

McFRAUD

TIMBER LIST FOR MOTH

BY JIM FRENCH

— Moths have to be light to be competitive, therefore top quality light timbers must be used throughout.

— WESTERN RED CEDAR (or similar timber)

Noseblock - 1m ~~25~~ x 60mm
Strongback Framing - 10m x 28 x 10mm
Framing - ~~30~~ 10 x 10mm
No. 1 frame (bow) - 1m 10 x 70mm
C/plate case framing - 3m 20 x 20mm
Chines - 4 off - 3.5m 25 x 12mm
Gunwale - 2 off - 3.5m 20 x 12mm
Mast strut - 1.5m 40 x 10mm

— STRINGERS use clear Oregon (or similar timber)

Bottom - 5 off 3.5m 20 x 10mm
Deck - 2 off 1.5m 20 x 10mm
- 4 off 1.0m 20 x 10mm
2 off 10 x 10mm 1.3m

— PLY WOOD must be top quality marine ply.

Decks 3 sheets 1800 x 900 x 1.5mm + Strongback
Sides 2 sheets 1800 x 900 x 2.5mm or 1.5mm if vertical
Bottom, frames, ~~strongback~~, and cockpit (usually S.W.P. grain
Klinki) 4 sheets 2400 x 1200 x 3mm

BUILDING INSTRUCTIONS FOR MOTH

BY JIM FRENCH

BUILDING REQUIREMENTS

- Two saw stools.
- Two pieces of dry, straight, timber approx. 150x50x3500mm.
- 10m 35x20mm straight timber for top of frames.
- A very good stapler with a good range and supply of staples from 5-13mm in length.
- A spacious flat, dry working area.
- A good range of wood-working tools, patience and moderate skill.

BUILDING THE HULL

The frames and strongback are marked out using the ~~table of offsets~~ *hull air sheet.* on the ply (2400x1200x3mm) making sure that there is not much waste. The frames are drawn so that the datum line is the top of the frame (see fig. 1). Two sheets can be used making sure that a square 1.5x1.0 metres is left for the cockpit.

The strongback is made of two halves, joining over the centreplate case thus making a slot. ~~Forward of the centreplate case is gusseted as per plan.~~

Frame No. 1 being of timber (1m 10x70mm) must be sandwiched in ply so that the datum line is the same as for the other frames. (see fig. 2)

Care should be taken to put centre lines and frame spacings on frames and strongback respectively.

Cut out frames and strongback (strongback is final shape, needs no datum line on it) and plane up to dimensions, noting that all frames have radius curved bottoms as per plan.

The framing material (28x10mm) is used to frame the strongback as per plan. Centre case top and bottom framing (20x20mm) is now glued on, and before the two halves of the strongback are joined, two coats of varnish should be given to the centre case insides. A block should be glued in the nose of the strongback to take the forestay tang. ~~Ply gussets should be glued to all joints forward of centre case, as per plan.~~

The frames can now be strengthened with their framing material (10x10mm). No. 2 frame is framed as per plan, making sure, as with all other frames, that the bottom strut is 20mm up from bottom as to accommodate stringers. The vertical struts are positioned so that they are above the stringers, which are equally spaced in the bottom panel. The side struts to accommodate chines can be done as per plan (see fig. 3).

No. 3 frame has be be framed both sides as to accommodate both fore-deck and cockpit areas (see fig. 4).

The transom can be framed around edges with 28x10mm strongback framing material, so that stringers and chines can be cut in. A block of 3x3mm ply thick by 70mm wide can be glued in centre of frame as to accommodate rudder pintle, and framing 10x10mm can be bent to form cockpit floor on frame. (see fig. 5).

With frames and strongback framed, holes can be cut in frames as per plan. Be careful not to go too close to edges (closest 30mm).

The 35x20mm timber can be stapled to top of frames.

The building jig can now be assembled, placing the stools 2 metres apart, (approx.) and the planks of timber about 800mm apart on stools.

It is absolutely essential that this jig is level across wise, and secured so that it cannot move. A twisted hull will occur if these requirements are not met; extra bracing may be needed.

Mark on the planks the frame spacing and put a centre string line down the centre.

The frames can now be skew nailed on to the jig lining up the centre line and frame spacing. Note No. 1 frame's back side is ~~25~~mm from tip of bow, (a ~~25~~mm noseblock goes on later).

Cut a slot out of frames, 2,3,4, and 5 to accommodate strongback and slide strongback in using 10x10mm pieces each side of frame for glueing onto. Also fix bow and ~~transom~~ frames to strongback.

Stringers and chines can now be cut and glued in, making sure that the stringers end flush with the frame bottoms, and the chine's centre line is at the intersection of the two sides (see fig. 6).

A centre line should be put on all chines as this makes fairing up easier.

The hull can now be faired up, being careful not to plane too much off.

The ply gussets can now be glued in, both sides on every strut going to stringers as well as on the top chine (see fig. 7 and plan).

Hollows should be planed in between stringers and chines to allow water to be drained easily (see plan).

The sides can be scarfed up planing a 10:1 scarf for the join. (i.e. 3mm ply - 30mm scarf).

! This 900x3600 sheet can now be cut into (4) 225mm strips.

The bottom side panel (225x3600mm) can now be glued on, fitting and trimming down the size slightly bigger than needed, before glueing.

Strips must be cut of scrap ply about 12mm wide so that staples cannot leave a mark on ply. This applies to all staples that are put in the hull.

Putting this panel on first, stabilizes chines, care must be taken to ensure any unfair curves are not glued in, between frames. Small struts can prevent chines sagging or moving.

Remove all staples and plane up flush with chines.

The bottom can now be glued together using two 2400x1200x3mm sheets. The grain should be placed straight across the boat for maximum strength, so if each sheet is cut in half, and using three of these halves, a sheet 3600x1200x3mm will be made with grain running straight across. These sheets should be scarfed as mentioned before. (note that the half sheet left over can be used for something else).

This 3600x1200x3mm sheet should be cut in half longways so that two 3600x~~600~~mm sheets are made. These sheets should be fitted and glued on

bottom one side at a time (join should be on centre line down middle of strong-back).

The topsides can now be glued on in the same fashion as the bottom side panel, and when dry all staples should be removed and hull planed off.

The hull can now be taken off the jig and turned right side up.

The sheer line and deck areas can be faired up carefully, glueing in chain place re-inforcing wing blocks, mast strut and cockpit stringers, (as per plan). Mast strut can be curved on top to incorporate deck (see fig. 8).

Coat inside of hull at least twice with a good wood preservative.

The hull should be levelled up so that there is no twist before decks are fitted, and cannot move from this position.

All decks should be given at least two coats of wood preservative underneath, before glueing on hull.

Foredecks can be glued on with join down the centre using two sheets of 1800x900x1.5mm ply.

Offcut from foredeck can now be glued in forward cockpit as per plan, after scarf has been planed on aft edge to accommodate cockpit ply (see fig. 9).

Cockpit can now be glued on as per plan (see fig. 9).

Aft cockpit can now be glued on using one sheet of 1800x900x1.5mm ply, as per plan, (see fig. 9).

Noseblock can now be glued on.

Hull can now be cleaned up and sanded ready for painting and varnishing.

CENTRE PLATE AND RUDDER

The centre plate and rudder should be made of hardwood, or oregon or similarly stiff durable timber.

Approx. dimensions:

Centre plate	1300x250x25mm
Dagger Rudder	850x170x18mm

Rudder box (dagger type) can be made of wood or aluminium (see fig. 10).

The top rudder pintle can be incorporated in the hull by the addition of a beam 30mmx20mm on the flat, across the transom, or a stainless steel tripod.

BUILDING NOTES

Epoxy glue is recommended for all glueing, but any waterproof glue will do. (3 litres required).

An epoxy coating instead of varnish can be used inside the hull. This seals out moisture better than varnish, and can be glued on to, if painted under decks.

The availability of masts, booms, wings, and all other accessories as well as any other information that may be required, can be obtained from the Moth Class Association in your State, or plan distributor.

BOTTOM PLY:

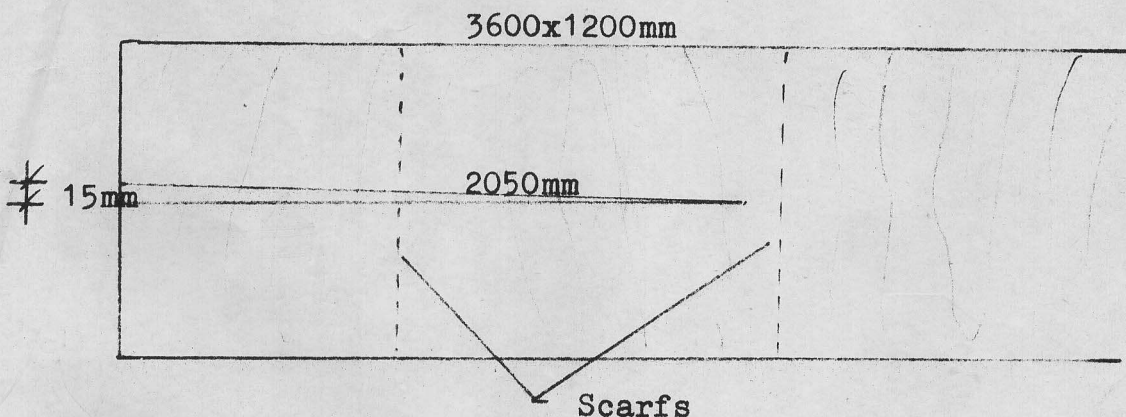
To make a stronger and better job of the bottom, the ply can be put on in one single sheet instead of two halves.

The plan says; - "This 3600x1200x3mm sheet should be cut in half longways, so that two 3600x600mm sheets are made."

Instead of this, it should be cut from the transom end, to the forward side of the centre plate slot, (about 2050mm), leaving the forward section intact.

A wedge should be cut 15mm wide at transom end, to nothing at the centre case end.

The bottom ply will now go on easily in one sheet, and will be much stronger under forward sections.



STRONGBACK:

Make the strongback out of the offcuts from the 1.5mm decks, and strut as per plan.

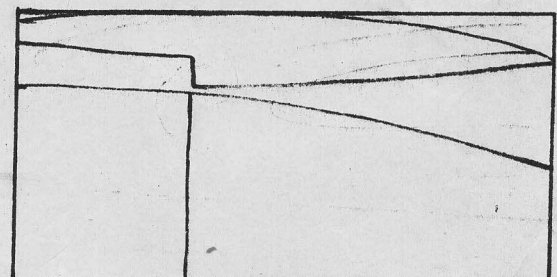
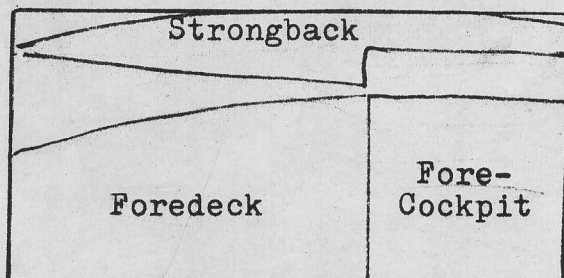
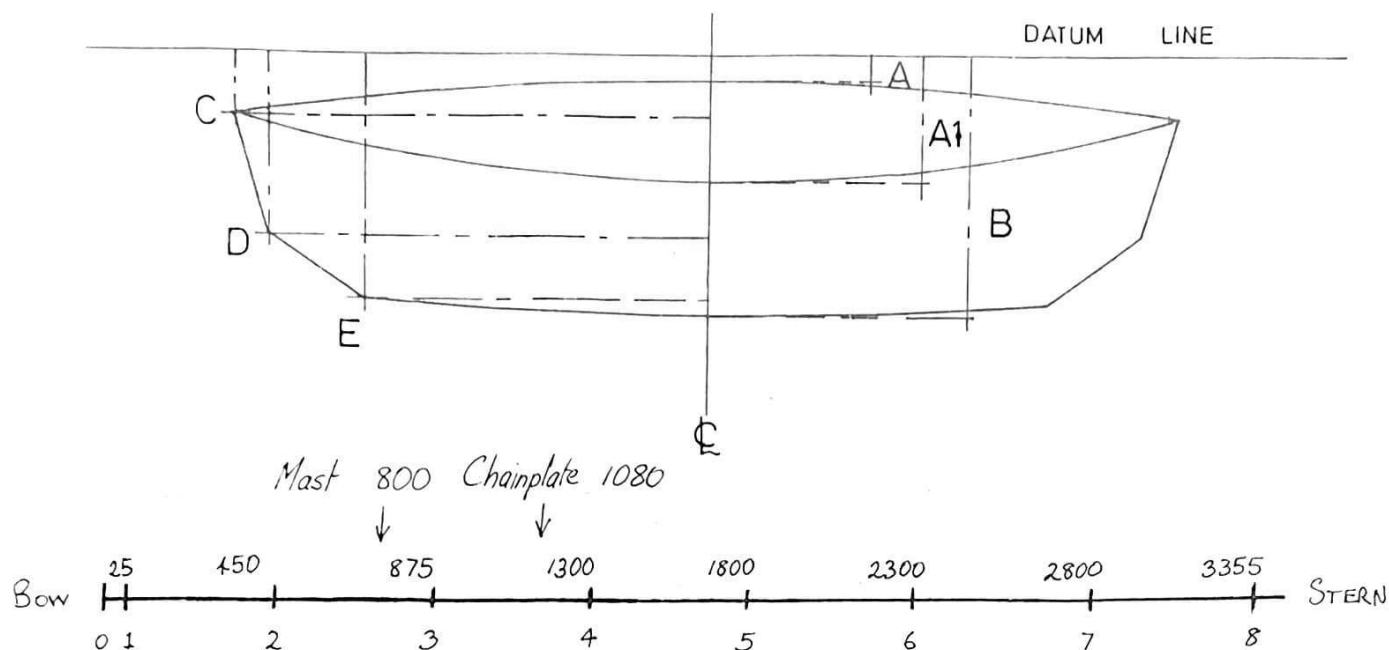


TABLE OF OFFSETS

DESIGN :

I. WARD.

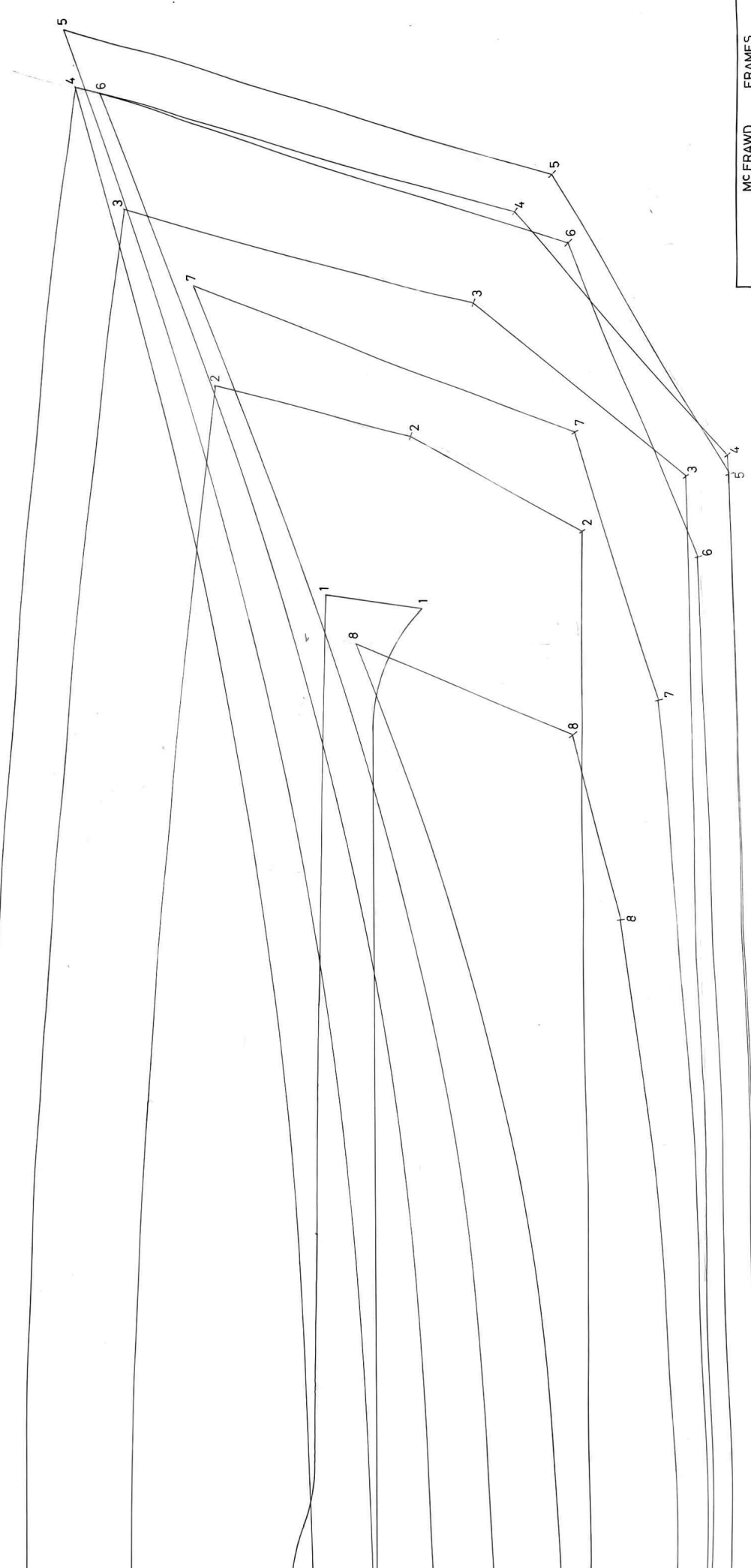
M^cFrawd.



	1	2	3	4	5	6	7	8
A	170	101	55	32				
A1				180	206	232	258	287
A	¢	¢	¢	¢	¢	¢	¢	¢
B	207	299	352	372	373	361	350	337
B	¢	¢	¢	¢	¢	¢	¢	¢
C	187	139	100	79	74	90	130	200
C	432	522	597	650	675	647	564	410
D	188	224	251	269	285	292	295	295
D	232	500	557	596	612	582	501	370
E	229	299	343	361	362	348	332	315
E	426	459	482	491	483	447	385	289

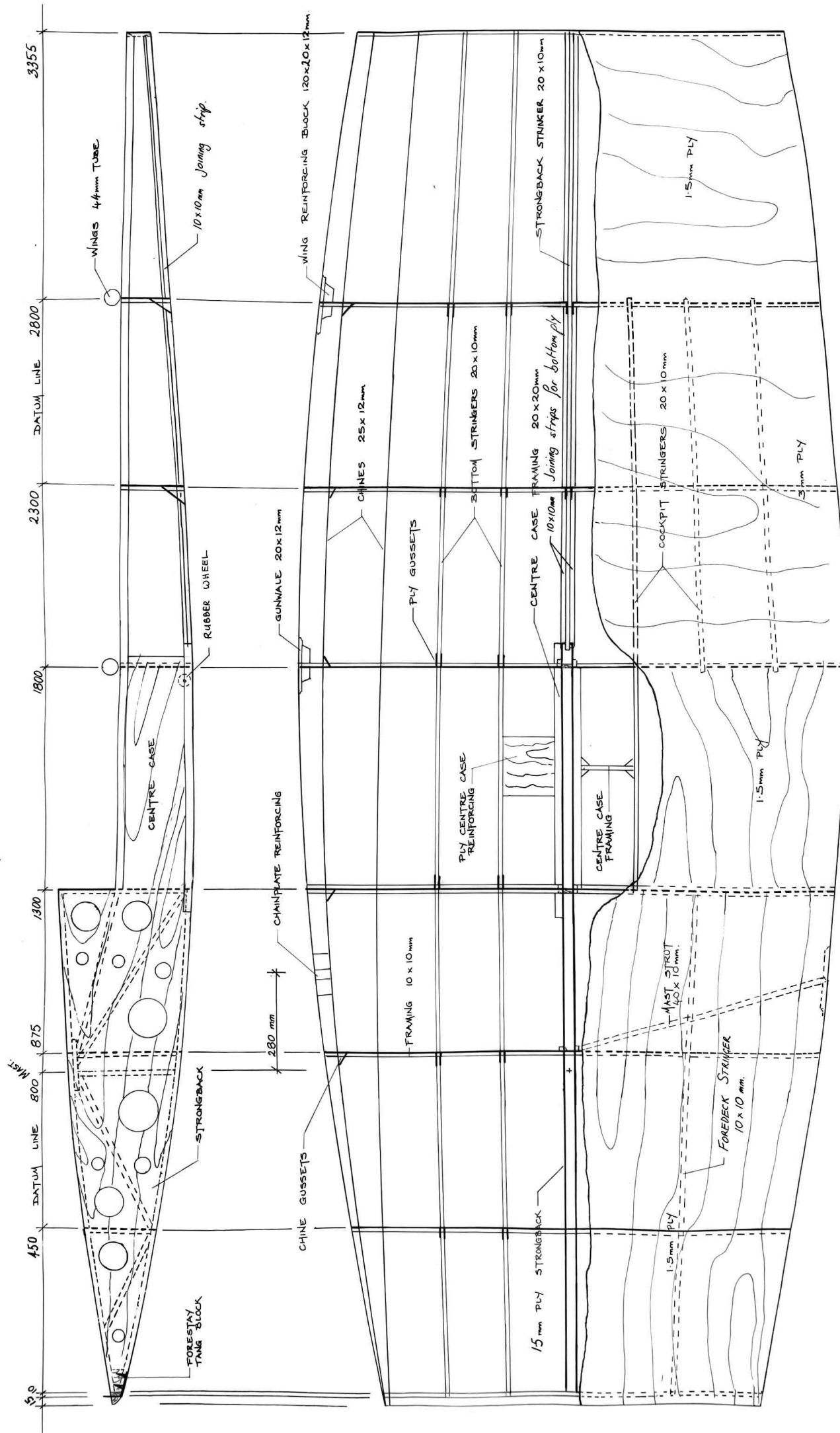
4
3
2
1
4
5
1
6
7
8
2
8
7
3
6
4
5

DATUM LINE



MC FRAWD FRAMES	
By: Jim French.	1982
SCALE: FULL SIZE.	DESIGN: 1 Ward.

INTERNATIONAL MOTH



A

MC FRAUD.

BY JIM FRENCH

1982

NOT TO SCALE

Not to scale

fig 1

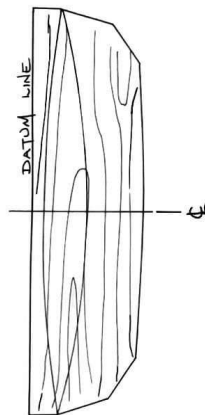


fig 2

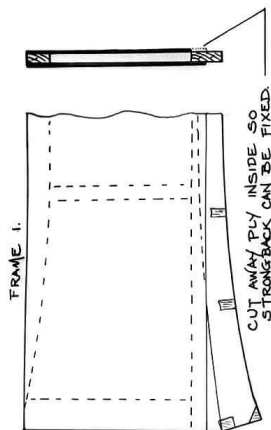


fig 3

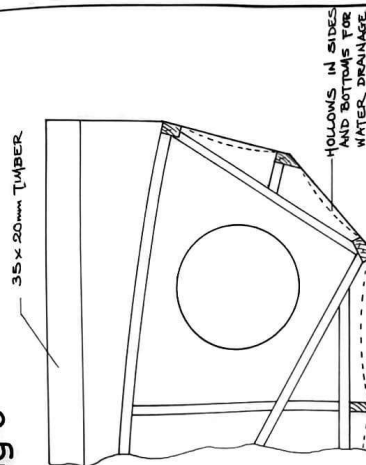


fig 4

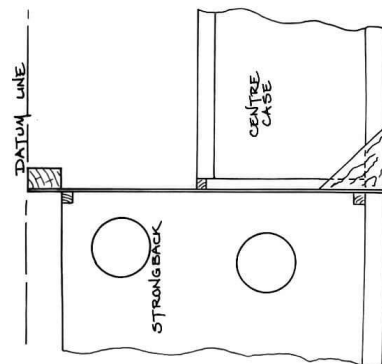


fig 5

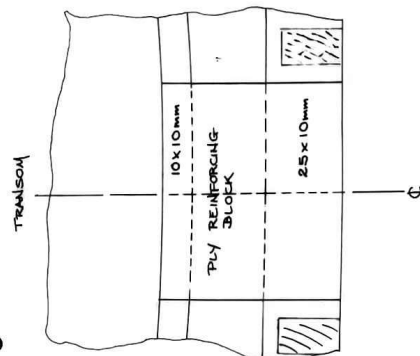


fig 6

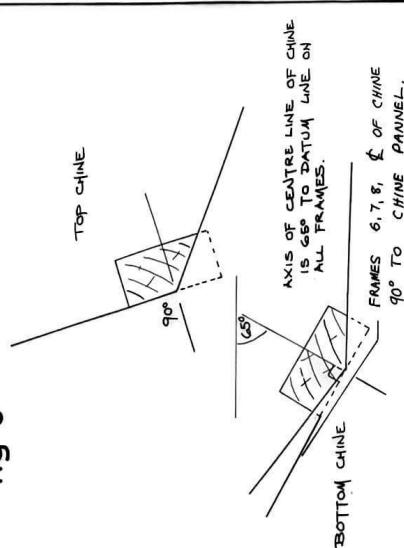


fig 7

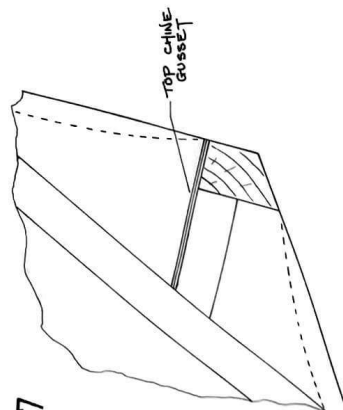


fig 8

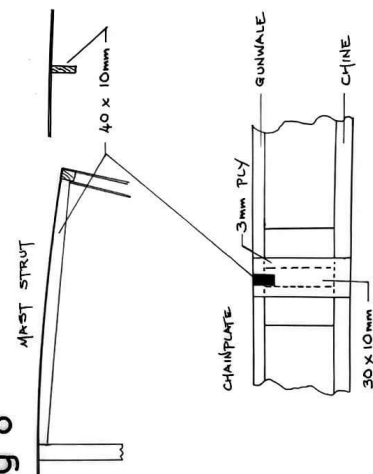


fig 9

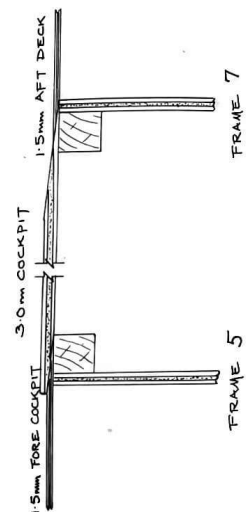


fig 10

