"THE GULL" FLYING BOAT

DESIGNED BY A.K.E. GYFORD.

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ALLEN HOUSE, NEWARKE STREET, LEICESTER.

MODEL COLOURED DARK GREEN WITH YELLOW NACELLES & PROPS YELLOW LETTERING AND NAME.

NACELLES

MADE UP FROM ⅛" SHEET BALSA RINGS - 1/16" CENTRE HOLE.

1/32" GAP. N1a. N1b. NZ. N3. N4. 1/16" SHEET FILL UP. 1/32" PLY DISCS. 1/8"×1/16" STRINGER. 1/32" SKIN. NR. 1/16" BALSA. 11" DIA. PROPS. SEE SECTIONS.

FLEXIBLE DRIVE THRO' RIBS.

FLEX. DRIVE. BLOCKS. REAR SPAR. STRUT. RIBS TO REAR OF SPAR AT AN ANGLE FOR ANTI-WHIPPING OF FLEX. DRIVE. CELLULOID WINDOWS ON UNDERSIDE WITH ⅛" DIA. HOLE FOR OILING. 3/32" PLY EACH SIDE. STEEL BUSHES MADE FROM FLEX. CURTAIN ROD. T.E.

DETACHABLE TAILPIECE.

HOOKS 18 S.W.G. 1/16" PLY. TAILPIECE ⅛" DIA. SPRUCE PEGS. STRUTS. F12b FITS IN AT 'A'. F12. F13. 1/16" PLY. ⅛" DIA. PEG. CUT AFTER ASSEMBLY.

REAR COCKPIT.

MAKE FROM BLOCK BALSA 2¾×1⅛×⅝. CELLULOID MOULDING. RECESS BLOCK TO THIS PATTERN AT TOP - HOLLOW OUT - CEMENT IN WINDSCREEN TO BOTTOM OUTLINE. UF4 + 1/16" SHEET.

LINE OF DRIVE. UF1. 1/16" SHEET. SEE SECTIONS. CUT AWAY AFTER FINISHED COVERING. HATCH. HATCH. SKIN. CUT ON LINE. FILL IN WITH BLOCK BALSA & SHAPE. TAIL RIBS T1. 2 OFF - 1/16" SHEET. UF4. UF3. 1/16" SHEET BALSA. UF2. REAR SPAR. FRONT SPAR. 1/16" BALSA.

1/32" SKIN. 1/8"×1/16". COVER HULL TO F4 WITH STRIPS OF 1/8"×1/32" BALSA. MOULD CABIN IN CELLULOID — FRAMEWORK PAINTED ON. SHEET BALSA COVER. GEAR BOX. 1/8"×1/16". MOULD CELLULOID DORSAL HATCH. 1/8"×1/16" REINFORCING STRUTS [4 OFF]. F1. F2. F3. F4. F5. F6. F7. F8. F9. F10. F11. F12. F12a. F12b. F13. REST OF HULL IS COVERED WITH 1/32" SHEETING IN LARGE SECTIONS. AFTER TOP HALF OF HULL IS COVERED 1/16×1/32" STRIPS ARE GLUED TO SKIN BETWEEN ALL FORMERS FOR STIFFENING. INCREASE TO 1/16×⅛ BETWEEN FORMERS 4,5&6. ⅛×¼" BALSA [SHAPED]. COVER WITH ⅛×1/16" BALSA STRIPS. ⅛×1/16". COVER WITH 1/32" SHEET. ALSO TISSUE AFTERWARDS AS IN FRONT UP TO CENTRE STRINGER. CHINE 3/16"×⅛ BALSA [SHAPED]. ⅛×1/16". KEEL ¼×¼" BALSA [SHAPED]. W.L. HEEL. FRONT STEP. END OF SKIN COVERING AS SHADED. UF5. 2 COATS OF DOPE } UNDER FIN. LOCATING PEG. CUT ON LINE. HOOKS FOR ELASTIC BANDS. W.L. FILL IN WITH BALSA & SHAPE. UF7. UNDER FIN RIBS - 1/16" SHEET. UF6.

PORT WING OUTER PANEL.

R1. R7. 1/32" PLY BOX ENDS AT REAR OF SPAR. FILL IN ENDS & SIDES OF BOXES R3. 1/16" SHEET. SHORT REAR SPAR 1/16" SHEET × 1/32" WIDE. R4. MAINSPAR. R5. R6. L.E. ¼×⅛". T.E. 1/2"×1/16" TAPER TO ⅜×1/16" AT R14. R7. DOUBLE RIB AT FRONT. R8. R9. SLOT. R10. R11. R12. R13. R14. TIPS TISSUE COVERED & WATERPROOFED WITH RHODOID TO TO RIB 11. WHERE TISSUE COVERED ONE COAT SHRINKING DOPE ON TOP & 2 COATS UNDERNEATH.

FINS.

FR1. FR2. FR3. FR4. FR5. FIN RIBS 1/32" SHEET. 4 OFF. FS1. FS2. 1 COAT OF DOPE. TAIL SPARS [GLUE TO FIN SPARS]. ¼×1/16". 1/16" SHEET. UNDER FIN REAR SPAR 1/16" SHEET. UNDER FIN FRONT SPAR 1/16" SHEET. POINT OF TURN UP. 1/16" SHEET.

MAIN SPAR 1/32 SHEET [SEE PORT WING]

STARBOARD WING OUTER PANEL.

R1. R2. R3. R4. R5. R6. R7. R8. R9. R10. R11. R12. R13. R14. RIBS HALF NOTCHED ON SPAR. COVER TOP & BOTTOM TO SPAR WITH 1/32" SHEET. 1/32" COVERING. TIPS 1/16" SHEET. R1 & R2 JOINED WITH 1/16 BALSA. BOX. BOX. WING SPAR BOXES BUILT UP FROM 1/32" PLY.

PROP SHAFT TO DRIVE JOINT.

1" TURN UP AT TIPS. SHAFT. FLEX. DRIVE. N4. THRUST RACE. COPPER JOINT. ¼" DIHEDRAL AT CENTRE OF OUTER PANEL L.E. 11" DIA. PROPS TURN INBOARD. KEEL 3/16"×⅛ BALSA [SHAPED]. UF3. UF2. UF5. UF7. UF6. FORE W.L.

RIGGING DIAGRAM.

1/8 FULL SIZE. FR3. FR4. FR5. FR2. FR1.

HATCH ON HULL TOP BETWEEN F6 & F7. & BETWEEN F7 & F8.

HATCH FROM 1/16 SHEET BALSA. ⅛×1/16. FRAME AS F7 TOP OUTLINE.

DATA: SPAN... 52½" · OVERALL LENGTH 36¾" · WEIGHT... 15¾ OZS. WING AREA 2 SQ.FT. WING SECTION R.A.F.32 AT 4½° · C.G. 3½" FROM L.E. AT NACELLE AT WING JOINT · ANGLE OF SIT [FRONT TO REAR STEP] 5¾°.

DETACHABLE NOSEPIECE

1/32 SKIN. 1/16" PLY. NZ. 1/16" HOLE. ALL SHEET COVERED COMPONENTS SANDED DOWN & COVERED WITH TISSUE OVER JOINTS. BOTTOM OF HULL EXTRA COVERING OF TISSUE EXTENDING TO CENTRE STRINGER. CAPPING PIECE 1/32 PLY TO COMPLETE OUTLINE INNER CUT OUT. BRASS BUSH. ⅛" BALSA TO OUTLINE CUT OUT INNER & SLOTS. 1/16 PLY TO DOTTED OUTLINE. BACKING PIECE 1/16 PLY TO INNER DOTTED LINE. F1. WIRE HOOKS 18 G. 1/16 PLY LOCATING PIECE. LEAD WEIGHT FITTED HERE. 1/16" PLY. BALSA BLOCK. GROOVE. HELD IN POSITION BY RUBBER TENSION.

POWER.

2 OPPOSITE ROTATING PROPS. 11" DIA. 14¾" PITCH. BLADE WIDTH 1"-3/16" PITCH ANGLE 23° BUILT UP WITH 6 PIECES 3/16"×1/16" PIECE ¼" BLADE AREA 13¾ SQ.INS. EACH PROP. MOTORS 4 OF 8 STRANDS ¼" 20" LONG ON LOWER SETS OF HOOKS. 6 OF 6 STRANDS 5/16" 18" LONG ON TOP SET OF HOOKS. SAFE TURNS 560. TOTAL WEIGHT OF MOTORS 3-75 OZS.

RIBS 1/8" SHEET BALSA

N1a. N1b. 1/16" PLY 2 OFF EACH. ⅛ BALSA LAMINATED. N3. 1/16" PLY 2 OFF. BRASS BUSH. ARMS CUT OFF AT NACELLE & HULL WHEN NACELLE IS RIGID. F2. 2 PLY 1/16 BALSA LAMINATED. F6. 1/16" PLY. 3/16"×⅛". STRUT BETWEEN L.E. OF CS1 RIBS. N4. DRILL 1/16 HOLE. SLOT FOR RIBS. F8. 1/16" HARD PLY. 3/16"×⅛" BALSA [SHAPED]. BACK WITH ⅛"×1/16" BALSA. F7. 3/32" HOLES 5 OFF. HOLES FOR GEARBOX LUGS. 1/16" HARD PLY. CS1. CS2. CS3. CS4. CS5. HOLLOWED IF DESIRED. ⅛×¼" SPRUCE MAIN SPAR BOTH SIDES. THIS PORTION AT AN ANGLE. THIS PORTION AT AN ANGLE. SKIN. F1. F2. F3. F4. F5. F6. F7. F8. F9. F10. F11. F12. F12a. F13. 1/32" ALLOWED FOR SKIN. ARMS CUT AWAY AT HULL WHEN NACELLE IS RIGID ENOUGH TO RETAIN SHAPE. SHADED PORTION ⅜×⅜" BALSA CUT TO WEDGE SHAPE. FRONT STEP. MARK POSITION & CUT PART OF THE WAY TO FINISH OFF AFTER ASSEMBLY OF WING CENTRE SECTION & NACELLES. F3. 1/8×1/16 STRINGERS. 2 PLY 1/16 BALSA LAMINATED. ¼×¼" BALSA [SHAPED] STEAM BEFORE FITTING. F4. 2 PLY 1/16 BALSA LAMINATED. ⅛" SQ. BRACING AFTER FITTING. F5. 1/16" PLY HARDWOOD. ASSEMBLE FORMERS ON ⅜" SQ. SPRUCE. F9. F10. F11. F12. F12a. F13. UF5. UF6. UF7. 1/8×1/16 BALSA AFTER FITTING. F9, 10 & 11. 1/16" BALSA 2 PLY LAMINATED. 1/16" PLY BACKED WITH ⅛" BALSA. ⅛ HOLE. P85. F12b. 1/16 PLY. 1/16" BALSA FACED WITH 1/32" PLY.

GEARBOX. [LOOKING AFT].

2 "ALCLAD" FRAMES BRASS BUSHED SECURED TO F7 WITH 5-3/32 BOLTS & NUTS & 5 N° 10 G WASHERS. 3-¾" DIA. BRASS GEARS ON CENTRE LINE TO RUBBER MOTORS - 2 TOP ¾" GEARS EACH DRIVING ⅝" DIA. BRASS GEAR TO FLEX. DRIVE. F7. GEARBOX FRONT. 3/32 BOLT. 10G WASHER. GEARBOX REAR. 16 G. SHAFT. 3/16"×⅝" COPPER TUBE 1/16" I/D. ONE END DRILLED TO TAKE FLEX. DRIVE.

GEARS TO FLEX. DRIVE.

PROP. CLUTCH.

1/32" PLY. PLANKING. 1/16" PLY FORMER. PEG. ELASTIC BAND. CLUTCH ARM. BOSS IS RECESSED TO TAKE CLUTCH MECHANISM. IN THIS VIEW THE CLUTCH ARM IS SWUNG ROUND JUST PAST THE RECESSED CENTRE HOLE. SLIPPED OFF PROP SHAFT THEN RELEASED. ELASTIC BAND MAINTAINS PRESSURE ON PROP. SHAFT AT ALL TIMES - TURNING PROP. IN ONE DIRECTION ENGAGES CLUTCH - THE OPPOSITE DIRECTION DISENGAGES & PROP. CAN BE REMOVED BY PULLING OFF. 18 G. WIRE WOUND ROUND SHAFT & SOLDERED. BRASS BUSH. 16 G. SHAFT. PEG. ELASTIC BAND.

STARBOARD CENTRE SECTION.

[BUILT UP ON JIG AS WITH HULL FORMERS]. STRUT FROM L.E. TO JOIN AT REAR OF F6. FRONT VIEW OF SPRUCE SPAR. F7. F8. N3. N4. CS1. CS2. CS3. CS4. CS5. NR [SEE ELEVATION]. BLOCKS. 1/16" GUSSET. LINE OF DRIVE. NR TO CS5 CRANKED [SEE FORMERS 7 & 8].

CENTRE SECTION RIBS 1/16" SHEET BALSA

HOLES FOR SPRUCE SPARS.

TAILPLANE.

STRUT FROM T.E. TO T.E. AT POINT OF F.S. L.E. ⅜×⅝ TO ¼ HOLLOWED OUT BETWEEN RIBS. T1. T2. T3. T4. T5. ¼" SHEET RIB SHAPED TO TAKE FIN RIB F1. 1/16" SHEET. RIBS. 1/16 MAIN SPAR. 1/16 REAR SPAR. UF4. 2 COATS OF DOPE. COVER TOP & BOTTOM WITH 1/32" SHEET. T.E. ⅝ TO ¼×1/16. REAR SPAR. FRONT SPAR. SPAR JOINT.

PORT CENTRE SECTION.

L.E. 3/16×¾". ⅛×1/32" STIFFENING STRIPS TOP ONLY. N3. 1/32" BALSA SHEET COVER TOP & BOTTOM. SPAR ON F7. ¼×¼" SPRUCE SPAR GLUED TO F7. PLUGS INTO FRONT BOX IN WING OUTER PANEL. PLAN OF SPRUCE SPAR. NOTE! "PLAY" OF SPARS IN BOXES ENABLES OUTER PANELS TO KNOCK OUT EASILY. 5/32×5/32 SPRUCE SPAR GLUED TO F8. PLUGS INTO REAR BOX IN WING OUTER PANEL. CS5. CS4. CS3. CS2. CS1. SHEET TOP ONLY. NR. LINE OF DRIVE. SPAR ON F8. BLOCKS. STRUTS 1/16×1/16". 1/16" GUSSET. T.E. ½×1/32". CENTRE PIECE SHAPED OUT OF SOLID BLOCK & CHINE ¼×⅛ BALSA. R9. R10. R11. R12. R13. R14. R13 - 1 FULL RIB & 1 RIB WITH SLOT FOR EACH WING. R14 - 1 PIECE 1/32 PLY. R13 - 1 PIECE ⅛ BALSA. R13 & R14 - 2 PIECES 3/32 BALSA. R7 - 1 FULL RIB & 2 PIECES TO FORM SLOT FOR EACH WING. R24. R25. R26. R27. R28. SKIN. 1/32" SKIN.