machine, seems to have escaped the notice of the "scale boys". Way back in 1913 the Eastbourne Aviation Company's Monoplane turned out to be a fine little flyer. It has 29.2ft. span, 21ft. long, and was powered by a 35 h.p. Anzani three-cylinder engine. Our model of the E.A.C. Monoplane is simple and fun to build from these plans. You will get a great thrill from its realistic flight, recalling for

you those early "do-or-die" days of aviation. Balance the model carefully, test glide over long grass and then after checking for correct downthrust and adding a wee mite (1/16in. approx.) of offset you'll be ready to go. Maximum turns on lubricated "run-in" rubber are about 650.

"Oh! Mary where's my cap and goggles—I'm aviating this afternoon"

Cement wings to fuselage then brace with thread

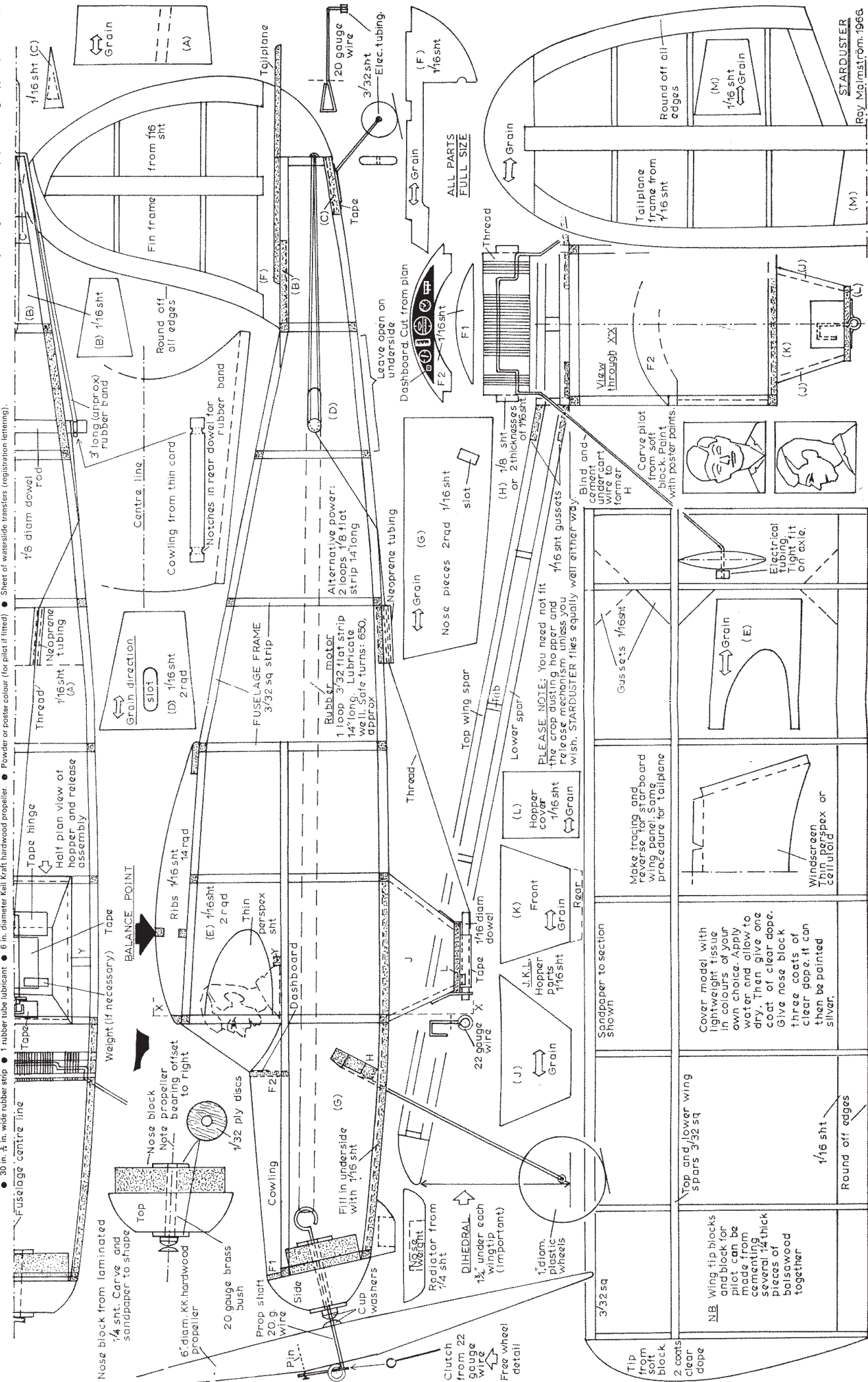


Crop-duster or Leaflet dropper that's Starduster

A semi-scale rubber powered model aeroplane by Ray Malmström

Starduster materials list:

- 8 lengths 36 in. by 3/4 in. ea. balsa strip
- 1 sheet 36 in. by 3 in. by 1/4 in. balsa
- 1 length 12 in. by 3/4 in. by 1/4 in. plywood
- 2 in. length of 3/4 in. diameter hardwood dowel (or rounded matchstick)
- 18 in. length of 20 gauge piano wire
- 12 in. length of 2 gauge piano wire
- cup washer 20 gauge
- 1 pair 1 in. diameter plastic wheels
- Short length of neoprene tubing
- 6 in. length of 1/8 in. wide line tape or silk
- 18 in. thread
- 1 sheet lightweight tissue (2 colour for propeller)
- 1 sheet of 1/4 in. diameter K&K Kraft hardwood propeller
- Powder or paraffin wax (for pilot if fitted)
- Sheet of water-soluble transparent (registration) varnish
- 30 in. x 3/4 in. wide rubber strip
- 1 rubber tube lubricant
- 6 in. diameter K&K Kraft hardwood propeller
- 1 3 in. length approx. (rubber band)



Enlarge 143% to appear full size.