

## LOCKHEED VENTURA

The Ventura or PV1 was developed from the Lockheed Lodestar Slightly larger in fuselage length and wing chord than the Hudson. The Ventura was used in small numbers by the RAF and by USAF - B.36, USN PV1, PV2 and PV3.

The only main Airfix kit parts which can really be used without alteration are the tail surfaces, u/c and forward transparencies. However in order to use as much of the original kit as possible the wing outline will have to be changed by the addition of plastic card strips and filler at the inner trailing edges to make up to the new wider chord outline (see diagram 1).

Stage II - Cut away existing engine nacelles and fill in recesses - see notes and diagrams for Whitley conversion.

If the USAAF or USN version is being built the Martin dorsal turret should be fitted in place of the Boulton and Paul turret of the RAF version.

Fuselage construction follows the methods shown on the general instruction sheet.

## ARMSTRONG-WHITWORTH WHITLEY III.

Large numbers of Whitley III bombers, which had been replaced by Martin powered Mk.IV aircraft in 1938, were converted to troop transports by having the bomb racks and "dust bin" turrets removed and a hatch fitted in the lower fuselage behind the wings.

The Mk.III was radial engined 2 x 845 h.p. Armstrong Siddeley Tiger engines. No armament was carried and aircraft could be seen with or without the pronounced bomb aimers window.

The modifications to the basic Frog kit involve complete replacement of engines and nacelles, new front and tail turrets a new rear fuselage below the tail turret and new tail fins.

Stage I - Bend a piece of .030 polycard to the airfoil curvature for both upper and lower wing halves, to fit internally (see Diagram I) The pieces should overlap the existin nacelle position by 6 m.m. Glue in place and hold down to a firm close bond. Set aside to dry.

Stage II - Cut away front and rear fuselage to accommodate new turrets (see 1/72 scale drawings). The bomb aimers window as supplied in kit may be used or alternatively the aperture may be filled with card and filler and when dry filed and sanded to the more rounded shape as shown.

The lower section of the fuselage below the tail turret should be cut away and the new moulded section glued in place.

Stage III - Any filling with stopping may now be done and when dry the new sections filed and sanded smooth.

Stage IV - The wing halves glued together and the nacelles cut and filed completely away. The surface of the plastic sheet inside the wing will be below the level of the outer wing surface. This should now be built up level on all surfaces with plastic card and filler (see diagram II). File and sand level when dry.

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Stage V - Nacelle assembly follows method given in General instruction sheet. Note:- It is advisable to place wings into fuselage slots while fitting of nacelles to wings is taking place. Due to

Due to/. . . . .

the abnormal angle of incidence of the Whitley wings the nacelles sit at rather a nose down attitude relative to the centre line of the wing chord. Any filling should be done when the nacelles are set and finally filed and sanded to a smooth finish.

Stage VI - The new fins are now assembled ready for fitting to the Kit tail planes when final assembly takes place. Vacuum formed radial engines can be considerably strengthened by making a rolled insert from very thin plastic card (see diagram III). Engines from spare parts may be glued to the front of the insert before the two halves are placed together.

The Whitley III D/F loop was not enclosed in a fairing.

### VICKERS-ARMSTRONG WELLINGTON II

The main-stay of Bomber Command in the early two years the Wellington Mk.II was a Merlin XX notored version of the IC & IA Wellington. The Merlins giving increased power and lifting capacity.

Modification to the Airfix Mk.III kit involves a cowling and nacelle change and the making up of new propellers from plastic card and the spinners provided.

N.B. It is advisable if using the vacuum formed spinners to fill these with stopping before boring holes for the blades. Alternatively the whole propeller from the Frog Whitley kit may be filed down and glued inside the vacuum formed spinners.

Preparation of wings and fitting of new nacelles follows the same method as is usual for the Whitley.

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Although a few Wellington IIs had the triangular fuselage windows the majority had the long side windows and nose windows. This conversion is much more difficult. Vacuum formed windows are not very satisfactory for the purpose - far better to cut same from the thick clear polystyrene supplied as the pillar for the model stands in Airfix kits. A plan to 1/72 scale is supplied for marking these windows. The Geodetic frames can be marked onto the plastic using a sharp knife or scribe.

Considerable care is necessary when cutting out the long side windows - use fine fret saw and file.

You will find the fuselage has now become very pliable and this must be stiffened before windows, wings etc are added.

Stage I - Cut a .040 polycard fuselage former to fit at the front end of the long windows - you will find the former will also act as a rear bulkhead for the cockpit (see diagram A).

Stage II - Assemble the fuselage halves including the new bulkhead.

Stage III - Cut and fit two centre fuselage spars from .040 card - these will rest onto the top of the wing stub stiffeners inside the fuselage and can be inserted through the side window openings (see diagram A).

Stage IV - The bulkhead and spars must now be painted black and allowed

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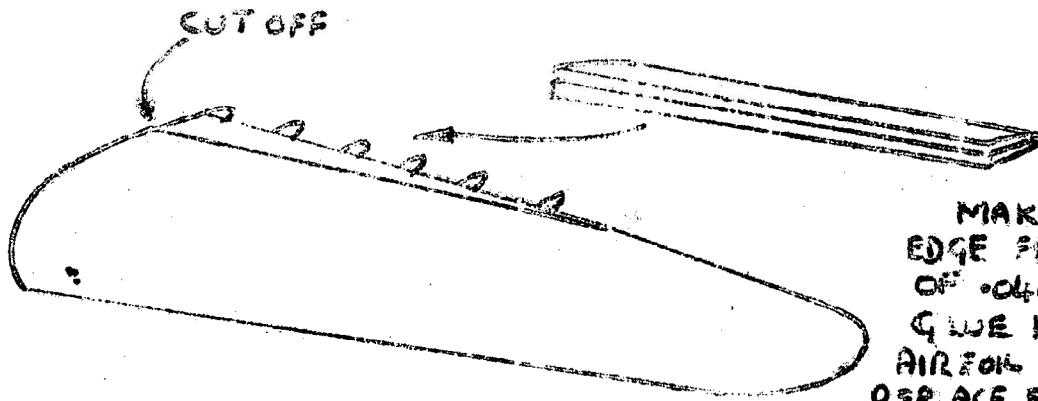
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Stage IV - The bulkhead and spars must now be painted black and allowed to dry before side windows and canopy are carefully glued in place.

N.B. If the Geodetic lines on the windows are to be painted black this is best done before fitting the windows. Use a fine point mapping pen to run the paint into the scratched grooves.

# HEAVY CONVERSION UNIT No 3.

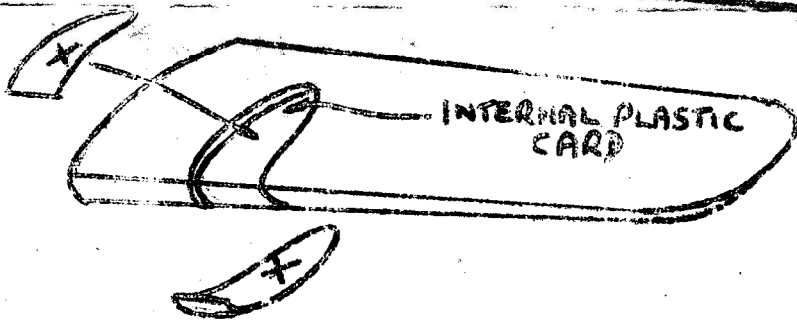


LOCKHEED  
VENTURA  
DIAGRAM I

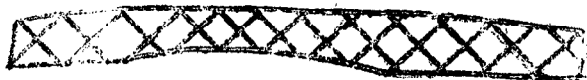
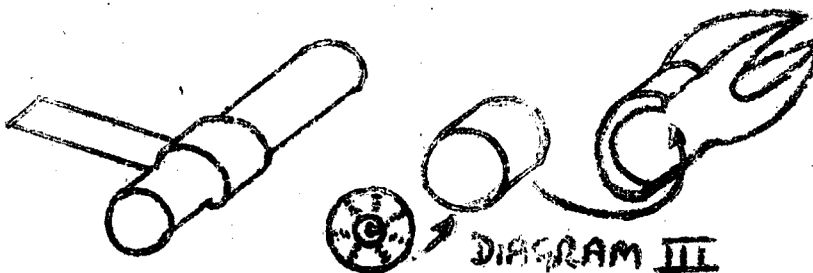
MAKE UP NEW TRAILING  
EDGE FROM TWO THICKNESSES  
OF .040 PLASTIC CARD  
GLUE IN PLACE AND FILE TO  
AIRFOIL SECTION WHEN SET.  
REPLACE FLAP SLOTS MADE FROM  
SCRAP SPRUE



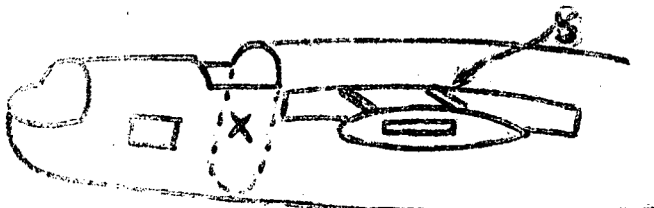
A.W. WHITLEY III  
DIAGRAM I



CARD CUT AND BENT X  
TO BRING NACELLE  
RECESS UP TO SURFACE  
LEVEL



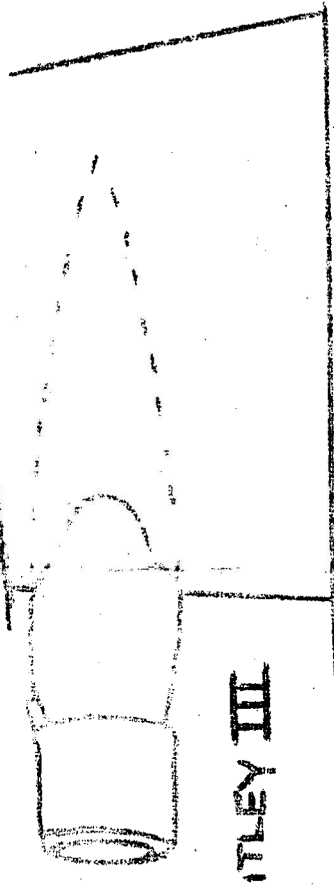
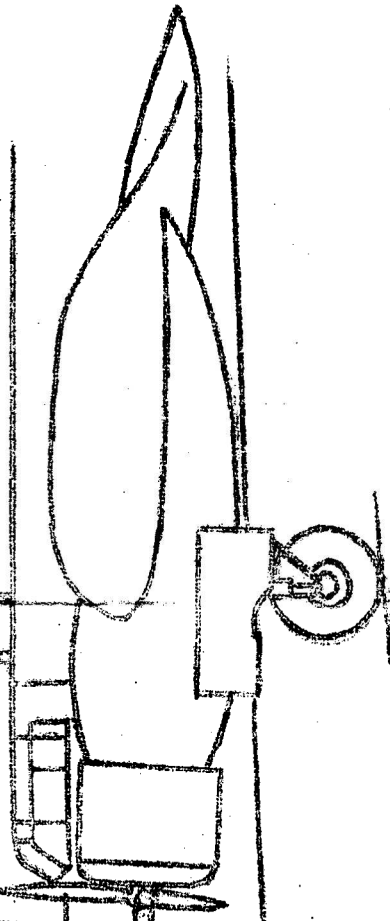
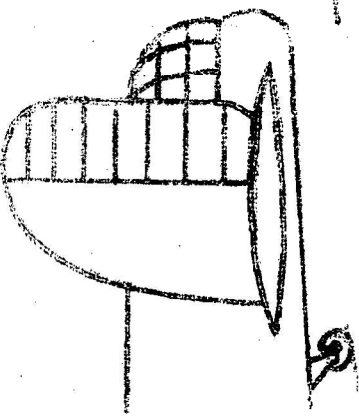
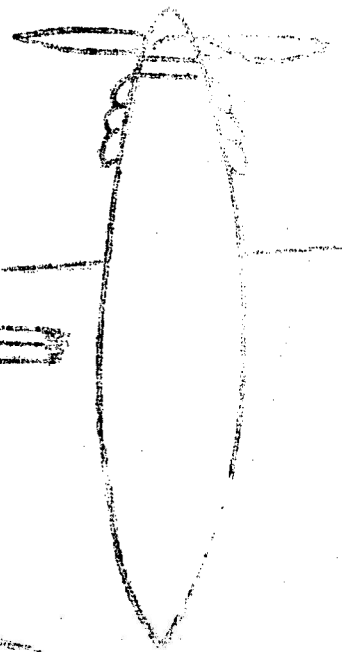
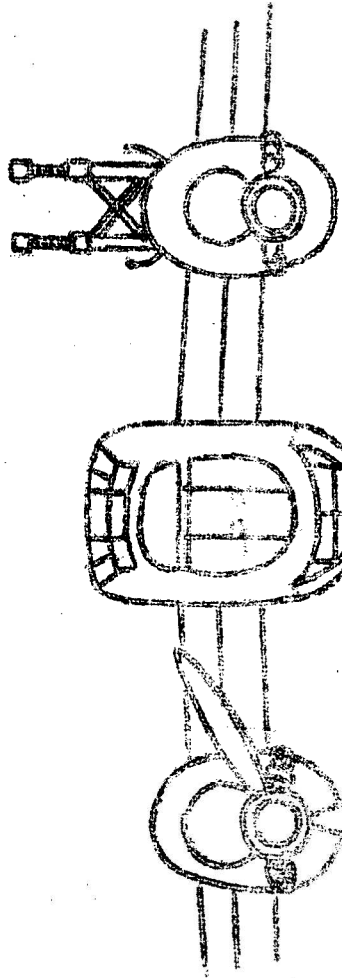
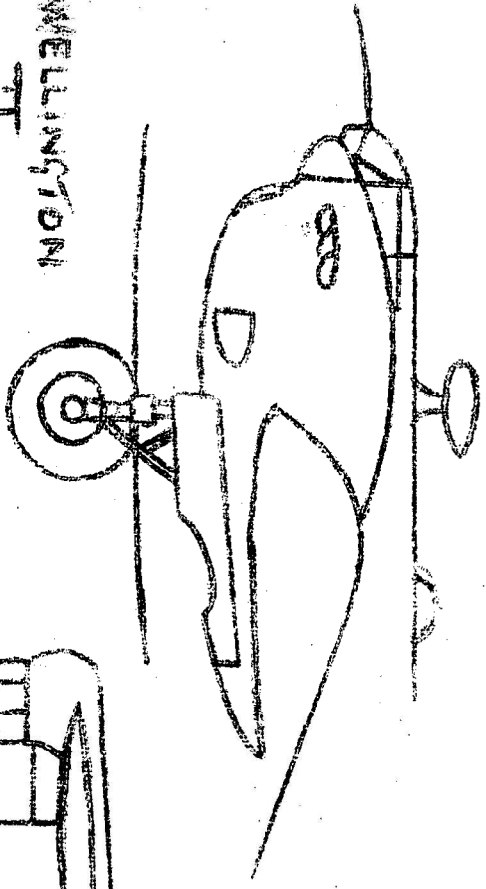
1/42 SCALE SIDE WINDOWS FOR  
WELLINGTON II.



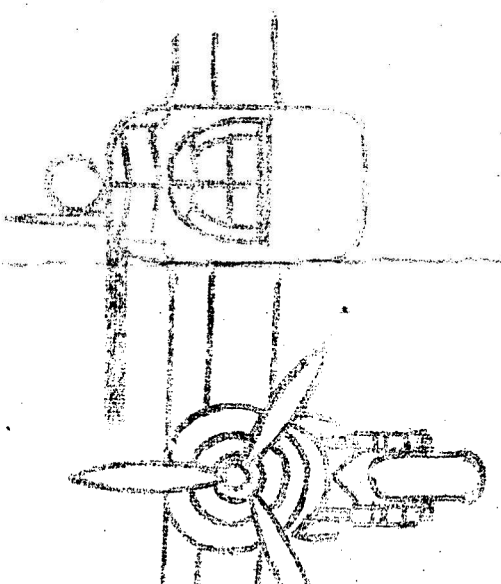
FUSELAGE FORMER X  
SPAR SPACERS S

DIAGRAM A

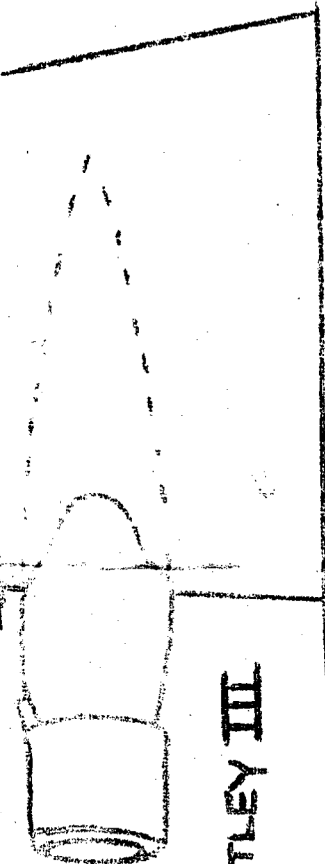
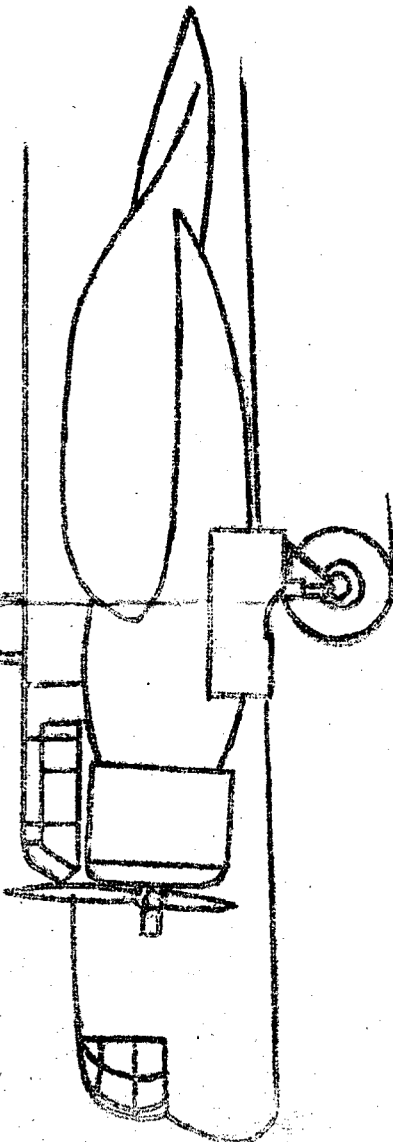
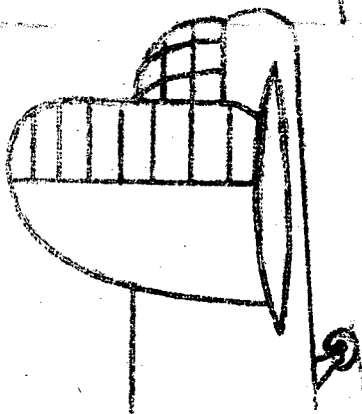
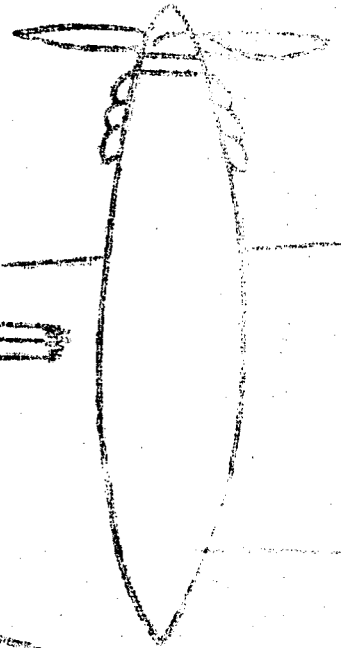
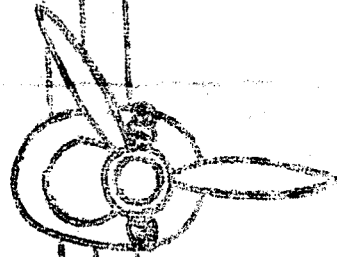
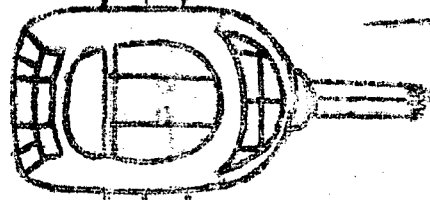
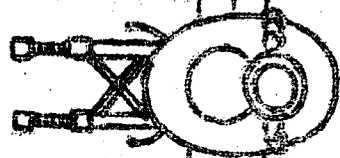
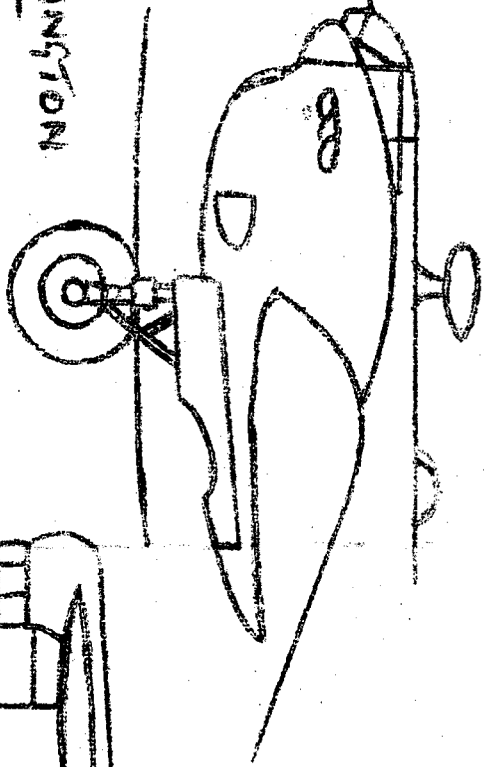
WELLINGTON II



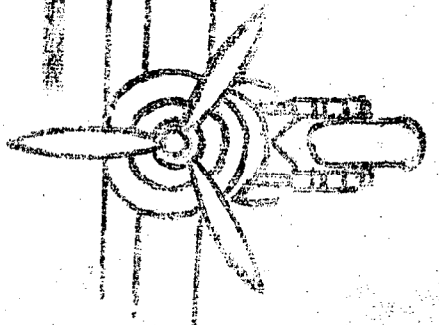
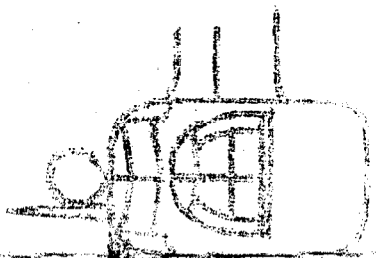
WELLEY III

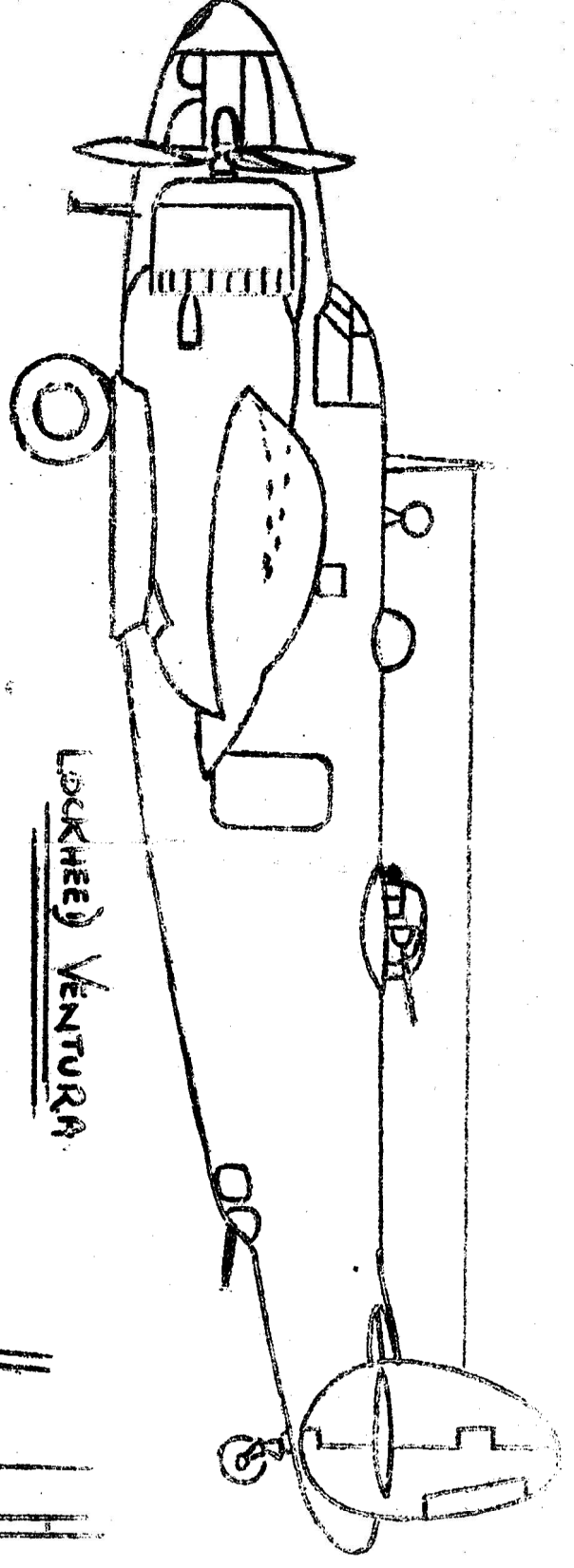
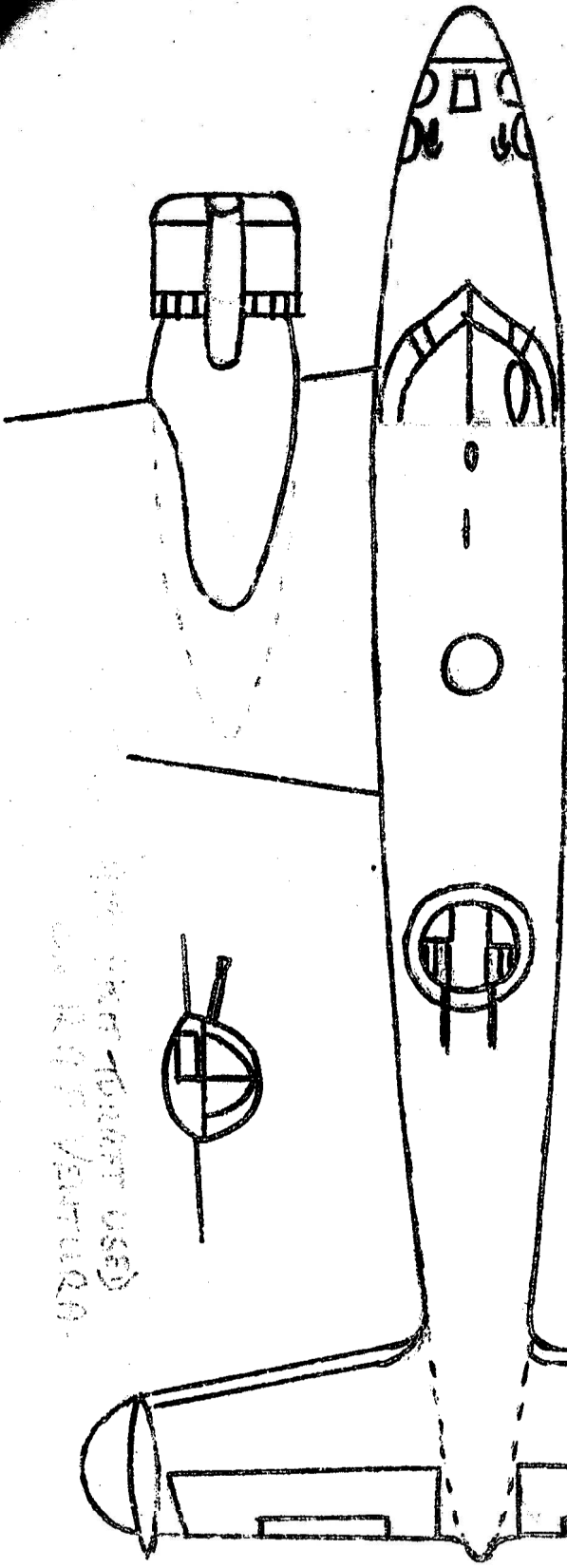


WELLINGTON  
II



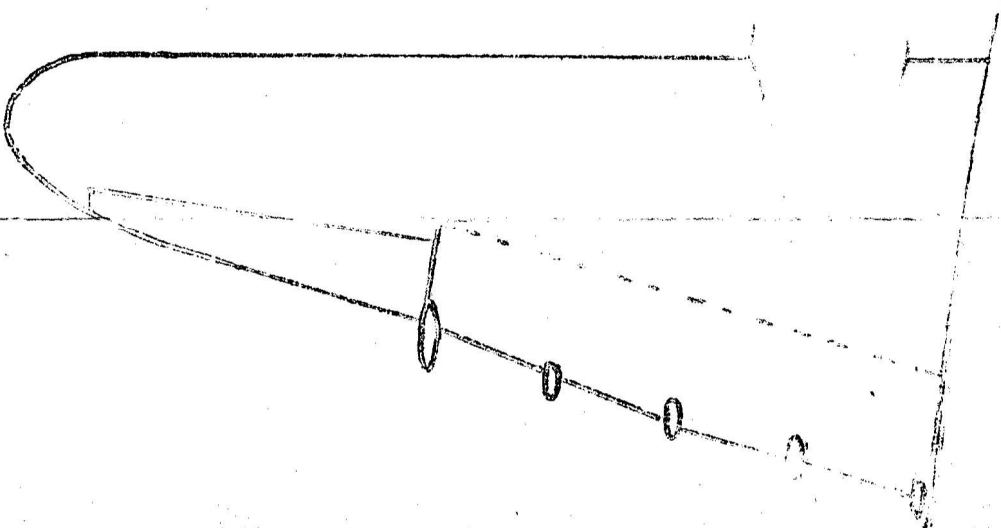
W. WHITLEY III





LOCKHEED VENTURA

FOR PARTS TO BE USED  
ON R-40 VENTURA





## GENERAL CONSTRUCTION DATA FOR VACUUM FORMED KITS

The nature of vacuum forming causes irregular stretches of the polystyrene sheet, giving thin edges at the points of maximum pull, considerable care must be taken in the cutting out of the mouldings and liquid cement is recommended and should be used sparingly on the thin sections of the mouldings.

Most vacuum moulded aircraft can be assembled by one or a combination of the methods shown on the drawing.

**STAGE 1** Use scissors and sharp model knife to cut out all the parts from the mould sheets. Edges for jointing should be glasspapered flat to the profile - a sheet of glass paper drawing pinned to a flat board is the most satisfactory method - the molding can be held down and rubbed over the abrasive.

**STAGE 2** The fuselage halves can be joined together using one or a combination of three methods..

1. Cut a fuselage profile 'C' from polycard. To this can be glued the two fuselage halves 'A' & 'B'. Interior detail being fitted before assembly.
2. Formers 'X' can be added to the profile 'C' for extra strength.
3. Narrow strips of thin polycard 'P' can be glued along the edges of one fuselage half (see section drawing Diagram 'Z'). After adding interior detail the second half is glued to the protective strips.

The joint line is filled with Brummer stopping and left to dry before sanding smooth.

**STAGE 3** Assembly of wings and tail planes can follow a common format. Structural support can be given by following orthodox airframe practise by having a cantilever wing spar 'S' passing through slots cut in fuselage halves. After careful assembly of the wing halves allow to dry for some hours before glass papering the edges smooth.

**STAGE 4** The wings can be slipped onto the spars and any irregularity of fit against the fuselage can be filed away before gluing in place.

**STAGE 5** If wing fillets have to be added these can be built up using stopping rolled to shape with a thin rod and smoothed off when dry.

**STAGE 6** If the engine nacelles are not integral with the wings, these can be assembled in a similar manner to the fuselage (see diagram 'M'). Round file and glasspaper the slot until the nacelle will slide onto the wing to the correct position. Glue in place and fillet around edges with stopping. Sand smooth when set.

N.B. If u/c is to be fitted well formers will have to be added and well recess cut away before nacelle halves are assembled. This can be done after nacelle is fitted in place on the wing.

**STAGE 7** An alternative method of nacelle construction is shown in diagram 'K' in the method the nacelle recess is cut out on the wing. Some models take better to this method depending on shape of nacelle.

**STAGE 8** 'Cowlings are not easy to vacuum form and the cowling is more satisfactory as an addition to the fuselage or nacelle rather than an integral moulding. Cowlings can be easily made as shown in diagram 'T'. Dowel rod is used as the former a 10 or 20th. polycard strip rolled and glued around the rod two or three times (Allow for thickness of layers of polycard when selecting dowel rod).

Discs of 40th. polycard,,two with engine recess and one blank are glued together to form collector ring for cowling front - when dry file and glasspaper to profile shape.

Plastic tubes such as those used to contain throat tablets, mouth ulcer tablets etc. make ideal cowlings when sawn off with fine hack saw to correct lengths. Collector rings as above can be glued to end of these tubes with cement.

**STAGE 9** Final detail of the model should be added using plastic card, sprue and pieces from spares box. Panel lines are often overdone on many models (try measuring a panel line or rivet on a full size aircraft and scale down to 1/72 you would require a magnifying glass in most cases to see them!).

### NOTES

If using Brummer stopping do not use the exterior (waterproof) grade. This contains a solvent which will soften polystyrene.

Transparencies. Transparent polystyrene will not vacuum form. All transparencies supplied are formed in P.V.C. use contact adhesive or Araldite. Where flat sheet clear plastic is supplied in kits this will be polystyrene. Where a lot of window cutting or slot cutting has to be carried out it often is set one has a firm support to cut against. When cutting or drilling is completed the plaster filler will easily fall away from the plastic. Model clay would serve just as well but tends to stain the plastic mouldings.

## DONNÉES GÉNÉRALES DE CONSTRUCTION POUR LES TROUSSES D'OUTILS MOULÉS AU VIDE

Le moulage au vide conduit inévitablement à des allongements irréguliers de la feuille de polystyrène donnant naissance aux bords peu épais à des points où les forces de traction atteignent leur maximum. Il est donc nécessaire de prendre beaucoup de soin quand on coupe les moulures. Pour cela il est recommandé d'utiliser du ciment liquides en l'appliquant modérément sur les sections minces des moulures.

La plupart des avions moulés au vide peuvent être assemblés en se servant d'une - ou d'une combinaison - des méthodes indiquées sur les dessins.

**1ère Etape** Utilisez des ciseaux et un couteau aigu de modelage pour couper toutes les pièces à la feuille moulée. Les bords de jointure doivent être adoucis au papier verre pour être étendus à plat sur le profilé. Il vaut mieux d'utiliser une ébauche au papier verre montée à l'aide des épingles sur une planche aplatie. On peut tenir solidement le moulage en le frottant sur l'abrasif.

**2ème Etape** Les moitiés du fuselage peuvent être réunies en se servant d'une - ou d'une combinaison - des trois méthodes mentionnées ci-dessous:

1. Couper un profil de fuselage "C" à une planche en feuille polu. A cela on peut coller les deux moitiés de fuselage "A" & "B". Les détails d'intérieur étant mis à place avant l'assemblage.
2. Des supports "X" peuvent être ajoutés au profile "C" pour obtenir un supplément de rigidité.
3. On peut coller des bandelettes de feuille poly très mince "P" le long des bords d'une moitié du fuselage (voir dessin - section Diagramme "Z"). Après avoir ajoutés les détails de l'intérieur on peut coller la deuxième moitié du fuselage aux bandelettes protectrices.

On remplit la ligne de joint avec du composé obturateur Brummer pour assurer l'étanchéité et on laisse le joint s'assécher avant de l'adoucir au papier verre.

**3ème Etape** L'assemblage des ailes et des surfaces d'arrière peut être effectué suivant un format commun. Le support structural peut être mis au point par la technique orthodoxe de construction de carosse aéronautique en utilisant un bras d'aile en encorbellement "S" qui passe à travers les fentes taillées dans les moitiés du fuselage. Après l'assemblage oigneux des moitiés d'ailes laissez la construction s'assécher durant quelques heures avant d'adoucir les bords au papier verre.

**4ème Etape** Les ailes peuvent être emmanchées dans les bras d'aile en enlevant à la lime toute irrégularité d'ajustage contre le fuselage avant qu'on les mette en place à la colle forte.

**5ème Etape** S'il est nécessaire d'ajouter des congés de raccordement, on peut les composer en utilisant du composé d'étanchéité (stopping) roulé en forme avec une gauette et adouci après le séchage.

**6ème Etape** Si les nacelles du moteur ne sont pas solidaires des ailes, on peut les assembler au fuselage d'une façon semblable (voir diagramme "M"). On adoucit la fente à la lime et au papier verre jusqu'à ce que la nacelle glisse dans la position voulue sur l'aile. Collez à la colle forte et adoucissez les bords avec du composé obturateur. Adoucissez-le au papier verre après le séchage.

**N.B.** Si l'on met en place la carosse de roues, il faut qu'on ajoute des éléments formant le fond et qu'on coupe des enfoncements du fond avant d'assembler les moitiés de la nacelle. Cela peut être effectué après l'assemblage de la nacelle dans les ailes.

**7ème Etape** Le diagramme "K" montre une autre méthode de construction de la nacelle par laquelle le retrait nacelle est coupée sur l'aile. Cette méthode est préférable pour un nombre de modèles suivant la forme de la nacelle.

**8ème Etape** Le moulage au vide des capotages est assez difficile et il est donc plus facile de les ajouter en supplément au fuselage à la préférence au moulage solidaire. Les capotages sont faciles à produire selon le diagramme "T". On utilise un goujon pour les façonner en roulant deux ou trois fois et collant ensuite une bandelette 10 ou 20 th. autour du goujon. (Il faut tenir compte de l'épaisseur des couches polycard quand on choisit le goujon).

On colle les disques de polycard 40th. - deux à l'enfoncement du moteur et un disque en blanc - pour former la bague collectrice pour l'avant du capotage. Après séchage, adoucissez-le à la lime et au papier verre.

Des tubes en matière plastique semblables à celles utilisées pour l'emballage des comprimés pour la gorge et pour l'ulcère de la bouche etc. constituent le matériel qui convient le mieux pour faire les capotages quand on coupe les tubes avec une scie à métaux très mince pour obtenir la longueur correcte. Les anneaux collecteurs mentionnés ci-dessus peuvent être collés au bout de ces tubes avec du ciment.

**9ème Etape** Le détail final du modèle doit être ajouté en utilisant du plastic card (feuille en matière plastique), de la coulee et des pièces contenues dans la boîte de pièces de rechange. Souvent il arrive qu'un grand nombre de modèles a les joints de panneaux trop exagérés (essayez de mesurer une ligne de jointure ou un joint riveté et tracez-la à l'échelle 1/72 - Pour cela il faudrait utiliser une loupe dans la plupart des cas)

**Notes** Si l'on utilise du composé obturateur Brummer il est indispensable qu'on ne choisisse pas le qualité à l'usage extérieur (étanche à l'eau), parce que ce type de composé contient un solvant qui amolite le polystyrène.

**Transparences** Le polystyrène transparent ne permet pas le moulage au vide. Par conséquent, toutes les matières transparentes fournies sont formées en PVC. Utilisez de l'adhésif de contact ou Araldite. Mais les feuilles plates claires, qui sont fournies dans les trousseaux d'outils, se composent de polystyrène. Où il est nécessaire de tailler des fenêtres ou des fentes on se sert d'un support solide. Après avoir fini le coupege ou le perçage le plâtre replisseur se détache facilement de la matière plastique. Aussi est-il possible d'utiliser de l'argile de modelage, mais il a l'inconvénient de déformer les pièces moulées en matière plastique.

DIAGRAM M

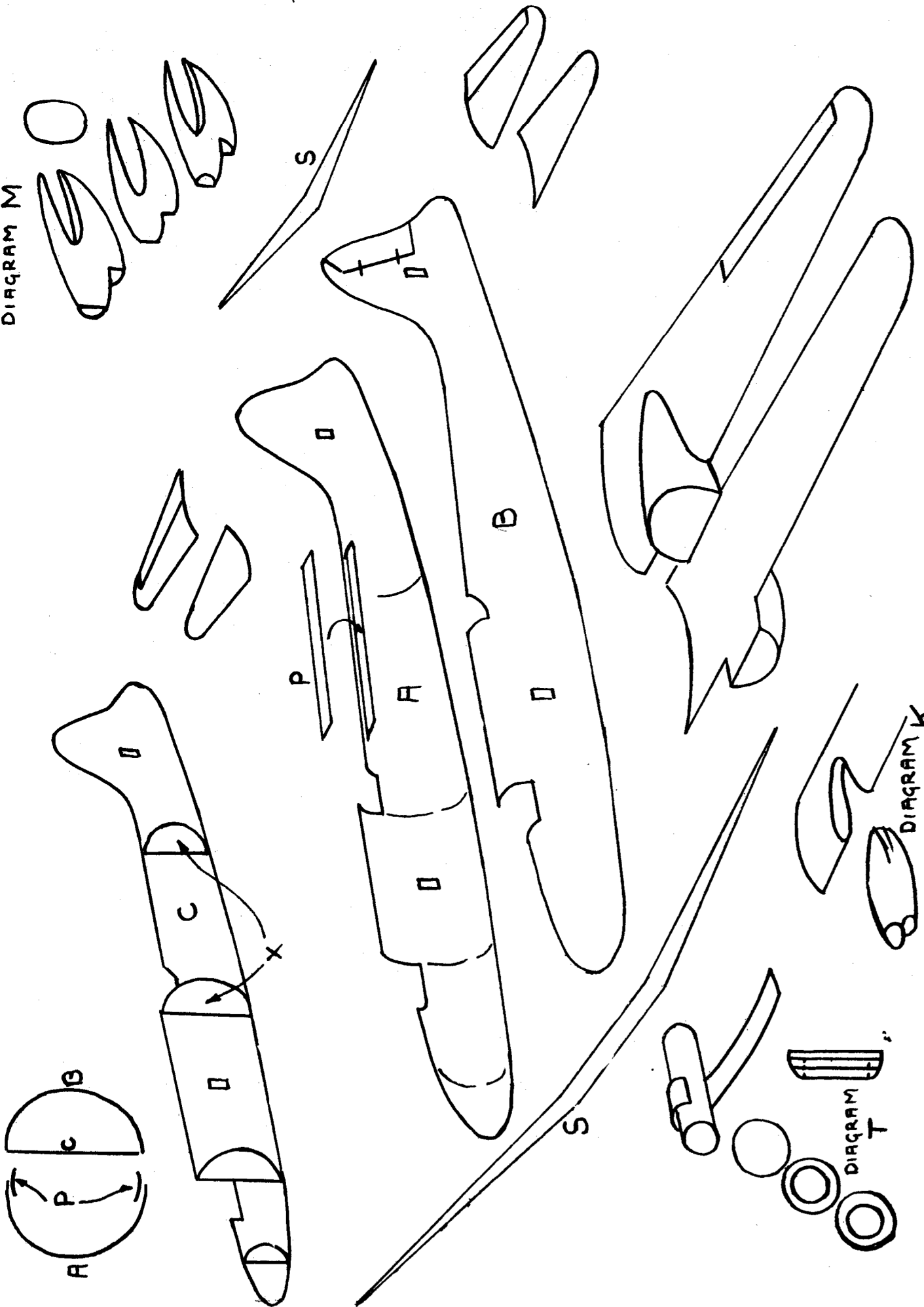


DIAGRAM K

DIAGRAM T

## ALLEGEMEINE KONSTRUKTIONSANGABEN FÜR VAKUUMVERFORMTE BAUTEILAUSTRUSTUNGEN

Die Vakuumverformung gibt naturentsprechend Anlass zu unregelmässigen Dehnungen des Polystyrolbandes unter Entstehung dünner Kanten an den Stellen maximaler Zugbeanspruchungen. Hieraus ergibt sich, dass man beim Ausschneiden der Gusstücke sehr sorgfältig sein muss. Es empfiehlt sich, flüssigen Zement zu verwenden, den man sparsam auf die dünnen Teile der Gusstücke auftragen soll.

Die meisten vakuumverformten Flugzeuge können mittels einer Methode bzw. einer Kombination der Methoden, die unten angegeben sind, zusammen-gestellt werden:

**Erste Stufe** Man verwende eine Schere und ein scharfes Bastelmesser, um alle Teile aus den Folien herauszuschneiden. Die zu verbindenden Kantenflächen sollen mit Glaspapier flach auf das Profil gerieben werden. Die beste Methode besteht darin, ein Stück Glaspapier auf einer flachen Tafel mit Reissnägeln zu befestigen und das Folienstück über die Reibräche zu reiben, indem man es fest anpackt.

**Zweite Stufe** Die Halften des Flugzeugrumpfes können miteinander verbunden werden, indem man eine - bzw. eine Kombination - der drei folgenden Methoden anwendet:

1. Ein Rumpfpfprofil "C" aus dem Polystyrolbogen ("Polystyrolkarte") ausschneiden. Hierauf kann man die beiden Rumpfhälften A & B nakleben. Innenausrüstungsteile werden vor dem Zusammenbau eingebaut.
2. Es können Formgeber "X" zum Profil "C" zur Erlangung zusätzlicher Festigkeit hinzugefügt werden.
3. Es können schmale Streifen aus dünner Polykarte "P" den Kanten der Rumpfhälfte entlang angeklebt werden. (siehe Zeichnung Diagramm "Z"). Nach Einbau des Innendetails wird die zweite Hälfte auf die Schutzstreifen aufgeklebt.

Die Nahtlinie wird mit Brummer-Abdichtungsmittel angefüllt. Nach Trockenlassen wird diese dann mit Glaspapier glattgerieben.

**Dritte Stufe** Der Andau der Flügel und der Schwanzflächen kann nach einem gemeinsamen Format erfolgen. Eine Absteifung der Baukonstruktion ist gemäss gängiger Flugzeugrahmen bauweise möglich, indem ein Gerberträger "S" durch die in den Rumpfhälften ausgeschnittenen Schlitzten geführt wird. Nach sorgfältigem Zusammenbau der Flügelhälften und Trockenlassen Laufe mehrerer Stunden werden die Kanten mit Glaspapier glattgerieben.

**Vierte Stufe** Die Flügel kann man auf die Gerberträger schieben, wobei irgendwelche Unregelmässigkeiten im "Sitz" der Flügel am Rumpf weggefeilt werden müssen, bevor man zum Festkleben voranschreitet.

**Fünfte Stufe** Falls Auskehhlungen zwischen Flügel und Rumpf vorzusehen sind, so kann man diese mit Dichtungsmittel aufbauen, das durch Rollen in die richtige Form gebracht worden ist und weiter im trockenen Zustand glattgerieben wird.

**Sechste Stufe** Falls die Motorrumpfe nicht ein Ganzes bilden mit den Flügeln, so können diese in ähnlicher Weise an den Flugzeugrumpf angebaut werden. (Siehe Diagramm "M"). Mit Rundfeile und Glaspapier reibe man den Schlitz glatt, bis der Rumpf gleitend in die korrekte Lage auf dem Flügel einrastet. Festkleben und Kante mit Abdichtstoff ausglätten. Nach dem Hartwerden glattreiben.

**N.B.** Falls das Fahrgestell eingebaut werden soll, so müssen Gestellabsätzungen zusätzlich angebracht werden und Aussparungen hierfür vor dem Einbau der Rumpfhälften ausgeschnitten werden. Dies kann nach dem Anbau des Rumpfes an den Flügel geschehen.

**Siebte Stufe** Eine andere Methode zur Anbringung des Rumpfes wird durch das Diagramm "K" veranschaulicht, wonach die Rumpfaussparung auf dem Flügel ausgeschnitten wird. Einige Modelle vertragen sich besser mit dieser Methode je nach der Form des Rumpfes.

**Achte Stufe** Die Haubenbleche sind nicht einfach vakuumverformbar und werden deshalb als Zusatzteil später extra an den Rumpf angebaut und nicht an einem Stück mit dem Ganzen gegossen. Hauben können leicht nach der in dem Diagramm "T" gezeigten Weise gemacht werden. Hierzu wird ein Zylinderstift als Absteifung gebraucht, indem man einen 10 oder 20 th. Polykartestreifen zwei- oder dreimal um den Stift herumwickelt und jeweils daran anklebt. (Man muss natürlich die Schichtdicke des Polystyrol-streifens bei der Wahl des Zylinderstiftes mit in Betracht ziehen).

Scheiben aus 40th. Polykarte (zwei an der Aussparung für den Rumpf und eine als Rohteil) werden zusammengeklebt, um somit den Lagerring für die Motorhaube zu bilden. Nach dem Trockenlassen auf Profilgestalt abfeilen und mit Glaspapier glattreiben.

Das ideale Ausgangsmaterial für die Hauben bilden Kunststoffröhrchen wie sie etwa zur Verpackung von Halstabletten, Mundgeschwür-Heiltabletten u. dgl. m. verwendet werden. Diese schneidet man einfach mit einer Metallsäge auf die richtige Länge ab. Die obigen Lagerringe können an das Ende dieser Röhrchen mit Zement angeklebt werden.

**Neunte Stufe** Das letzte Detail des Modells soll unter Verwendung von Polykarte, Verbindungsstücken und Gegenständen aus der Ersatzteilkiste hinzugefügt werden. Die Nahtlinien für die Verbindung der Plattenverkleidung stechen oft bei vielen Modellen übertrieben deutlich hervor. (Man versuche doch nur einmal eine Verbindungsnaht oder Vernietung an einem Flugzeug natürlicher Grösse zu messen und diese dann massstabgerecht mit einer Verkleinerung von 1/72 aufzutragen. Hierzu musste man in den meisten Fällen eine Lupe haben, um die Naht überhaupt sehen zu können).

**Anmerkungen** Falls Brummer-Abdichtstoff gebraucht wird, so nehme man nicht die wasserdichte Sorte für Assenanwendungszwecke. Diese enthält nämlich ein Lösungsmittel, welches das Polystyrol aufweicht.

**Transparente Teile** Durchsichtiges Klarsichtpolystyrol kann nicht vakuumverformt werden. Alle Klarsichtteile sind daher aus PVC. Man verwende Kontaktkleber bzw. Araldite. Die Flachbögen aus Klarsichtkunststoff, die im Bastelkasten sind, bestehen jedoch sämtlich aus Polystyrol. An den Stellen, wo viele Fenster auszuschneiden oder Löcher zu bohren sind, fällt der Gipsfüllstoff leicht vom Kunststoff herab. Man könnte auch ohne weiteres Modellier-ton verwenden, aber dieser hat die nachteilige Eigenschaft, den gegossenen Kunststoff zu deformieren.



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