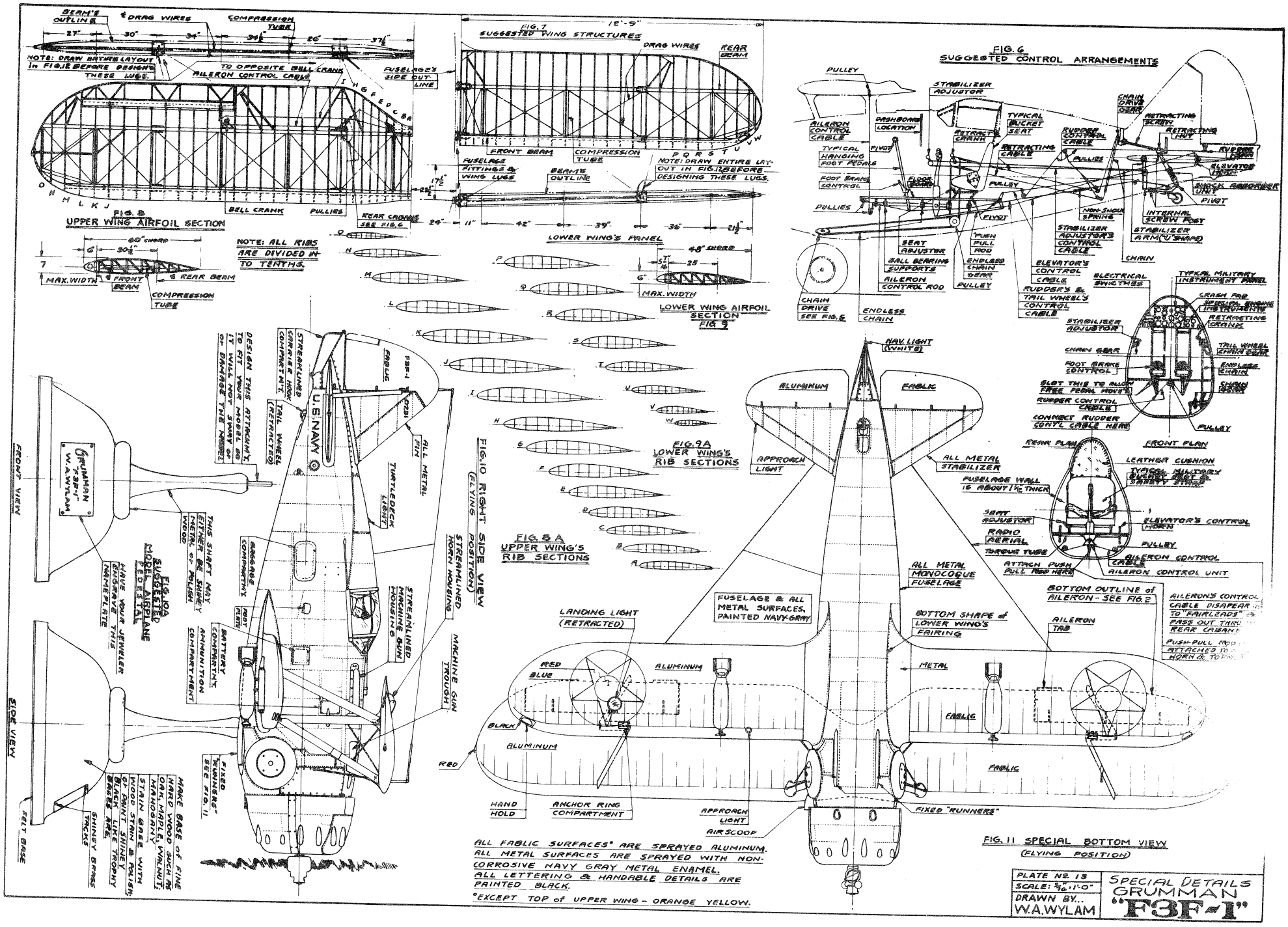


FIG. 8
UPPER WING AIRFOIL SECTION
BEAM'S OUTLINE
DRAG WIRES
COMPRESSION TUBE
NOTE: DRAW ENTIRE LAYOUT IN FIG. 12 BEFORE DESIGNING THESE LUGS.
TO OPPOSITE BELL CRANK
AILERON CONTROL CABLE
FUSELAGE'S SIDE OUT-LINE
BELL CRANK
PULLIES
REAR CRANKS SEE FIG. 6
FIG. 7
SUGGESTED WING STRUCTURES
FRONT BEAM
COMPRESSION TUBE
REAR BEAM
FUSELAGE FITTINGS & WING LUGS
BEAM'S OUTLINE
NOTE: DRAW ENTIRE LAY-OUT IN FIG. 12 BEFORE DESIGNING THESE LUGS.
LOWER WING'S PANEL
NOTE: ALL RIBS ARE DIVIDED INTO TENTHS.
MAX. WIDTH
FRONT BEAM
REAR BEAM
COMPRESSION TUBE
LOWER WING AIRFOIL SECTION
FIG. 9
FIG. 9A
LOWER WING'S RIB SECTIONS
FIG. 8A
UPPER WING'S RIB SECTIONS
FIG. 6
SUGGESTED CONTROL ARRANGEMENTS
PULLEY
STABILIZER ADJUSTOR
AILERON CONTROL CABLE
DASHBOARD LOCATION
TYPICAL HANGING FOOT PEDALS
FOOT BRAKE CONTROL
TYPICAL BUCKET SEAT
RETRACTING CRANK
RETRACTING CABLE
RUDDER CONTROL CABLE
PULLIES
CHAIN DRIVE GEARS
RETRACTING SCREW
RETRACTING NUT
ELEVATOR HORN
SHOCK ABSORBER UNIT
PIVOT
NON-SHOCK SPRING
INTERNAL SCREW POST
STABILIZER ARM ("U" SHAPE)
CHAIN
STABILIZER ADJUSTOR'S CONTROL CABLE
ELEVATOR'S CONTROL CABLE
RUDDER'S & TAIL WHEEL'S CONTROL CABLE
SEAT ADJUSTOR
BALL BEARING SUPPORTS
AILERON CONTROL ROD
PUSH PULL ROD
ENDLESS CHAIN GEAR
CHAIN DRIVE SEE FIG. 6
ENDLESS CHAIN
ELECTRICAL SWITCHES
TYPICAL MILITARY INSTRUMENT PANEL
CRASH PAD
SPECIAL ENGINE INSTRUMENTS
RETRACTING CRANK
STABILIZER ADJUSTOR
CHAIN GEAR
FOOT BRAKE CONTROL
TAIL WHEEL CHAIN GEAR
ENDLESS CHAIN
SLOT THIS TO ALLOW FREE PEDAL MOVE
RUDDER CONTROL CABLE
CONNECT RUDDER CONT'L CABLE HERE
PULLEY
REAR PLAN
FRONT PLAN
LEATHER CUSHION
TYPICAL MILITARY SHIPPY STICK
FUSELAGE WALL IS ABOUT 1 1/16" THICK
SEAT ADJUSTOR
ELEVATOR'S CONTROL HORN
RADIO AERIAL
TORQUE TUBE
PULLEY
AILERON CONTROL CABLE
ATTACH PUSH PULL ROD HERE
AILERON CONTROL UNIT
ALL METAL MONOCOQUE FUSELAGE
BOTTOM OUTLINE of AILERON - SEE FIG. 2
AILERON'S CONTROL CABLE DISAPEAR TO "FAIRLEADS" & PASS OUT THRU REAR CABANE
PUSH-PULL ROD ATTACHED TO HORN & TO
NAV. LIGHT (WHITE)
ALUMINUM
FABLIC
APPROACH LIGHT
ALL METAL STABILIZER
FUSELAGE & ALL METAL SURFACES, PAINTED NAVY-GRAY
BOTTOM SHAPE of LOWER WING'S FAIRING
AILERON TAB
METAL
LANDING LIGHT (RETRACTED)
RED
BLUE
ALUMINUM
BLACK
RED
HAND HOLD
ANCHOR RING COMPARTMENT
APPROACH LIGHT
AIRSCOOP
FIXED "RUNNERS"
FIG. 11 SPECIAL BOTTOM VIEW
(FLYING POSITION)
FIG. 10 RIGHT SIDE VIEW
(FLYING POSITION)
STREAMLINED CARRIER HOOK COMPARTMENT
TAIL WHEEL (RETRACTED)
DESIGN THIS ATTACHMENT TO FIT YOUR MODEL SO IT WILL NOT SPRAY OR DAMAGE THE MODEL
U.S. NAVY
FABLIC
F3F-1
FIN
ALL METAL
TURTLEDECK LIGHT
GRUMMAN "F3F-1" W.A.WYLAM
THIS SHAFT MAY EITHER BE SHINEY METAL OR POLISHED WOOD
GARAGE COMPARTMENT
FOOT PLATE
BATTERY COMPARTMENT
AMMUNITION COMPARTMENT
STREAMLINED HORN HOUSING
STREAMLINED MACHINE GUN HOUSING
MACHINE GUN TROUGH
FIXED "RUNNERS" SEE FIG. 11
FIG. 10A
SUGGESTED MODEL AIRPLANE PEDESTAL
HAVE YOUR JEWELER ENGRAVE THIS NAMEPLATE
MAKE BASE OF FINE HARD WOOD SUCH AS OAK, MAPLE, WALNUT, MAHOGANY
STAIN BASE WITH WOOD STAIN & POLISH OR PAINT SHINEY BLACK LIKE TROPHY BASES ARE.
SHINEY BRASS TACKS
FELT BASE
FRONT VIEW
SIDE VIEW
ALL FABLIC SURFACES* ARE SPRAYED ALUMINUM.
ALL METAL SURFACES ARE SPRAYED WITH NON-CORROSIVE NAVY GRAY METAL ENAMEL.
ALL LETTERING & HANDABLE DETAILS ARE PAINTED BLACK.
*EXCEPT TOP of UPPER WING - ORANGE YELLOW.
PLATE NO. 13
SCALE: 3/16" = 1'-0"
DRAWN BY... W.A.WYLAM
SPECIAL DETAILS GRUMMAN "F3F-1"

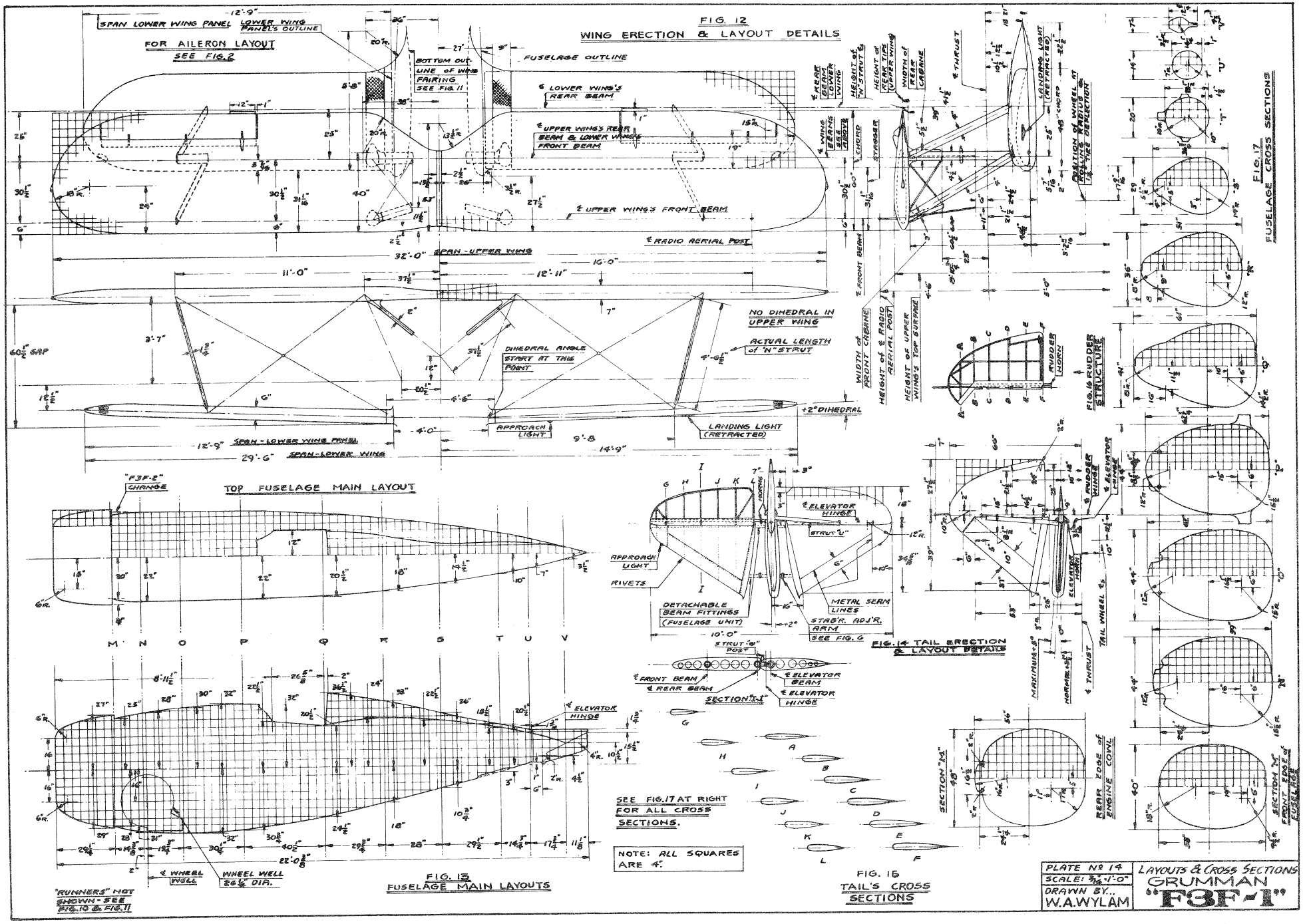


FIG. 12
WING ERECTION & LAYOUT DETAILS
SPAN LOWER WING PANEL
LOWER WING PANEL'S OUTLINE
FOR AILERON LAYOUT SEE FIG. 2
BOTTOM OUTLINE OF WING FAIRING SEE FIG. 11
FUSELAGE OUTLINE
℄ LOWER WING'S REAR BEAM
℄ UPPER WING'S REAR BEAM & LOWER WING'S FRONT BEAM
℄ UPPER WING'S FRONT BEAM
℄ RADIO AERIAL POST
SPAN-UPPER WING
NO DIHEDRAL IN UPPER WING
ACTUAL LENGTH of "N" STRUT
DIHEDRAL ANGLE START AT THIS POINT
APPROACH LIGHT
LANDING LIGHT (RETRACTED)
+2° DIHEDRAL
SPAN-LOWER WING PANEL
SPAN-LOWER WING
GAP
℄ REAR BEAM LOWER WING
HEIGHT of "N" STRUT ℄
HEIGHT of REAR TIP (UPPER WING)
WIDTH of REAR CABANE
℄ THRUST
LANDING LIGHT (RETRACTED)
POSITION OF WHEEL AT ROLLING RADIUS & TIRE DEFLECTION
℄ WING BEAMS SEE CHORDS
CHORD
STAGGER
℄ FRONT BEAM
WIDTH of FRONT CABANE
HEIGHT of ℄ RADIO AERIAL POST
HEIGHT of UPPER WING'S TOP SURFACE
FIG. 17
FUSELAGE CROSS SECTIONS
FIG. 16 RUDDER STRUCTURE
RUDDER HORN
"F3F-2" CHANGE
TOP FUSELAGE MAIN LAYOUT
℄ ELEVATOR HINGE
STRUT "U"
APPROACH LIGHT
RIVETS
DETACHABLE BEAM FITTINGS (FUSELAGE UNIT)
METAL SEAM LINES
STAB'R. ADJ'R. ARM SEE FIG. 6
FIG. 14 TAIL ERECTION & LAYOUT DETAILS
℄ ELEVATOR BEAM
℄ ELEVATOR HINGE
℄ FRONT BEAM
℄ REAR BEAM
SECTION "T-T"
℄ ELEVATOR HINGE
℄ WHEEL WELL
WHEEL WELL 26½" DIA.
"RUNNERS" NOT SHOWN - SEE FIG. 10 & FIG. 11
FIG. 13
FUSELAGE MAIN LAYOUTS
SEE FIG. 17 AT RIGHT FOR ALL CROSS SECTIONS.
NOTE: ALL SQUARES ARE 4".
FIG. 15
TAIL'S CROSS SECTIONS
MAXIMUM
NORMAL
℄ THRUST
TAIL WHEEL
SECTION "M"
REAR EDGE of ENGINE COWL
SECTION "M"
FRONT EDGE of FUSELAGE
PLATE Nº 14
SCALE: 3/4" = 1'-0"
DRAWN BY... W.A.WYLAM
LAYOUTS & CROSS SECTIONS
GRUMMAN
"F3F-1"

fine of the manufacturer from a small company to a first-class place in the aeronautical industry. Mr. LeRoy Grumman and his associates originated the clever, and much copied, retracting-wheel system that are found on all of his products. Mr. Grumman's originality is shown by every design that he has created; his airplanes are about the easiest to identify in the sky because of its very plump fuselage, the compact wing arrangements and the folded landing wheels.

The "F3F-1" was a great improvement over its predecessor . . . the "F2F-1." The first "F3F-1" was manufactured in large quantities for the navy and is still in first

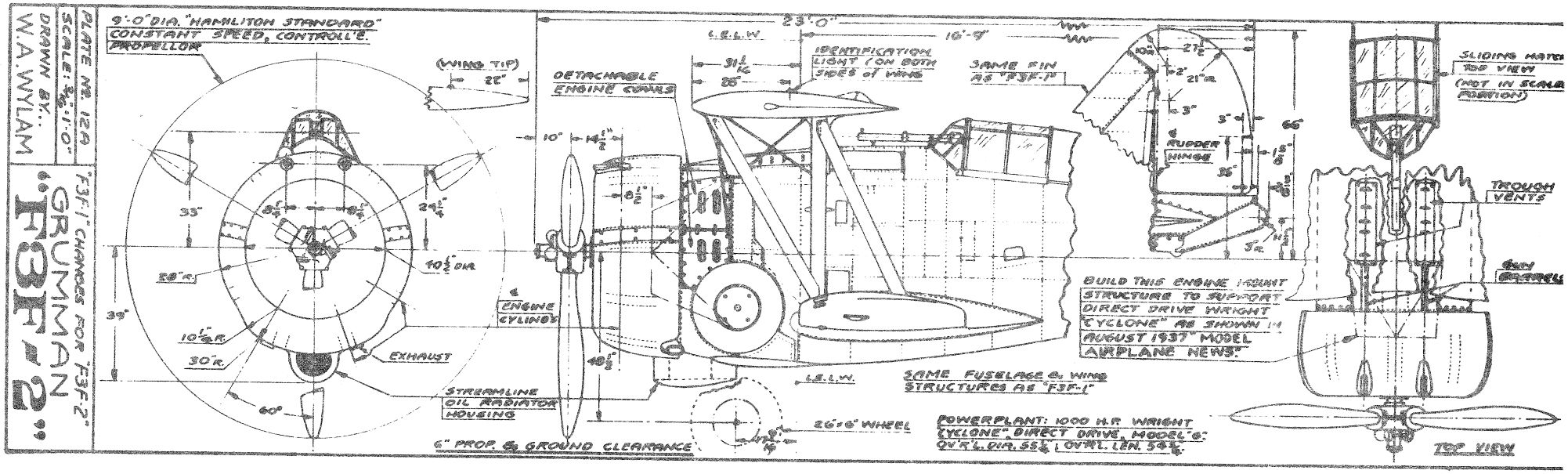
**The Grumman U.S. Navy F3F-1 powered by a 650 hp. Wasp Jr.**

model of the "F3F-2" in large quantities, which was turned over to the United States Marine Corp squadrons. The "F3F-2" was identified the same as the "F3F-1," with the exception of the changes around the engine section, which were made in order to accommodate the 1,000 horsepower Wright Cyclone, Model "G." It has the same specifications and design characteristics as the "F3F-1" had; the "F3F-2" was rather formidable looking by its new style engine cowl, snappy looking windows and new type rudder. Getting

ered. The landing gear a tail wheel retract fully in the fuselage, as shown Figure 10.

## Modeling the Grumman Fighter

It is suggested that the reader refer the super-plans shown on the Voug "V-143" for aid in drawing up the pla on the "F3F-1." After the plans are draw it is best that the modeler build the mod by the following method, in order to insu realism.

The fuselage should be carved from solid wood to a shape as shown in Figu 13, and to the cross-sections as shown

— *(continued on page 8)*