GRUMMAN

F-14A TOMCAT

DESIGNED AND DRAWN BY MATT HALTON 2001 ©

NET ADDRESS: http://www.geocities.com/grumman_uk

PROP DRIVEN	32 – 40 ENGINES	SWING WING
WEIGHT: 5-7 LBS. SPAN: 37" NON SWEPT.		
FOR EXPERIENCED BUILDERS ONLY!		
EDF: 2 x WINFOLD MINI FANS (6x30) OR SIMILAR		

CONGRATULATIONS! I WISH YOU EVERY SUCCESS WITH YOUR F-14. PLEASE VISIT MY WEBSITE FOR FURTHER BUILDING ASSISTANCE.

TO BUILD 23% LARGER VERSION TO USE 90mm FANS TAKE THIS PLAN TO COPIERS, ENLARGE AT 123% (YES! 123%) AND ENJOY UNRIVALLED PRIDE IN ME.

NOTE: AS OF FEB 2002, THIS MODEL IS AVAILABLE IN CNC LASER CUT PARTS. EMAIL FOR DETAILS AT; pioneplane@tiscali.co.uk

LIGHTWEIGHT GRADED BALSA (CONTEST*) IS RECOMMENDED VERY HIGHLY FOR BEST FLIGHT PERFORMANCE!

TAILERON DEFLECTIONS:

NOTE: PLEASE VISIT MY WEBSITE TO VIEW AN ON-LINE BUILDING SEQUENCE WITH PHOTOS & TEXT. SEE BOX ABOVE FOR U.R.L.

IF YOU WOULD LIKE TO BUILD A LARGER VERSION TO USE 90mm FANS, TAKE THIS COPY TO YOUR COPY SHOP ASK FOR A 123% ENLARGEMENT, THIS WILL SCALE THE MODEL BY A PHYSICAL 23% BIGGER.

THE LARGER VERSION CAN BE CONVERTED TO USE SPRING AND MICRO RETRACTS.

LARGER CANOPY IS NOW AVAILABLE!

GENERAL BUILDING NOTES:
CUT ALL FORMERS, REAR SIDES (R2) AND GUSSETS FROM 1/16" (1.5mm) BALSA. PUS CUTTERS AND SANDPAPER WILL HELP YOU ENSURE YOU MAKE A VERY FLAT SURFACE TO BUILD ON. TRIAL FIT ALL PARTS BEFORE GLUEING. OPEN OUT FORMERS WHERE YOU WILL BE PLACING BATTERIES TO FIT. PLY SWING WING BOX IS FOR FREE FLIGHT VERSION ONLY. BEING AN EXPERIENCED R/C MODELER, FEEL FREE TO MAKE MODIFICATIONS TO SUIT YOUR STYLE OF BUILDING.

IMPORTANT NOTES:
FORMER F7 MUST BE POSITIONED PERFECTLY SQUARE & VERTICAL AS MUST WING FIT TIGHT TO ENSURE A WARP FREE WING SET UP. ALL INTERNAL BRACING IS FROM 1/64" PLY, OR YOUR PREFERENCE. FOAM WEIGHT WHERE POSSIBLE, WITHOUT AFFECTING STRUCTURAL INTEGRITY. WING CHORD BOARD, AT LEAST ENG THICK REQUIRED. FOAM WING WILL BE WARPED, DUE TO SIMPLICITY & LIGHT WEIGHT. I FIND A COMMERCIAL WING CUTTING ITEM IF YOU ARE ABLE, TO CUT YOUR OWN WINGS. USE A PLASTIC F-14 KIT FOR REFERENCE. I FOUND IT VERY USEFUL.
USE CARBON TUBES TO ACTUATE WING SWEEP FROM SERVO

WING SELECTION:
USE THE LIGHTEST BALSA AVAILABLE. ALL PLY, UNLESS STATED, IS 1/64 PLY.
REMEMBER TO ENSURE PRESENCE OF DIHEDRAL, SWEEPBACK FOREWARD, ETC.
IF ANYTHING ABOUT THE CONSTRUCTION IS UNCLEAR TO YOU, PLEASE CONTACT ME THROUGH MY PRESENT E-MAIL ADDRESS, OR WRITE TO ME.
MANY THANKS IN SELECTING THE F-14 TOMCAT, PLEASE LET ME KNOW HOW YOURS DEVELOPS & SHARE PHOTOGRAPHS.

FOOT NOTE:
PLAN VIEW OF FUSELAGE IS SPLIT – ½ SIDE SHOWN, UPPER PANELS, OTHER HALF SHOWS LOWER PANELS.

WATCH CONSTRUCTION:
WATCH IS MADE FROM 1/32" BALSA.
USE A PIECE OF STIFF CARD TO COPY REAR OF F7 (SEE DRAWING)
FIT 3.2GGCM BATTERY WITH FOAM INTO WATCH FORMER (SEE PLAN)
COVER CENTRAL PORTION WITH TRANSPARENT FOOD WRAP FILM (SHRINK FIT)
USE CARD TEMPLATE TO CUT A COPY IN 3/4 LITPLY (F7 PART)
USE SPOT GUARD TO FIT BEHIND F7, FIT WITH SPRING IN PLACE.
FRAME COVERS FORWARD SECTION.
FIT SHAFTS AS SHOWN BY DRAWING → PUT ITS UPPER PCB TURNS WHEEL SHOWN FULLY DOWN, REMOVE FROM MENU OR CAVITY WITH ¼" BLOCK GLUED IN POSITION. FIT TO MODEL USING M3 SCREWS AS SHOWN.

BEFORE BUILDING PLEASE STUDY DRAWINGS TO ASSIST IN YOUR UNDERSTANDING!

NOTE: R/D POSITIONS SHOWN FOR OPTIONAL BUILT UP VERSION. USE "SANDWICH" METHOD

SKIN WINGS WITH 1/32" BALSA AFTER STUB SPAR HAS BEEN EPOXIED IN PLACE INTO FOAM.

INNER FOREWARD INLET EXTENSION 1/32" BALSA

OUTER FOREWARD INLET EXTENSION 1/32" BALSA

3/8" HARD BALSA OR TULIPWOOD SHAPE TO MATCH AIRFOIL SECTION

EXPERIMENT WITH POSITION.

REMOVE ONE CORNER

CARBON CLOTH & RESIN WHERE SHOWN (OPTIONAL ONLY)

BALSA BLOCK

CUT A RECESS IN F3 TO CLEAR THIS PART WHEN MOVING

SHIM I.D. BEARINGS TOP AND BOTTOM

GLUE BUILDING SWING WING PARTS TOGETHER MEASURE WITH CAREFUL CARE, DRY FIT ALL PARTS BEFORE BONDING.

2" OR NUMBER ONE SCREW WITH WASHERS PRE-D FITTED USING A VICE. TIGHTEN ONLY

FIT STUB WING ACTUATOR ARM JUST BELOW UPPER SKIN

FIT ⅛" PLY OR WING ROOT CAP.

SHIM WING PIVOT AXIS

SWING WING BOX

MAKE TIPS FROM BALSA

R10

FRONT

LOWER WING GLOVE FAIRING ⅛" BALSA

NOTE GRAIN DIRECTION

LOWER AS NOSE HATCH PERSPECTIVE

HATCH SPINE (REMOVE AFTER BUILDING HATCH)

¼" BALSA SHEET

CENTRAL SPINE

½" OR SLIGHTLY LESS

LOWER VIEW OF HATCH

GRAIN DIRECTION OF SHEET

SHAFT SECTION/ASSY ILLUSTRATED

BASIC MESSERSCHMITT CONSTRUCTION (NOT TO SCALE)

BALSA FUSE SIDES

½ STRIP BALSA

GUSSET

USE COMMERCIALLY AVAILABLE SPINNER

CUT SLOT IN WING BLANK WITH WING CORE IN THE MIDDLE TO ENSURE ¼" VERTICAL CUT IN THE CORE

CUT SLOT IN FOAM BLANK ¼"

FOAM WING CORE

INSERT A PIECE OF ⅛" BALSA INTO THE SLOT, DRAW AROUND THE EDGES, THIS IS YOUR SPAR TEMPLATE

NOTE: SIDETHRUST BUILT IN FOR FINAL VERSION

EDIT: MAKE NOSE FROM CARVED/SANDED FOAM BLOCK. COVER WITH 2 LAYERS OF GLASS CLOTH AND EPOXY RESIN. FINAL SAND FINISH REMOVE FOAM WITH GASOLINE.

MOULDED CLEAR CANOPIES AVAILABLE FROM DESIGNER FOR BOTH VERSIONS

FOR RIBSET, PLEASE CONTACT ME, I WILL SEND IT VIA EMAIL. YOU NEED A CAD PROGRAMME TO READ IT.

CUT 2 PIECES TO AREA MARKED Δ

CUT 4 PIECES TO AREA MARKED Δ

CUT 6 PIECES TO AREA MARKED Δ

SWING WING PIVOT AXIS

NOTE: SWING WING BAY FOR FREE VERSION ONLY

PASS THROUGH 5/16" HOLES. WOOD DOWEL TO HOLD IN POSITION (REPEAT ON OPPOSITE SIDE)

ALTERNATIVE WING BOX STRUCTURE.

UNDER PANEL SWING WING BOX ⅛" LITEPLY

FWD

SWING WING BOX MAKE 2 OF THIS PART FROM ⅛" LITEPLY

INCLUDE CUTOUT FOR SECTION

LINE EDGE WITH SCRAP LITEPLY

CUT WITH DOTTED SECTION SAME PART

MAKE SHORT BLACK FIN PANELLINES

CARVE FROM BLOCK BALSA

TURN UP FOAM (PINK/BLUE) SLIGHTLY WITH A DRILL OR LATHE, TRACE OUT INSIDE AIRFOIL TO DEPTH REQUIRED. COVER WITH LIGHT GLASS CLOTH AND EPOXY RESIN

USE THIS DRAWING AS WORKING TEMPLATE)

MAKE HATCH HOLE TO ACCESS FAN.

ALL DUCTING FROM ⅛" PLY, THIN CARD OR PLASTIC SHEET

INFILL TO AREA MARKED A WITH ¼" SHEET BALSA AFTER FITTING F.O.A TO CREATE RECESS FOR MOUNTING MINIMUM SHEET.

CARBON TUBE (⅛" DIA.) SHROUD OVER WIRE

EXPERIMENT WITH SHAPE/LENGTH OF DUCTING FOR PATCHED SURFACE

F.O.A

1" LITEPLY SERVO MOUNT

BRACE OR SILVER SOLDER PA'S INNER TUBE TO OUTER TUBE WITH SMALL PIECE OF BRASS TUBE THROUGH HOLE. MAKE A CAPPLY FOR CARE (SMALL)

RECESS R2 TO FIT OVER THESE PARTS

⅛" BIRCH PLY/BALSA SUPPORT

¼" SHEET BALSA SKIN

⅛" BIRCH PLY

⅛" FIN TIP

CUT TO CLEAR DISCHARGE

FOA

FIN TAPERED BACK TO ⅛"

CAMBER CORE PLUG (SHAPE)

CUT TO CLEAR WING MACHINE SAND OFF

COVER THIS FOREWARD SECTION WITH BALSA CLOTH & RESIN WHEN MADE TO ASSEMBLE

GA

GB

F7 ⅝" LITEPLY

CLAIRE

⅛" BALSA SKIN

⅛" BALSA SUPPORT

⅛" BALSA SKIN (VERY LIGHT) NOT FUNCTIONAL

ALTERNATIVELY CUT ALL TAILPIECES FROM FOAM, BALSA VENEERS

HOLLOWED BALSA OR FOAM

FIN BASE, CUT TO AREA MARKED Δ FROM ⅛" BALSA

SPLITTER PLATE ⅜" BALSA

GA

GC

GD

SET GD SLIGHTLY NICKED (½°) THAN GC.

PIVOT PLATES CUT 6 OFF THIS SHAPE FROM ¼" LITEPLY. CHAMFER WITH GLASS CLOTH AND EPOXY RESIN ON ALL EDGES BEFORE FITTING.

PS

PS CUT 6 PIECES ¼" LITEPLY

NOTE: ENSURE F2 IS FITTED TRULY STRAIGHT AND VERTICAL

IF GEARS RETRACTS, YOU WILL NEED TO CUT A HOLE FOREWARD TO CLEAR THE WHEEL.

⅛" BIRCH PLY LOCAL SUPPORT

⅛" BIRCH PLY MOUNTING DISC (TEMP-PORARY SUPPORT)

BEARING (ØI" O/D, ⅜" I/D, ¼" THICK) CLAMP ONE SIDE

SHAFT (BEARING CLAMP ONE SIDE)

TAILERON BOX GENERAL ARRANGEMENT. CONSTRUCT FROM ¼" LITEPLY (NOT TO SCALE)

INSERT BALLRACES BOTH SIDES F.S SUPPORT RODS (NOT SHOWN)

3mm CAPBOLT

BEARING TUBE 6mm

SECURING NUT-LOCTITE THREAD!

CUT (6mm I.D. INNER TUBE FOR ALL) 70.8mm LONG. 25.1mm FOR ¼" OD VERSION

HOLLOWED BALSA OR FOAM

UPPER HATCH OUTLINE

PLASTIC LOW FRICTION

BALL RACE

SPIN BEARING

SPIN BEARING

SPIN BEARING