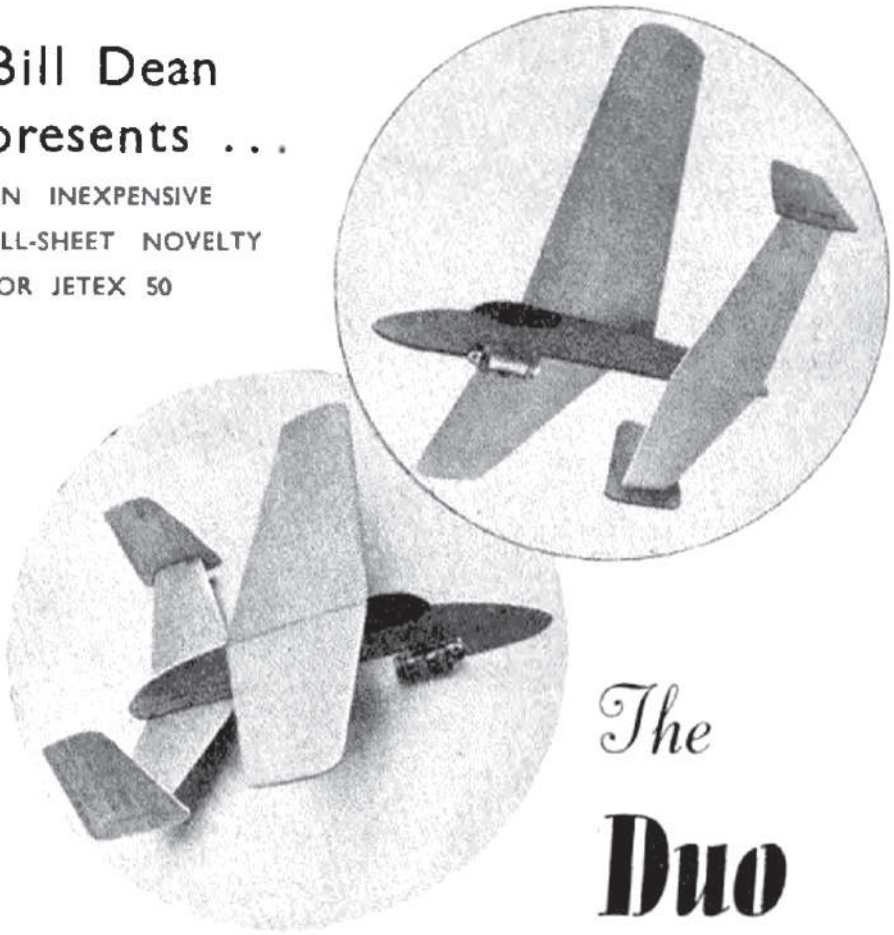
## Bill Dean presents . . .

AN INEXPENSIVE ALL-SHEET NOVELTY FOR JETEX 50



# *The* Duo Monoplane

GLANCING through the pages of a recent American aviation magazine, we came across an interesting article on Duo-Monoplanes -- those unusual aircraft that are something like a DeBolt Bipe, minus the tailplane ! We had never seen a model based on the Dual-Mono layout, so the decision was made to build a Jetex 50 powered version and see if they really worked. All-sheet construction was chosen for simplicity and the Jetex unit was shifted along the fuselage until the glide had been perfected. No alterations to the incidence settings were necessary and the model performed just as well as other more conventional designs that we had previously built. We were pleased to find that if the model happened to be climbing vertically when the charge expired, the stall recovery was remarkably good. Building time should not be more than two hours, so you need only set aside a short evening for this 15-in. span Jetex model.

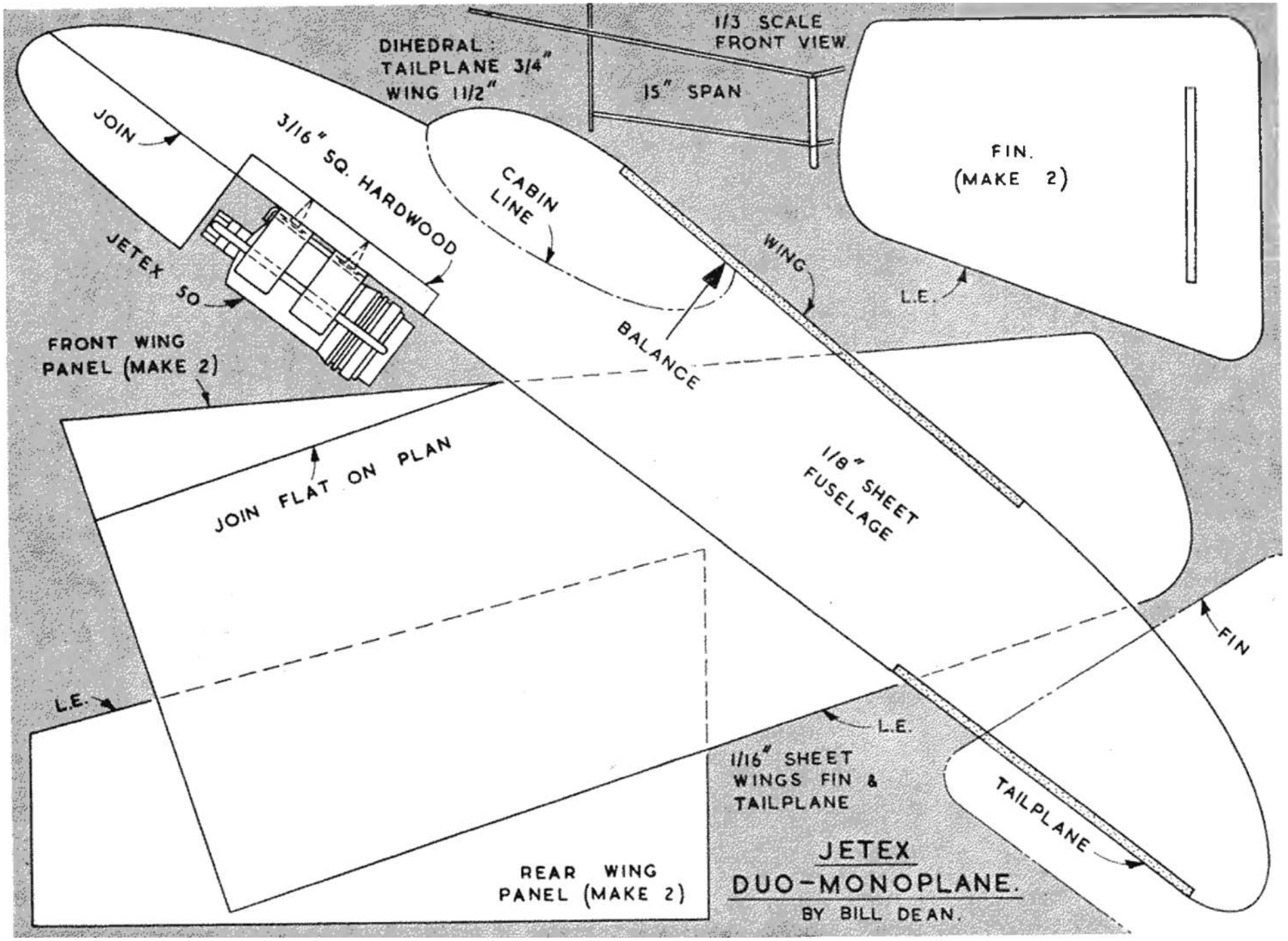
**Construction** The plans on the adjoining page are given full size, so the patterns may be transferred directly on to the balsa sheet by means of carbon paper. Choose light, strong 1/16 in. sheet for the flying surfaces and medium ⅛ in. for the fuselage. Taper the leading and trailing edges of the wings (on top) and join the panels at the indicated dihedral angles—pinning the left hand panels flat on the building board and cementing the right ones to them (propping up the latter with books). Notch the fins on to the rear wing and check that they are quite vertical.

Next cut the fuselage pieces from ⅛ in. sheet and join them flat on the plan. When dry, lift up and cement the 3/16 in. square hardwood motor mount in the notch provided. Carve away the front and upper corners of the motor mount so that it fairs into the fuselage. Round off the edges of the fuselage except at the wing positions. Screw the Jetex clip in position, making sure that it is lined up centrally. Attach the wings in the upper and lower notches, building up cement fairings on either side. Before the cement has had time to set, see that the wings are aligned correctly in the top and front views. Give the entire model a coat of banana oil, then check that the model balances at the point indicated (1 in. behind the L.E. of the front wing). A few drawing pins may be added to the nose to correct tail heaviness but if nose heavy, move the Jetex clip further back.

Keeping the weight down is all important with a Jetex-powered model, so any decoration should be applied sparingly. The cabin (see plan) may be filled in with black dope, but on no account colour dope the entire fuselage. All-up weight should not be more than one ounce.

**Trimming** Check the model to make certain that there are no warps, then clip in the loaded Jetex motor. Launched on a gentle downward path, the model should touch down some twenty feet away. Any suspicion of a stall must be trimmed out by adding weight to the nose or by twisting slight positive incidence into the rear wing panels. Make the model turn in either direction by warping the fins. Avoid flying over damp grass as these all-sheet models are prone to warping under these conditions—and this makes trimming extremely difficult.

Once the model is gliding well, light the fuse and as the thrust develops, launch at about the same speed as is usual with a rubber model. To get maximum height, the model must be trimmed into circling flight. Finally, put your name and address on the fuselage, as these little jobs frequently fly out of sight—even in the winter time.

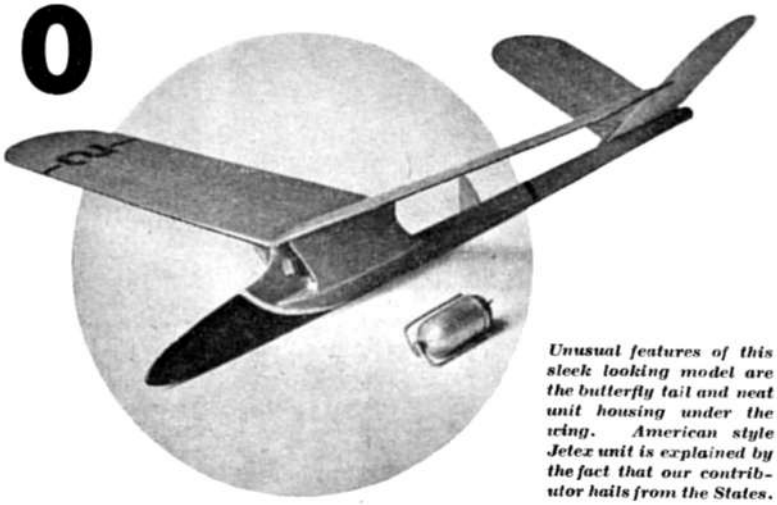

1/3 SCALE
FRONT VIEW.
DIHEDRAL :
TAILPLANE 3/4"
WING 1 1/2"
15" SPAN
JOIN
3/16" SQ. HARDWOOD
CABIN
LINE
FIN.
(MAKE 2)
JETEX 50
WING
L.E.
BALANCE
FRONT WING
PANEL (MAKE 2)
JOIN FLAT ON PLAN
1/8" SHEET
FUSELAGE
FIN
L.E.
L.E.
1/16" SHEET
WINGS FIN &
TAILPLANE
TAILPLANE
REAR WING
PANEL (MAKE 2)
JETEX
DUO-MONOPLANE.
BY BILL DEAN.

# FUEGO 50

## AN ALL-SHEET DESIGN FOR THE JETEX 50 UNIT

**BY**

**G. J. BLUMENTHAL**



***Unusual features of this sleek looking model are the butterfly tail and neat unit housing under the wing. American style Jetex unit is explained by the fact that our contributor hails from the States.***

SINCE my first Jetex job approximately a year ago, I have built about a dozen designs with varying degrees of success. I've tried big ones, small ones, bird wings, flying wings, conventional designs, etc. Finally, I believe I have reached a point where I know what is required in Jetex design. Because of the limited run on these small power plants, the plane must be fast in order to get any altitude. Therefore it must be small, and a small plane, in order to have a good glide, must be light. These considerations brought about the design presented here. Reading the article on Jetex design in the January AEROMODELLER, I found that the force set-up in my ship compared very favourably with that advocated in the article. The plane climbs rapidly to a good height and has a slow flat glide. The full size parts drawings and the all sheet construction will afford fast building.

### Construction

Sort out some light wood and trace the full size patterns directly on the balsa sheet with a pin or carbon paper. Be careful to note the grain direction. Cut a small hardwood block to size shown on the plans and screw the Jetex mount in place. Cement this unit into the $\frac{1}{8}$-inch engine platform.

Next, cut out the housing sides and cement them securely to each side of this platform, making sure they remain perpendicular. Trim the $\frac{1}{8}$-inch fuselage to a triangular cross section with the flat top, then cement the preceding assembly in place (see exploded drawing).

The wing is made next. Cut the wing halves from light $\frac{1}{16}$-inch sheet and sand them to a smooth airfoil taper. Breathe on the upper surface and gently bend in a slight undercamber the full length. Join the halves at the correct dihedral as shown on the front view and let them dry thoroughly. Next, cut two tailplanes from light $\frac{1}{32}$-inch quarter grain sheet. These too are cemented together at the dihedral shown. A length of thread cemented along the leading edge of the wing will prevent a number of small dents.

Cement the side braces to the fuselage, one on each side. These braces change the bending moment, preventing fracture of the boom upon impact. Attach the upper nose piece and centre brace and sand the entire nose smooth and round.

Cut a slight " V " in the centre brace to receive the wing and cement the wing in position. While the cement is drying, line up the wing from the front and top. The tail assembly is cemented in place next. Cut another " V " to receive it at the position shown and cement the assembly in place. Cut the tail fairing from $\frac{1}{8}$-inch scrap and cement it in position.

The original plane had two coats of thin orange anilin dyed dope, sanded lightly between. The nose was black with a thin chartreuse stripe. The air intakes were red. The model, when finished, should weigh no more than one ounce.

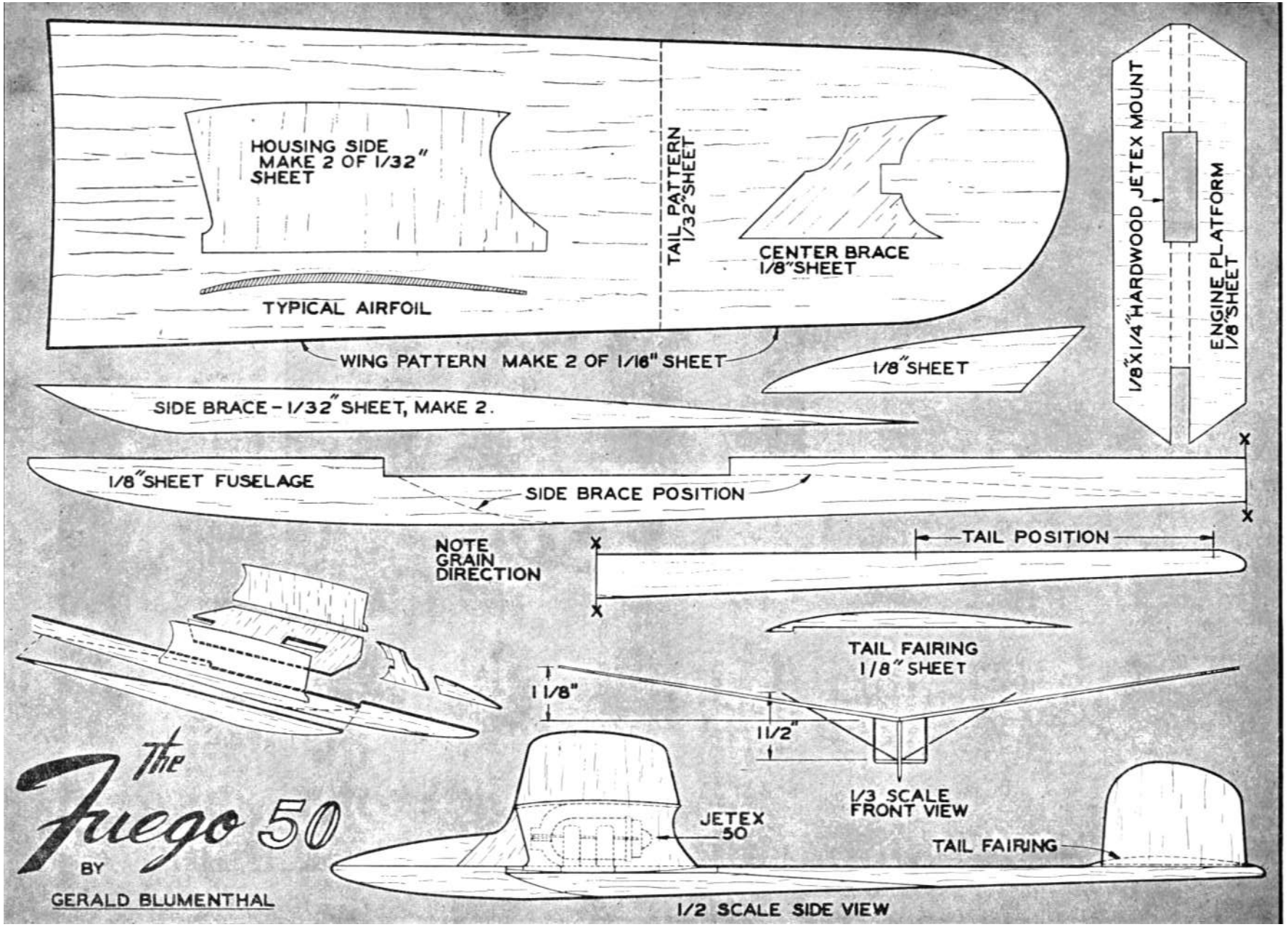
### Trimming

Look the model over carefully and make sure there aren't any warps. Slide the loaded Jetex motor into its bracket from the rear and give the model a few hand glides. Correct for stall or dive by adding modelling clay to the nose or tail respectively.

The orginal plane had a jet rudder of aluminium. To be effective, this rudder would have to be mounted very close to the exhaust nozzle. This would make access to the engine difficult, so it was omitted.

The ruddervators are trimmed like ailerons; *i.e.*, when one side is bent up the other side must be bent down.

Go out some nice afternoon and adjust the model for a gentle left turn. Light the fuse, launch, and get on your horse, because this job can really go.




# The Fuego 50

BY

GERALD BLUMENTHAL

**A PERFECT PAIR OF SIMPLE JETEX CONTEST DESIGNS WITH WINNING PERFORMANCE . . .**

# ARROW 50 & 100

by Ian Dowsett

**Aged 20 . . . Serving in the R.A.F. . . . Member West Middlesex Club . . . In British Wakefield team 1951 . . . Main interest is in Wakefields . . . Other hobbies, Athletics and Table Tennis.**

HERE'S a quickie for your Jetex, whether it be a " 50 " or a " 100 ". Ian Dowsett, whose connections with Jetex activities have already gained renown, designed this pair of models for contest work in the 1951/52 season—not without success. The Arrow 100 gained the following places :—

1st, R.A.F. Championship, 1951, with 2 flight total of 7 mins. 47 secs., all on a 12 second power run.

1st, Southern Counties Rally, 1951, with a 2 flight ratios of 13 : 1 and 8 : 1.

Best flight to date with this model is 18 minutes o.o.s., a good figure for any size of model, let alone this rather small job.

The baby version, for the Jetex 50, has the amazingly short building time of 3 hours, Ian Dowsett tells us, and its performance is parallel to its bigger brother. Full size plans are printed overleaf so why not pull out the board and try this one for your Jetex unit. The plans for the 100 Arrow can be obtained in the usual way through Aeromodeller Plans Service, price 3/- post free.

## Construction

Since the models are similar in construction, the same building assembly applies to each of them, and it is best to start with the fuselage. Cut the side view from 1/32 in. sheet and add the centre lamination for the pylon mounting. When this is set, remove from the plan and cut out the top elevations of the fuselage, then fit these on to the side keel. Small formers of triangular shape are then added and the respective mounting clips fitted in the correct position, screwed into $\frac{1}{8}$ sq. blocks.

The sheet fin is then cut out and cemented in place, whilst sundry pins for wing retaining and dethermaliser action can now be fitted and the whole fuselage covered in lightweight Modelspan and given a couple of coats of dope.

The wing and tailplane structures are very conventional and need little explanation. The wings should be built in one piece, flat, on to the building board, and then cracked up in stages for the dihedral angles. Care should be taken that the flat plate tailplane is covered without uneven tension and is not allowed to warp out of true.

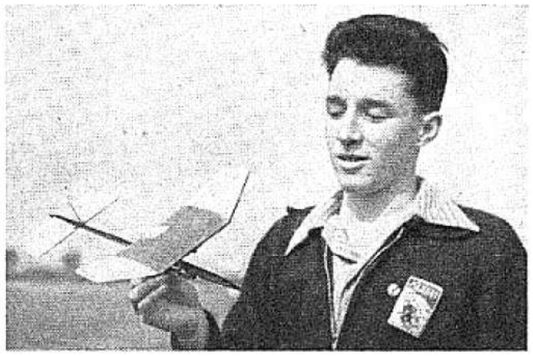
The tail is retained in place by an elastic band passing through the hole at the extremity of the fuselage and hooked on to the underneath of the leading edge. This will naturally pull the tail down to the " tip-down " dethermaliser position, and to keep the tailplane in its flying attitude, a length of thread is tied to the leading edge hook and this is pulled forward by an elastic band to the hooks underneath the fuselage. This elastic band is burned through by the d/t fuse and so allows the tail to tip down.

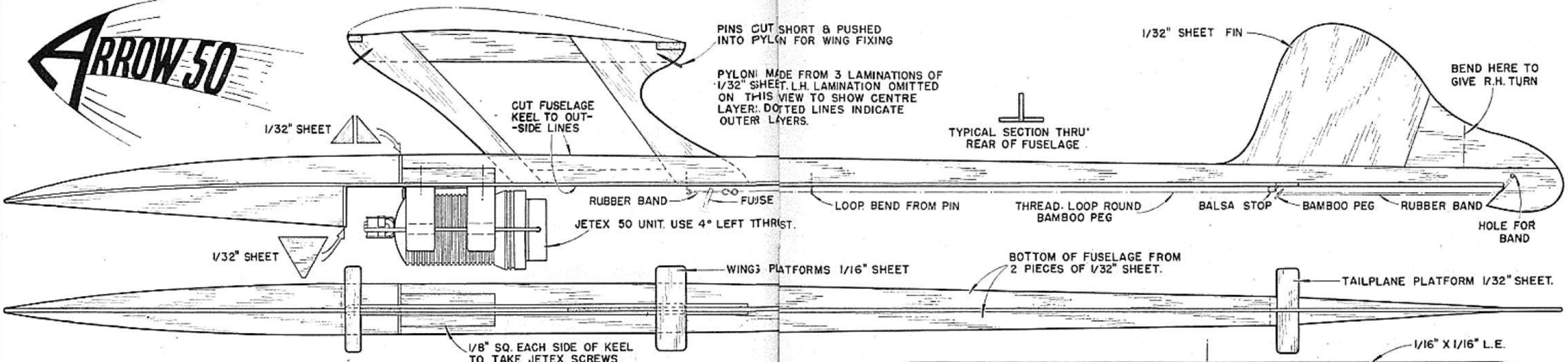
Flying the " Arrow " is simplicity itself. 8° port sidethrust was used for 100, & 4° for 50 prototypes and this was combined with offset rudder against the motor side thrust. The result is a dead straight climb under power and a nice right hand glide off the top. Test glide on a calm day, into wind, and over long grass, since it should be remembered that this is an ultra light-weight job. All trimming should be made to the tailplane and all test glides with *empty* Jetex units.

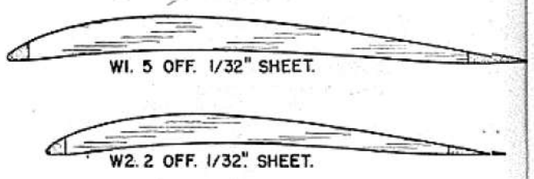
*Materials List* :—

| | |
|---|---|
| 1 Sheet $\frac{1}{32} \times 3 \times 18$ | 1 Sheet lightweight Modelspan |
| 1 Strip $\frac{1}{8} \times \frac{1}{8} \times 18$ | 1 oz. bottle dope |
| 1 Strip $\frac{3}{8} \times \frac{3}{32} \times 18$ | 1 tube cement |
| 1 Strip $\frac{1}{4} \times \frac{1}{16} \times 18$ | 1 Jetex 50 |
| 1 Strip $\frac{1}{16} \times \frac{1}{16} \times 36$ | |

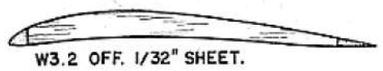
# ARROW 50

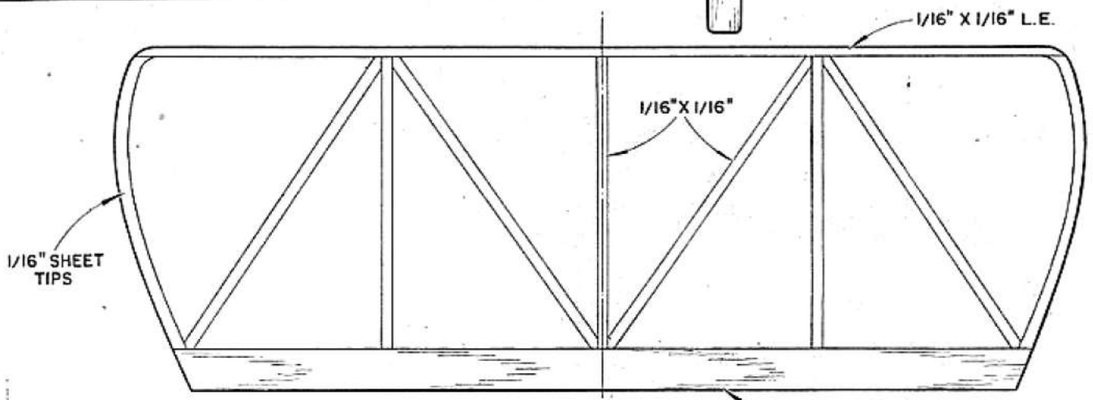


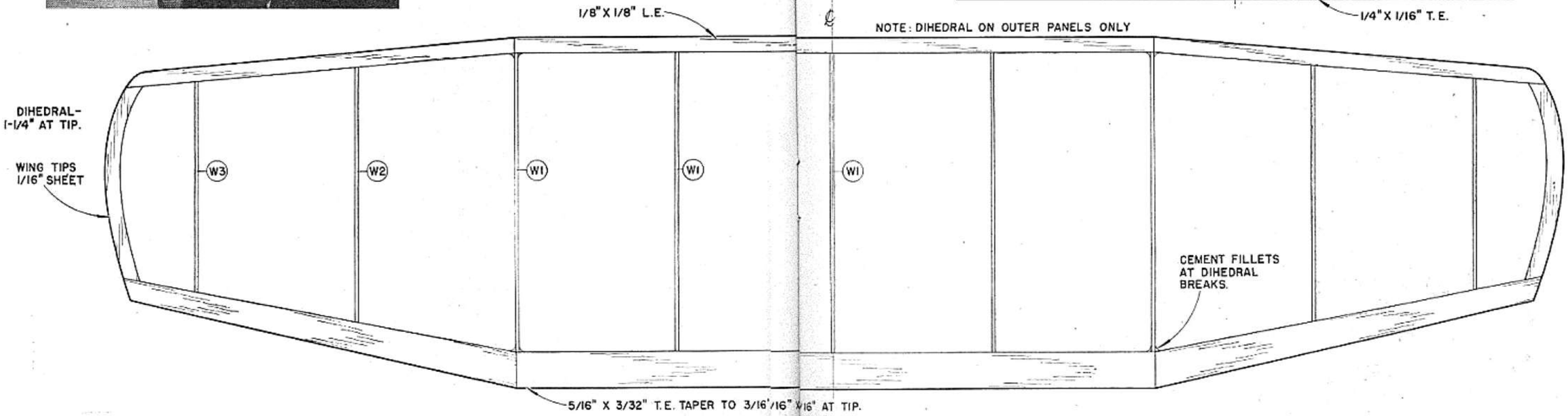

PINS CUT SHORT & PUSHED INTO PYLON FOR WING FIXING
PYLON MADE FROM 3 LAMINATIONS OF 1/32" SHEET. L.H. LAMINATION OMITTED ON THIS VIEW TO SHOW CENTRE LAYER. DOTTED LINES INDICATE OUTER LAYERS.
1/32" SHEET FIN
BEND HERE TO GIVE R.H. TURN
CUT FUSELAGE KEEL TO OUT--SIDE LINES
1/32" SHEET
TYPICAL SECTION THRU' REAR OF FUSELAGE
RUBBER BAND
FUSE
JETEX 50 UNIT. USE 4° LEFT THRUST.
LOOP BEND FROM PIN
THREAD- LOOP ROUND BAMBOO PEG
BALSA STOP
BAMBOO PEG
RUBBER BAND
HOLE FOR BAND
1/32" SHEET
WING PLATFORMS 1/16" SHEET
BOTTOM OF FUSELAGE FROM 2 PIECES OF 1/32" SHEET.
TAILPLANE PLATFORM 1/32" SHEET.
1/8" SQ. EACH SIDE OF KEEL TO TAKE JETEX SCREWS

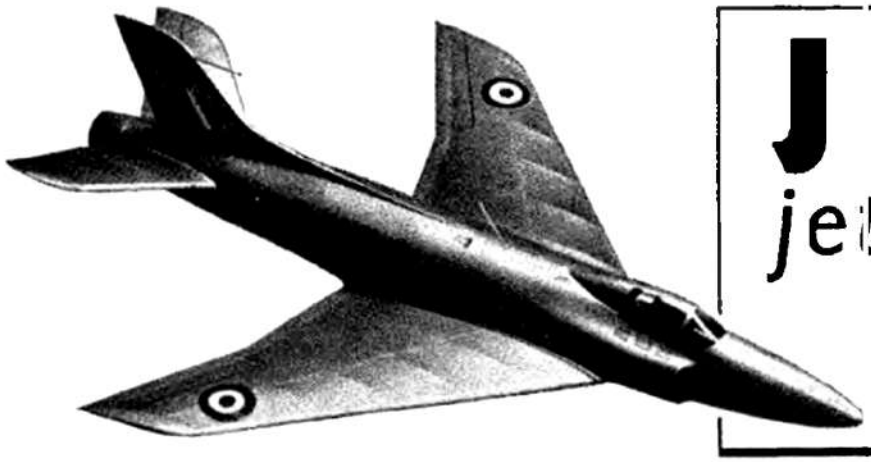

W1. 5 OFF. 1/32" SHEET.


W2. 2 OFF. 1/32" SHEET.


W3. 2 OFF. 1/32" SHEET.

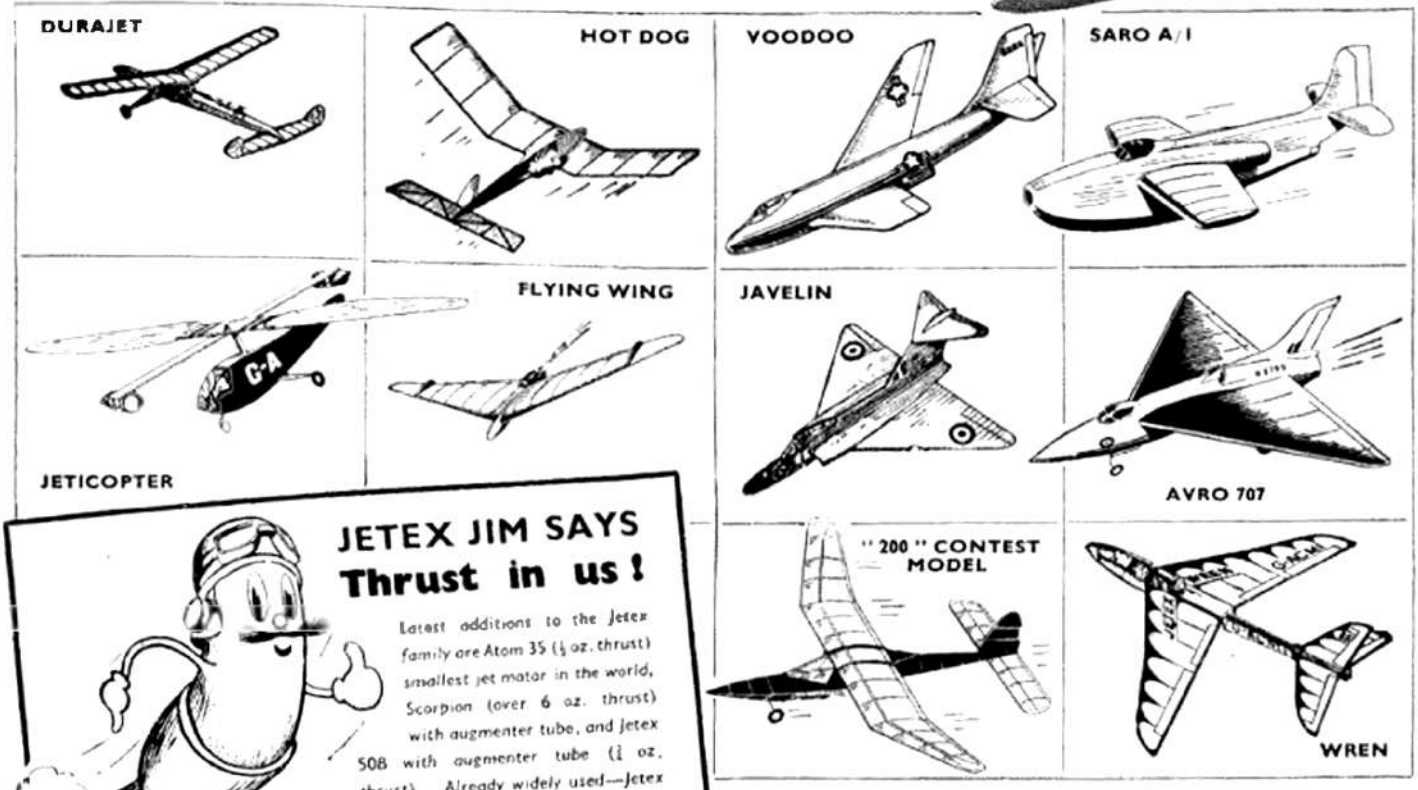

1/16" X 1/16" L.E.
1/16" X 1/16"
1/16" SHEET TIPS
1/4" X 1/16" T. E.


1/8" X 1/8" L.E.
NOTE: DIHEDRAL ON OUTER PANELS ONLY
DIHEDRAL- 1-1/4" AT TIP.
WING TIPS 1/16" SHEET
W3
W2
W1
W1
W1
CEMENT FILLETS AT DIHEDRAL BREAKS.
5/16" X 3/32" T.E. TAPER TO 3/16" X 1/16" AT TIP.



# JETEX
## *jet propelled*
# KITS

# The most beautifully designed models in the air




## JETEX JIM SAYS
## Thrust in us!

Latest additions to the Jetex family are Atom 35 (⅛ oz. thrust) smallest jet motor in the world, Scorpion (over 6 oz. thrust) with augmenter tube, and Jetex 508 with augmenter tube (1 oz. thrust). Already widely used—Jetex 50 (¼ oz. thrust). Jetex 100 (1 oz thrust), Jetex 200 (2 oz. thrust), Jetex 350 (3½ to 4 oz. thrust) and Jet Master with augmenter tube (4½–5 oz. thrust)

**STOP PRESS:**
All Britain Rally postponed to September 20th. More time to enter Jetex Ratio-Duration Contest and win £20 and trophy. Contest at Radlett Aerodrome, Herts —sponsored by St. Albans Model Aircraft Club. Write for entry form.

The Jetex range of jet-propelled kits is the greatest anywhere, with the accent on quality; quality of design, quality of materials and flyability. Ask your model shop for leaflets describing complete range of models and motors.

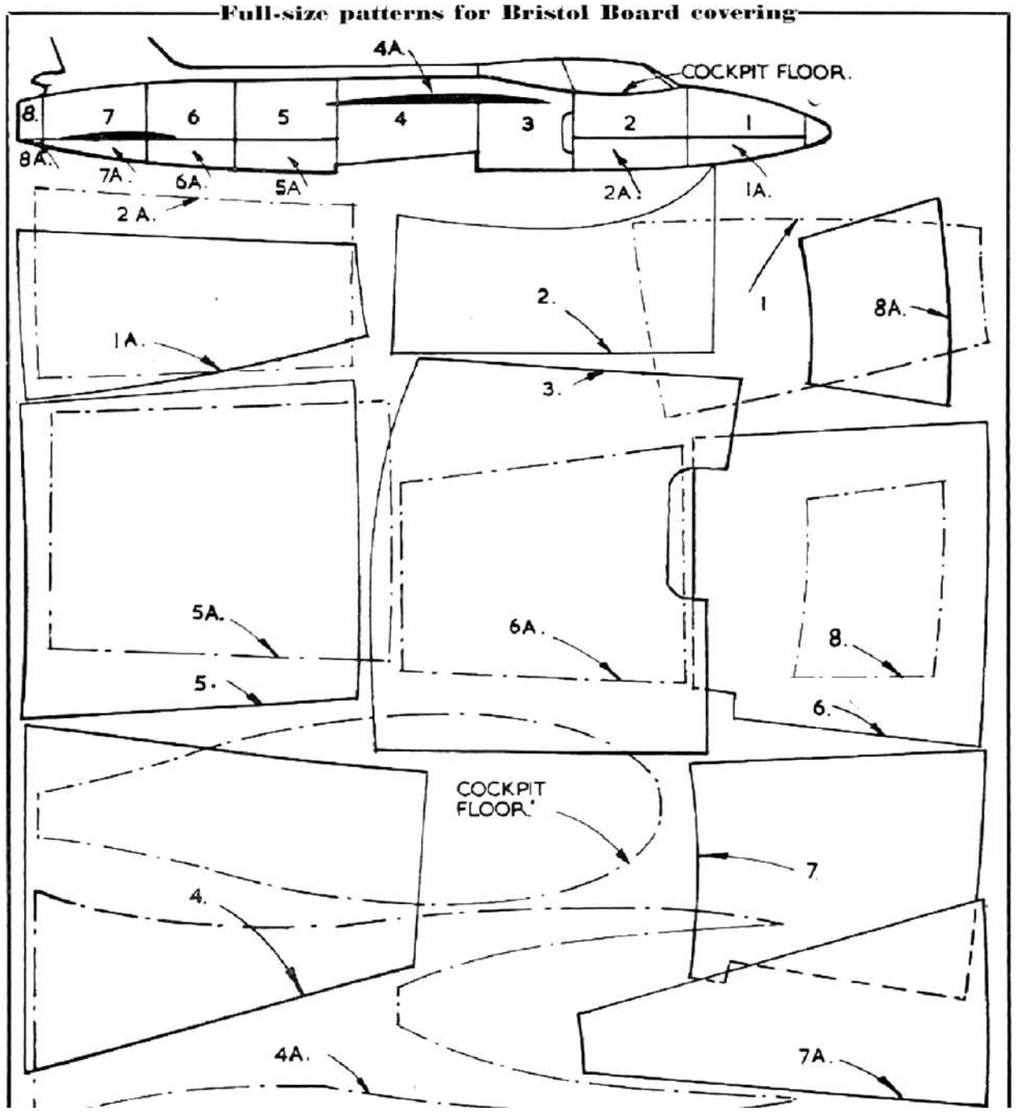
**WILMOT MANSOUR & CO. LTD.,**
SALISBURY ROAD, TOTTON,
HANTS.

**JETEX JET MOTORS OUTDATE EVERY OTHER FORM OF MODEL PROPULSION**


# A model MIDGE

**Build this 1/24th scale model of the Folland fighter for Jetex 50, or 100, unit. Simple construction with sheet surfaces and card fuselage covering make it a robust high-speed sport flier– by JOHN DARNELL**

**Full-size patterns for Bristol Board covering**




THERE'S NO doubt about it—the Midge is a "winner" from all angles and as the star of the 1954 Farnborough Air Display, it has already gained great repute though still but a few months old. A preview of John Enoch's concise and very accurate drawing of the Midge and Gnat which was featured as his "Aeroplane in Outline" last month, enabled John Darnell to get one step ahead of "AEROMODELLER" readers and to start on his flying version. John builds at the rate of several models per month, he is one of our chief kit tester's and his total production to date runs into hundreds of designs. But all of his experience was sorely tried in devising a means to reproduce the gracious curves created by Mr. Petter of Follands. Lightness and smoothness of line is difficult to achieve in a model this size—the Jetex "Tailored" kits with pressed fuselage sides being the ideal, and only real answer. After experiment with balsa sheet, which would not take the double curvature, John tried Bristol Board in panels similar to the covering of the full-size aircraft, and the result exceeded expectations. All-up weight of the final model, including an augmented Jetex 50b, and generous coating of Belco Delft Blue, was no more than 2¼ ounces, and the appearance, as these photographs show, is commendably realistic.

A 50b unit was used in the original, and slight ballast needed for trim in the nose. A larger unit will undoubtedly provide an even more sparkling performance but will still require a swift launch after waiting for thrust to build up.

Ready to start? Here's what you will need:

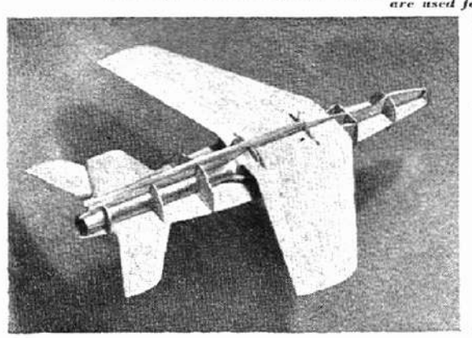
One sheet ⅛ × 3 × 36 in. Medium Balsa
One sheet ⅛ × 4 × 18 in. Medium Balsa
One sheet 18 × 18 × "thin" Bristol Board
One strip ¼ × ¼ × 12 in. Balsa
One Bubble Hood or celluloid to mould same.
Cement, Delft Blue and Red dope.

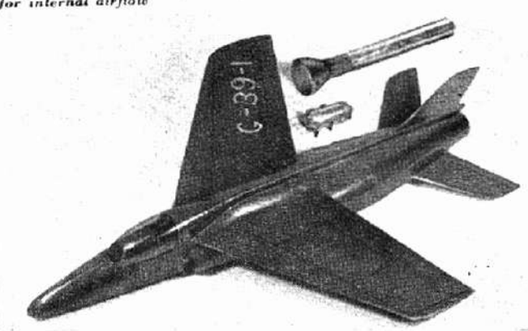
Not much is it? Start by cutting out the vertical keel with cutaway for augmenter tube. Add the half formers on one side, then the augmenter tube, and the other half formers. Fill in with the ⅛ side keel pieces, and set aside to dry while shaping the wing. Sand this to a lifting type section, then seat on the fuselage and prepare the tail surfaces.

Fit the tailplane on the horizontal keel, ensuring that it is at neutral, then add the fin and ¼ square fuselage spine with its tail end fillet. The job now resembles the lower left photo, and is ready for covering. If you dislike the idea of Bristol Board, then stringers are a less realistic but effective substitute. Card patterns, drawn slightly oversize for slight building error allowance, are shown opposite and are arranged to butt join over the formers.

Fit a commercial canopy of nearest size or mould a scale one as described on page 134, and after filling the cracks in covering with a mixture of talc and dope, colour Delft Blue with Red letters.

*Upper Opposite: Underside, with 50b on opened hatch and Jetex box displayed for size comparison. Above: Designer and his Midge, he need not have looked apprehensive—the tests were quite safe and satisfactory! Below left: Uncovered frame before card covering. Right: The finished job and power unit. Scale air intakes are used for internal airflow*






**Full-size plans overleaf**

1/16 = 15/10

1/16" SHEET LET IN UP TO F3. TO FORM TOP VIEW SHAPE.

MIDGE COLOUR SCHEME: HIGH GLOSS NORDIC BLUE, WITH SCARLET SYMBOLS.

BRISTOL BOARD COVERING.

BLOCK EACH SIDE OF KEEL.

HATCH CATCH.

F5 JETEX CLIP RIVETED TO 1MM. PLY.

F4.

F3.

F2.

F1.

LINE OF CANOPY.

CELLULOID CANOPY.

3/16" SHEET.

3/16 = 50/10

1/16" SHEET AIR SCOOP.

SILK HINGE.

END OF CANOPY.

SCRAP BLOCK.

F2.

F2.

1/16" SHEET LET IN. 1/16 = 15/10

F5.

F6.

F7.

POSITION OF TAILPLANE.

POSITION OF WING ROOT.

F8.

LINE OF INTAKE.

F3.

INDIAN INK MARKINGS.

JETEX 50 B.

F4.

1/16 = 15/10

TAILPLANE 1/16 SHEET

3/16 = 50/10

3/16" SHEET.

HATCH FROM BLOCK.

L.E.

AUGMENTER TUBE.

3/16" SQ.

3/16 = 50/10

TOP FAIRING LINE.

F4.

F 8.

FIN 1/16" SHEET.

VIEW OF TAILPIPE.

ALL FORMERS FROM 1/16" SHEET.

1/16 = 15/10

1/16" SHEET.

F 7.

POSITION OF CANOPY.

1/8 = 30/10

WING 1/8" SHEET CEMENT AT CENTRE (NO DIHEDRAL.)

POSITION OF TAILPLANE.

INDIAN INK OUTLINES.

F1.

SKETCH SHOWING 1/16" SHEET KEEL.

CUT AWAY AFTER ASSEMBLY.

CUT FOR AUGMENTER TUBE.

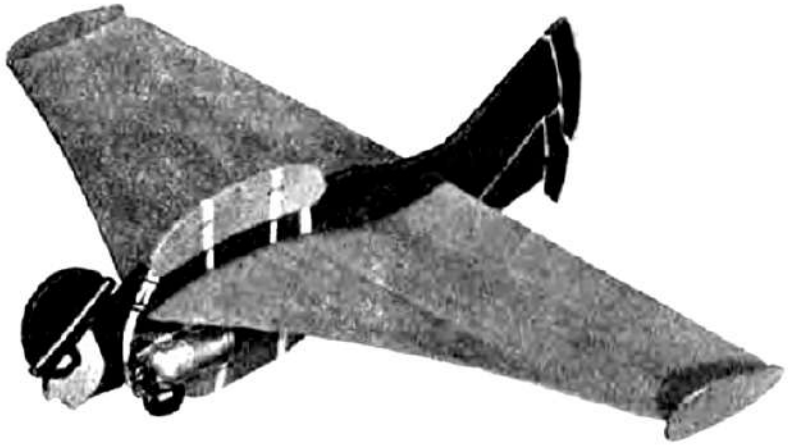
F6.

F5.

F3.

F5.

F6.



Half a sheet of 1/8 and a sheet of 1/16 Balsa—a Jetex 35 or 50, cement and dope are all you need for this novel scale flier.

## *The Intrepid Birdman from France*

# Monsieur LEO VALENTIN

### *"It's by that man* RAY MALMSTROM *again"*

WE SUPPOSE it is true to say that Leo Valentin, the French birdman leads a somewhat up and down existence. Up in an aeroplane and then down on his wooden wings and a parachute or two. It is also true that such a game needs courage of a very high order, and there must be many of us who would go a long way in order to see this intrepid son of France do his stuff. However, there may be few opportunities of seeing an actual demonstration by Leo himself. But here is a model of him, which when you see it soaring around in the blue, will not only give you a very true impression of Leo himself on the wing, but will also intrigue you by its flying ability. Be the first in your group to fly a "Leo Valentin", He's an eye-catcher believe us. Even fuel-soaked digit-twisted, power bods have been known to look up with interest when Leo was above them, cheerily breasting the upper air!

**Just cut out, paint and fly!**

There is no sense in telling you how to build him. He's too easy for the old "sheet of instructions" lark. Just cut him out of sheet, adding the hard-wood block, drilled ready for the screws of the Jetex 50 clip. Cut out his wings, slip them through the slot and cement. Add the wing tips, balance by modelling plasticine onto his helmet (it even makes the helmet look more realistic!) and Voila! Leo is ready. Decorate him either with a ball point pen (ultra-quick method) or for a real effect, paint him with poster or powder colours (suggested colours are shown on the plan) using these with as little water as possible. Then when absolutely dry, give a coat of thin, clear dope, putting it on quickly with a really soft large brush.

When Leo lands on his chest on concrete or gravel, he says it makes him feel sore (! !), so please choose some soft grass for test gliding. Providing the balance point is correct, as shown on plan, the glide from shoulder height, should be long and shallow. Due to the weight and thrust of the offset Jetex 50, Leo may bank rather steeply on his first powered flight, probably to the left. Stick a small spot of plasticine onto the outer part of the opposite wing to correct this. Actually, a steep bank in either direction can easily be corrected this way. If he stalls add a little weight to his helmet. If he fails to climb and seems nose (sorry—head!) heavy take some plasticine off. Well thats your lot! Take if from the lads who have watched the original Leo—he really is fun to fly. So build him carefully, keeping him as light as possible and you're all set for some flying fun that is *DIFFERENT*. Vive Leo Valentin! Vive La France! !

WING TIPS: 1/16" SHEET 2 OFF.

RED.

BLACK

BLACK

DARK BLUE.

CUT OUT WING SLOT.

BODY: MEDIUM 1/8" SHEET.

WHITE

YELLOW

RED.

PUSH PIN IN WHERE SHOWN, SUSPEND MODEL ON PIECE OF COTTON, WITH UNLOADED '50'

BALANCE POINT.

HELMET TO OBTAIN CORRECT BALANCE

YELLOW

YELLOW

GREY OR BLACK.

BROWN.

OCHRE.

BLUE.

HARDWOOD BLOCK.

BLACK.

BROWN.

CUT OUT BODY FROM SHEET AND CEMENT ON HARDWOOD BLOCK.

DRILL SMALL SCREW HOLES

TOP OF WING: RED

SHEET JOINED HERE.

BOTTOM: NATURAL WOOD

SLIDE WING INTO SLOT AND CEMENT, CHECK FOR CORRECT ALIGNMENT, ADD WING TIPS AND SCREW ON JETEX '50' CLIP.

TRACE DRAWING OF ARM ONTO UNDERSIDE OF WINGS ONLY.

NOTE GRAIN DIRECTION.

BUTT 2 PIECES OF 3" X 1/16" SHEET TOGETHER AND TRACE ON SHAPE OF WING AND CUT OUT

WINGS: SOFT 1/16" SHEET.

THIS PORTION MAY BE PAINTED BLACK BUT DO NOT CUT AWAY.

WEIGHT:
WITH UNLOADED JETEX '50'
APPROX:
1/2 – 3/4 OZ.

# MON. LEO VALENTIN —

*Assisted aloft by a JETEX 50*

*FRANCE'S FAMOUS BIRDMAN*