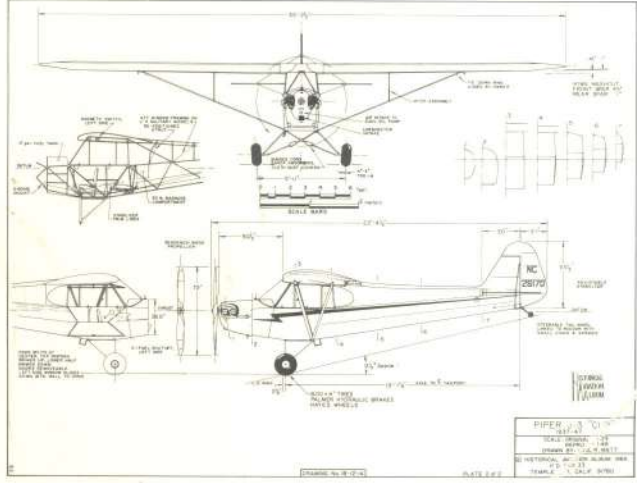
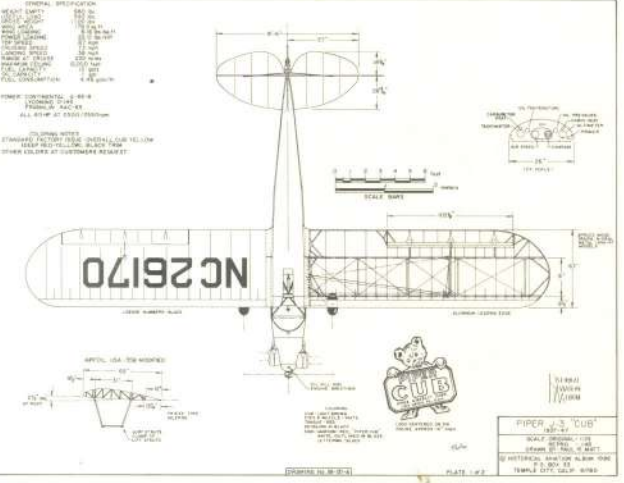
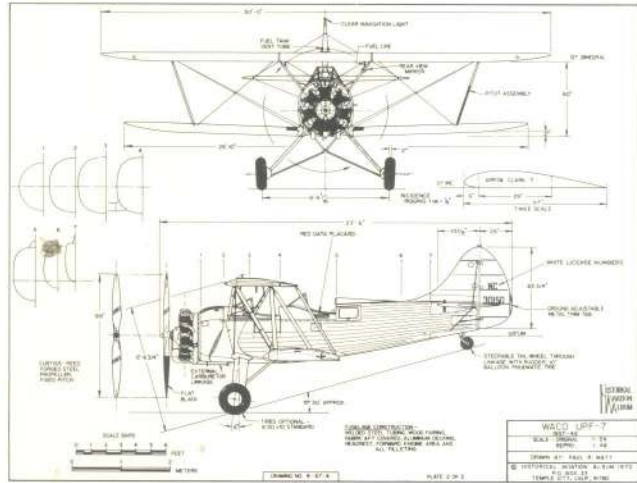
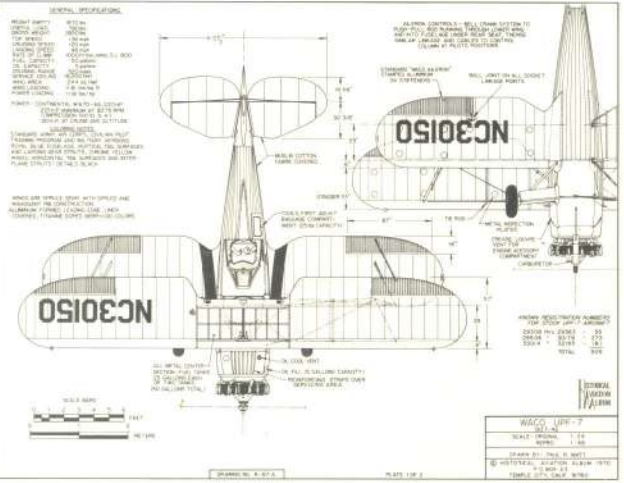
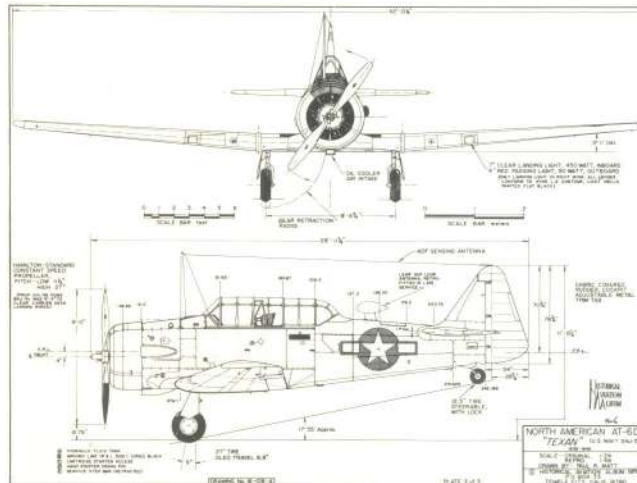


# Paul Matt Scale Airplane Drawings Volume 2



# 3-View Scale Drawings by Paul Matt

Volume 1 contains all airplanes listed from A through G. Volume 2 contains all airplanes listed from H through W. If you would like individual, large sheets of any of the below listed scale drawings, send request, catalog #, appropriate fee, and shipping charge of \$3.95. If you want your drawing rolled in a tube — add \$4.00. Clear, concise, uncluttered 3- and 4- view engineering presentations, in large (17" x 22"), easy to work with standard scales. Drawing is highly detailed and is an accurate working print with all dimensions, specifications, airfoils, cross sections, templates, and color scheme included. These drawings are part of the collection of the internationally acclaimed and highly honored *Historical Aviation Album*. All orders are folded unless a tube is ordered. Each has 2 to 6 large sheets. **Rolled in tube — add \$4.00 plus \$3.95 postage. Send to: Aviation Heritage, P.O. Box 665, Destin, FL 32540.**

DRAWING SCALE CODE	
Last letter of catalog number indicates scale of drawing	
A =	1:24 ... 1/2" = 1'
B =	1:16 ... 3/4" = 1'
C =	1:48 ... 1/4" = 1'
D =	1:32 ... 3/8" = 1'
E =	1:8 ... 1 1/2" = 1'
F =	1:6 ... 2" = 1'
G =	1:96 ... 1/8" = 1'

## VOLUME 1 CONTENTS:

### RETAIL PRICE

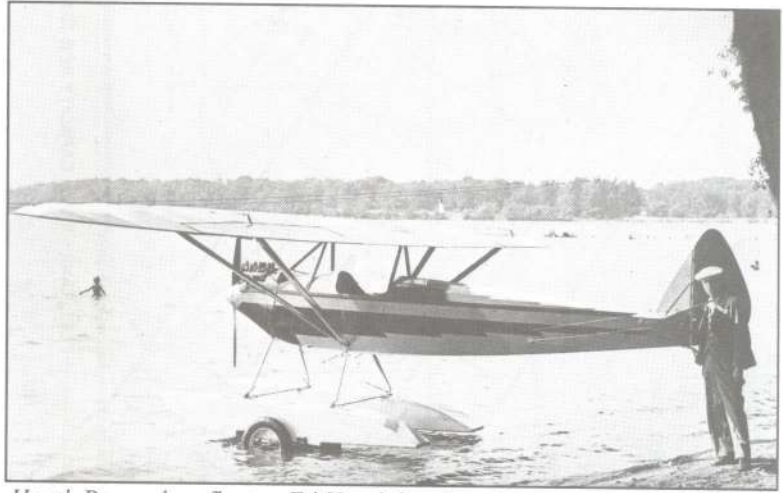
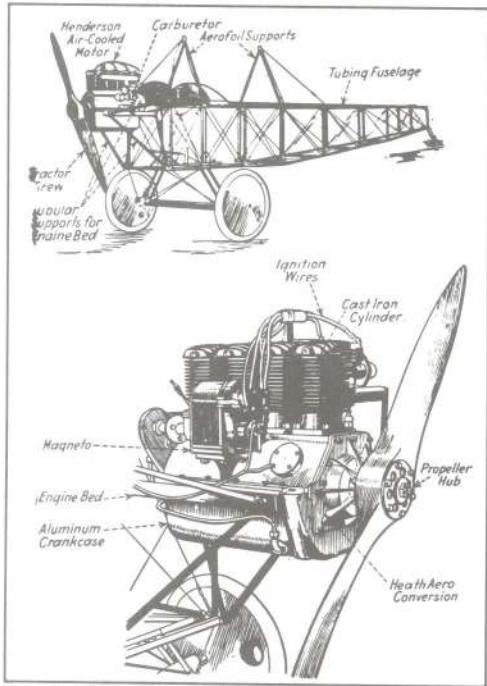
## VOLUME 2 CONTENTS:

### RETAIL

Aeromarine 39B	(#9-78A, 3 shts.)	\$16.50	Heath LNB-4 Parasol	(#4-35B, 2 shts.)	
Aeronca 7AC "Champion"	(#AM-41A, 2 shts.)	15.00	Howard DGA-15P	(#AM-52A, 2 shts.)	
Aeronca C-2	(#10-80A, 2 shts.)	15.00	Howard DGA-3 "Pete"	(#12-89A, 2 shts.)	
Aeronca C-3 "Collegian"	(#10-81A, 2 shts.)	15.00	Howard DGA-4 "Mike"	(#13-90A, 2 shts.)	
Aeronca C-3 "Master"	(#10-82A, 2 shts.)	15.00	Howard DGA-5 "Ike"	(#13-91A, 2 shts.)	
Aeronca K	(#15-103A, 2 shts.)	15.00	Howard DGA-6 "Mr. Mulligan"	(#14-99A, 3 shts.)	
Aeronca LB "Low wing"	(#AM-60A, 2 shts.)	15.00	Hughes 1B Longwing Racer	(#16-108A, 3 shts.)	
Alcor C.6.1 Jr. Transport	(#4-33D, 2 shts.)	15.00	Hughes 1B Shortwing Racer	(#16-107A, 3 shts.)	
Anderson-Greenwood AG-14	(#12-94A, 2 shts.)	15.00	Laird LC-DW-300 "Solution"	(#7-64A, 2 shts.)	
Beechcraft D-18S Twin	(#6-59A, 3 shts.)	16.50	Laird LC-DW-500 "Super Solution"	(#8-74A, 2 shts.)	
Bell P-39Q "Airacobra"	(#1-7A, 2 shts.)	15.00	Laird-Tumer LTR-14	(#10-83A, 2 shts.)	
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Berliner-Joyce XF3J-1	(#15-104A, 2 shts.)	15.00	Lockheed Model 9 "Orion"	(#3-22A, 2 shts.)	
Boeing 307 "Stratoliner"	(#7-63C, 2 shts.)	15.00	Lockheed PV-1 "Ventura"	(#E-101C, 3 shts.)	
Boeing F3B-1	(#AM-56A, 2 shts.)	15.00	LWF Cato Model L "Butterfly"	(#10-84A, 2 shts.)	
Boeing XF7B-1	(#AM-38A, 2 shts.)	15.00	LWF Model G-2	(#2-13A, 2 shts.)	
Brewster F2A-3 "Buffalo"	(#5-47A, 2 shts.)	15.00	LWF Model H-1 "Owl"	(#11-85C, 2 shts.)	
Cessna 120/140	(#1-9A, 2 shts.)	15.00	Martin BM-1 and 2	(#1-5A, 2 shts.)	
Cessna C-37 "Airmaster"	(#6-50A, 2 shts.)	15.00	Martin T4M-1, Great Lakes TG-1	(#4-29D, 2 shts.)	
Cessna T-50 "Bobcat"	(#17-115A, 2 shts.)	15.00	Martin TT, 1913 Trainer	(#5-40A, 2 shts.)	
Consolidated P2Y-2	(#9-71C, 3 shts.)	16.50	Messerschmitt Me 109 E-3	(#AA-75A, 2 shts.)	
Consolidated PBV-5A "Catalina"	(#17-114C, 3 shts.)	18.00	Morehouse 2 Cyl. Aero Engine	(#3-27E, 1 sht.)	
Curtiss "Carrier Pigeon I"	(#2-15A, 2 shts.)	15.00	Navy-Wright NW-1 Mystery Racer	(#4-31A, 2 shts.)	
Curtiss 1st Milit. Tract. S.C. No. 21/22	(#6-55A, 2 shts.)	15.00	Navy-Wright NW-2 Mystery Racer	(#4-32A, 2 shts.)	
Curtiss A-3B "Falcon"	(#AM-39A, 2 shts.)	15.00	North American O-47A	(#13-98A, 3 shts.)	
Curtiss AT-9 "Jeep"	(#2-18A, 2 shts.)	15.00	North American AT-6D "Texan"	(#16-106A, 3 shts.)	
Curtiss B-2 Condor Bomber	(#18-116C, 2 shts.)	15.00	North American XB-70-1 "Valkyrie"	(#7-66G, 3 shts.)	
Curtiss B-20 Condor Transport	(#18-117C, 2 shts.)	15.00	Packard-Le Pere LUSAC-11	(#1-3A, 2 shts.)	
Curtiss F Boat	(#1-1A, 2 shts.)	15.00	Pfizer 1910 Monoplane	(#2-11A, 2 shts.)	
Curtiss F92 "Sparrowhawk"	(#18-118A, 2 shts.)	15.00	Piper J-3 "Cub"	(#18-121A, 2 shts.)	
Curtiss MF-K-6 "Seagull"	(#AM-37A, 2 shts.)	15.00	Piper J-4 "Cub Coupe"	(#18-122A, 2 shts.)	
Curtiss P-36 "Hawk"	(#7-62A, 2 shts.)	15.00	Piper PA-12 "Super Cruiser"	(#4-36A, 2 shts.)	
Curtiss P-6E "Hawk"	(#5-42A, 2 shts.)	15.00	Republic RC-3 Seabee	(#16-109A, 3 shts.)	
Curtiss PW-8	(#10-79A, 2 shts.)	15.00	Rover Inverted Aero Engine	(#5-45F, 1 sht.)	
Curtiss R-6 Racer	(#HS-73A, 2 shts.)	15.00	Ryan B-5 "Brougham"	(#RB-96A, 2 shts.)	
Curtiss SC-1 "Seahawk"	(#1-8A, 2 shts.)	15.00	Ryan FR-1 "Fireball"	(#3-26A, 2 shts.)	
Curtiss SNC-1 "Falcon"	(#AA-65A, 2 shts.)	15.00	Ryan SCW Low Wing	(#AM9-49A, 2 shts.)	
Curtiss SO3C-1 "Seagull"	(#AM-34A, 2 shts.)	15.00	Ryan ST-A	(#9-76A, 2 shts.)	
Curtiss Twin JN	(#3-21A, 2 shts.)	15.00	Seversky BT-8	(#3-23A, 2 shts.)	
Curtiss-Cox "Texas Wildcat"	(#2-14B, 2 shts.)	15.00	Seversky P-35	(#AA-57A, 2 shts.)	
Curtiss-Wright T-32 "Condor"	(#1-6C, 2 shts.)	15.00	Sikorsky S-39B	(#14-100A, 5 shts.)	
Curtiss-Wright CW-1 "Jr."	(#11-88A, 3 shts.)	16.50	Standard J-1	(#17-110A, 2 shts.)	
Douglas O-2	(#11-86A, 3 shts.)	16.50	Taylor E-2 "Cub"	(#18-119A, 2 shts.)	
Douglas O-2H	(#11-87A, 2 shts.)	15.00	Taylor J-2 "Cub"	(#18-120A, 2 shts.)	
Douglas O-38	(#12-92A, 2 shts.)	15.00	Thomas-Boeing MB-3A and		
Douglas O-38E	(#12-93A, 2 shts.)	15.00	Thomas-Morse MB-3	(#4-28B, 2 shts.)	
Douglas M-2	(#14-68A, 2 shts.)	15.00	Timb TC-170 "Collegiate"	(#8-72A, 2 shts.)	
Douglas A-20G "Havoc"	(#15-102D, 6 shts.)	20.00	Verville R-3 Racer	(#6-58A, 2 shts.)	
Etrich 1913 Taube	(#TB-105D, 3 shts.)	16.50	Vought F4U-1 "Corsair"	(#AA-51A, 3 shts.)	
Fairchild FC-1	(#17-111A, 2 shts.)	15.00	Vought SBU-1	(#3-24A, 2 shts.)	
Fairchild FC-2	(#17-112A, 2 shts.)	15.00	Vought XF5U	(#8-70A, 3 shts.)	
Fairchild FC-2W "Stars & Stripes"	(#17-113A, 2 shts.)	15.00	Vultee V-1A Transport	(#2-16A, 2 shts.)	
Fairchild M-62, PT-19 "Cornell"	(#AA-69A, 2 shts.)	15.00	Waco UMF/YMF-5	(#13-97A, 3 shts.)	
Fokker T.5 Netherlands Bomber	(#AA-61C, 2 shts.)	15.00	Waco UPF-7	(#8-67A, 2 shts.)	
Gallaudet D-1	(#3-20A, 2 shts.)	15.00	Waco YKS-6 Cabin	(#2-17A, 2 shts.)	
General Aviation Clark GA-43	(#13-95D, 2 shts.)	15.00	Waterman "Arrowbile"	(#3-25A, 2 shts.)	
Grumman F-11F-1 "Tiger"	(#2-19D, 2 shts.)	15.00	Waterman "Gosling" Racer	(#1-4B, 2 shts.)	
Grumman FF-1	(#AA-77A, 2 shts.)	15.00	Wright F2W-1 Racer	(#5-43A, 2 shts.)	
Grumman G-44 "Widgeon"	(#AM5-30A, 2 shts.)	15.00	Wright F2W-2 Racer	(#5-44A, 2 shts.)	
Grumman J2F-5 "Duck"	(#6-53A, 3 shts.)	16.50	Wright Brothers 1903 Flyer	(#0-123A, 2 shts.)	
			Wright-Martin V	(#1-2A, 2 shts.)	

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# Heath LNB-4 Parasol

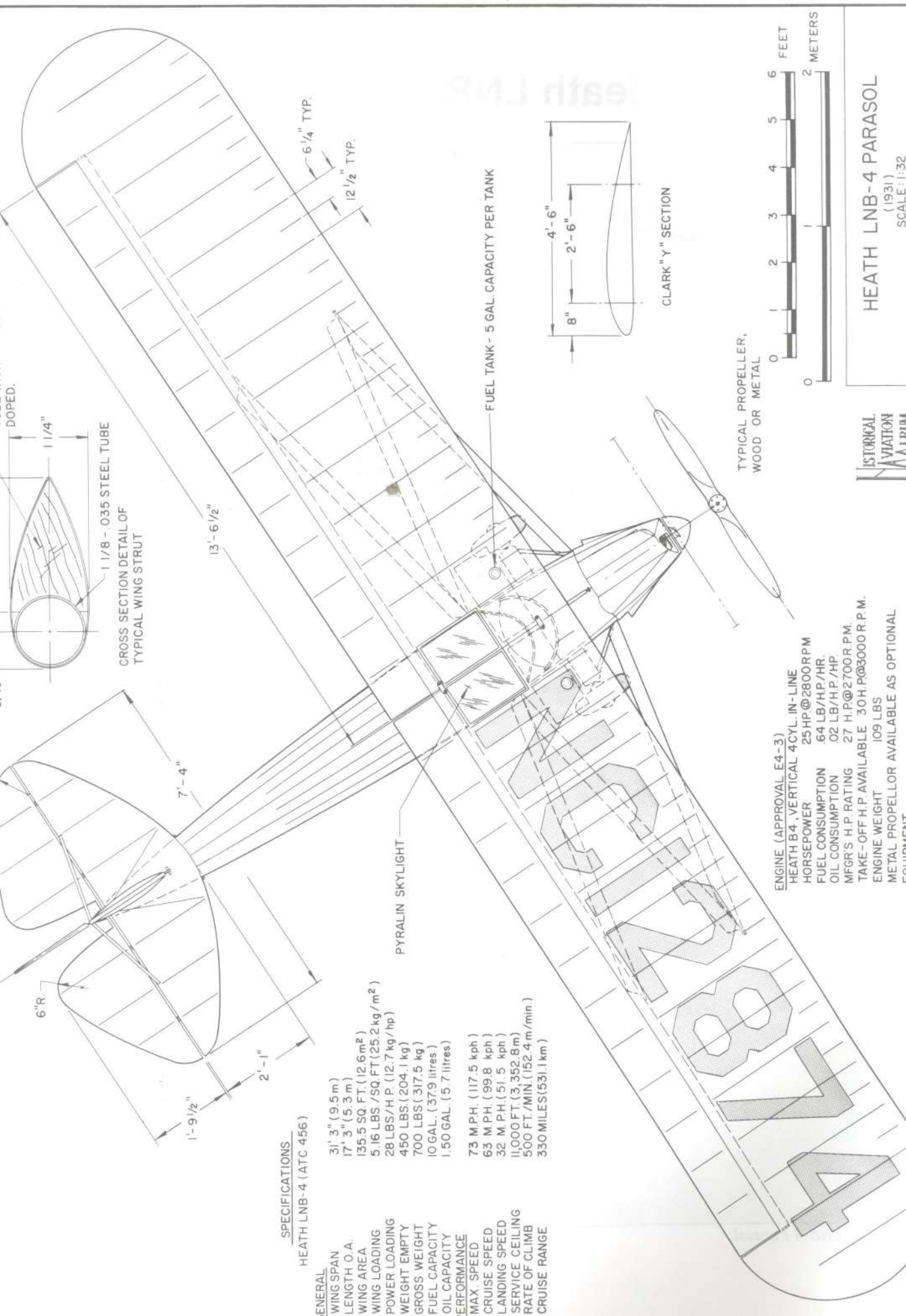


*Heath Parasol on floats. Ed Heath by aircraft.*

*Heath Parasol and Henderson converted motorcycle engine installation.*

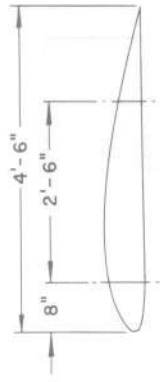


*Heath LNB-4 Parasol.*

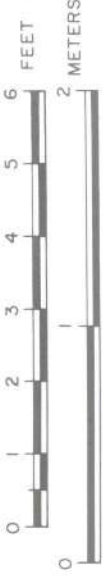


**SPECIFICATIONS**  
HEATH LNB-4 (ATC 456)

- GENERAL**  
 WING SPAN 31' 3" (9.5 m)  
 LENGTH O.A. 17' 3" (5.3 m)  
 WING AREA 135.5 SQ. FT. (12.6 m<sup>2</sup>)  
 WING LOADING 5.16 LBS./SQ. FT. (25.2 kg/m<sup>2</sup>)  
 POWER LOADING 28 LBS./H.P. (12.7 kg/hp)  
 WEIGHT EMPTY 450 LBS. (204.1 kg)  
 GROSS WEIGHT 700 LBS. (317.5 kg)  
 FUEL CAPACITY 10 GAL. (37.9 litres)  
 OIL CAPACITY 1.50 GAL. (5.7 litres)
- PERFORMANCE**  
 MAX. SPEED 73 M.P.H. (117.5 kph)  
 CRUISE SPEED 63 M.P.H. (99.8 kph)  
 LANDING SPEED 32 M.P.H. (51.5 kph)  
 SERVICE CEILING 11,000 FT. (3,352.8 m)  
 RATE OF CLIMB 500 FT./MIN. (152.4 m/min.)  
 CRUISE RANGE 330 MILES (531.1 km)



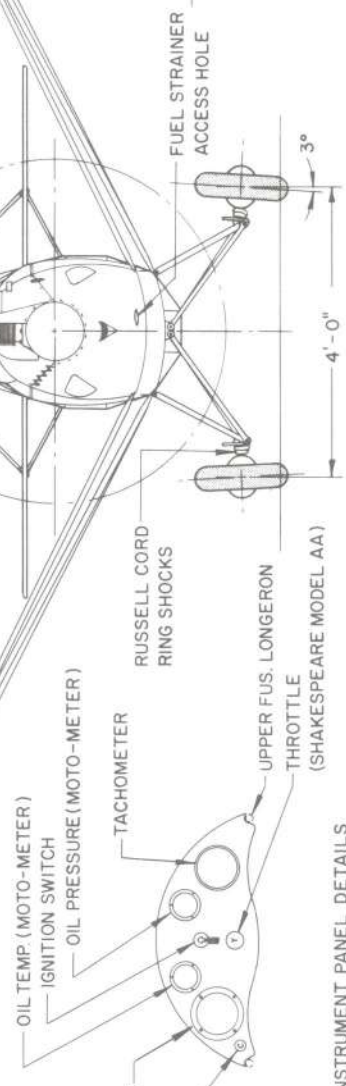
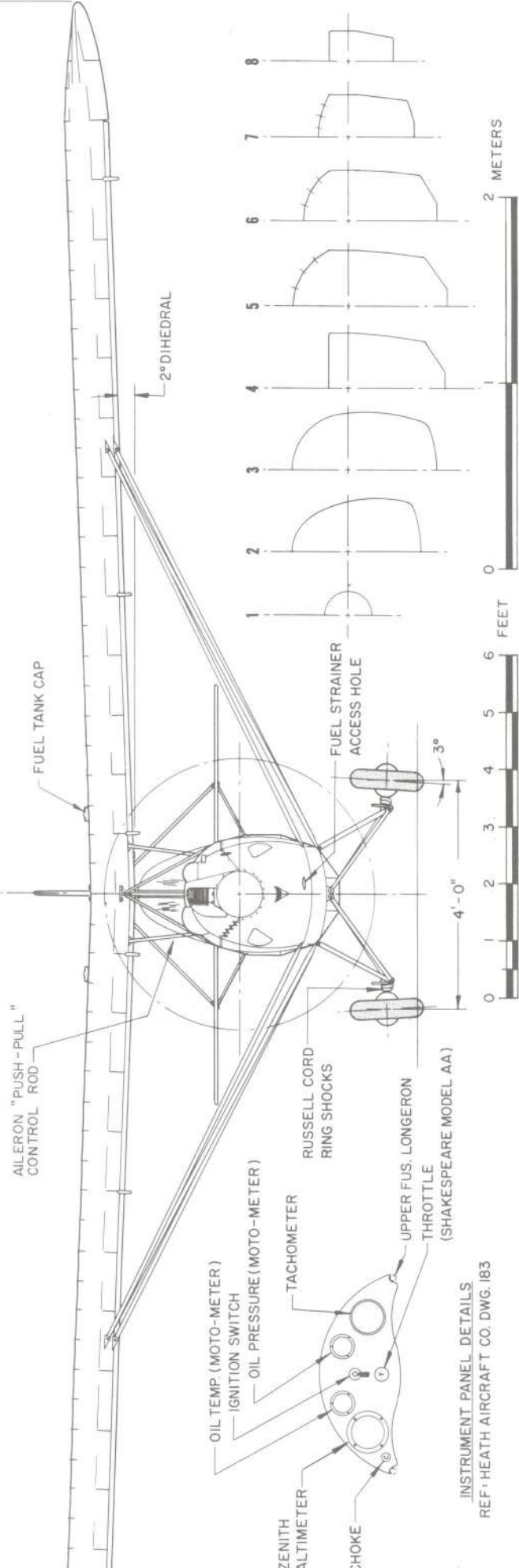
TYPICAL PROPELLER,  
WOOD OR METAL



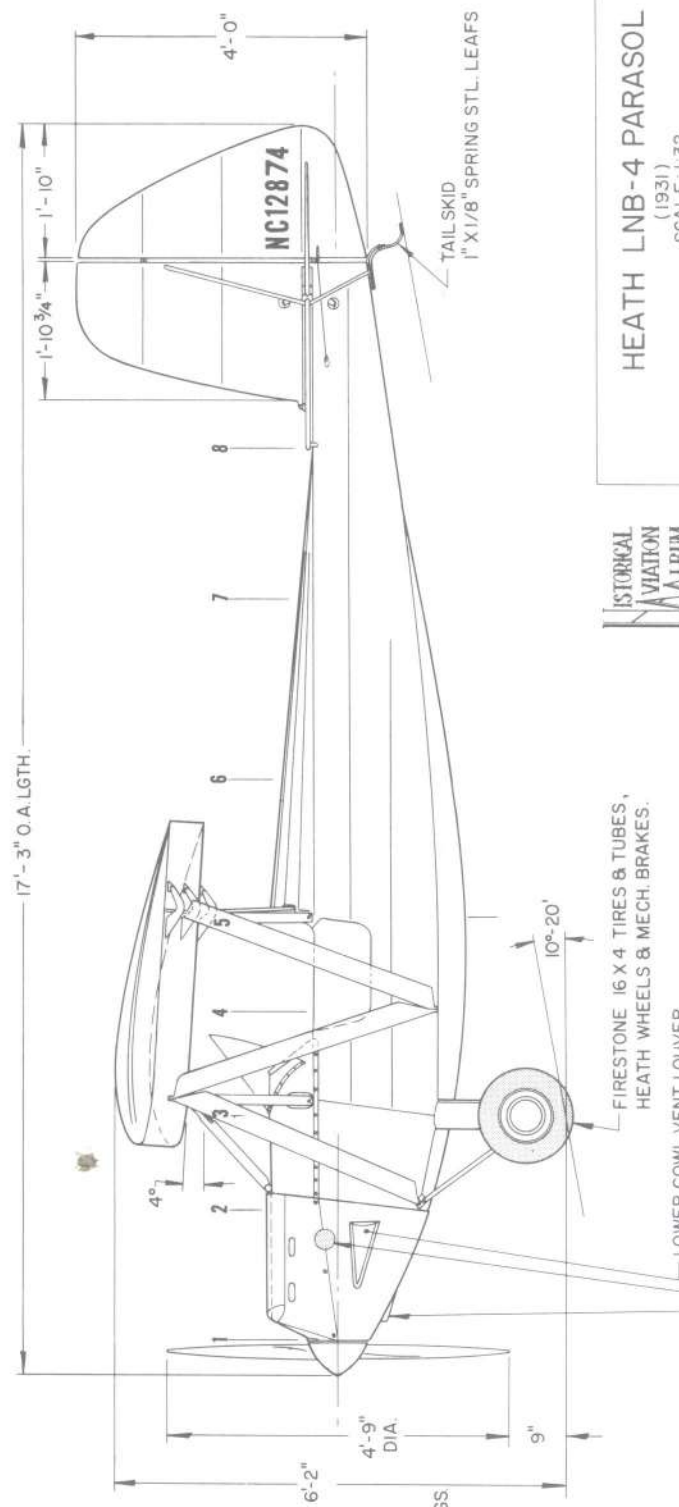
- ENGINE (APPROVAL E4-3)  
 HEATH B4, VERTICAL 4 CYL. IN-LINE  
 HORSEPOWER 25 HP @ 2800 RPM  
 FUEL CONSUMPTION .64 LB./HP/HR.  
 OIL CONSUMPTION .02 LB./HP/HR.  
 MFG'S H.P. RATING 27 H.P. @ 2700 R.P.M.  
 TAKE-OFF H.P. AVAILABLE 30 H.P. @ 3000 R.P.M.  
 ENGINE WEIGHT 109 LBS  
 METAL PROPELLOR AVAILABLE AS OPTIONAL EQUIPMENT

HEATH LNB-4 PARASOL  
 (1931)  
 SCALE: 1:32

HISTORICAL  
 AVIATION  
 LITERATURE



INSTRUMENT PANEL DETAILS  
 REF: HEATH AIRCRAFT CO. DWG. 183



**COLOR SCHEME**  
 (FACTORY BUILT)

ENTIRE AIRCRAFT FINISHED IN LIGHT CREAM. REGISTRATION LETTERS, NUMERALS & OPTIONAL TRIM FINISH WERE BLACK.

KNOWN REGISTRATION NUMBERS OF FACTORY BUILT LNB-4 AIRCRAFT ARE LISTED AS FOLLOWS:  
 NC 10739 - BELIEVED TO BE PROTOTYPE.  
 NC 10740  
 NC 12874 - AIRCRAFT SHOWN IN THESE DWGS  
 NC 13375  
 NC 13646  
 NC 15621

# Howard DGA 15P

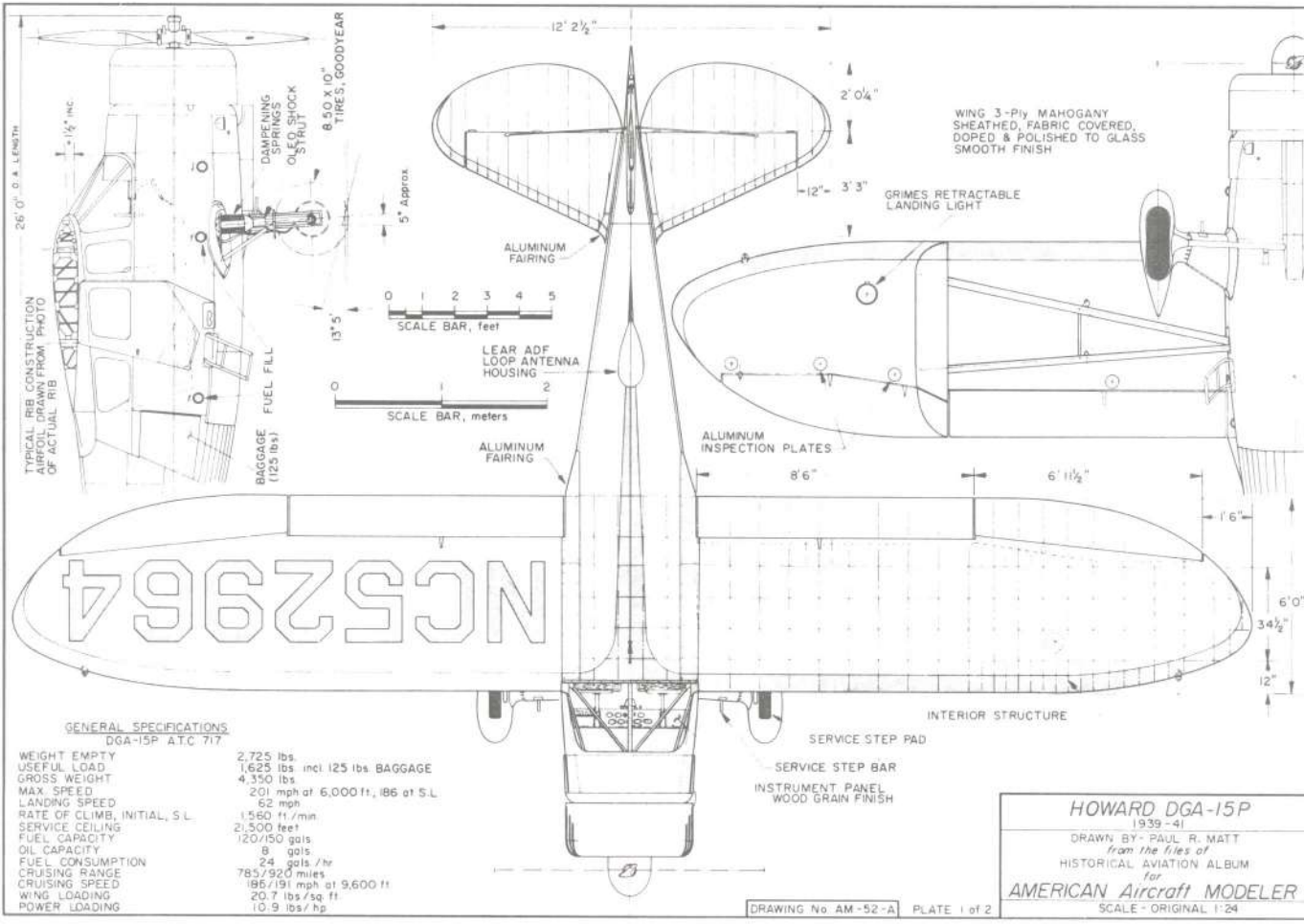
*Dark blue and red DGA-15P of the Aeronautical Commission, State of West Virginia, visits Cincinnati, Ohio – 1956.*



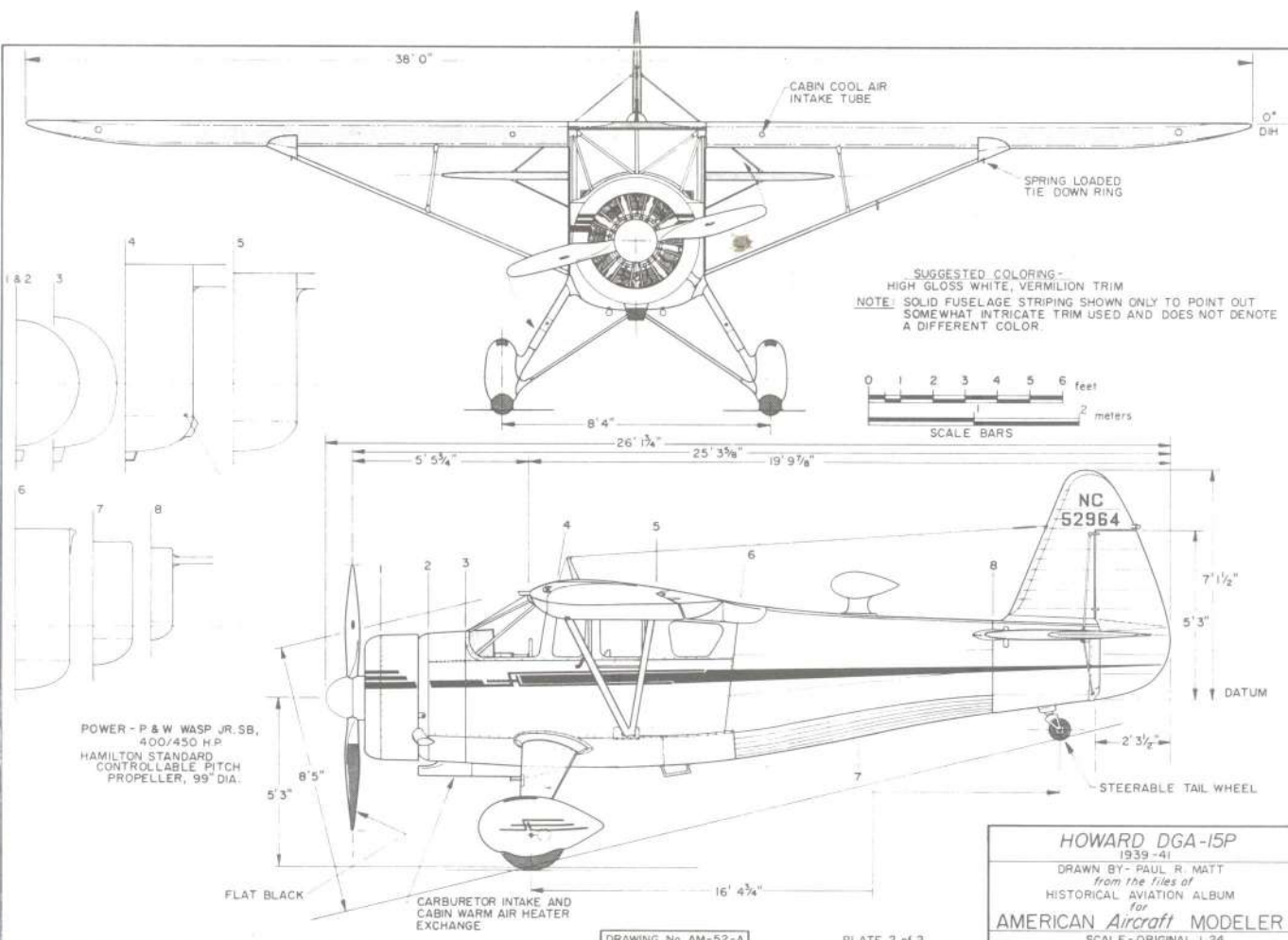
*Howard DGA-15P Modified post WWII.*



*Howard DGA-15P.*



**HOWARD DGA-15P**  
1939-41  
DRAWN BY - PAUL R. MATT  
from the files of  
HISTORICAL AVIATION ALBUM  
for  
**AMERICAN Aircraft MODELER**  
SCALE - ORIGINAL 1/24



**HOWARD DGA-15P**  
1939-41  
DRAWN BY - PAUL R. MATT  
from the files of  
HISTORICAL AVIATION ALBUM  
for  
**AMERICAN Aircraft MODELER**  
SCALE - ORIGINAL 1/24

GENERAL SPECIFICATIONS

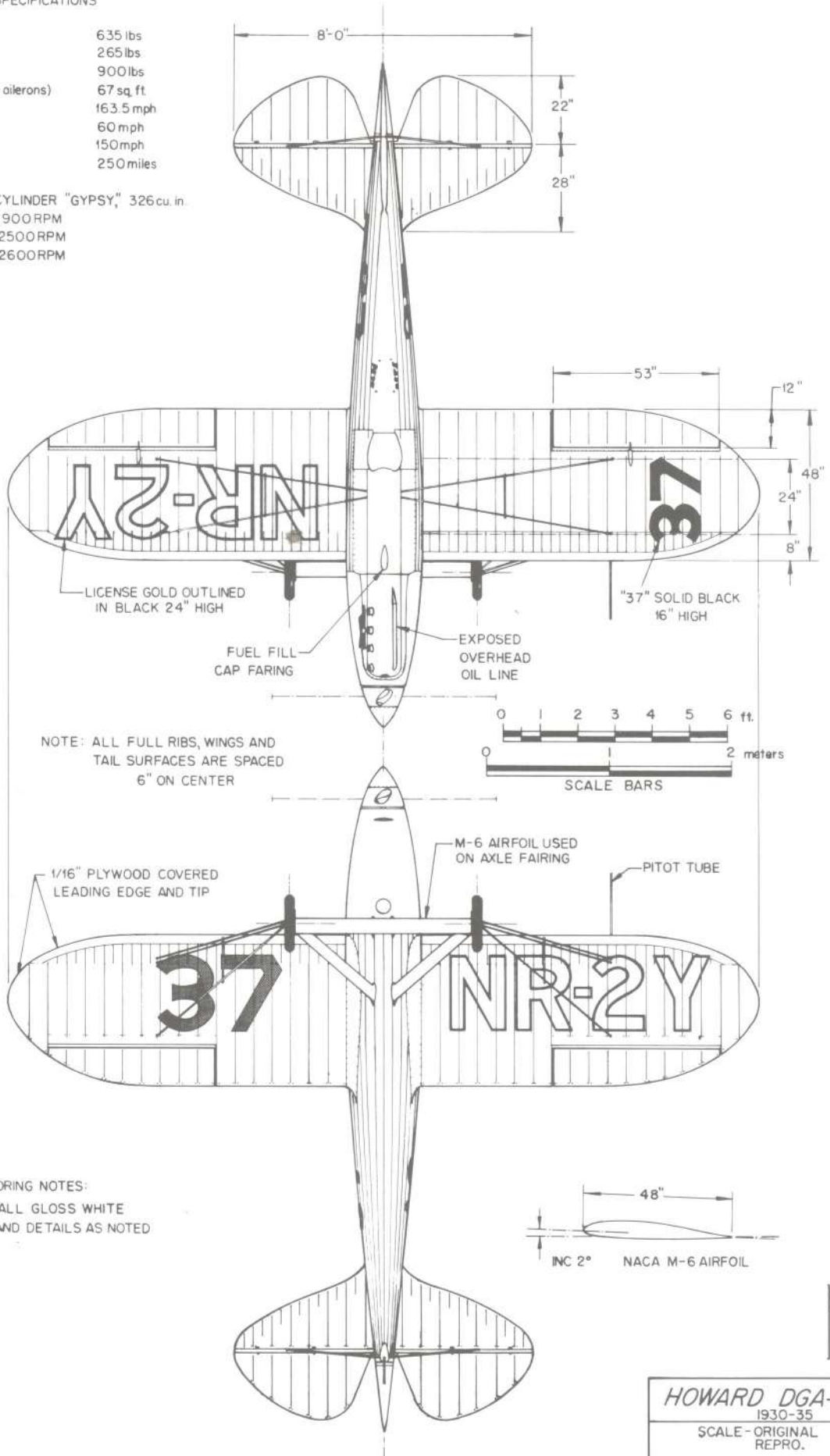
EMPTY WEIGHT	635 lbs
USEFUL LOAD	265 lbs
GROSS WEIGHT	900 lbs
WING AREA (including ailerons)	67 sq. ft.
MAXIMUM SPEED	163.5 mph
LANDING SPEED	60 mph
CRUISING SPEED	150 mph
CRUISING RANGE	250 miles

POWER: WRIGHT 4 CYLINDER "GYPSY," 326 cu. in.

85HP @ 1900RPM

90HP @ 2500RPM

95HP @ 2600RPM

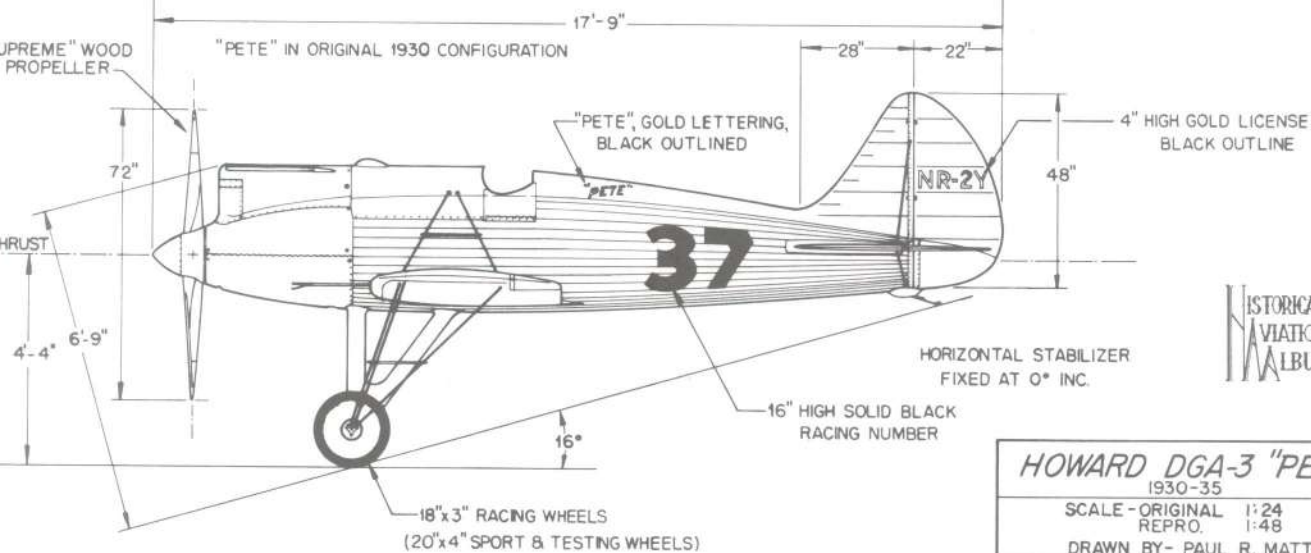
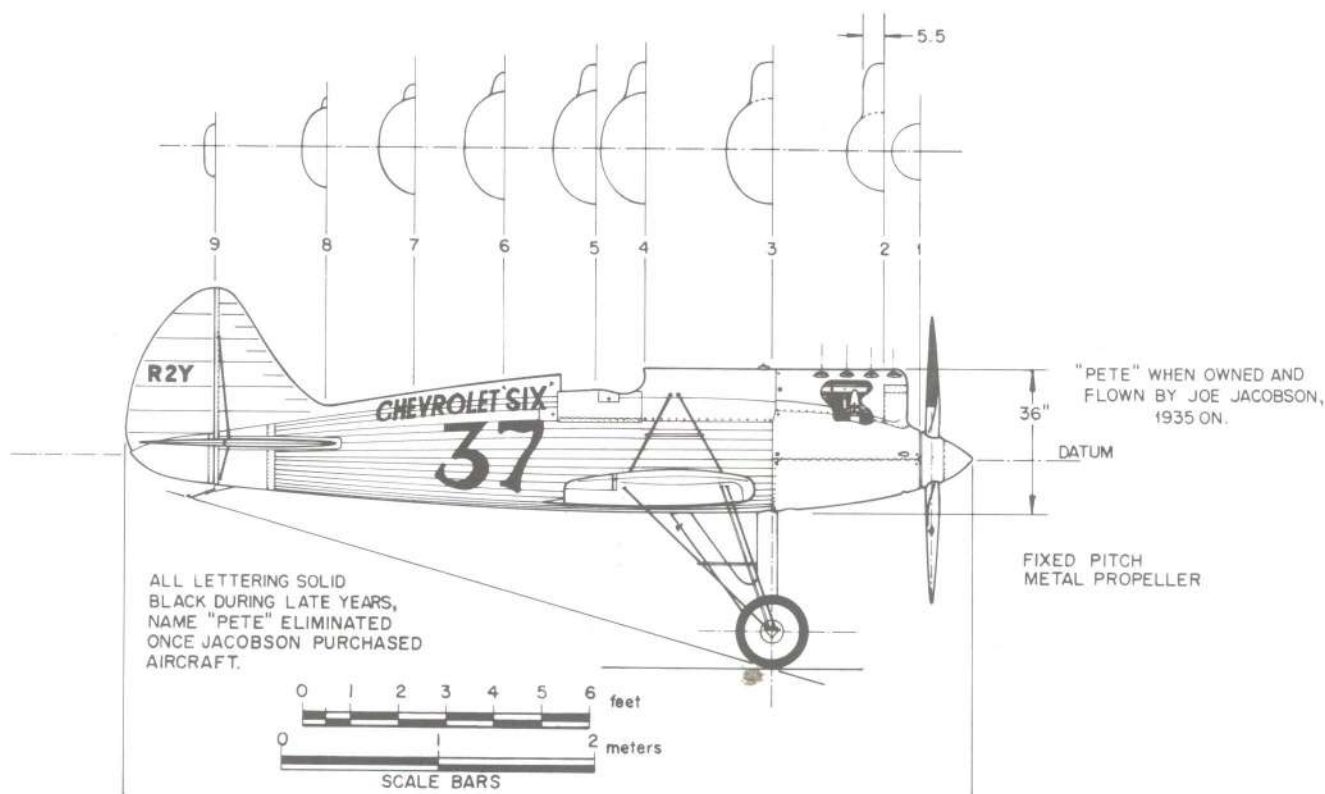
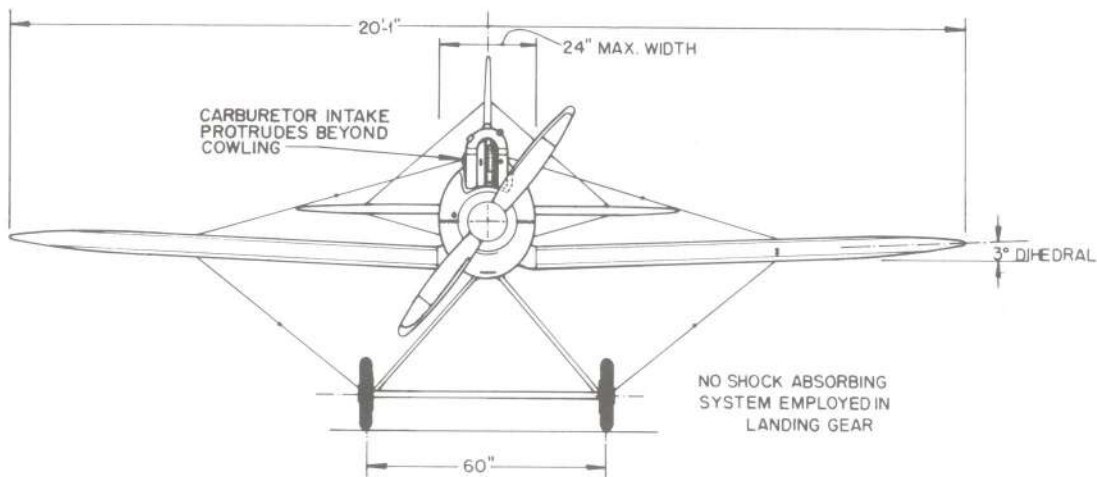


COLORING NOTES:  
 AIRCRAFT ALL GLOSS WHITE  
 LETTERING AND DETAILS AS NOTED

HISTORICAL AVIATION ALBUM

HOWARD DGA-3 "PET"	
1930-35	
SCALE - ORIGINAL	1:24
REPRO.	1:48
DRAWN BY - PAUL R. MATT	
© HISTORICAL AVIATION ALBUM	
P.O. BOX 33	
TEMPLE CITY, CALIF. 91780	





HISTORICAL AVIATION ALBUM

HOWARD DGA-3 "PETE"  
1930-35

SCALE - ORIGINAL 1:24  
REPRO. 1:48

DRAWN BY - PAUL R. MATT

© HISTORICAL AVIATION ALBUM 1973  
P.O. BOX 33  
TEMPLE, TEXAS 76788

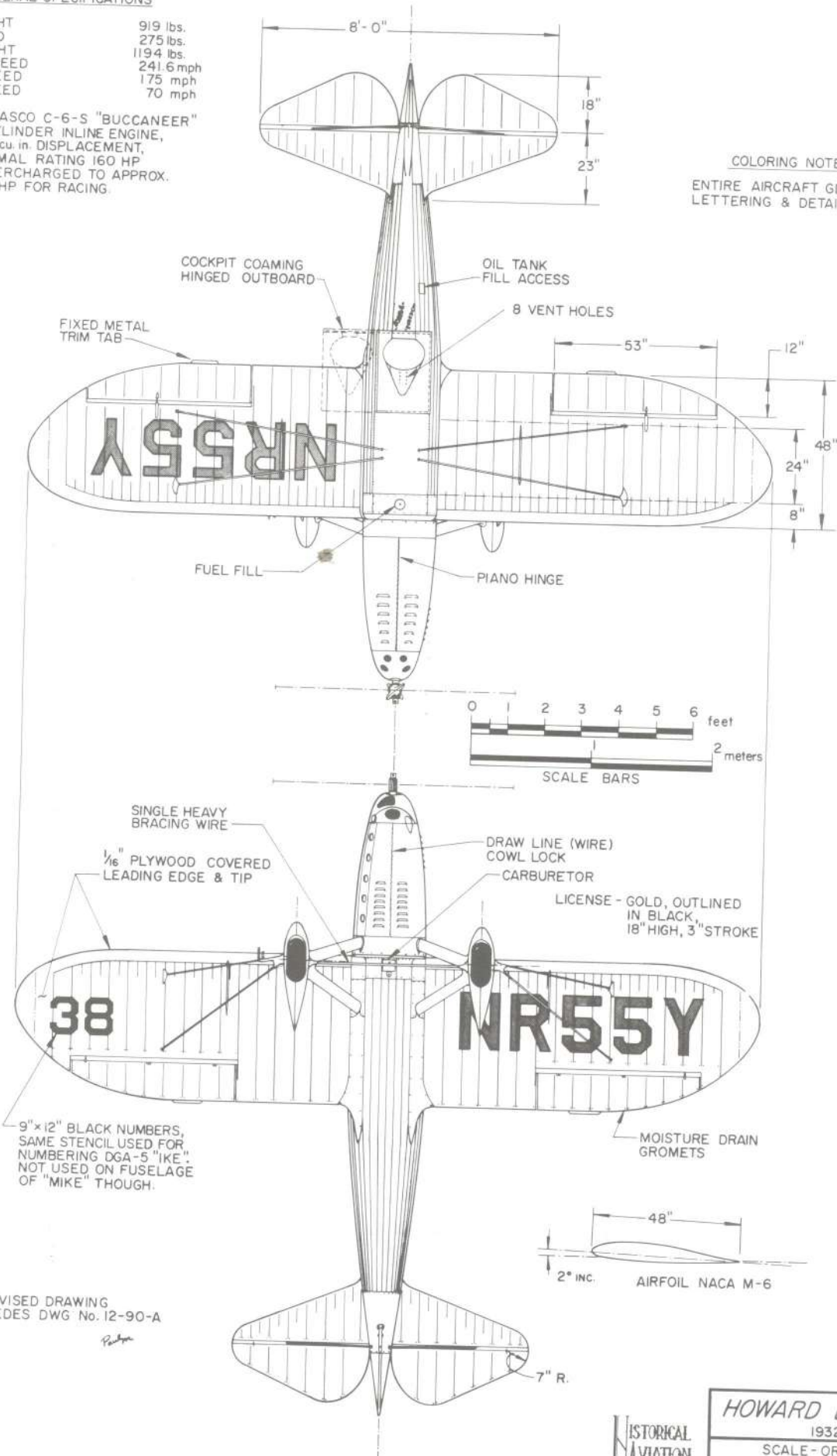
**GENERAL SPECIFICATIONS**

EMPTY WEIGHT 919 lbs.  
 USEFUL LOAD 275 lbs.  
 GROSS WEIGHT 1194 lbs.  
 MAXIMUM SPEED 241.6 mph  
 CRUISING SPEED 175 mph  
 LANDING SPEED 70 mph

POWER: MENASCO C-6-S "BUCCANEER"  
 6 CYLINDER INLINE ENGINE,  
 489 cu. in. DISPLACEMENT,  
 NORMAL RATING 160 HP  
 SUPERCHARGED TO APPROX.  
 200 HP FOR RACING

**COLORING NOTES**

ENTIRE AIRCRAFT GLOSS WHITE,  
 LETTERING & DETAILS AS NOTED



COCKPIT COAMING  
 HINGED OUTBOARD

OIL TANK  
 FILL ACCESS

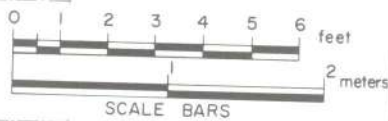
FIXED METAL  
 TRIM TAB

8 VENT HOLES

NR55Y

FUEL FILL

PIANO HINGE



SINGLE HEAVY  
 BRACING WIRE

1/16" PLYWOOD COVERED  
 LEADING EDGE & TIP

DRAW LINE (WIRE)  
 COWL LOCK

CARBURETOR

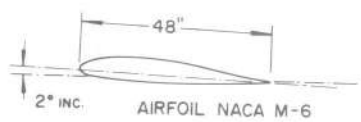
LICENSE - GOLD, OUTLINED  
 IN BLACK, 1/8" HIGH, 3" STROKE

38

NR55Y

MOISTURE DRAIN  
 GROMETS

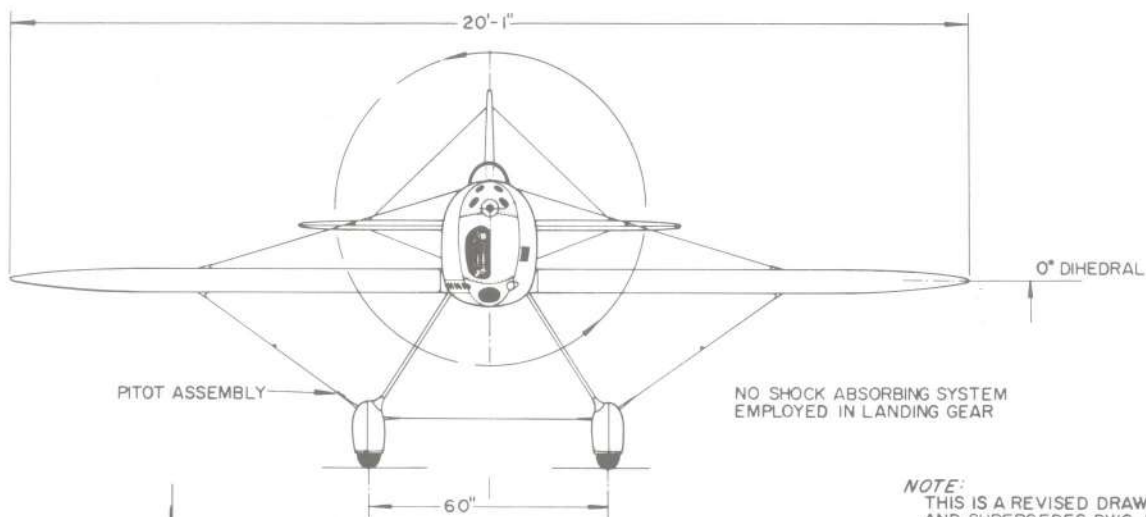
9" x 12" BLACK NUMBERS,  
 SAME STENCIL USED FOR  
 NUMBERING DGA-5 "IKE".  
 NOT USED ON FUSELAGE  
 OF "MIKE" THOUGH.



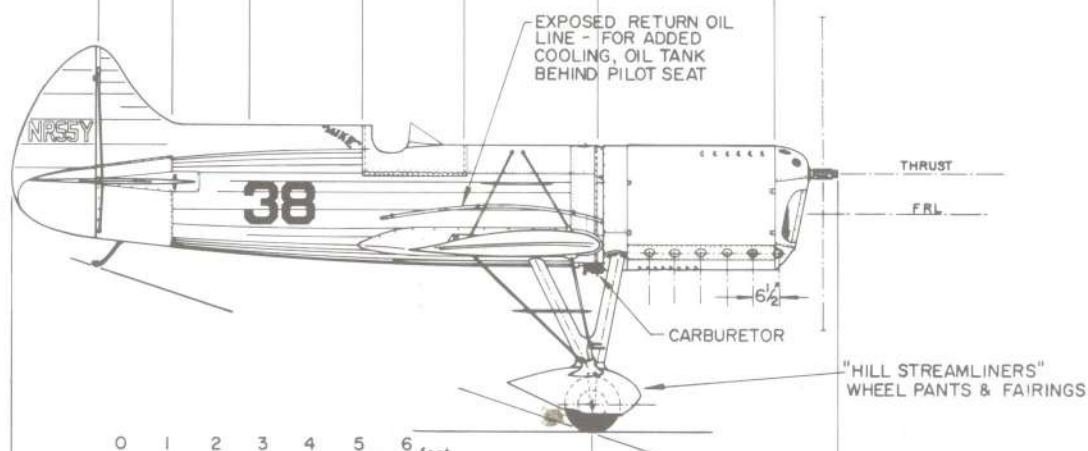
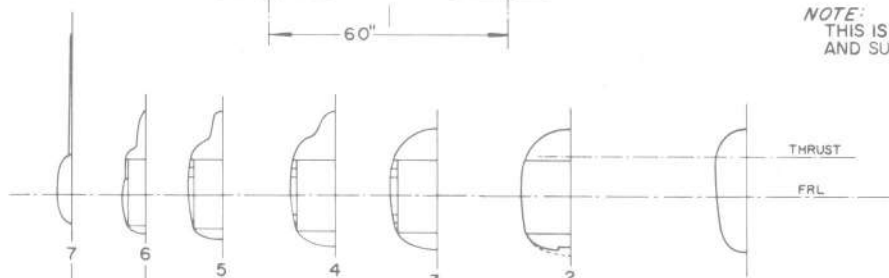
NOTE:  
 THIS IS A REVISED DRAWING  
 AND SUPERSEDES DWG No. 12-90-A

*Paul R. MA*

7" R.

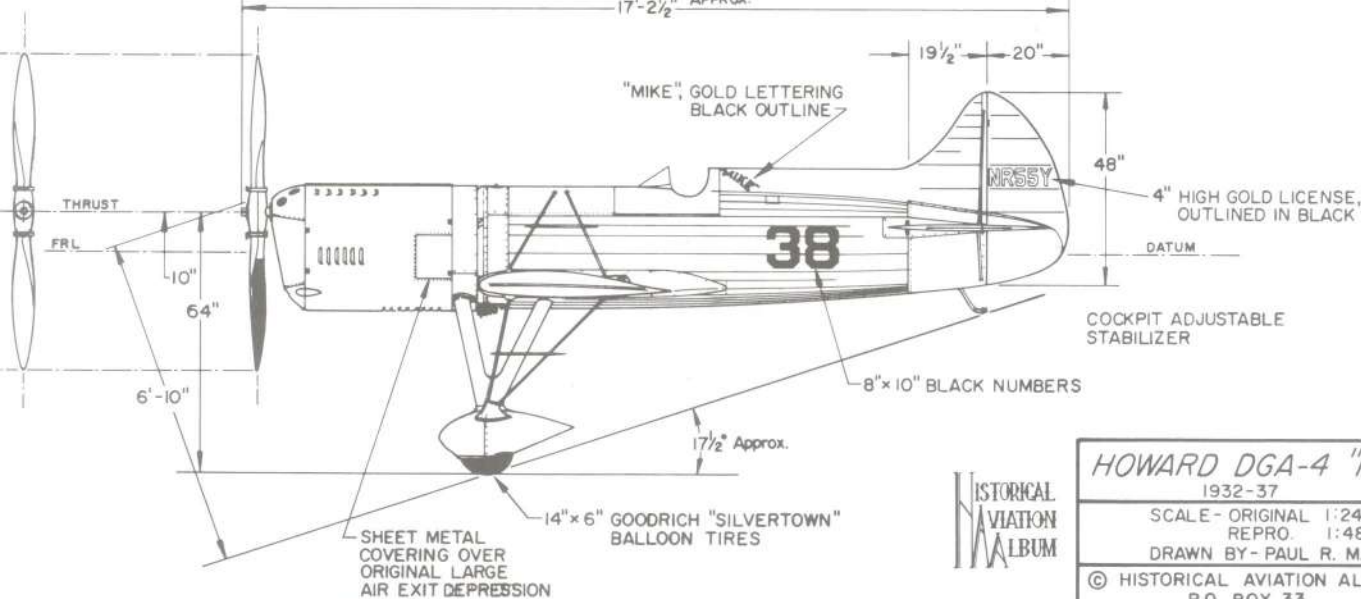


NOTE:  
THIS IS A REVISED DRAWING  
AND SUPERSEDES DWG. No. 12-90  
*Paul R. Mat...*



SMITH GROUND ADJUSTABLE METAL PROPELLOR

17'-2 1/2" APPROX.



HISTORICAL AVIATION ALBUM

HOWARD DGA-4 "MIKE"  
1932-37

SCALE - ORIGINAL 1:24  
REPRO. 1:48

DRAWN BY - PAUL R. MAT...

© HISTORICAL AVIATION ALBUM  
P.O. BOX 33

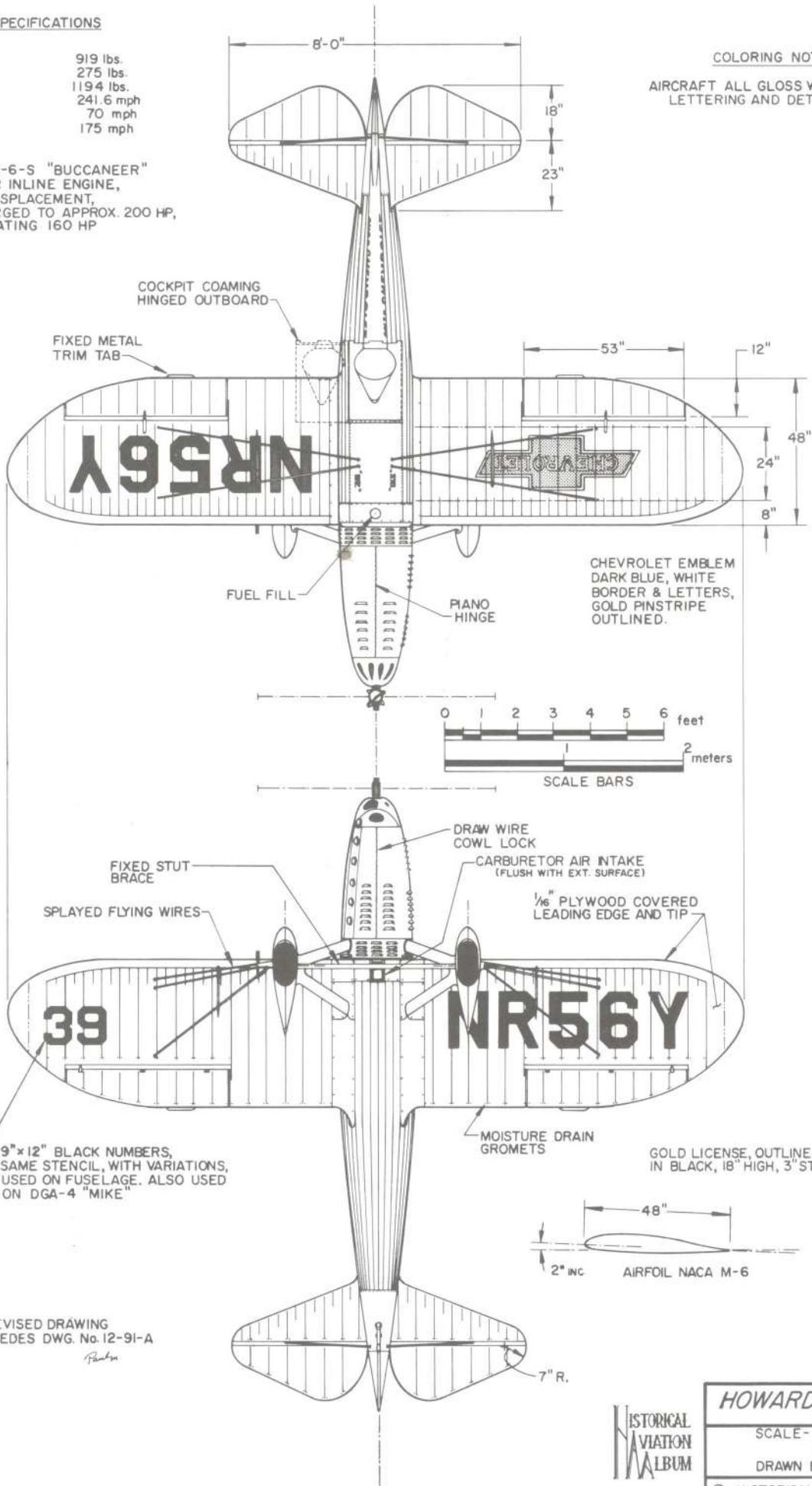
GENERAL SPECIFICATIONS

EMPTY WEIGHT 919 lbs.  
 MAXIMUM GROSS WEIGHT 275 lbs.  
 MAXIMUM TAKEOFF WEIGHT 1194 lbs.  
 MAXIMUM SPEED 241.6 mph  
 CRUISE SPEED 70 mph  
 STALL SPEED 175 mph

ENGINE: MENASCO C-6-S "BUCCANEER"  
 6 CYLINDER INLINE ENGINE,  
 489 cu. in. DISPLACEMENT,  
 SUPERCHARGED TO APPROX. 200 HP,  
 NORMAL RATING 160 HP

COLORING NOTES

AIRCRAFT ALL GLOSS WHITE,  
 LETTERING AND DETAILS AS NOTED

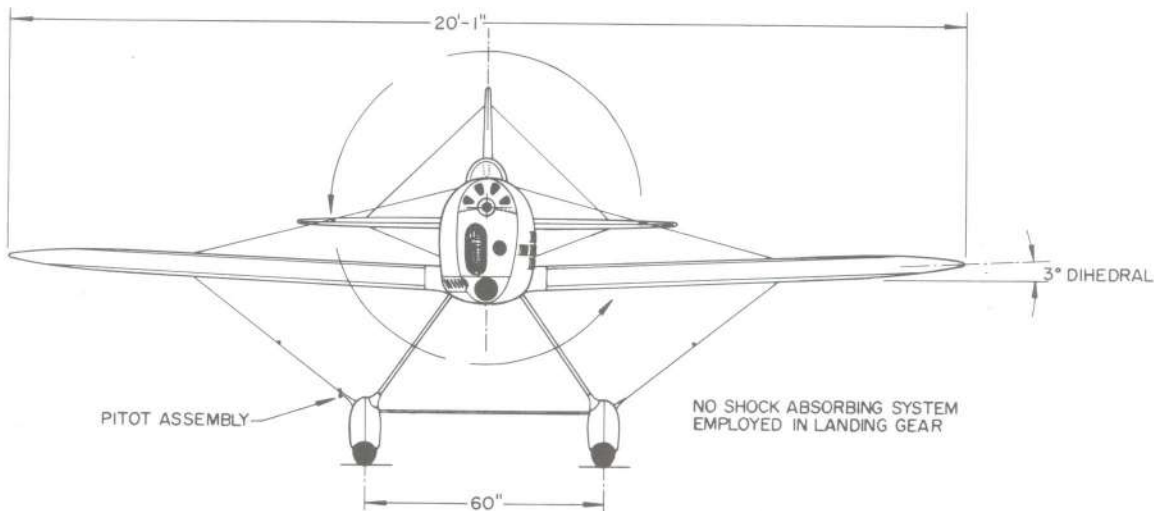


NOTE:  
 THIS IS A REVISED DRAWING  
 AND SUPERSEDES DWG. No. 12-91-A  
 P. Matt

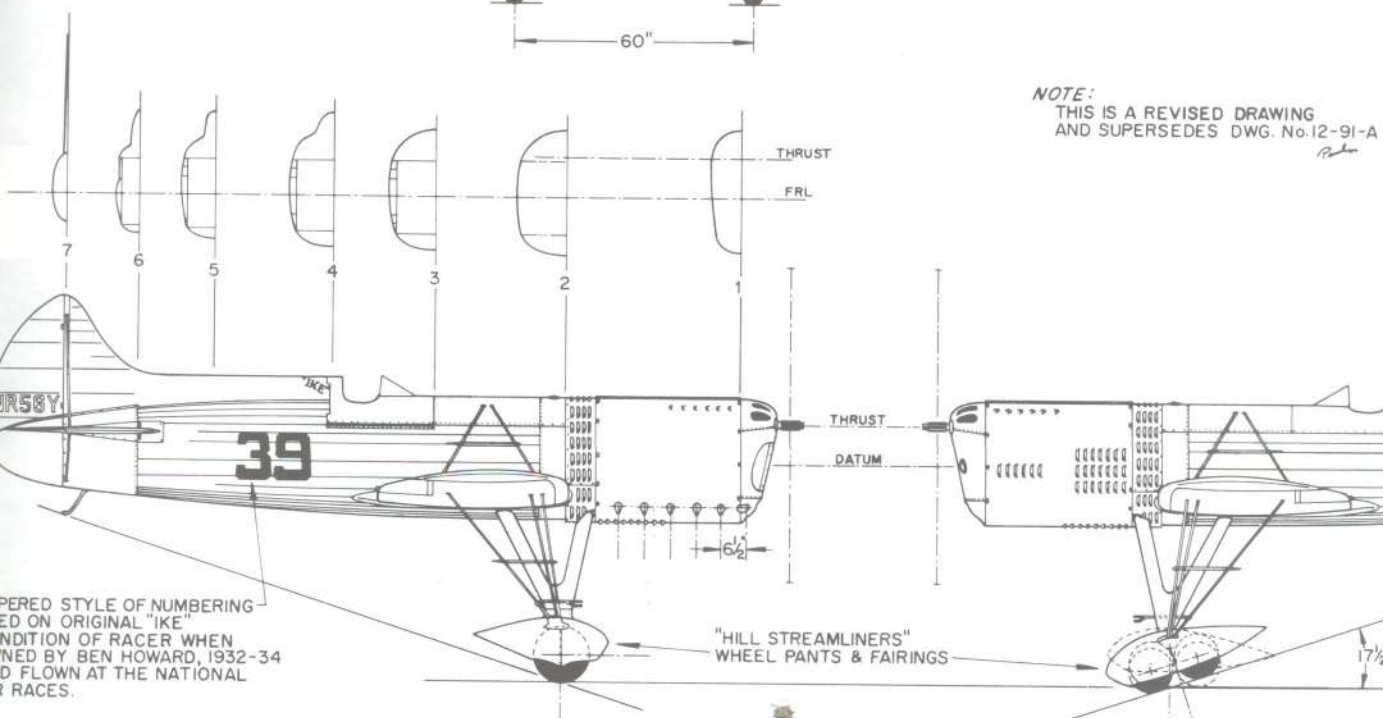
HISTORICAL  
 AVIATION  
 ALBUM

HOWARD DGA-5 "MIKE"	
1932-37	
SCALE - ORIGINAL	1:24
REPRO.	1:48
DRAWN BY - PAUL R. MATT	

© HISTORICAL AVIATION ALBUM  
 P.O. BOX 33  
 TEMPLE CITY, CALIF. 91789

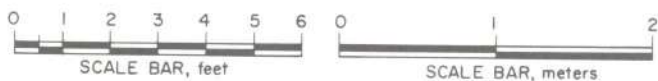


NOTE:  
THIS IS A REVISED DRAWING  
AND SUPERSEDES DWG. No.12-91-A

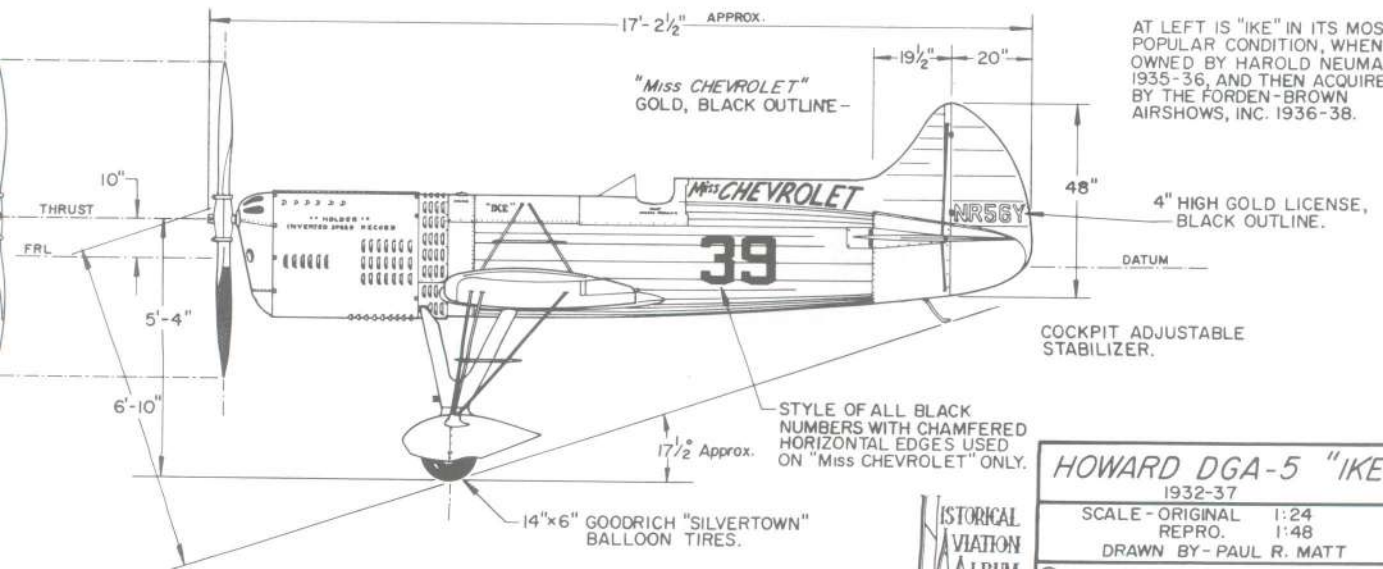


PERED STYLE OF NUMBERING  
EMPLOYED ON ORIGINAL "IKE"  
CONDITION OF RACER WHEN  
OWNED BY BEN HOWARD, 1932-34  
AND FLOWN AT THE NATIONAL  
RACES.

WITH GROUND ADJUSTABLE  
METAL PROPELLER.



ORIGINAL TANDEM LANDING GEAR  
EMPLOYED DURING FIRST, 1932-34  
RACING SEASON ONLY, 11x5" x 17 1/2"  
TRADED HIGH PRESSURE TIRES



AT LEFT IS "IKE" IN ITS MOST  
POPULAR CONDITION, WHEN  
OWNED BY HAROLD NEUMAN  
1935-36, AND THEN ACQUIRED  
BY THE FORDEN-BROWN  
AIRSHOWS, INC. 1936-38.

STYLE OF ALL BLACK  
NUMBERS WITH CHAMFERED  
HORIZONTAL EDGES USED  
ON "Miss CHEVROLET" ONLY.

HOWARD DGA-5 "IKE"  
1932-37

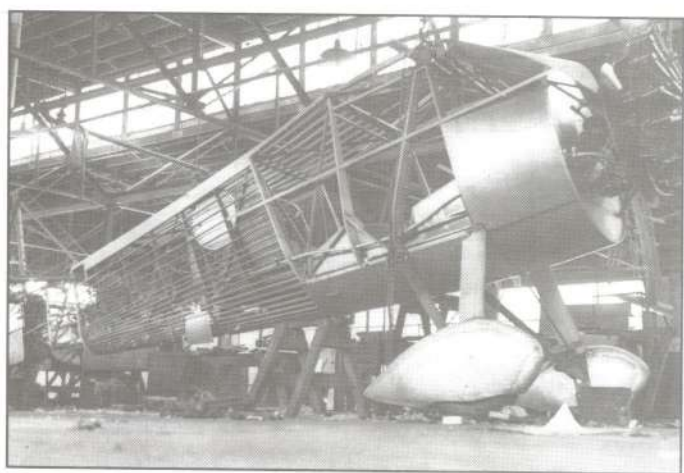
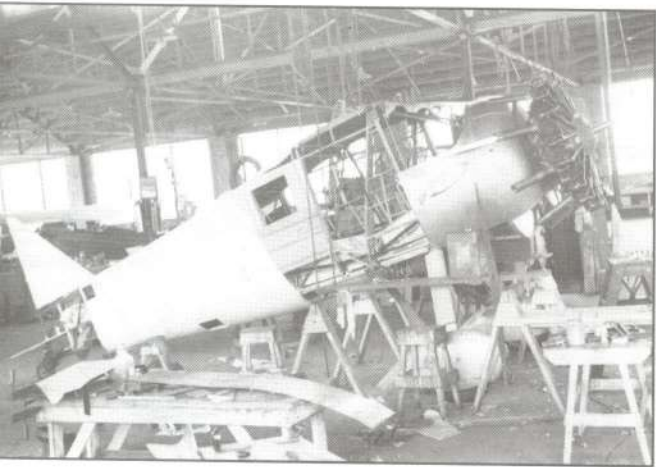
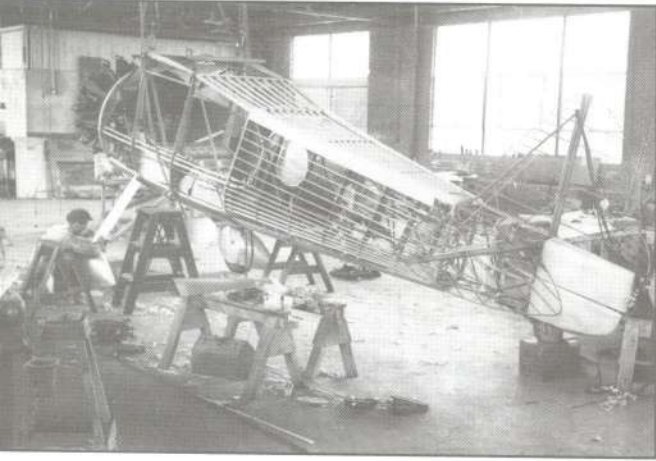
SCALE - ORIGINAL 1:24  
REPRO. 1:48

DRAWN BY - PAUL R. MATT

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P.O. BOX 33

HISTORICAL  
AVIATION  
ALBUM

# Howard DGA-6 Mister Mulligan

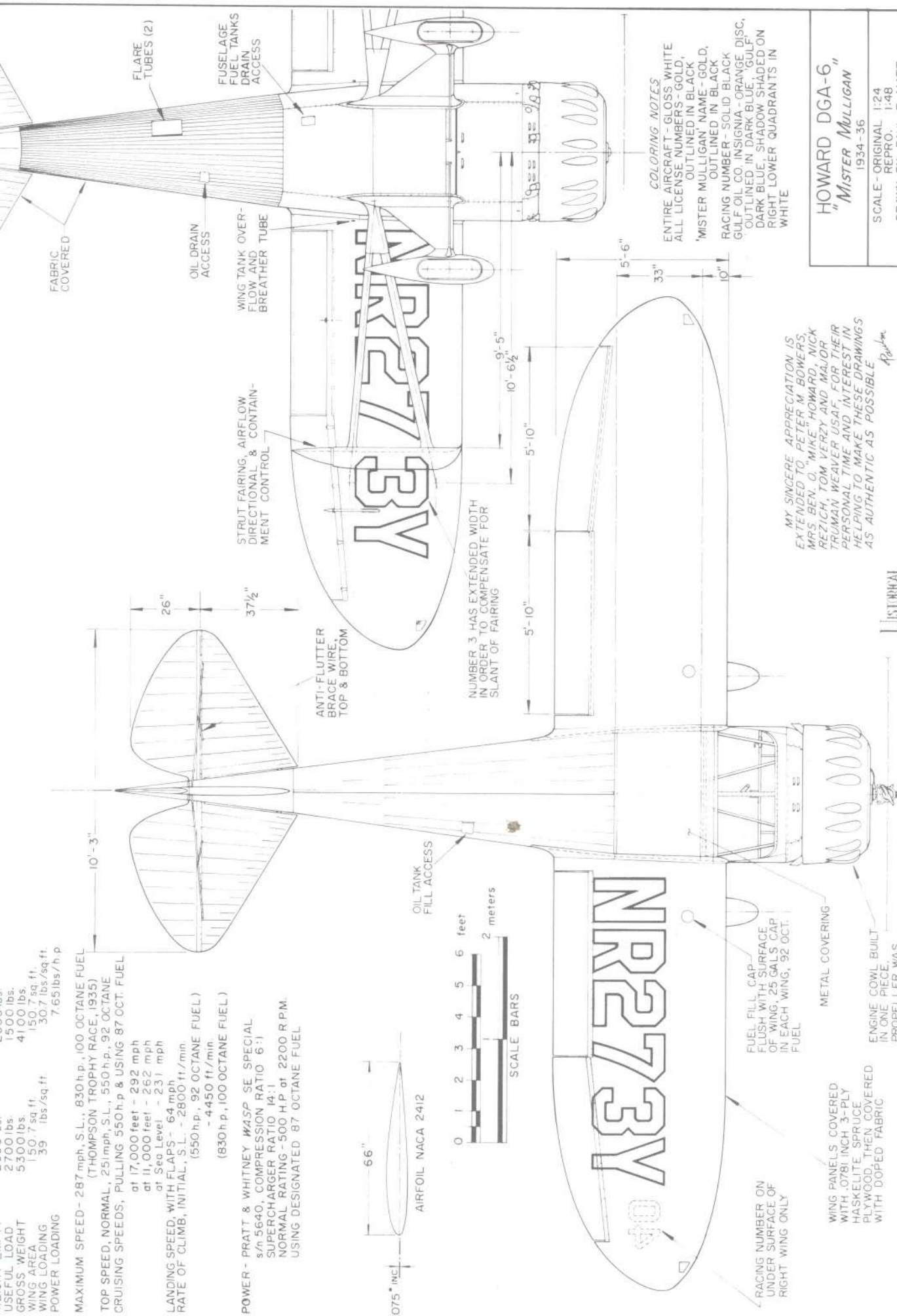
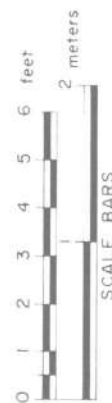


USEFUL LOAD 2700 lbs.  
 GROSS WEIGHT 5300 lbs.  
 WING AREA 150.7 sq. ft.  
 WING LOADING 39 lbs./sq. ft.  
 POWER LOADING 7.65 lbs./h.p.

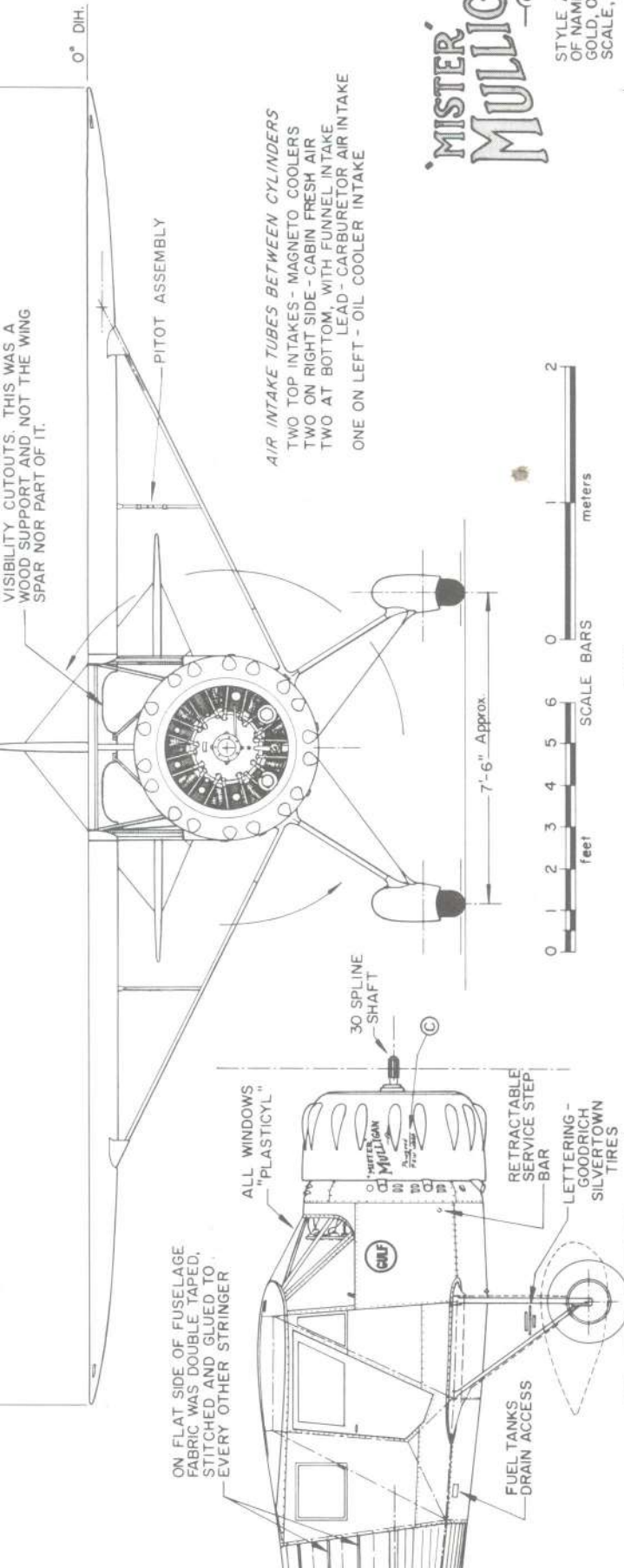
MAXIMUM SPEED - 287 mph, S.L., 830 h.p., 100 OCTANE FUEL  
 (THOMPSON TROPHY RACE, 1935)  
 TOP SPEED, NORMAL, 251 mph, S.L., 550 h.p., 92 OCTANE  
 CRUISING SPEEDS, PULLING 550 h.p. & USING 87 OCT. FUEL  
 at 17,000 feet - 292 mph  
 at 11,000 feet - 262 mph  
 at Sea Level - 231 mph

LANDING SPEED, WITH FLAPS - 64 mph  
 RATE OF CLIMB, INITIAL, S.L. - 2800 ft./min.  
 (550 h.p., 92 OCTANE FUEL)  
 - 4450 ft./min.  
 (830 h.p., 100 OCTANE FUEL)

POWER - PRATT & WHITNEY WASP SE SPECIAL  
 s/n 5640, COMPRESSION RATIO 6:1  
 SUPERCHARGER RATIO 14:1  
 NORMAL RATING - 500 H.P. at 2200 R.P.M.  
 USING DESIGNATED 87 OCTANE FUEL

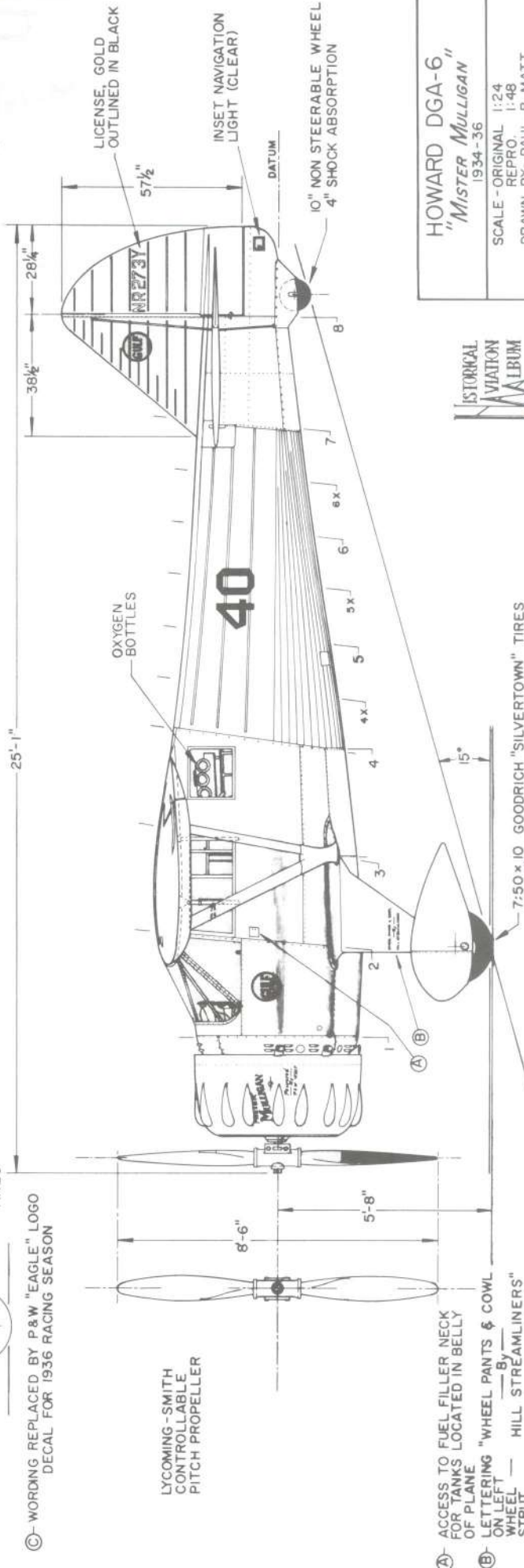


HOWARD DGA-6  
 "MISTER MULLIGAN"  
 1934-36  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT



# MISTER MULLIGAN

STYLE AND PLACEMENT OF NAME ON ENGINE COWL, GOLD, OUTLINED IN BLACK. SCALE, 4 X SCALE OF G.A.



HOWARD DGA-6  
 "MISTER MULLIGAN"  
 1934-36

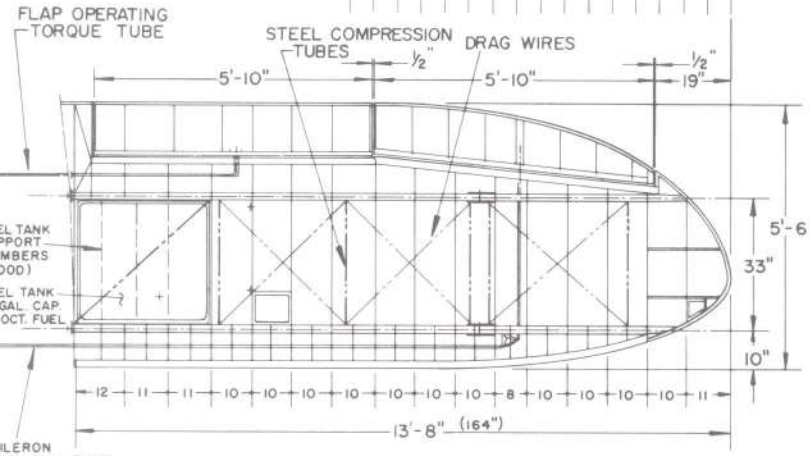
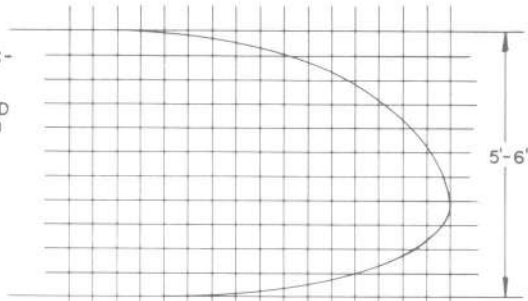
SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT



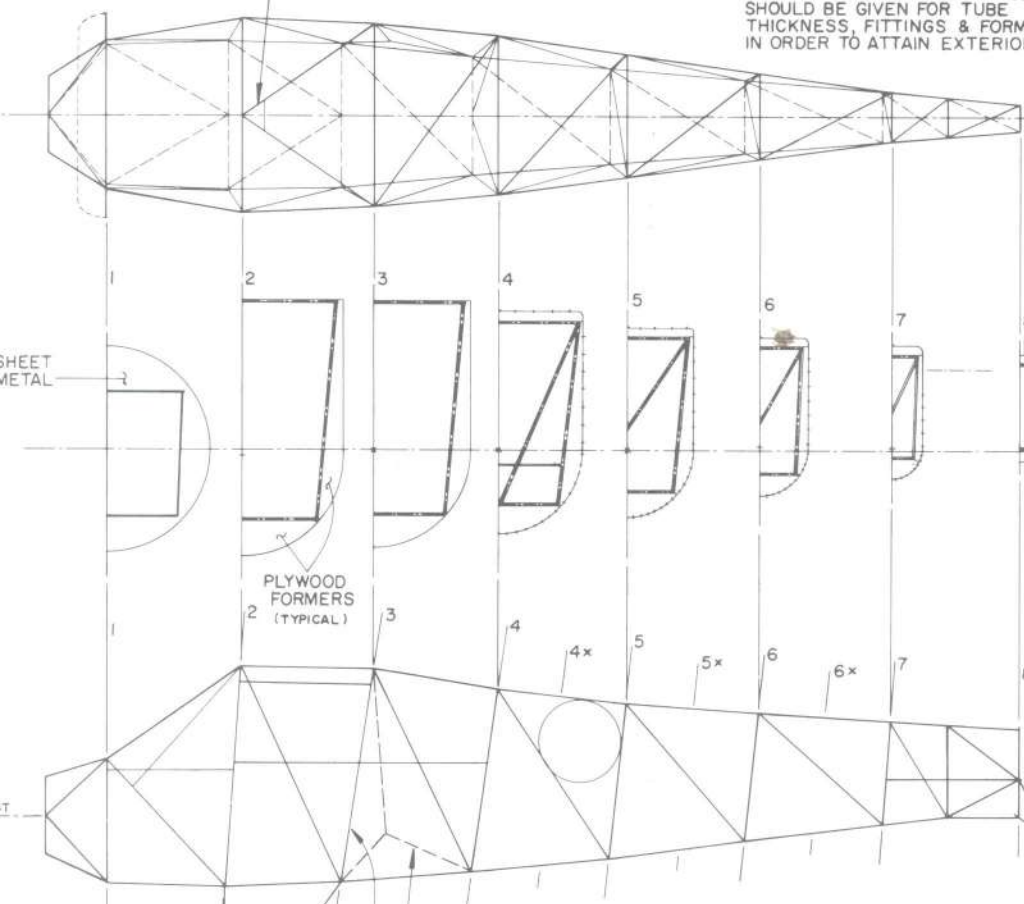


"MISTER MULLIGAN" WING TIP LAYOUT  
ON 6 INCH INCREMENTS

DRAG WIRES WERE USED IN CONSTRUCTION OF WING IN CONJUNCTION WITH THE .0781 INCH 3-PLY ELITE SPRUCE PLYWOOD. ASSEMBLY WAS THEN COVERED WITH FABRIC, DOPED, SANDED AND POLISHED TO A SMOOTH FINISH

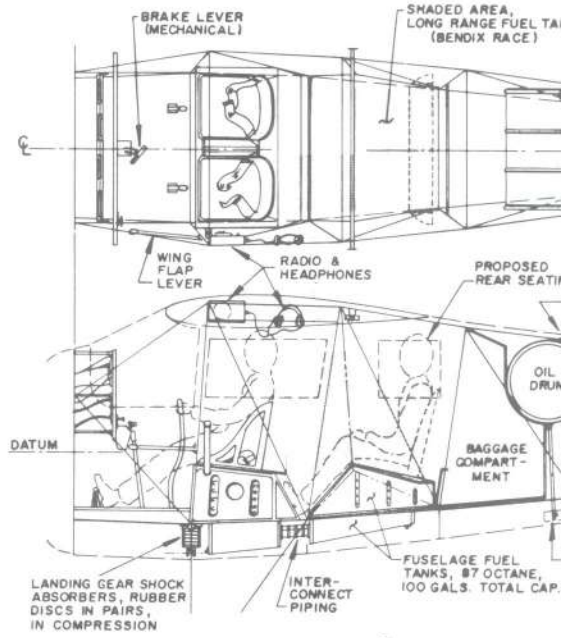


OVERHEAD METAL PLATE FOR STABILIZER ADJUSTMENT CRANK

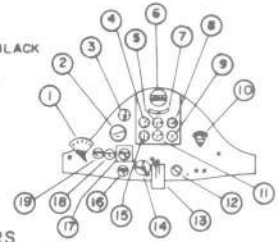


STRUCTURE ON RIGHT SIDE ONLY  
THIS TUBE OMITTED ON RIGHT SIDE TO ALLOW FOR CABIN DOOR

INTERIOR OF CABIN - NATURAL MAHOGANY PLY-VENEER FLOORBOARD - PAINTED DARK GRAY

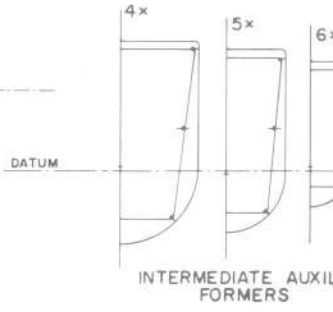


INSTRUMENT PANEL, BLACK CENTER FLIGHT INSTRUMENT SQUARE, CRINKLE FINISH



IN CONSTRUCTION ALLOWANCE SHOULD BE GIVEN FOR TUBE THICKNESS, FITTINGS & FORMERS IN ORDER TO ATTAIN EXTERIOR SHAPE

- 1. PROP. PITCH CONTROL INDEX
- 2. ARTIFICIAL HORIZON
- 3. CLOCK
- 4. AIRSPEED
- 5. TURN INDICATOR
- 6. COMPASS
- 7. BALL & BANK
- 8. RATE OF CLIMB
- 9. TACHOMETER
- 10. ENGINE PRIM
- 11. THROTTLE & MIXTURE C
- 12. IGNITION SW
- 13. ALTIMETER
- 14. MULTI POSIT
- 15. ON ENGINE H
- 16. TEMPERATUR
- 17. OIL PRESSUR
- 18. OIL TEMPERA



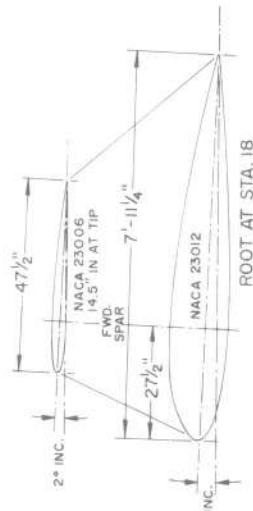
TAIL WHEEL SHOCK ASSEMBLY, RUBBER DISCS.

EXACT DIMENSIONS CANNOT BE GIVEN ON INTERIOR STRUCTURES AS THEY ARE NO LONGER AVAILABLE. DRAWINGS ARE RECONSTRUCTED FROM SURVIVING TECHNICAL DATA, PHOTOS AND PERSONAL REMEMBRANCES OF THOSE MORE CLOSELY ASSOCIATED WITH THE ACTUAL AIRCRAFT

HOWARD DGA-6  
"MISTER MULLIGAN"  
1934-36  
SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY - PAUL R. MATT  
© HISTORICAL AVIATION ALBUM  
P. O. BOX 33

WEIGHT EMPTY 4097.40 lbs.  
 TOP SPEED, APPROX. 330 mph  
 WING AREA 191 sq. ft.  
 WING LOADING 32.5 lbs./sq.ft.  
 POWER LOADING 8.86 lbs./H.P.  
 FUEL CAPACITY 280 gals.  
 OIL CAPACITY 30 gals.

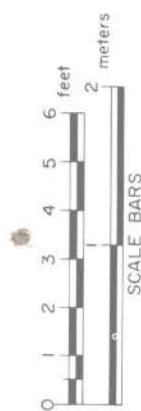
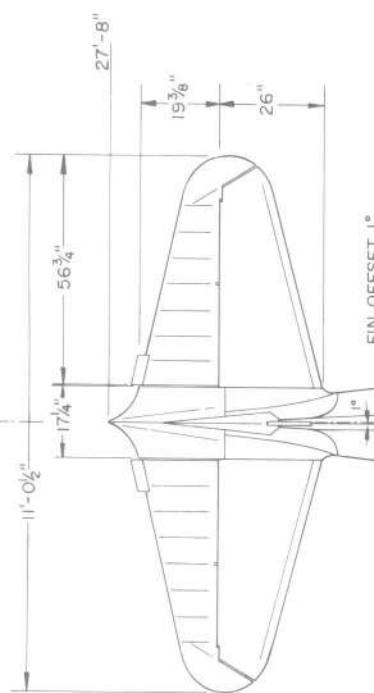
POWER: PRATT & WHITNEY SAS-G (R-1535),  
 TWIN WASP Jr., s/n 27 (Redesignated s/n 281)  
 700 HP at 2500rpm. PROPELLER REDUCTION  
 GEARING 4:3. POWER BOOSTED TO APPROX.  
 900 HP THROUGH "DOPED" FUEL AND  
 CARBURETION ADJUSTMENTS.



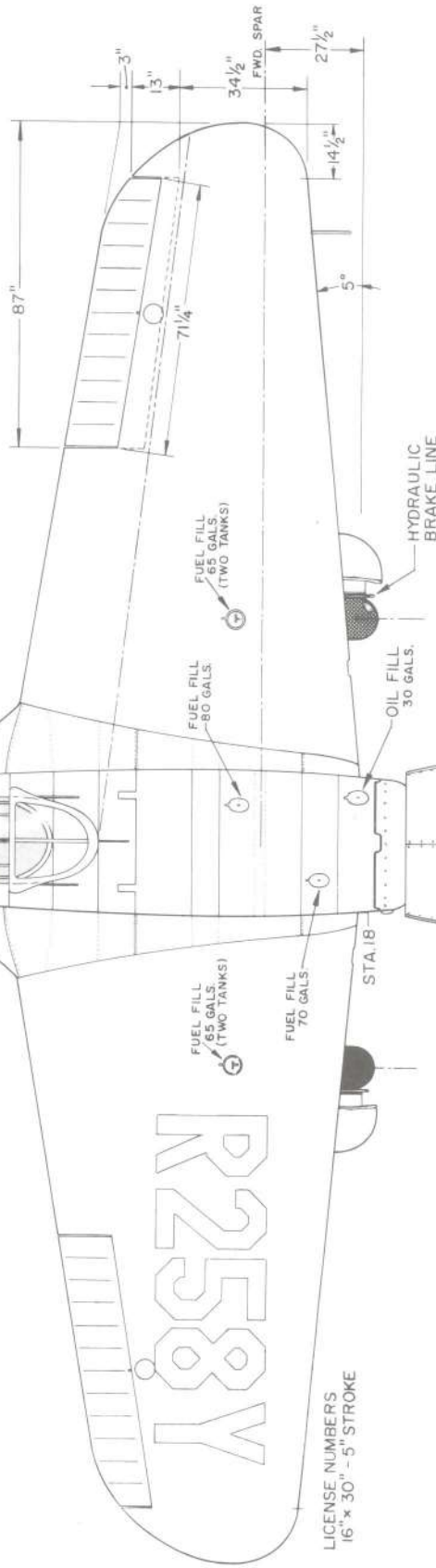
FUSELAGE AND FIXED TAIL SURFACES - ALUMINUM,  
 FUSELAGE PROPER - FLAT SHEET, BUTT JOINED,  
 FLUSH, SHAVED, BURNISHED & POLISHED RIVETING  
 CONTROL SURFACES - METAL FRAMEWORK, FABRIC  
 COVERED, WING FLAPS - WOOD FRAMEWORK,  
 PLYWOOD COVERED.  
 WINGS - WOOD SPARS AND RIBS, PLYWOOD COVERED,  
 SHAVED, CLOTH COVERED, DOPED AND POLISHED.  
 LANDING GEAR - ALUMINUM BOX CONSTRUCTION,  
 RIGID EXCEPT FOR SHORT 5" SHOCK STRUT AT  
 WHEEL AXEL.

COLORING NOTES

FUSELAGE, FIXED TAIL SURFACES - NATURAL ALUMINUM.  
 ELEVATORS AND RUDDER - SILVER DOPED.  
 WINGS - DARK ROYAL BLUE, (Hughes Tool Co. blue)  
 (MUNSELL 5PB 2/4)  
 LICENSE NUMBERS ON WINGS - DEEP YELLOW,  
 (Hughes Tool Co. yellow)  
 (MUNSELL 7.5 Y 8/12)  
 ALL SURFACES WERE EXTREMELY SMOOTH IN FINISH.



SPRING LOADED  
 FLUSH ENTRY  
 STEPS



LICENSE NUMBERS  
 16" x 30" - 5" STROKE

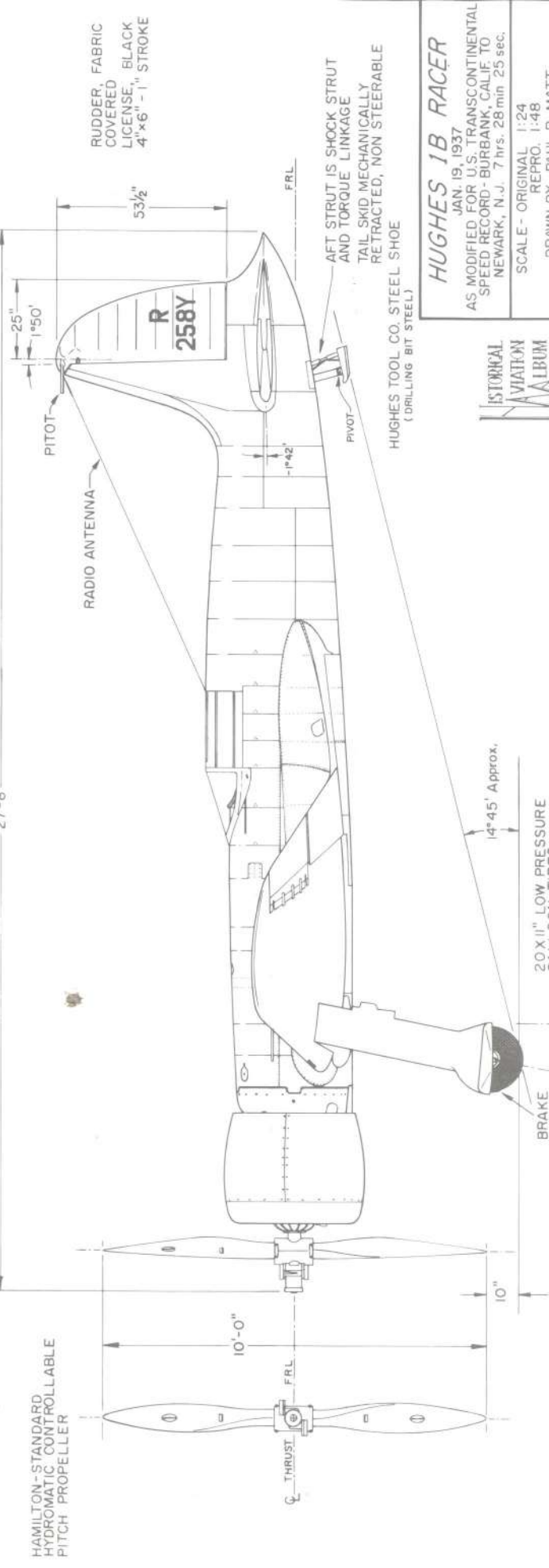
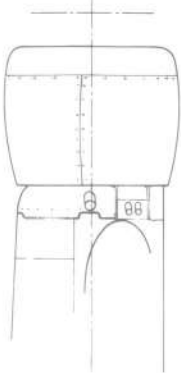
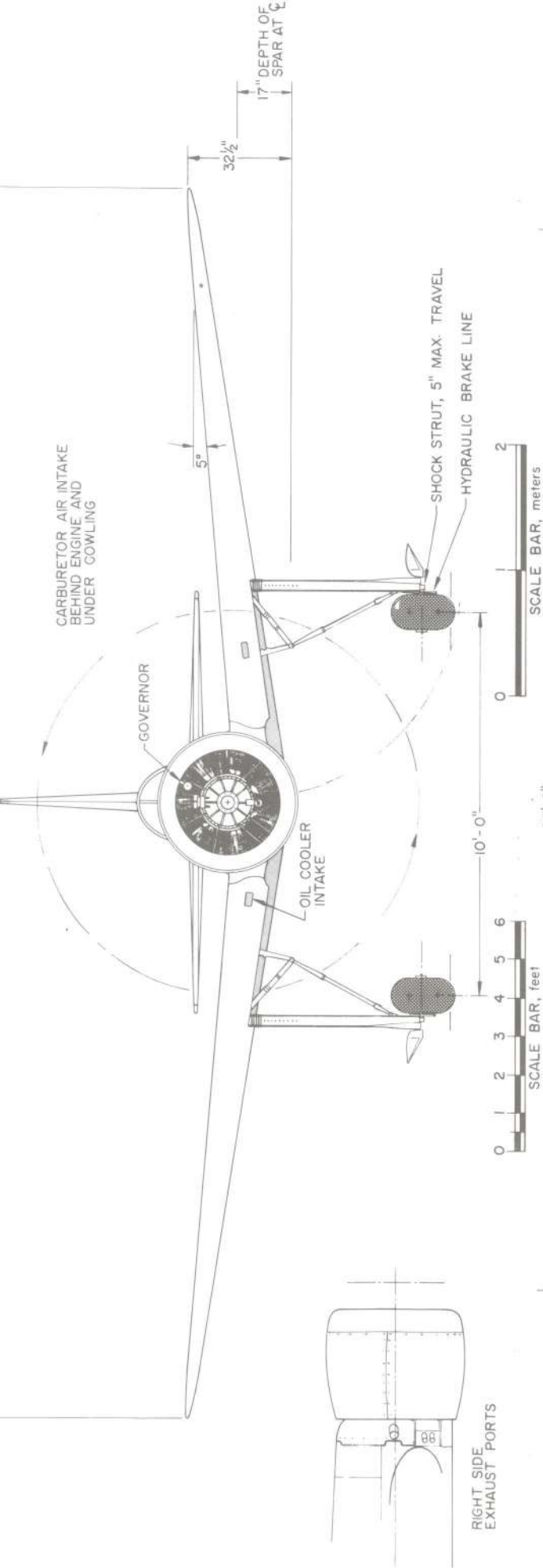
MY SINCERE APPRECIATION IS EXTENDED TO THE  
 FOLLOWING MEN FOR THEIR SPECIAL INTEREST AND  
 PERSONAL HELP IN MAKING THESE DRAWINGS AS  
 ACCURATE AND COMPLETE AS POSSIBLE -  
 MESSRS. RICHARD "DICK" PALMER, GLENN ODEKIRK,  
 CARL MARTYN, VAN STORM, ROBERT HIRSCH, JOE  
 LEINLEIN, AND WALTER ROYNE AND ROBERT MIKESH



HUGHES 1B RACER

JAN. 19, 1937

AS MODIFIED FOR U.S. TRANSCONTINENTAL  
 SPEED RECORD - BURBANK, CALIF. TO  
 NEWARK, N.J. 7 hrs. 28 min. 25 sec.



**HUGHES 1B RACER**

JAN. 19, 1937  
 AS MODIFIED FOR U.S. TRANSCONTINENTAL  
 SPEED RECORD - BURBANK, CALIF. TO  
 NEWARK, N.J. 7 hrs. 28 min 25 sec.  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 HUGHES TOOL CO.



ELEVATORS,  
FABRIC COVERED  
FIXED METAL  
TRIM TABS

SPRING LOADED  
FAIRING DOORS

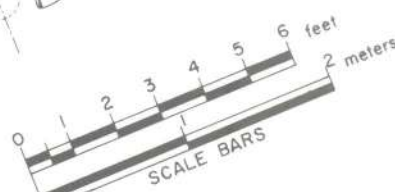
FLUSH HOLE,  
RELIEF TUBE

FLAPS MECHANICALLY OPERATED  
BY LEVER IN COCKPIT,  
DIRECT TORQUE LINKAGE

AILERON,  
FABRIC COVERED

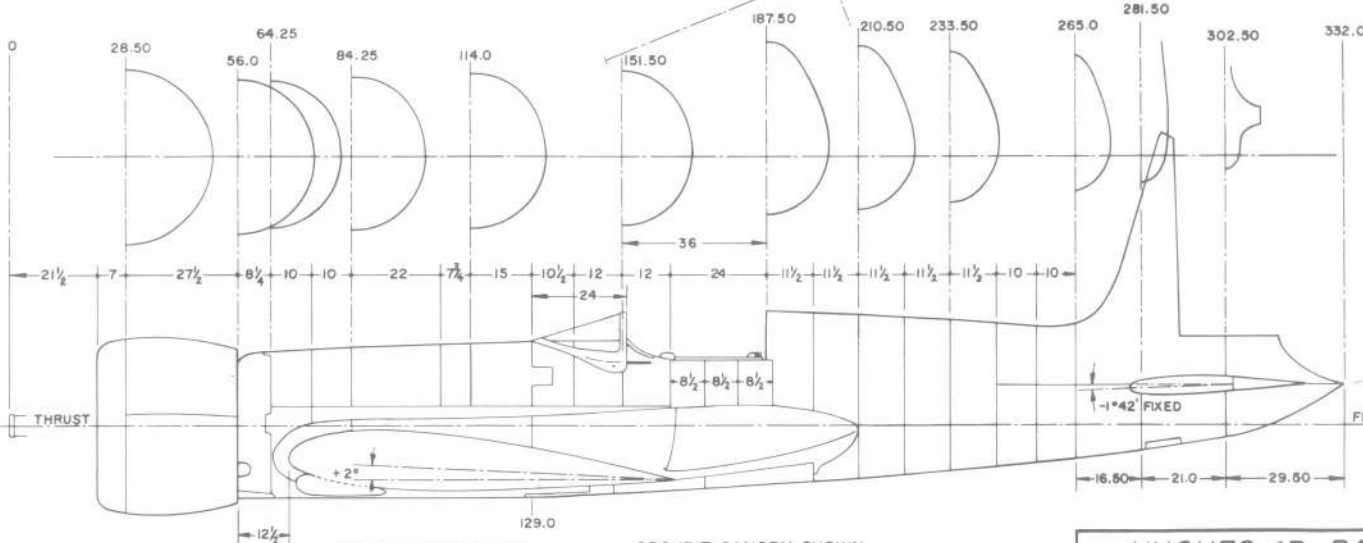
EMERGENCY FUEL  
DUMP PORTS, ALL TANKS,  
COLD SOLDERED PLATES.

INSET, FLUSH  
INSPECTION PANEL



COLOR LINE—  
BLUE OUTBOARD  
3 - 1/4" GAPS  
RETRACTION  
ACTIVATING  
ARMS

PITOT



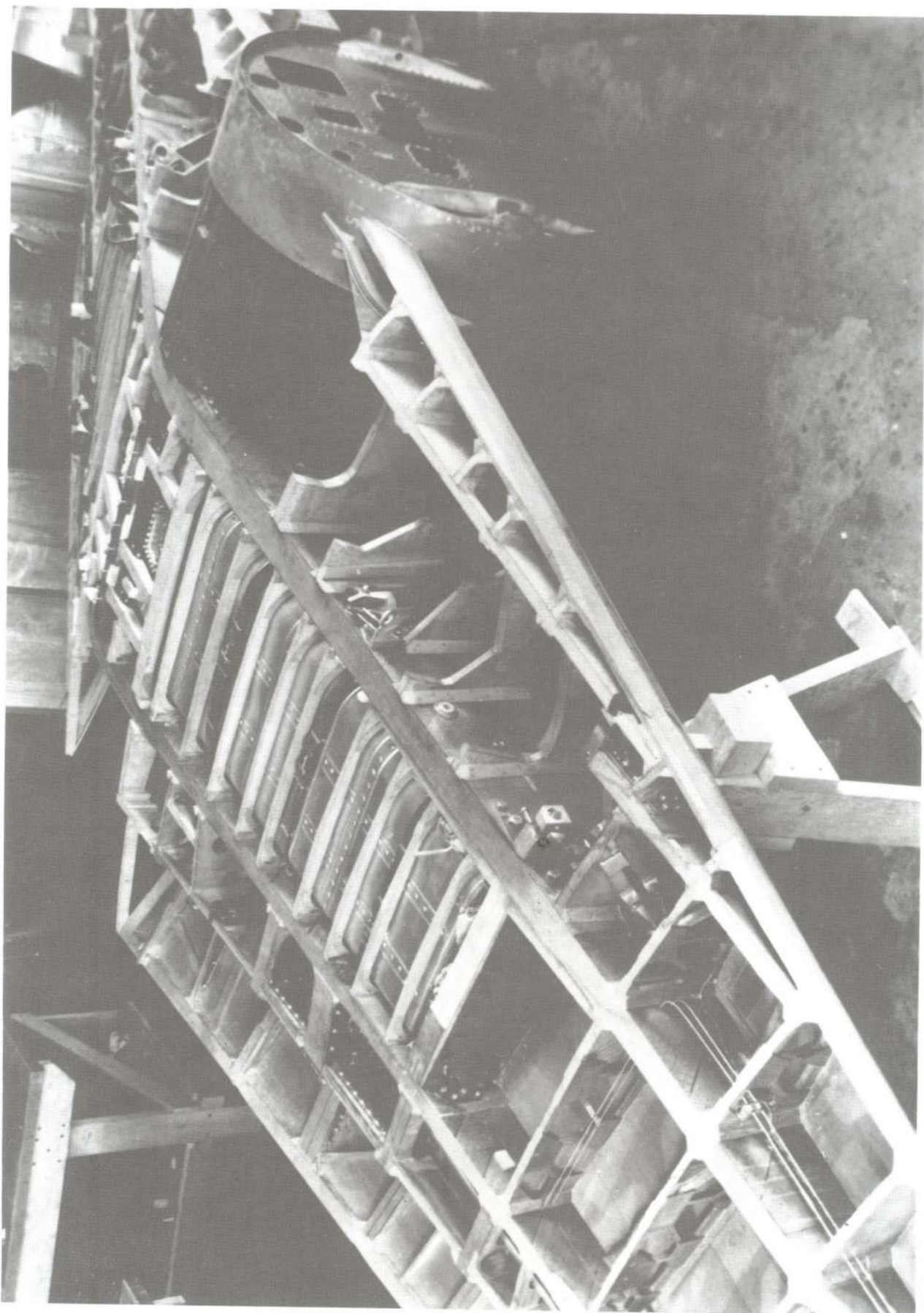
ALL DIMENSIONS IN PROFIE VIEW ARE INCHES

**HUGHES 1B RA**  
 JAN. 19, 1937  
 AS MODIFIED FOR U.S. TRANSCONTINENTAL  
 SPEED RECORD - BURBANK, CALIF.  
 NEWARK, N.J. 7 hrs. 28 min.

SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATTHEWS

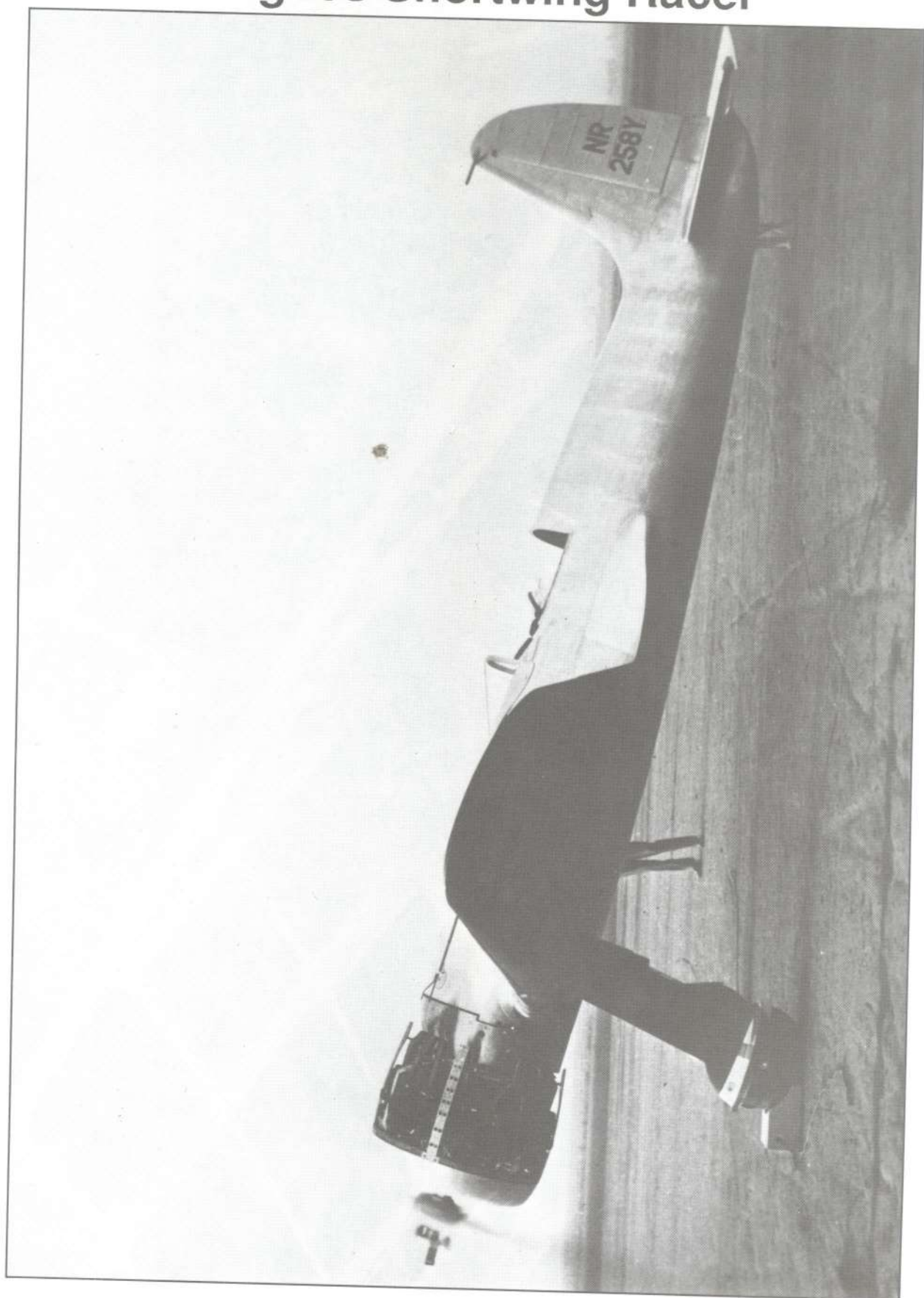
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*Hughes 1B Racer, "Longwing" under construction in 1937.*

# Hughes Shortwing Racer



OWER LOADING

7.85 lbs./HP.

FUEL CAPACITY

250 gals.  
30 gals.

OWER: PRATT & WHITNEY SA1-G (R-1535),  
TWIN WASP Jr., s/n 22, 700 HP at 2500 rpm  
PROPELLER REDUCTION GEARING 4:3  
POWER BOOSTED TO APPROX. 900 HP  
THROUGH "DOPED" FUEL AND  
CARBURETION ADJUSTMENTS.

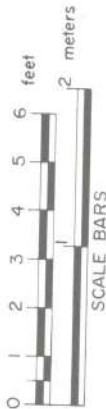
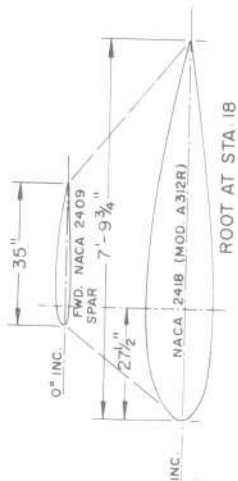


COLORING NOTES

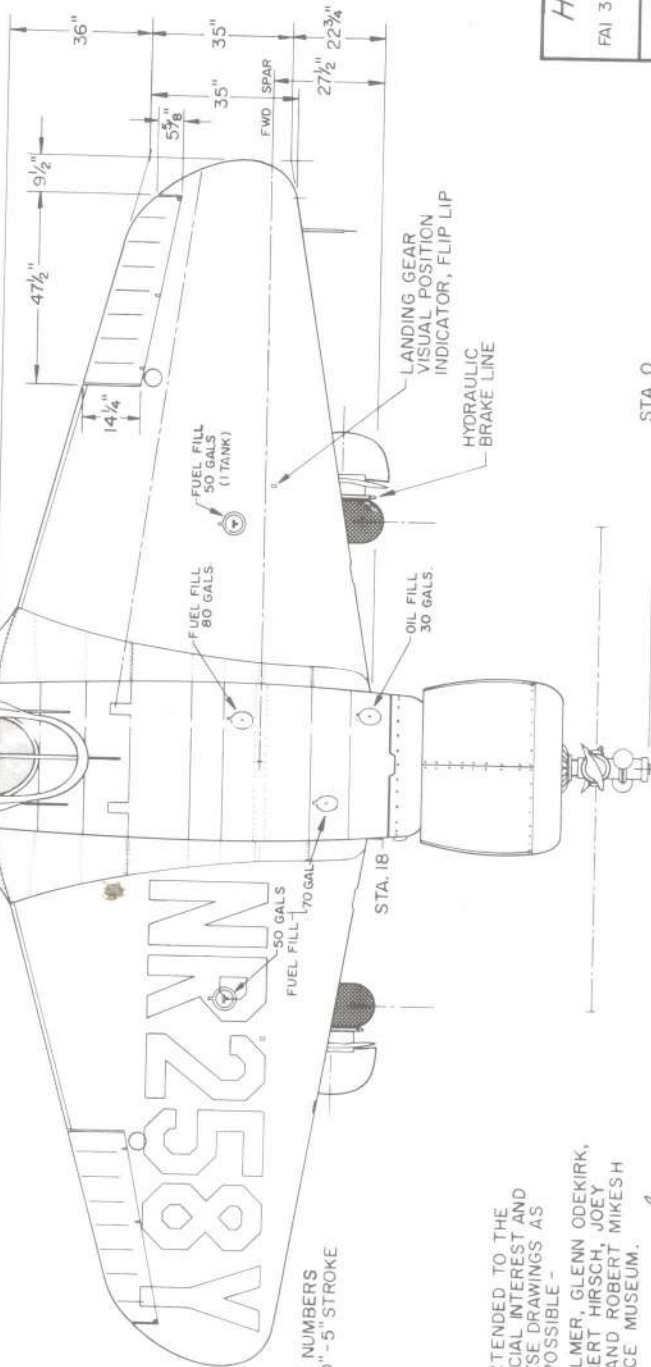
FUSELAGE, FIXED TAIL SURFACES - NATURAL ALUMINUM.  
ELEVATORS AND RUDDER - SILVER DOPED.  
WINGS - DARK ROYAL BLUE, (Hughes Tool Co. blue)

(MUNSELL 5PB 2/4)  
LICENSE NUMBERS ON WINGS - DEEP YELLOW,  
(Hughes Tool Co. yellow)

(MUNSELL 7.5 Y 8/12)  
ALL SURFACES WERE EXTREMELY SMOOTH IN FINISH.



SPRING LOADED  
FLUSH ENTRY

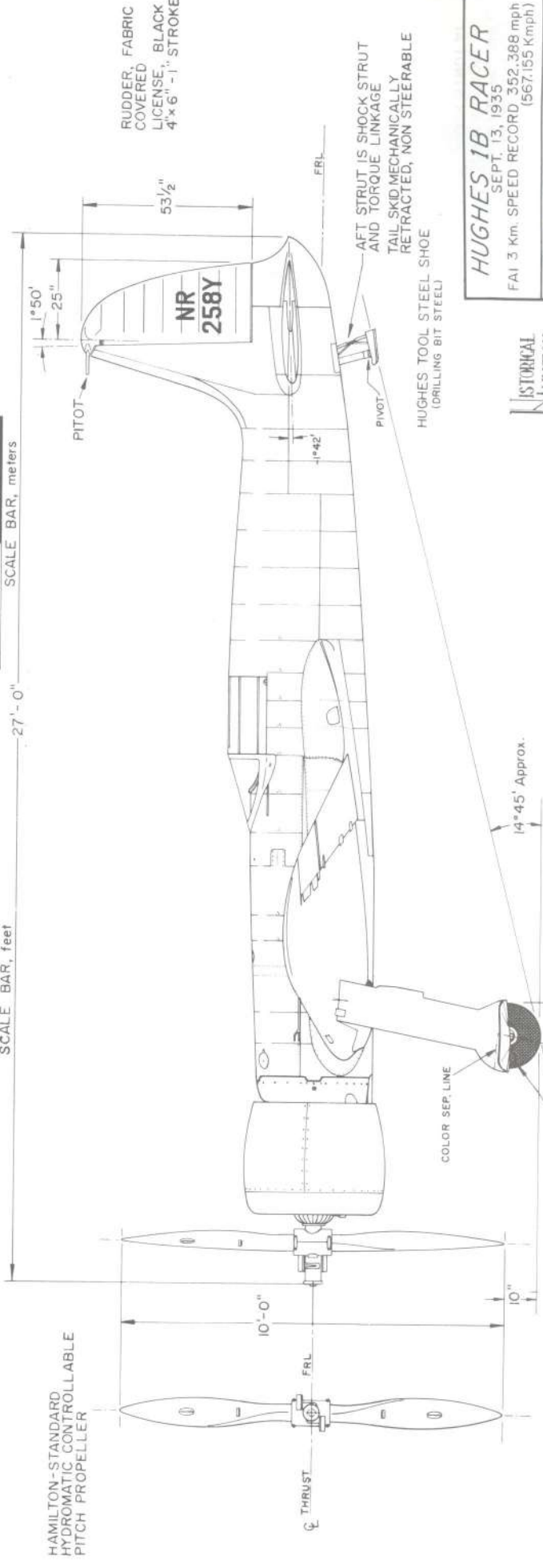
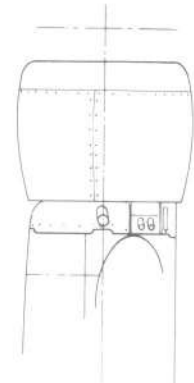
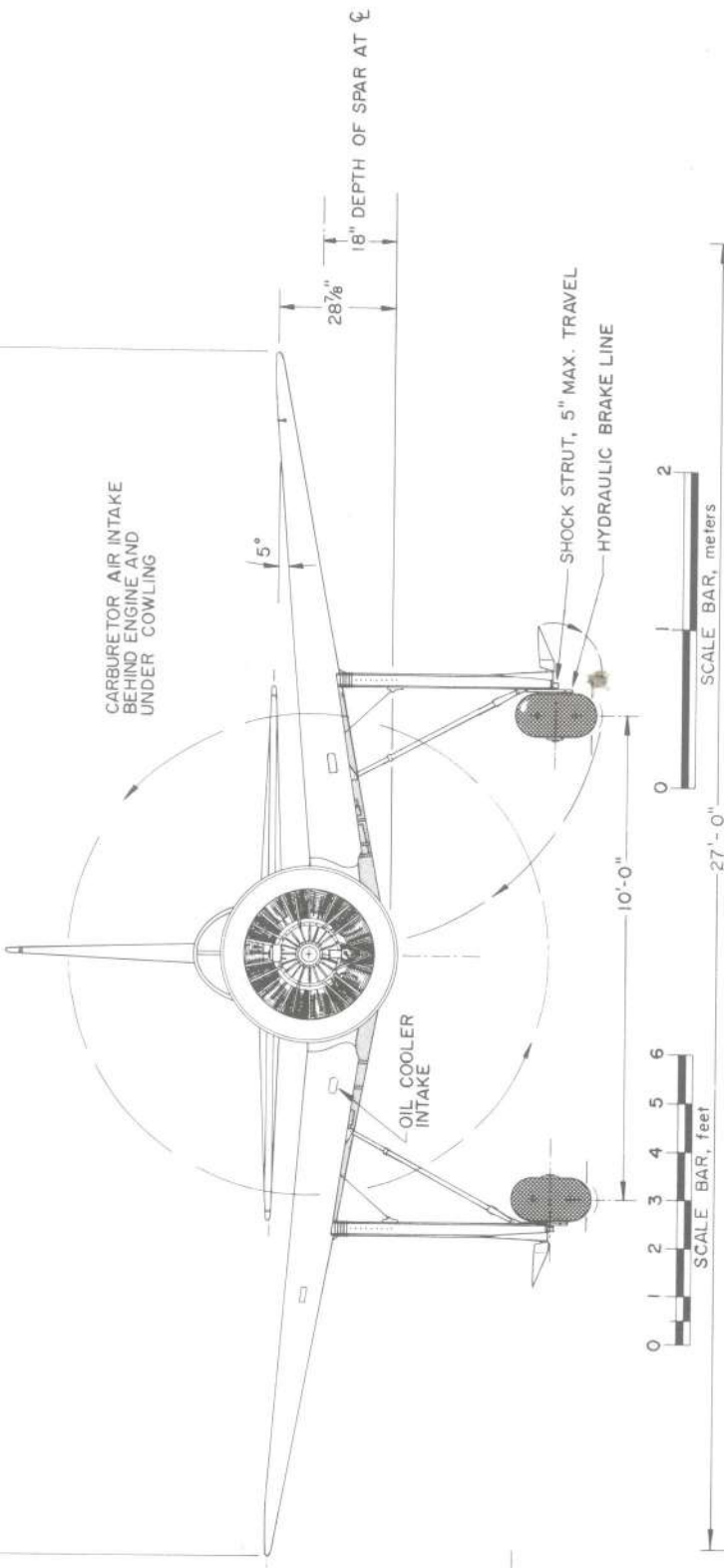


**HUGHES 1B RACER**  
 SEPT. 13, 1935  
 FAI 3 KM. SPEED RECORD 352.388 mph  
 (567.155 Km/h)

SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT

SINCERE APPRECIATION IS EXTENDED TO THE  
 FOLLOWING MEN FOR THEIR SPECIAL INTEREST AND  
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 L. MARTYN, VAN STORM, ROBERT HIRSCH, JOEY  
 LEIB, AND WALTER BOYNE AND ROBERT MIKESH  
 OF THE NATIONAL AIR AND SPACE MUSEUM.

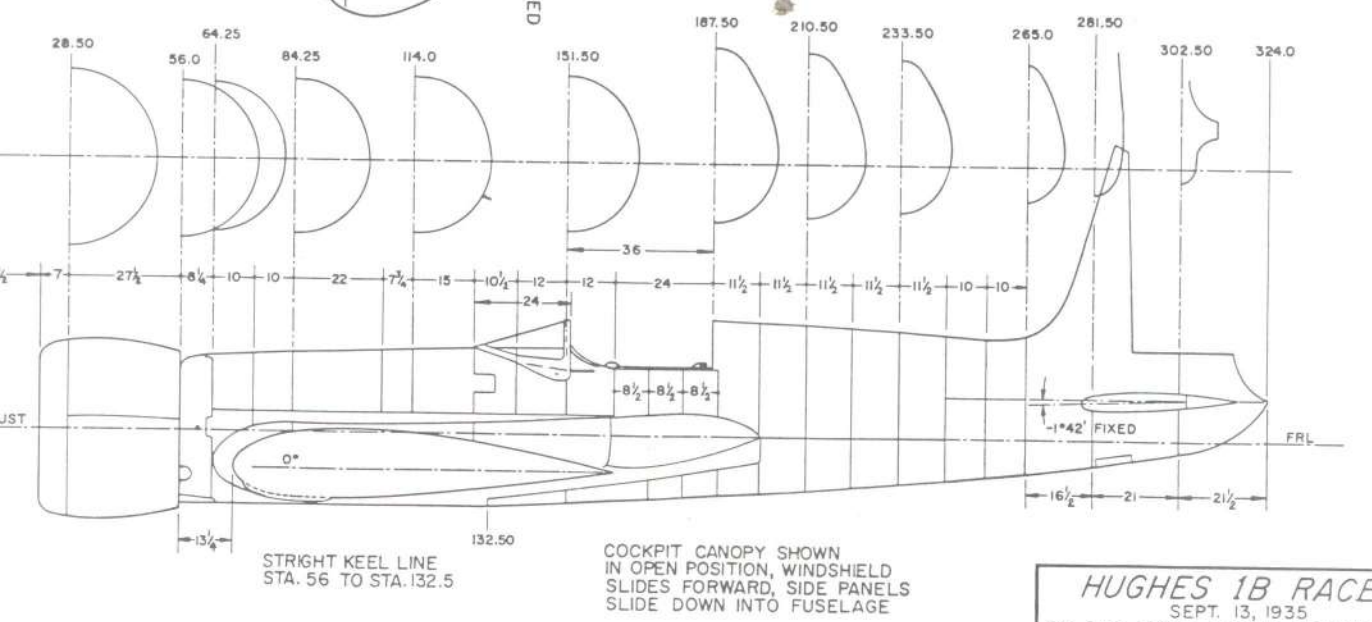
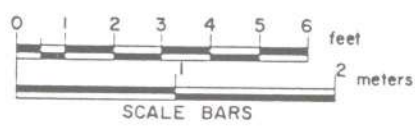
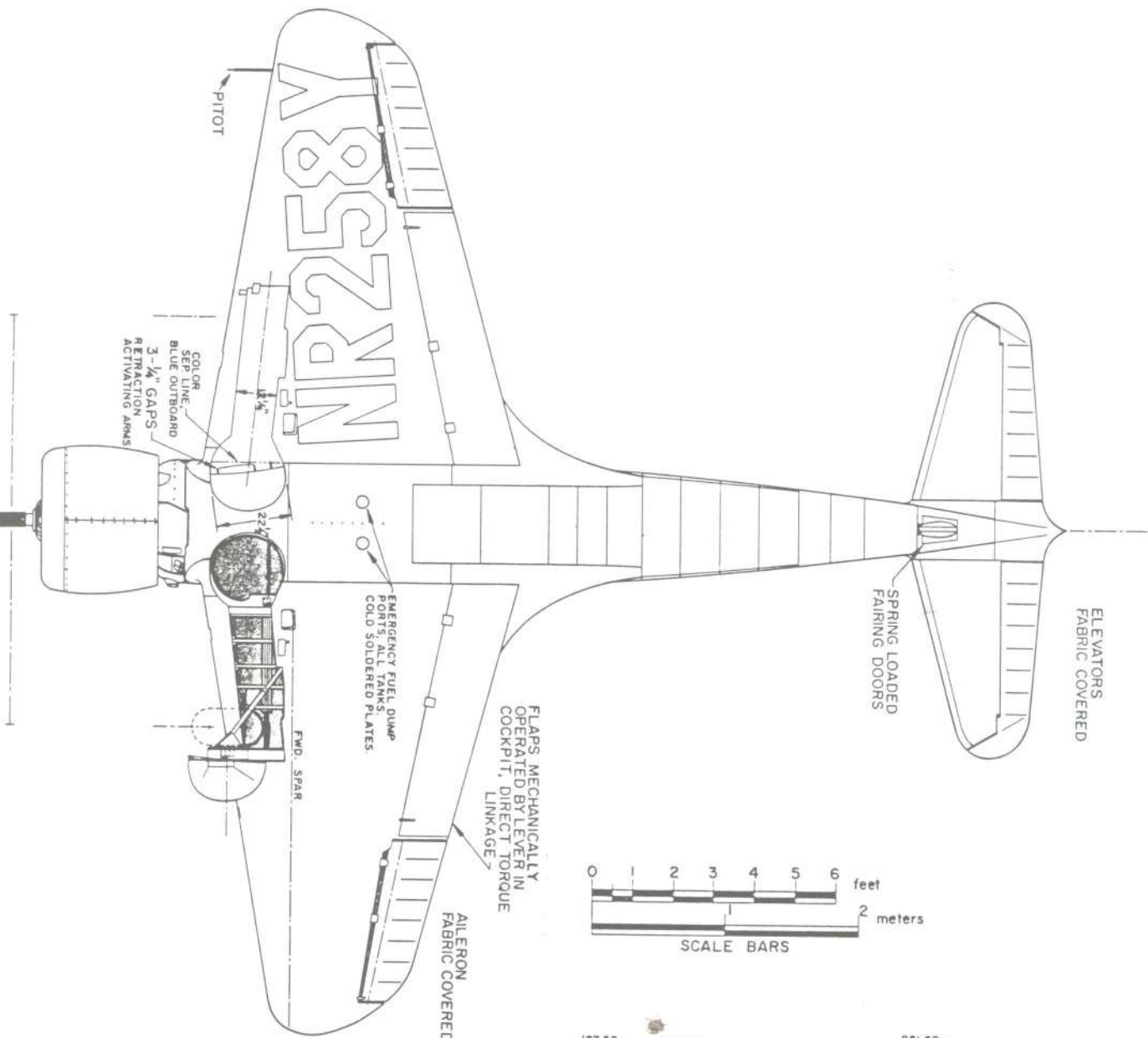
*Paul R. Matt*



**HUGHES 1B RACER**  
 SEPT. 13, 1935  
 FAI 3 Km. SPEED RECORD 352.388 mph  
 (567.155 Kmph)

NATIONAL  
 AVIATION





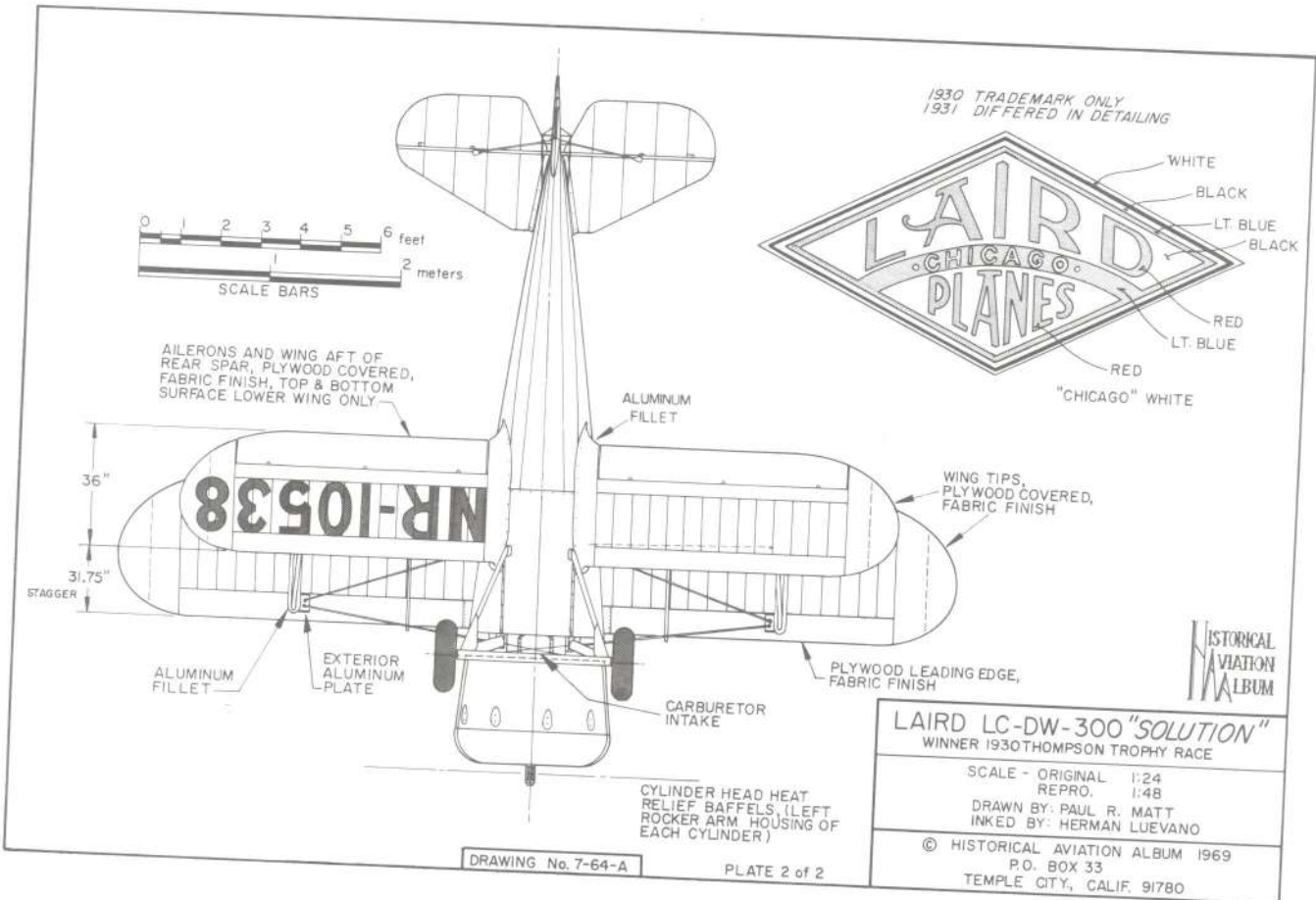
ALL DIMENSIONS IN PROFILE VIEW ARE INCHES

**HUGHES 1B RACER**  
 SEPT. 13, 1935  
 FAI 3 Km. SPEED RECORD 352.388 mph  
 (567.155 Km)

SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT  
 © HISTORICAL AVIATION ALBUM



# Laird LC-DW-300 "Solution"



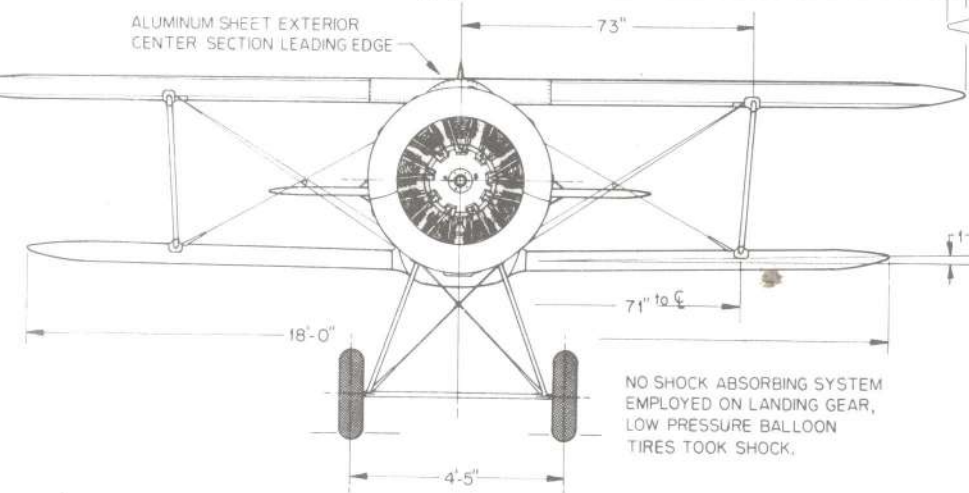
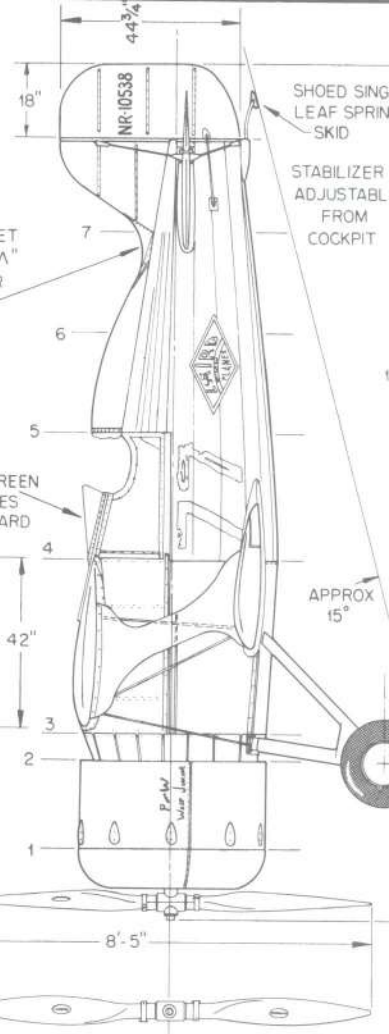
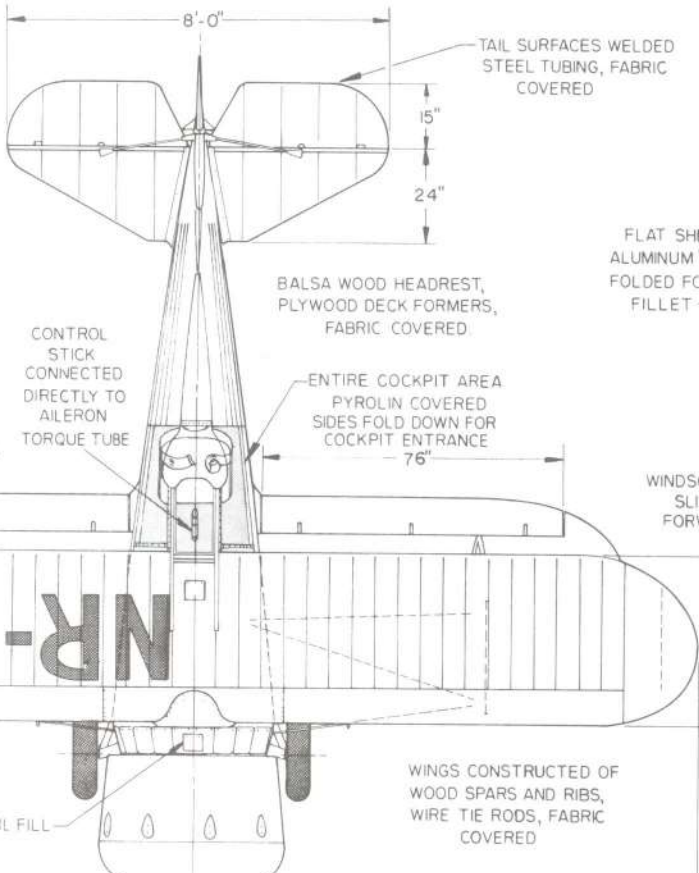
HISTORICAL AVIATION ALBUM

**COLORING NOTES**

FUSELAGE & ALL STRUTS  
GLOSS BLACK  
WINGS & TAIL SURFACES  
METALLIC GOLD  
LETTERING & NUMBERS  
WHITE ON BLACK,  
BLACK ON GOLD  
LAIRD INSIGNIA DESCRIBED  
ELSEWHERE

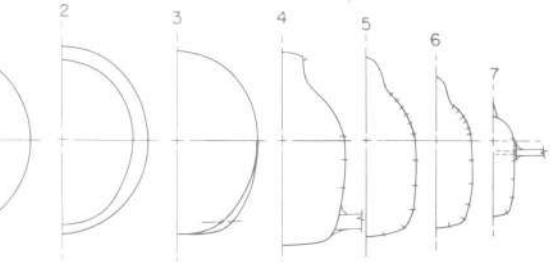
WEIGHT EMPTY ..... 1380 lbs.  
GROSS WEIGHT ..... 1845 lbs.  
FUEL CAPACITY ..... 50 gallons  
OIL CAPACITY ..... 7 gallons

POWER - PRATT & WHITNEY  
WASP JR. 300 HP. MAX.  
2nd PROTOTYPE



HAMILTON-STANDARD GROUND ADJUSTABLE PROPELLER, UNPAINTED.

1ST PLACE WINNER THOMPSON TROPHY RACE, CHICAGO, ILLINOIS, SEPT 1, 1930  
20 LAPS AROUND A FIVE MILE COURSE  
100 MILE TOTAL, - ELAPSED TIME: 29:43  
201.91 M.P.H. - PRIZE MONEY \$5,000



0° INC. UPPER WING  
LOWER WING  
M-12 AIRFOIL  
SAME SCALE AS DRAWING

OUR SINCERE APPRECIATION IS EXTENDED TO MAJ. TRUMAN S. WEAVER, USAF RET., MAJ. ROE HIRSCH, USAF RET., E. M. MATTY LAIRD, KEN. WILSON, HARVEY LIPPINCOTT AND EYE CASSENGERES OF THE CONNECTICUT AVIATION HISTORICAL ASSC. FOR THEIR ASSISTANCE IN THE PREPARATIONS OF THESE DRAWINGS.

AIRFOIL NACA M-12  
(DEVELOPED INTO NACA 2212)  
ORDINATES UPON REQUEST

**LAIRD LC-DW-300 "SOLUTION"**  
WINNER 1930 THOMPSON TROPHY RACE

SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY: PAUL R. MATT  
INKED BY: HERMAN LUEVANO

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P.O. BOX 33

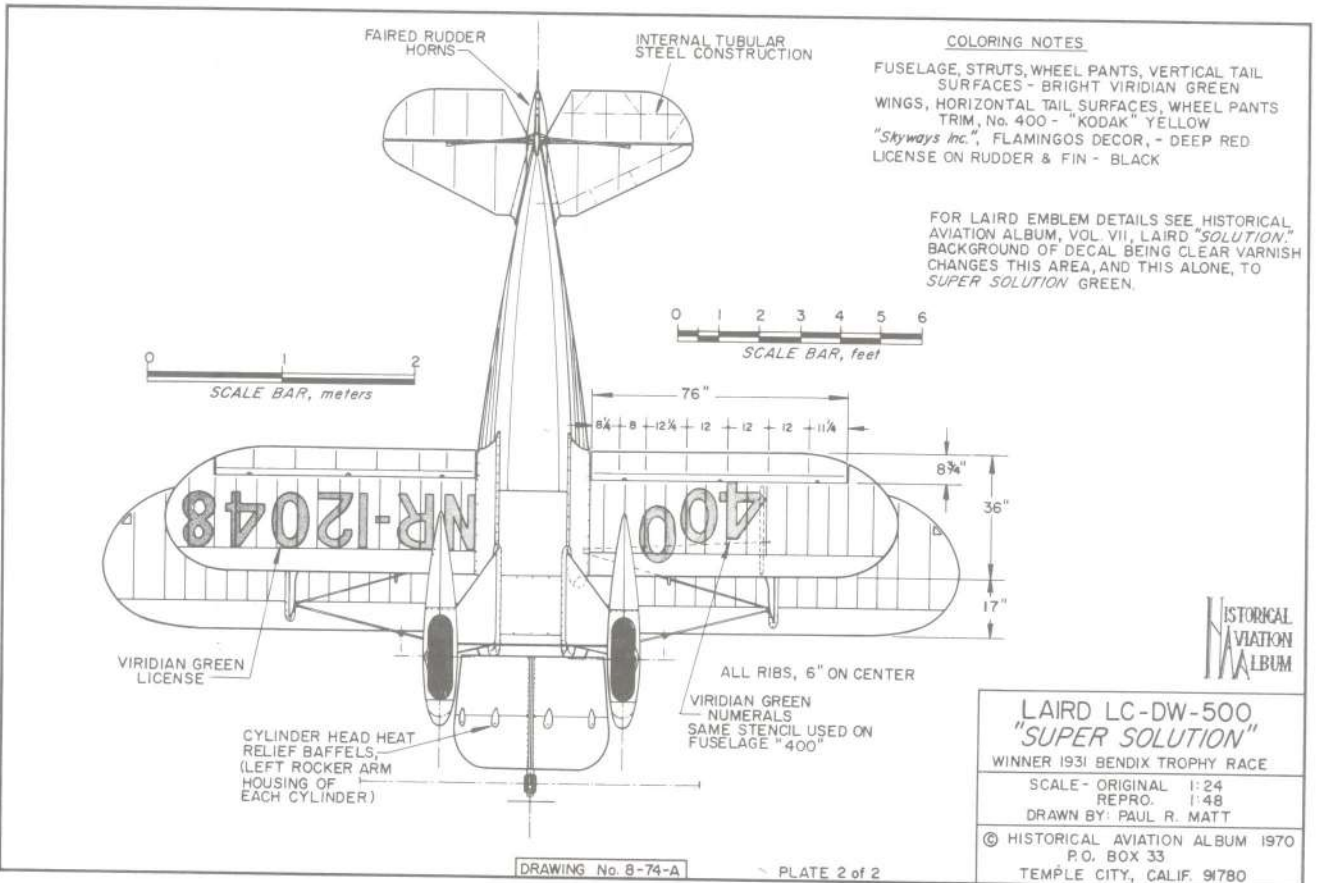


# Laird LC-DW-500 "Super Solution"



*Laird Super Solution*

*Jimmy Doolittle in front of Laird Super Solution, September, 1931.*



GENERAL SPECIFICATIONS  
BENDIX TROPHY CONDITION

WEIGHT EMPTY 1,580 lbs.  
GROSS WEIGHT 2,160 lbs. (Approx.)  
FUEL CAPACITY 112 gals.  
OIL CAPACITY 11 gals.

ENGINE - PRATT & WHITNEY WASP JR.  
ENGINE USED IN BOTH BENDIX AND THOMPSON RACES WAS THE DIRECT DRIVE WASP JR., S/N X-27 "YELLOW JACKET," COMPRESSION RATIO 6:1, BLOWER GEAR RATIO 10:1, BOOSTED TO APPROX. 525 H.P. (NORMAL 435/450 H.P.)

WINNER BENDIX TROPHY RACE, BURBANK, CALIF. TO CLEVELAND, OHIO, SEPT. 4, 1931, THENSE TO NEWARK, N.J., 2,882 MILES IN 11 HRS., 16 MIN. FOR FULL TRANSCONTINENTAL SPEED RECORD. AVERAGE SPEED FOR BENDIX RACE 223,038 MPH AND 217 MPH AVERAGE FOR ENTIRE FLIGHT



AIRFOIL M-12 (TWICE SCALE)  
DEVELOPED INTO NACA 2212

NAVIGATION

BANKLIN GOTHIC  
TYPE LETTERING,  
MIRIDIAN GREEN

HAND FORMED COWL &  
WHEEL PANTS BY  
HILL STREAMLINERS OF  
CINCINNATI, OHIO

ENTIRE AMIDSHIP COCKPIT  
ENCLOSURE SWINGS OPEN  
SIDE PANELS HINGED ON  
EITHER SIDE ON TOPSIDE  
LONGERON, ALLOWING IT  
TO FOLD OUTWARD. CLEAR  
TO WINDSCREEN SLIDES  
PARALLEL SIDE TRACKS

ENGINE S/N 36382-36385  
SIGN No. 21A1-7

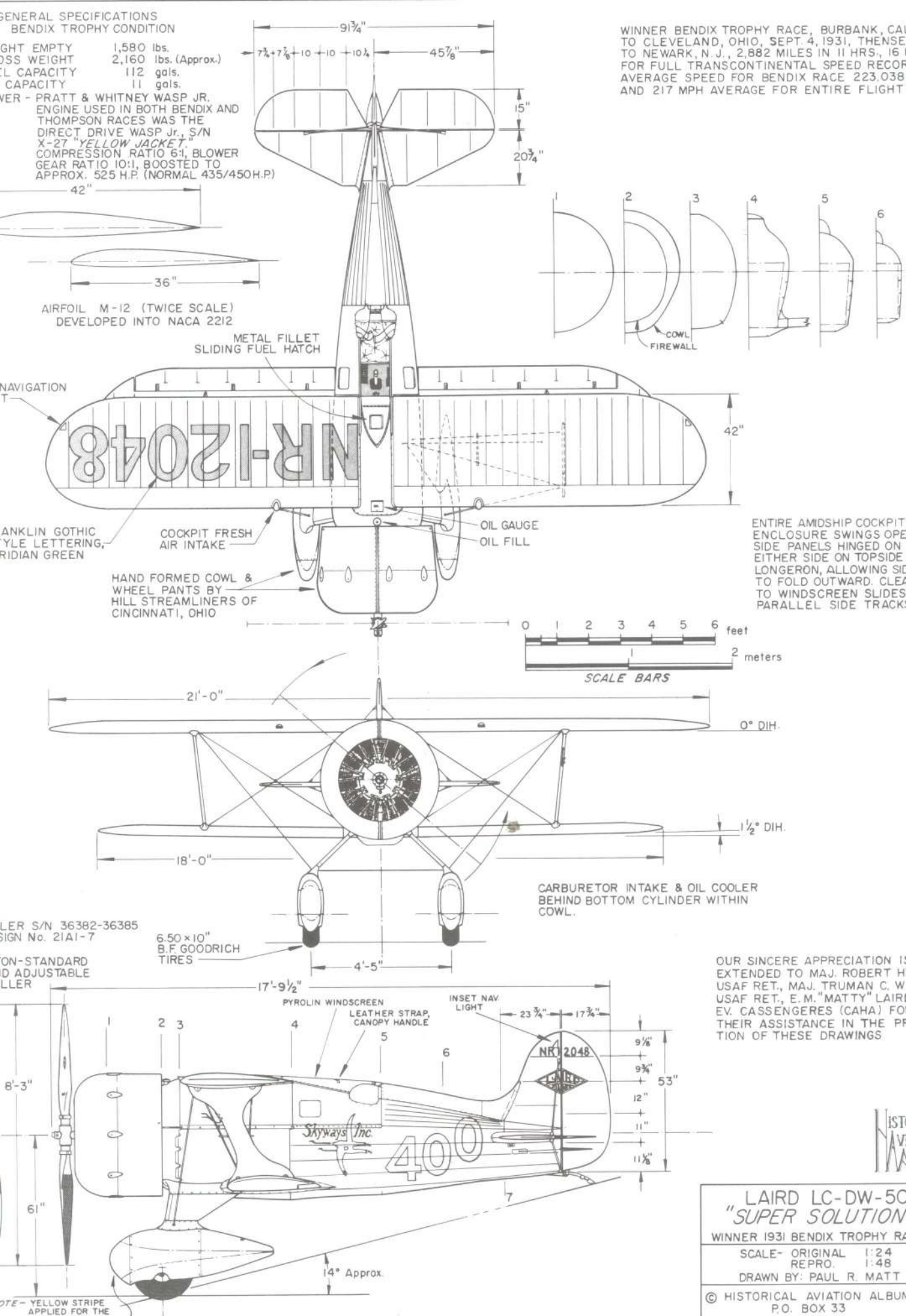
NON-STANDARD  
AND ADJUSTABLE  
ROLLER

6.50 x 10" B.F. GOODRICH  
TIRES

CARBURETOR INTAKE & OIL COOLER  
BEHIND BOTTOM CYLINDER WITHIN  
COWL.

OUR SINCERE APPRECIATION IS  
EXTENDED TO MAJ. ROBERT H.  
USAF RET., MAJ. TRUMAN C. W.  
USAF RET., E. M. "MATTY" LAIRD  
EV. CASSENGERES (CAHA) FOR  
THEIR ASSISTANCE IN THE PREP-  
ARATION OF THESE DRAWINGS

NOTE - YELLOW STRIPE  
APPLIED FOR THE



LAIRD LC-DW-50  
"SUPER SOLUTION"

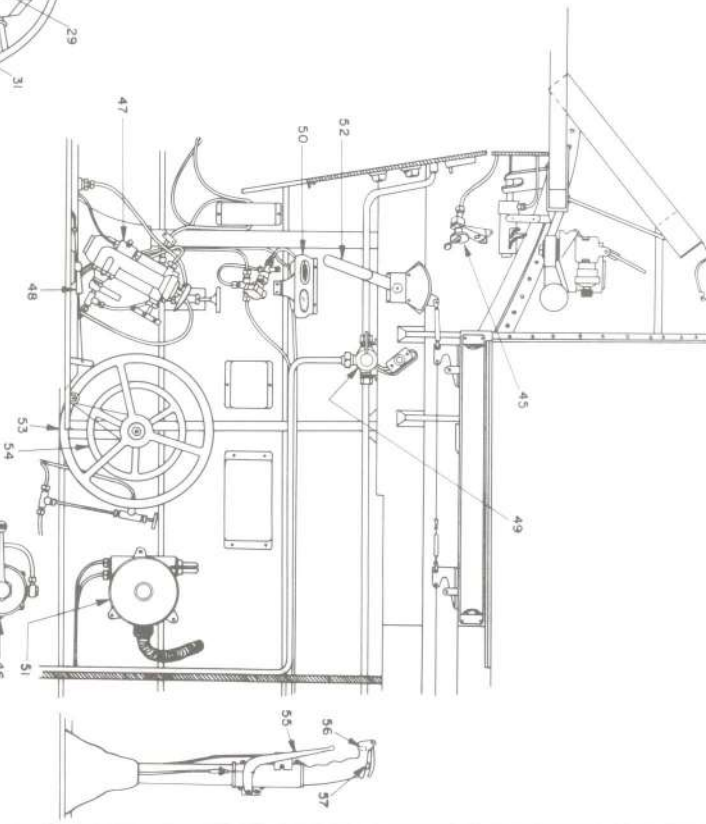
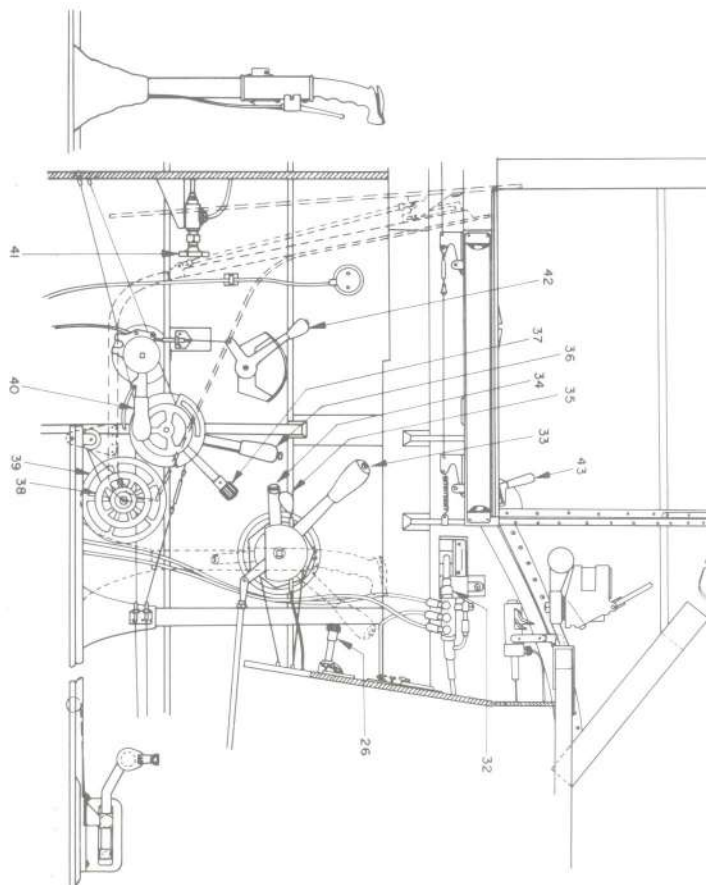
WINNER 1931 BENDIX TROPHY RACE

SCALE - ORIGINAL 1:24

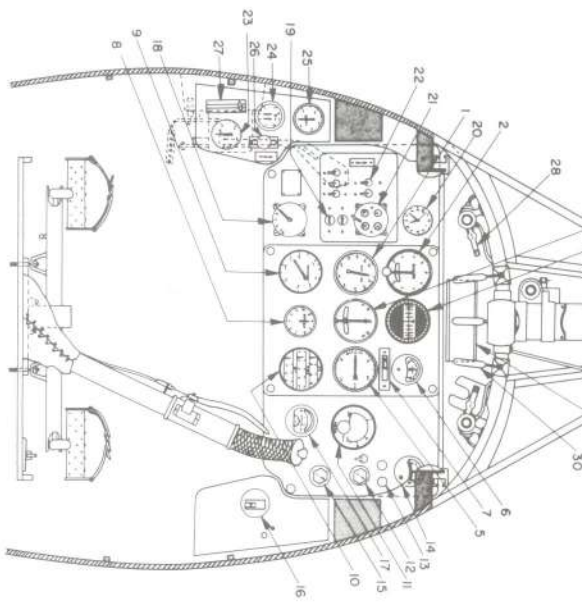
REPRO. 1:48

DRAWN BY: PAUL R. MATT

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P.O. BOX 33



- 1 AIRSPEED INDICATOR
- 2 AMPERE METER
- 3 TURN AND BANK
- 4 COMPASS
- 5 VERTICAL SPEED INDICATOR
- 6 COURSE INDICATOR (RATE OF CLIMB)
- 7 REVERSING SWITCH, C.I.
- 8 BOOST INDICATOR
- 9 THREE NEEDLE INDICATOR
- 10 FUEL LEVEL
- 11 COCKPIT ILLUMINATION
- 12 CHECK LIGHT, BOMB RELEASE
- 13 AMPERE METER
- 14 FUEL GAUGE
- 15 FREQUENCY REVERSING SWITCH
- 16 CYLINDER HEAD TEMP.
- 17 IGNITION SWITCH
- 18 STARTER SWITCH
- 19 CLOCK
- 20 UNDERCARRIAGE INDICATOR
- 21 SWITCHES
- 22 SWITCHES
- 23 BRAKE PRESSURE GAUGE
- 24 BRAKE PRESSURE GAUGE
- 25 AIR INSTALLATION PRESSURE
- 26 UNDERCARRIAGE CONTROL
- 27 LANDING FLAP INDEX
- 28 AIR CANNON CHARGING
- 29 DIRECTION FINDER
- 30 MANUAL CHARGING OF CANNONS
- 31 DOWN LOCK
- 32 LANDING FLAP CONTROL
- 33 THROTTLE
- 34 PROPELLER PITCH CONTROL
- 35 ENGINE STOP
- 36 BOOSTER CONTROL
- 37 OIL CONTROL CONTROL
- 38 FUEL CONTROL CONTROL, RIM, TAB
- 39 FUEL CONTROL CONTROL, OIL
- 40 BOMB BLOCKING, ARMING
- 41 MAIN AIR VALVE
- 42 COCKPIT AERATION
- 43 COCKPIT CLOSING LEVER
- 44 COCKPIT AERATION, CZECH
- 45 MIXING VALVE, FUEL TO OIL
- 46 FUEL PUMP
- 47 FUEL INJECTION PUMP
- 48 FUEL COCK
- 49 HYDRAULICS MAIN VALVE
- 50 OXYGEN PRESSURE
- 51 OXYGEN PRESSURE
- 52 EMERGENCY CANNON RELEASE
- 53 SIDE LOUVRES CONTROL
- 54 FRONTAL LOUVRE CONTROL
- 55 BRAKE LEVER
- 56 BOMB TRIGGER, RELEASE
- 57 BOMB TRIGGER, RELEASE

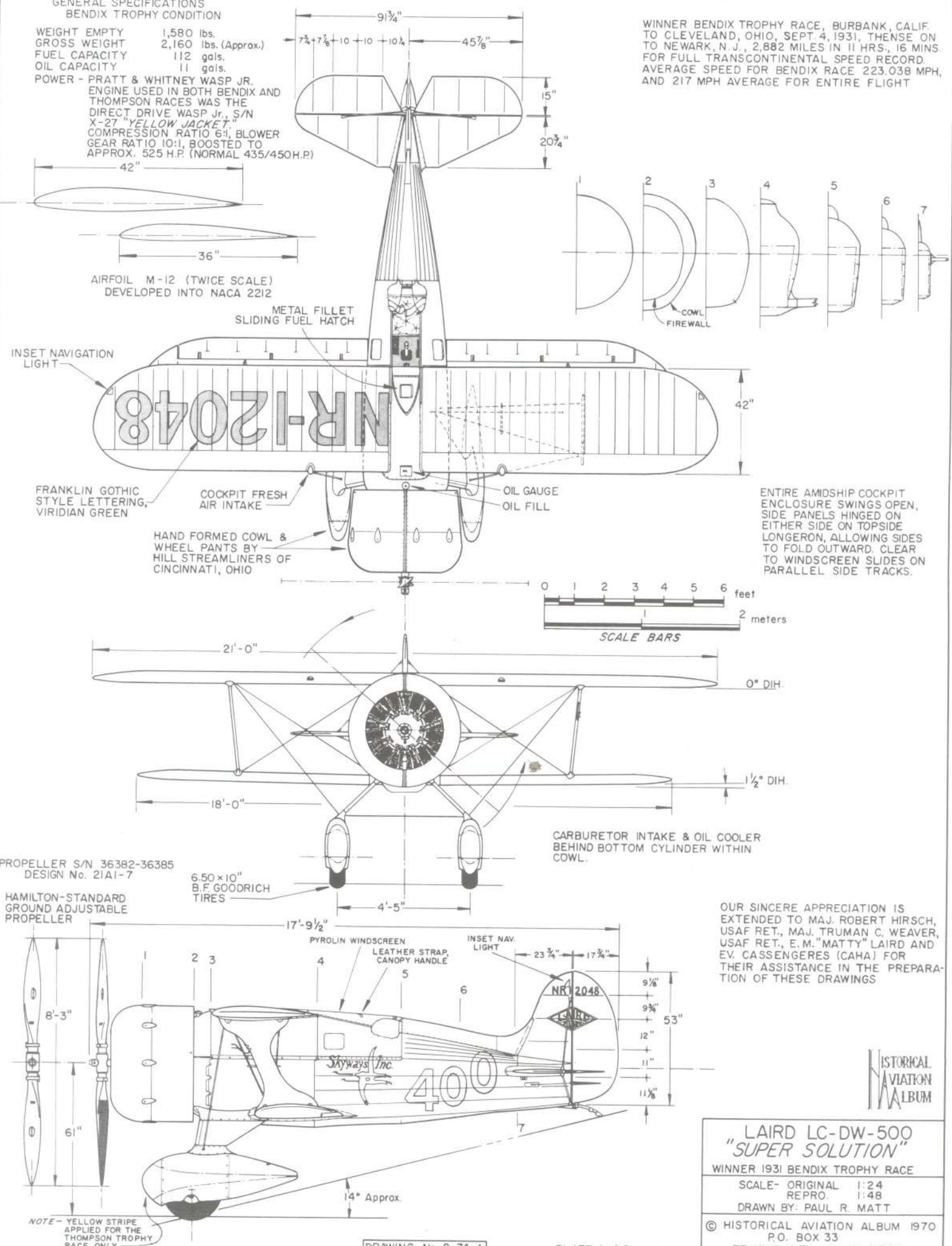


LAVOCHKIN LA-7  
 SCALE - SEE SCALE BAR  
 DRAWN BY - JOSEF KRYBUS  
 PRAGUE  
 CZECHOSLOVAKIA  
 LINKED & TRANSLATED FOR

GENERAL SPECIFICATIONS  
BENDIX TROPHY CONDITION

WEIGHT EMPTY 1,580 lbs.  
GROSS WEIGHT 2,160 lbs. (Approx.)  
FUEL CAPACITY 112 gals.  
OIL CAPACITY 11 gals.  
POWER - PRATT & WHITNEY WASP JR. ENGINE USED IN BOTH BENDIX AND THOMPSON RACES WAS THE DIRECT DRIVE WASP Jr., S/N X-27 "YELLOW JACKET" COMPRESSION RATIO 6:1, BLOWER GEAR RATIO 10:1, BOOSTED TO APPROX. 525 H.P. (NORMAL 435/450 H.P.)

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OUR SINCERE APPRECIATION IS EXTENDED TO MAJ. ROBERT HIRSCH, USAF RET., MAJ. TRUMAN C. WEAVER, USAF RET., E.M. "MATTY" LAIRD AND EV. CASSENGERES (CAHA) FOR THEIR ASSISTANCE IN THE PREPARATION OF THESE DRAWINGS



LAIRD LC-DW-500  
"SUPER SOLUTION"  
WINNER 1931 BENDIX TROPHY RACE

SCALE- ORIGINAL	1:24
REPRO.	1:48
DRAWN BY: PAUL R. MATT	
© HISTORICAL AVIATION ALBUM 1970	
P.O. BOX 33	
TEMPLE CITY, CALIF. 91780	

**GENERAL SPECIFICATIONS**

WEIGHT EMPTY (WHEN AIRCRAFT ORIGINALLY LEFT THE LAIRD FACTORY) 3,195 lbs.  
 WEIGHT EMPTY (IN LATER MODIFICATIONS) 3,300 lbs.  
 GROSS WEIGHT, LIGHT LOAD 3,765 lbs.  
 GROSS WEIGHT, FULL LOAD 3,765 lbs.  
 GROSS WEIGHT, OVERLOAD (TURNER'S FIGURE) 4,923 lbs.  
 WING AREA 95 sq. ft.  
 WING LOADING, FULL LOAD COND. lbs./sq. ft.  
 POWER LOADING 4.92 lbs./hp  
 MAX. SPEED, ESTIMATED STRAIGHT AWAY FLIGHT AT S.L. (LAIRD CO. & UNITED AIRCRAFT COMPUTATIONS) 330/350 m.p.h.  
 ROSCOE TURNER'S PERSONAL CLAIM 412 m.p.h. (1939)  
 LANDING SPEED, WITH FLAPS 87 m.p.h.

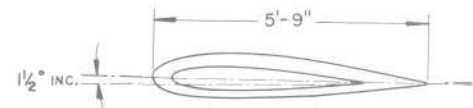
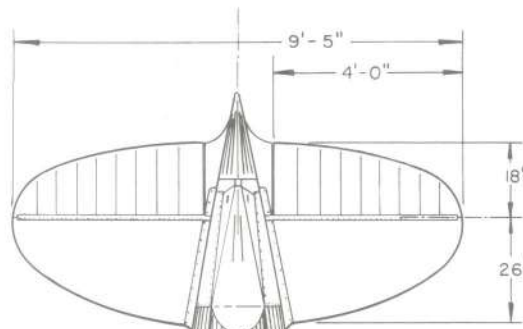
POWER: PRATT & WHITNEY SIB3-G, s/n 177  
 14 cyl. TWIN ROW WASP SR, 1830 cu. in.  
 DISPLACEMENT. MFG. RATING  
 900 hp AT 2450 RPM AT 6,500 FEET  
 1,000 hp AT 2600 RPM, S.L., TAKEOFF  
 USING 87 OCTANE FUEL

**THOMPSON TROPHY RACE RECORD**

3RD PLACE AT 253.802 m.p.h. 1937  
 1ST PLACE AT 283.419 m.p.h. 1938  
 1ST PLACE AT 282.536 m.p.h. 1939

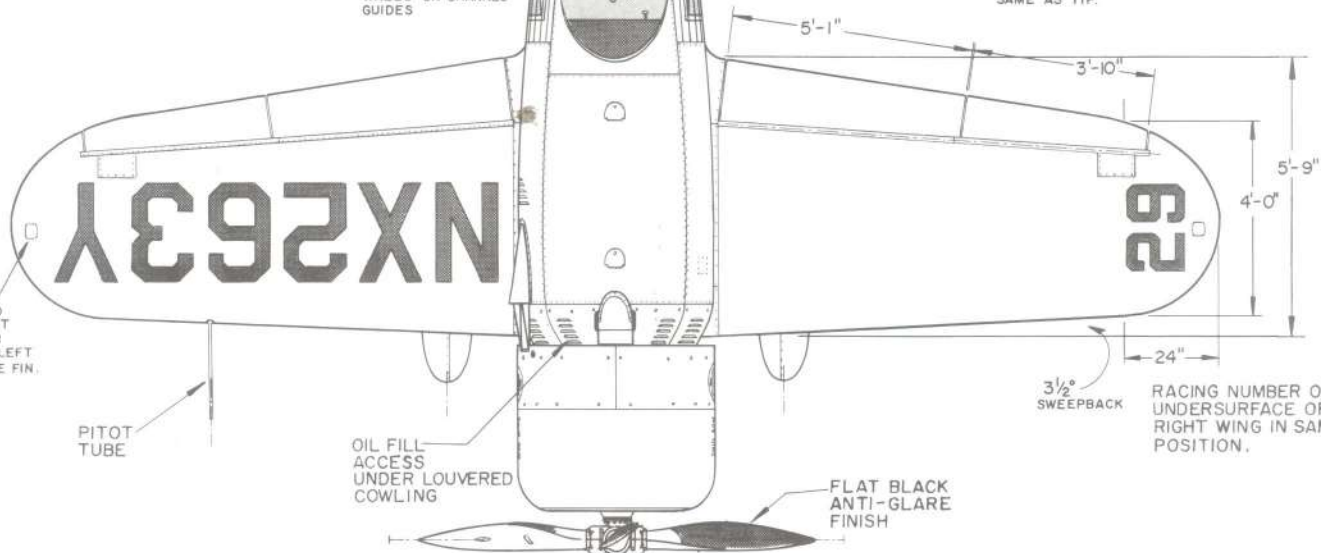
**CONSTRUCTION NOTES**

FUSELAGE - WELDED STEEL TUBULAR STRUCTURE, WOOD AND METAL FORMERS, IRISH LINEN COVERED AMIDSHIP, ALUMINUM COVERED FORWARD AND AFT PORTIONS  
 WING - ONE PIECE, TWO LAMINATED FULL SPAN SPRUCE SPARS, REINFORCED PLYWOOD RIBS, SINGLE WIRE MACWHITE TIE LINES, 3/32" THREE PLY HASKELITE VENEER COVERING AND IRISH LINEN FINISHED  
 AILERONS & FLAPS - SAME CONSTRUCTION AS WING, ALL TORQUE TUBE OPERATED  
 HORIZONTAL STABILIZER - SAME AS WING, ADJUSTABLE FROM COCKPIT  
 ELEVATORS & RUDDER - WELDED STEEL TUBING, LINEN COVERED  
 FIN - STEEL TUBE, ALUMINUM FAIRED, LINEN COVERED



AIRFOIL NACA 23000 SERIES (EXACT SECTION UNKNOWN) ROOT AND THEORETICAL TIP AIRFOIL NOT SYMMETRICAL, NO WASH-IN OR WASH-OUT, ROOT SECTION SAME AS TIP.

COCKPIT WINDOWS PART AT CENTER LINE, SLIDE DOWN INTO FUSELAGE WALLS ON CHANNEL GUIDES



FABRIC PATCH OVER ABANDONED NAVIGATION LIGHT FITTING, SIMILAR TREATMENT ON LEFT WING AND ON THE FIN.

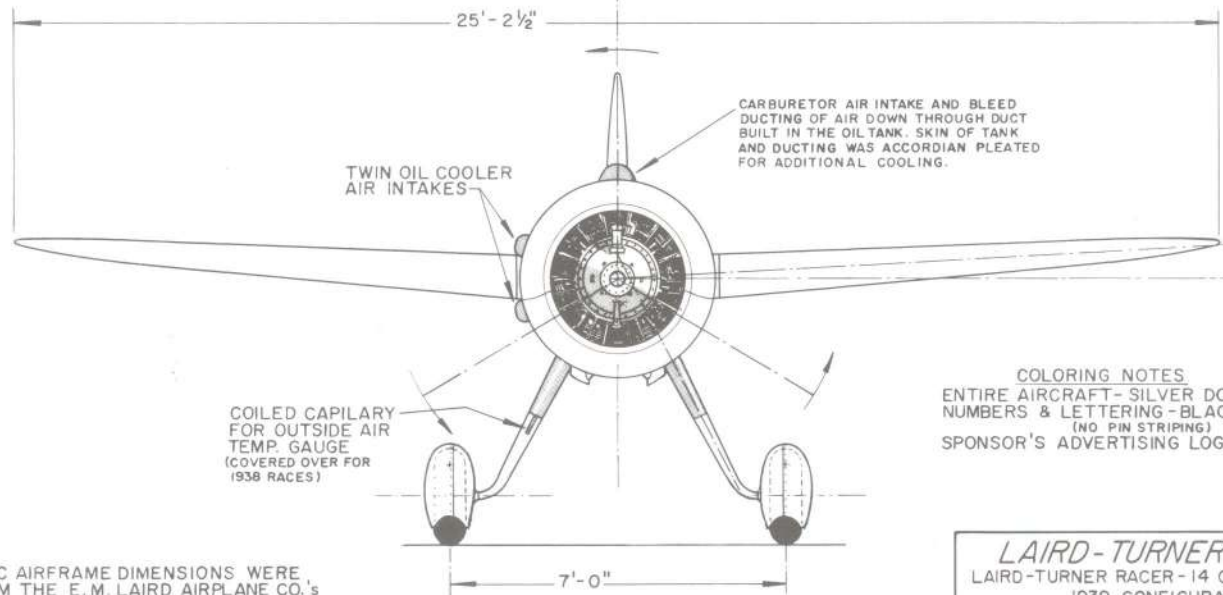
PITOT TUBE

OIL FILL ACCESS UNDER LOUVERED COWLING

FLAT BLACK ANTI-GLARE FINISH

3 1/2" SWEEPBACK

RACING NUMBER ON UNDERSURFACE OF RIGHT WING IN SAME POSITION.



TWIN OIL COOLER AIR INTAKES

CARBURETOR AIR INTAKE AND BLEED DUCTING OF AIR DOWN THROUGH DUCT BUILT IN THE OIL TANK. SKIN OF TANK AND DUCTING WAS ACCORDIAN PLEATED FOR ADDITIONAL COOLING.

COILED CAPILARY FOR OUTSIDE AIR TEMP. GAUGE (COVERED OVER FOR 1938 RACES)

**COLORING NOTES**  
 ENTIRE AIRCRAFT - SILVER DOPED  
 NUMBERS & LETTERING - BLACK (NO PIN STRIPING)  
 SPONSOR'S ADVERTISING LOGO - AS NOTED

**NOTE:**  
 OUR BASIC AIRFRAME DIMENSIONS WERE TAKEN FROM THE E. M. LAIRD AIRPLANE CO.'S BLUEPRINTS AND A REVIEW OF SURVIVING LAWRENCE BROWN AIRCRAFT CO. MATERIAL



**LAIRD-TURNER LTR-14**  
 LAIRD-TURNER RACER - 14 CYLINDER ENGINE  
 1939 CONFIGURATION  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT

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 P.O. BOX 33  
 TEMPLE CITY, CALIF 91780



**GENERAL SPECIFICATIONS**

WEIGHT EMPTY (WHEN AIRCRAFT ORIGINALLY LEFT THE LAIRD FACTORY) 3,195 lbs.  
 WEIGHT EMPTY (IN LATER MODIFICATIONS) 3,300 lbs.  
 GROSS WEIGHT, LIGHT LOAD 3,765 lbs.  
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 POWER LOADING 4.92 lbs./hp  
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 (LAIRD CO. & UNITED AIRCRAFT COMPUTATIONS)  
 ROSCOE TURNER'S PERSONAL CLAIM 412 m.p.h. (1939)  
 LANDING SPEED, WITH FLAPS 87 m.p.h.

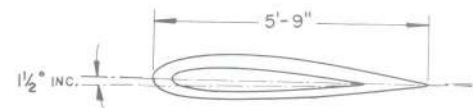
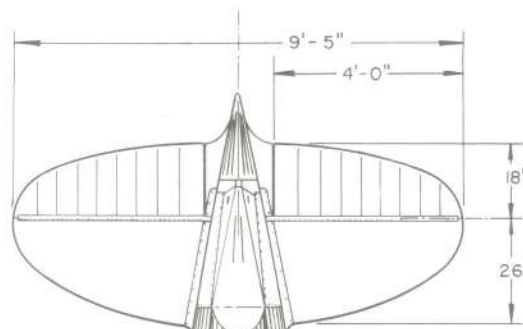
POWER: PRATT & WHITNEY SIB3-G, s/n 177  
 14 cyl. TWIN ROW WASP SR, 1830 cu. in.  
 DISPLACEMENT. MFG. RATING  
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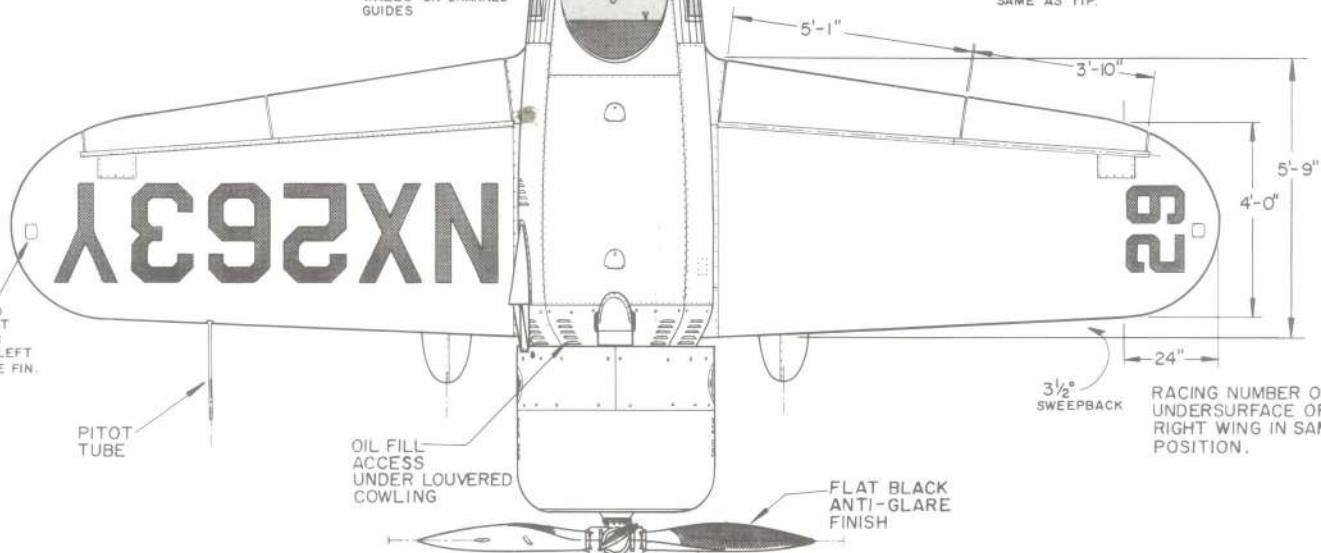
**CONSTRUCTION NOTES**

FUSELAGE - WELDED STEEL TUBULAR STRUCTURE, WOOD AND METAL FORMERS, IRISH LINEN COVERED AMIDSHIP, ALUMINUM COVERED FORWARD AND AFT PORTIONS  
 WING - ONE PIECE, TWO LAMINATED FULL SPAN SPRUCE SPARS, REINFORCED PLYWOOD RIBS, SINGLE WIRE MACWHITE TIE LINES, 3/32" THREE PLY HASKELITE VENEER COVERING AND IRISH LINEN FINISHED  
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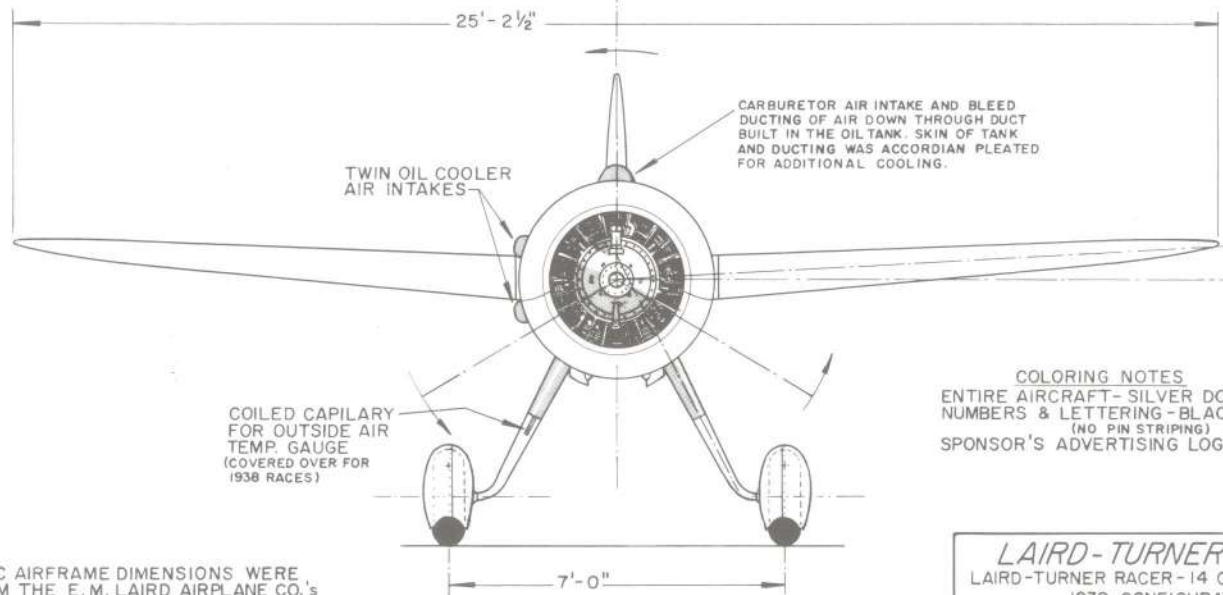


AIRFOIL NACA 23000 SERIES (EXACT SECTION UNKNOWN) ROOT AND THEORETICAL TIP AIRFOIL NOT SYMMETRICAL, NO WASH-IN OR WASH-OUT, ROOT SECTION SAME AS TIP.

COCKPIT WINDOWS PART AT CENTER LINE, SLIDE DOWN INTO FUSELAGE WALLS ON CHANNEL GUIDES



RACING NUMBER ON UNDERSURFACE OF RIGHT WING IN SAME POSITION.



**COLORING NOTES**  
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 NUMBERS & LETTERING - BLACK (NO PIN STRIPING)  
 SPONSOR'S ADVERTISING LOGO - AS NOTED

**NOTE:**  
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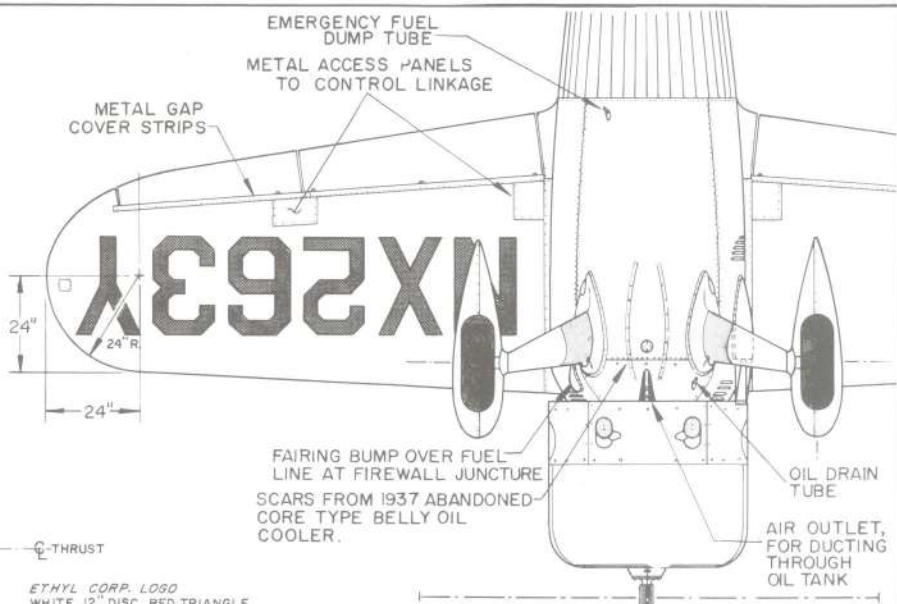
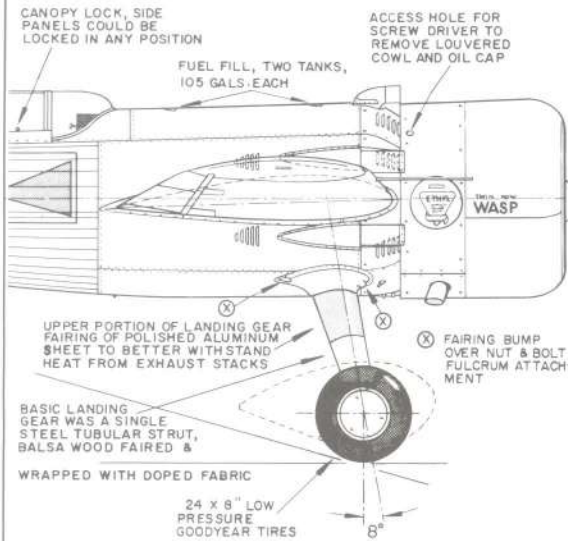
**LAIRD-TURNER LTR-14**  
 LAIRD-TURNER RACER - 14 CYLINDER ENGINE  
 1939 CONFIGURATION  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT



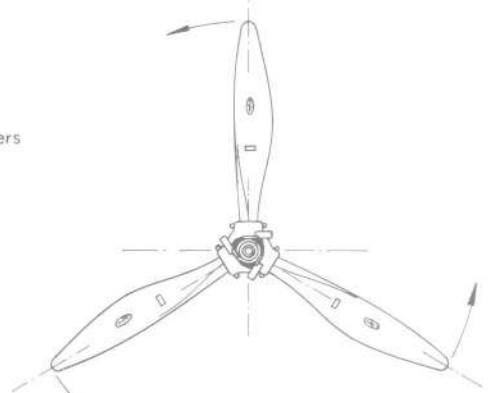
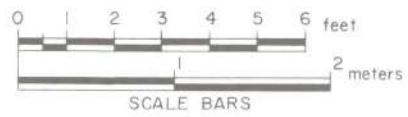
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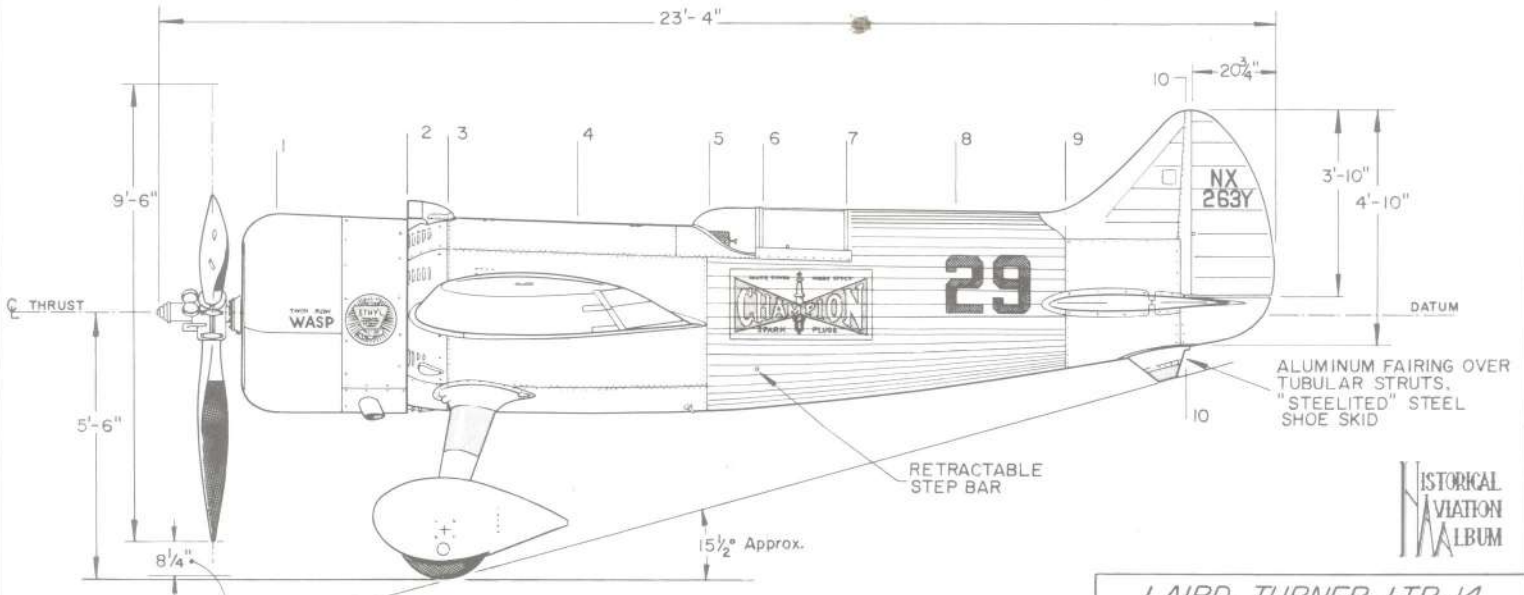
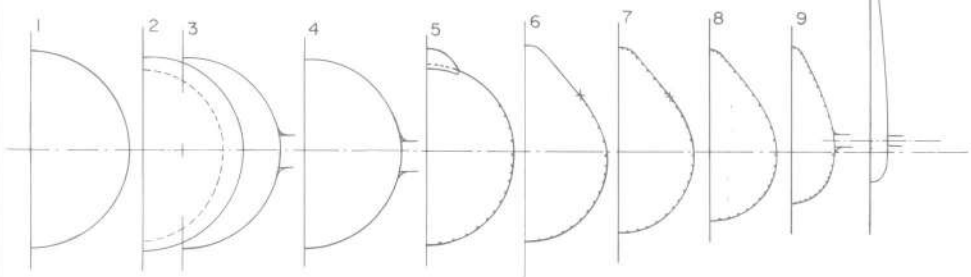
CHAMPION SPARK PLUG LOGO  
 YELLOW BACKGROUND, DARK BLUE  
 PINCHED BAR, CHAMPION WHITE,  
 SPARK PLUG WHITE WITH TONE OF  
 GRAY, BLACK & COPPER. ALL  
 LETTERING & OUTLINES - BLACK



ETHYL CORP. LOGO  
 WHITE 12" DISC, RED TRIANGLE,  
 YELLOW 'ETHYL' & RADIATING  
 SUN BURST, OTHER LETTERING  
 & OUTLINING - BLACK



CHROME PLATED  
 HAMILTON STANDARD  
 CONTROLLABLE PITCH  
 PROPELLER, 9'-6" DIA.



TAKEOFF CLEARANCE  
 UNDER NORMAL CONDITIONS

OUR SINCERE THANKS TO E.M. "MATTY" LAIRD  
 AND MAJ. ROBERT HIRSCH FOR THEIR VALUABLE  
 ASSISTANCE IN THE PREPARATION OF THESE DRAWINGS

HISTORICAL  
 AVIATION  
 ALBUM

<b>LAIRD-TURNER LTR-14</b>	
LAIRD-TURNER RACER - 14 CYLINDER ENGINE 1939 CONFIGURATION	
SCALE - ORIGINAL	1:24
REPRO.	1:48
DRAWN BY - PAUL R. MATT	
© HISTORICAL AVIATION ALBUM 1971 P.O. BOX 33 TEMPLE CITY, CALIF. 91780	

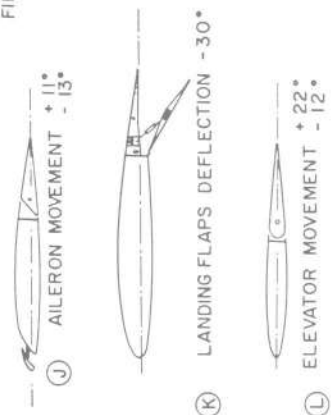
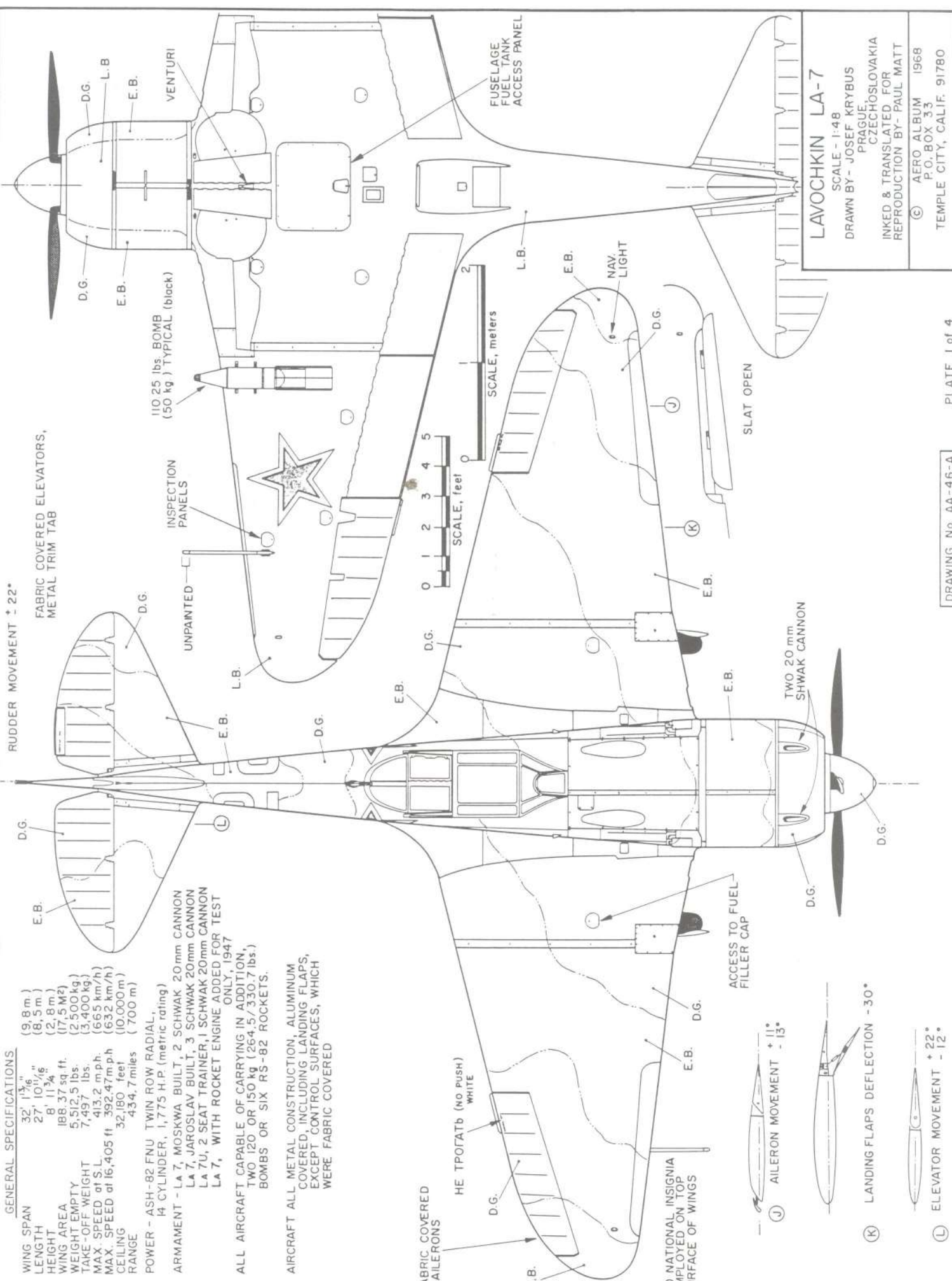
GENERAL SPECIFICATIONS

WING SPAN 32' 1 3/16"  
 LENGTH 27' 10 1/16"  
 HEIGHT 8' 11 3/4"  
 WING AREA 188.37 sq. ft.  
 WEIGHT EMPTY 5,512.5 lbs.  
 TAKE-OFF WEIGHT 7,497 lbs.  
 MAX. SPEED at S.L. 413.2 m.p.h.  
 MAX. SPEED at 16,405 ft. 392.47 m.p.h.  
 CEILING 32,180 feet  
 RANGE 434.7 miles

POWER - ASH-82 FNU TWIN ROW RADIAL,  
 14 CYLINDER, 1,775 H.P. (metric rating)  
 ARMAMENT - LA 7, MOSKWA BUILT, 2 SCHWAK 20mm CANNON  
 LA 7, JAROSLAV BUILT, 3 SCHWAK 20mm CANNON  
 LA 7U, 2 SEAT TRAINER, 1 SCHWAK 20mm CANNON  
 LA 7, WITH ROCKET ENGINE ADDED FOR TEST ONLY, 1947

ALL AIRCRAFT CAPABLE OF CARRYING IN ADDITION,  
 TWO 120 OR 150 kg (264.5/330.7 lbs.)  
 BOMBS OR SIX RS-82 ROCKETS.

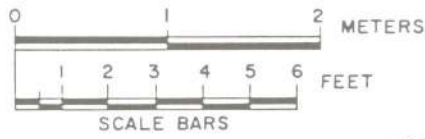
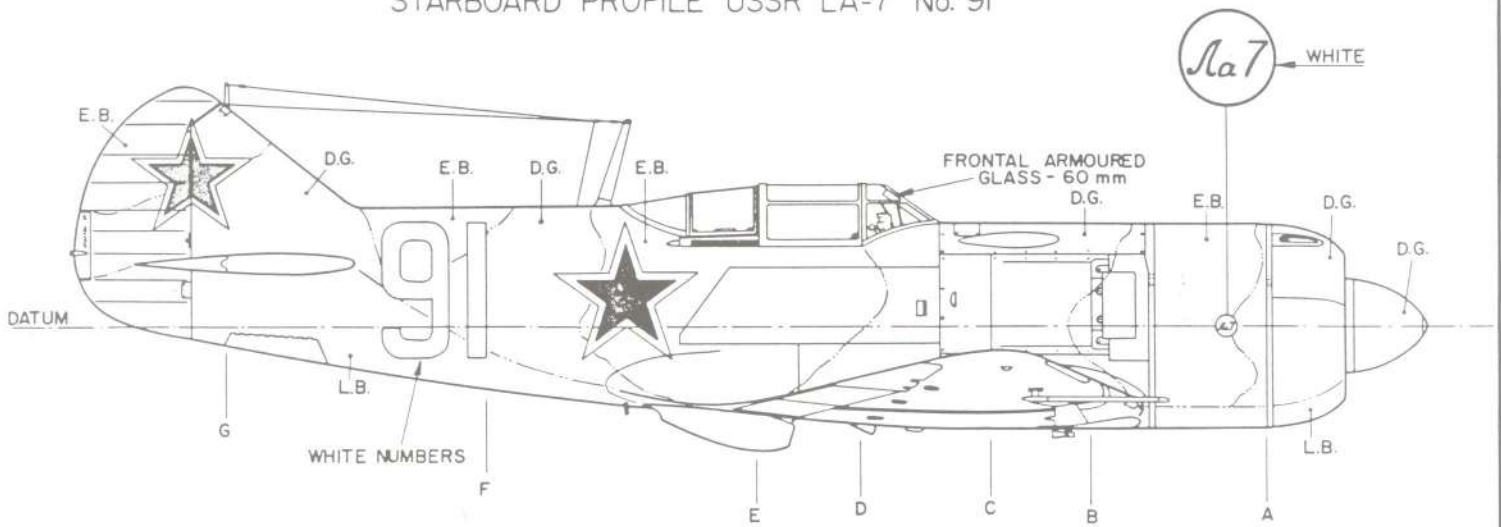
AIRCRAFT ALL METAL CONSTRUCTION, ALUMINUM  
 COVERED, INCLUDING LANDING FLAPS,  
 EXCEPT CONTROL SURFACES, WHICH  
 WERE FABRIC COVERED



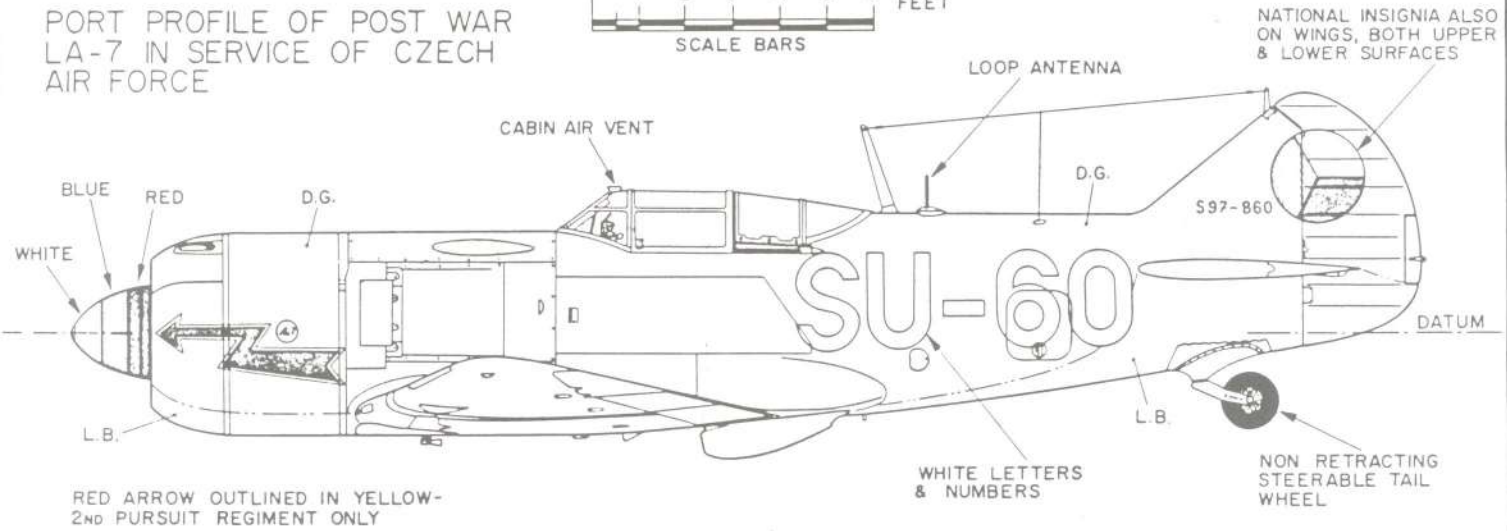
**LAVOCHKIN LA-7**  
 SCALE - 1:48  
 DRAWN BY - JOSEF KRYBUS  
 PRAGUE  
 CZECHOSLOVAKIA  
 INKED & TRANSLATED FOR  
 REPRODUCTION BY - PAUL MATT  
 © AERO ALBUM 1968  
 P.O. BOX 33  
 TEMPLE CITY, CALIF. 91780



STARBOARD PROFILE USSR LA-7 No. 91

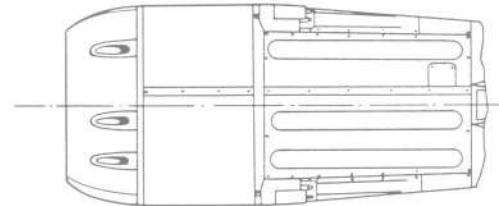
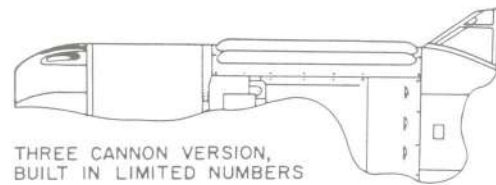
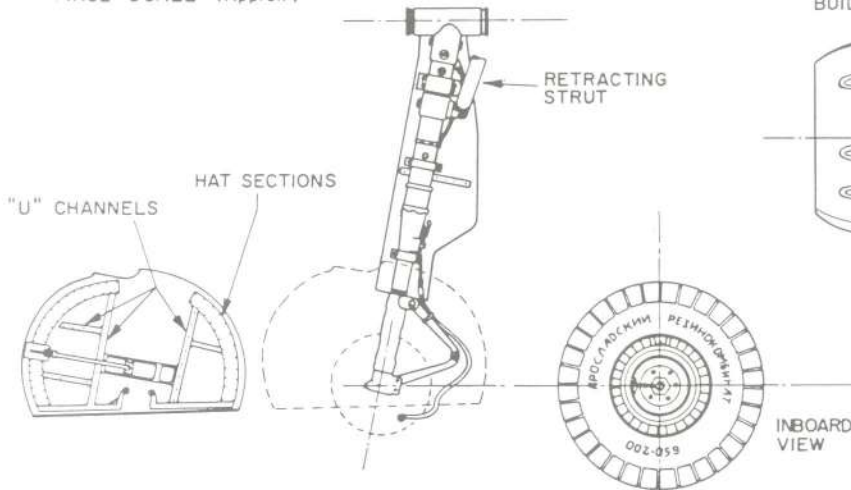


PORT PROFILE OF POST WAR LA-7 IN SERVICE OF CZECH AIR FORCE



RED ARROW OUTLINED IN YELLOW- 2ND PURSUIT REGIMENT ONLY

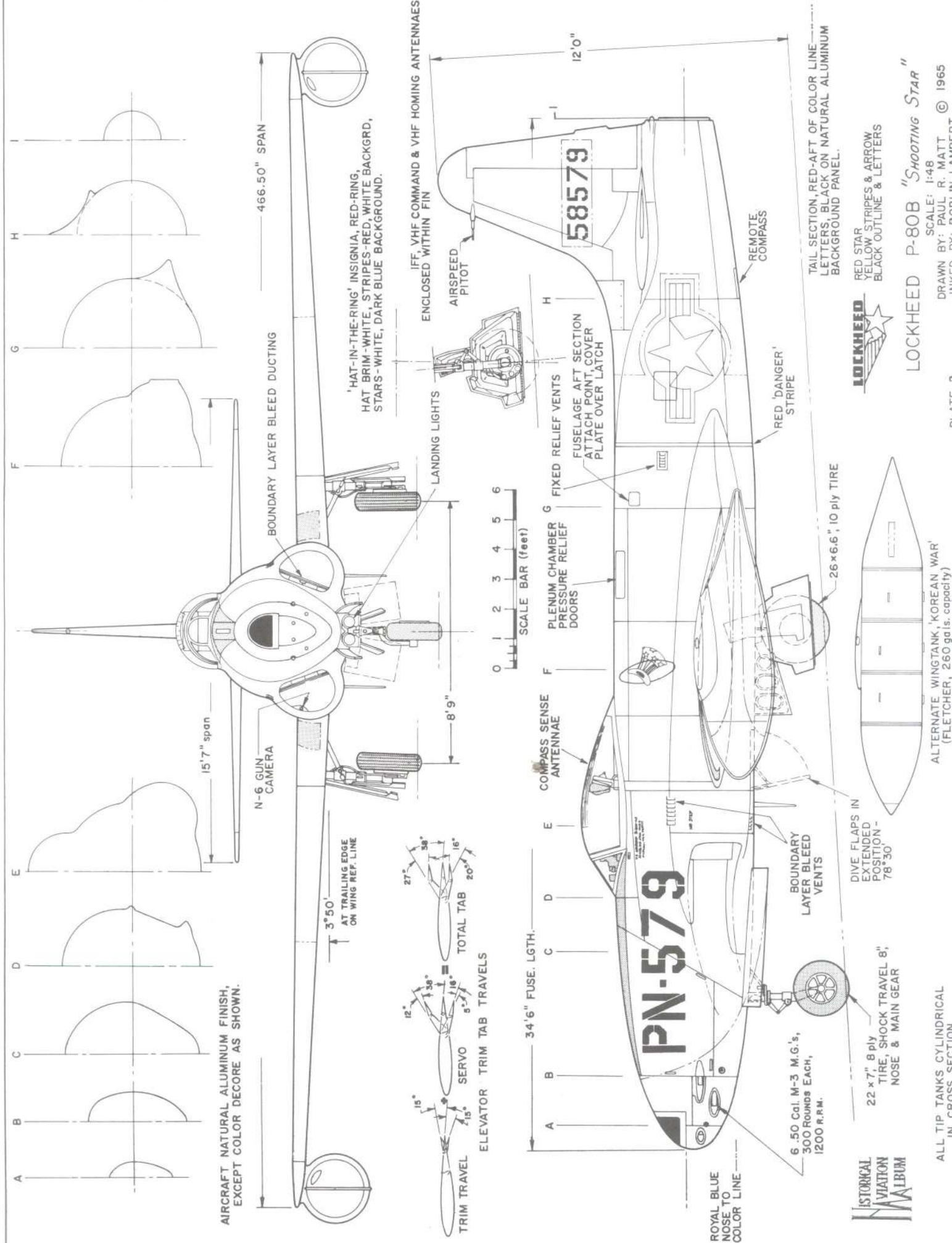
MAIN LANDING GEAR DETAILS  
TWICE SCALE (Approx.)

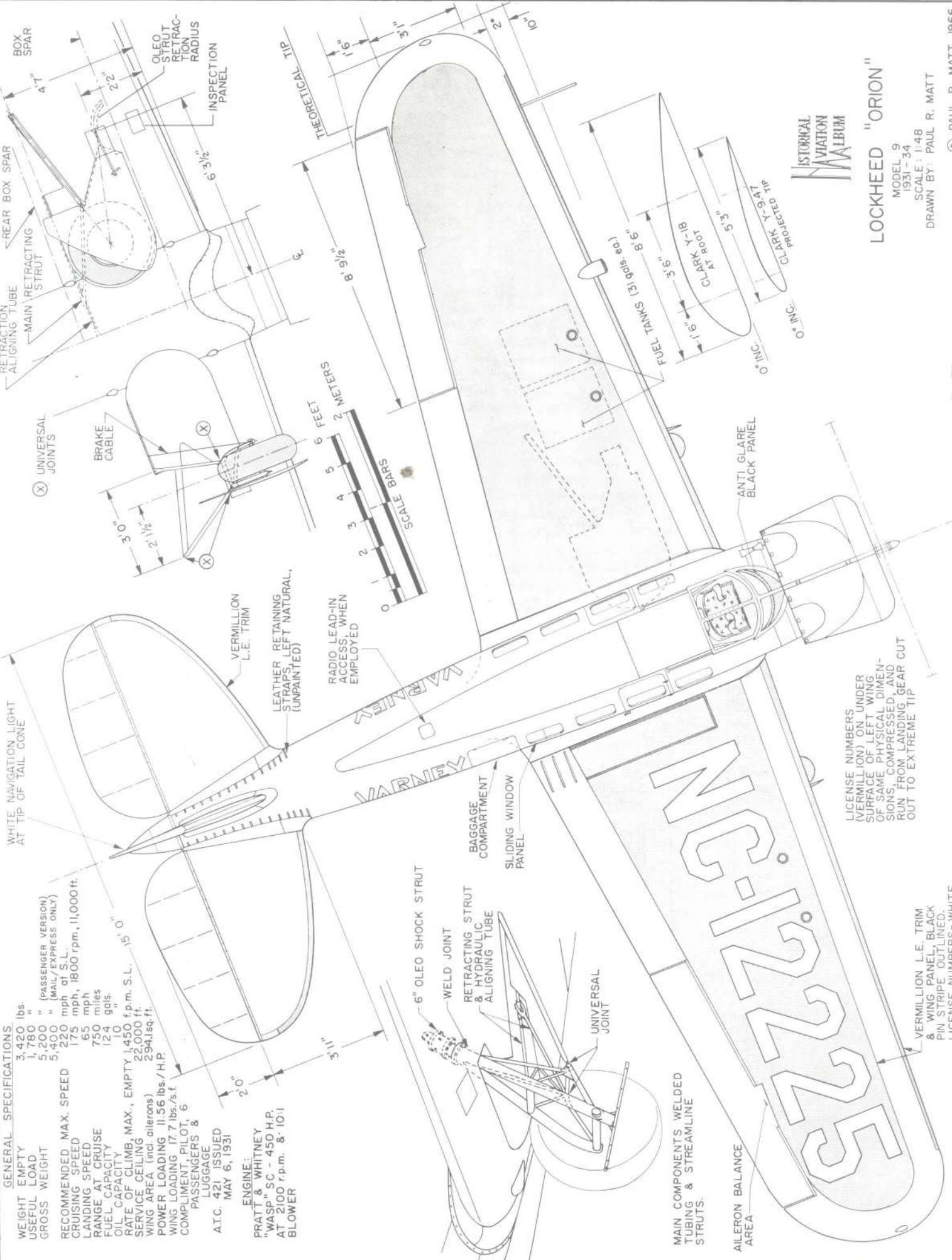


LAVOCHKIN LA-7

SCALE - 1:48  
DRAWN BY - JOSEF KRYBUS  
PRAGUE,  
CZECHOSLOVAKIA  
INKED & TRANSLATED FOR  
REPRODUCTION BY - PAUL MATT

© AERO ALBUM 1968  
P.O. BOX 33  
TEMPLE CITY, CALIF. 91780





**GENERAL SPECIFICATIONS:**

WEIGHT EMPTY	3,420 lbs.
USEFUL LOAD	1,780 "
GROSS WEIGHT	5,200 " (PASSENGER VERSION)
	5,400 " (MAIL/EXPRESS ONLY)
RECOMMENDED MAX. SPEED	220 mph at S.L.
CRUISING SPEED	175 mph, 1800 rpm, 11,000 ft.
RANGE AT CRUISE	65 mph
FUEL CAPACITY	750 miles
OIL CAPACITY	124 gals.
RATE OF CLIMB, MAX., EMPTY	1,450 f.p.m. S.L. - 15' 0"
SERVICE CEILING	22,000 ft.
WING AREA (incl. ailerons)	294.1 sq. ft.
POWER LOADING	11.56 lbs./h.p.
WING LOADING	17.7 lbs./sq. ft.
COMPLIMENT PILOT	6
PASSENGERS & LUGGAGE	6

A.T.C. 421 ISSUED MAY 6, 1931

**ENGINE:**  
 PRATT & WHITNEY  
 "WASP" SC - 450 H.P.  
 AT 2100 r.p.m. & 10:1 BLOWER

LICENSE NUMBERS (VERMILLION) ON UNDER SURFACE OF LEFT WING OF SAME PHYSICAL DIMENSIONS, COMPRESSED, AND RUN FROM LANDING GEAR CUT OUT TO EXTREME TIP

VERMILLION L.E. TRIM & WING PANEL, BLACK PIN STRIPE OUTLINED. LICENSE NUMBERS - WHITE

HISTORICAL AVIATION MUSEUM

LOCKHEED "ORION"

MODEL 9  
 1931-34  
 SCALE: 1:48  
 DRAWN BY: PAUL R. MATT

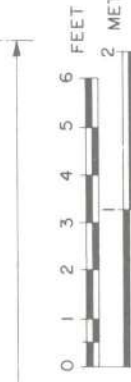
42' 9.25" OVER ALL SPAN

LEATHER PADDED HEADREST

TWO TUBES BETWEEN UPPER CYLINDERS ARE CARBURETOR INTAKES. LOWER TUBES ARE FOR OIL COOLING

RED WHITE BLUE

BRAVE CABLE



NOTE: THIS DRAWING PORTRAYS VARNEY SPEED LANES "NORTH WIND" MODEL 9 "ORION". OTHER VARNEY ORIONS DIFFERED ONLY SLIGHTLY WHILE OTHER ORIONS, IN PARTICULAR THE LATE VERSIONS & SPECIAL MODELS, HAD MANY MODIFICATIONS.

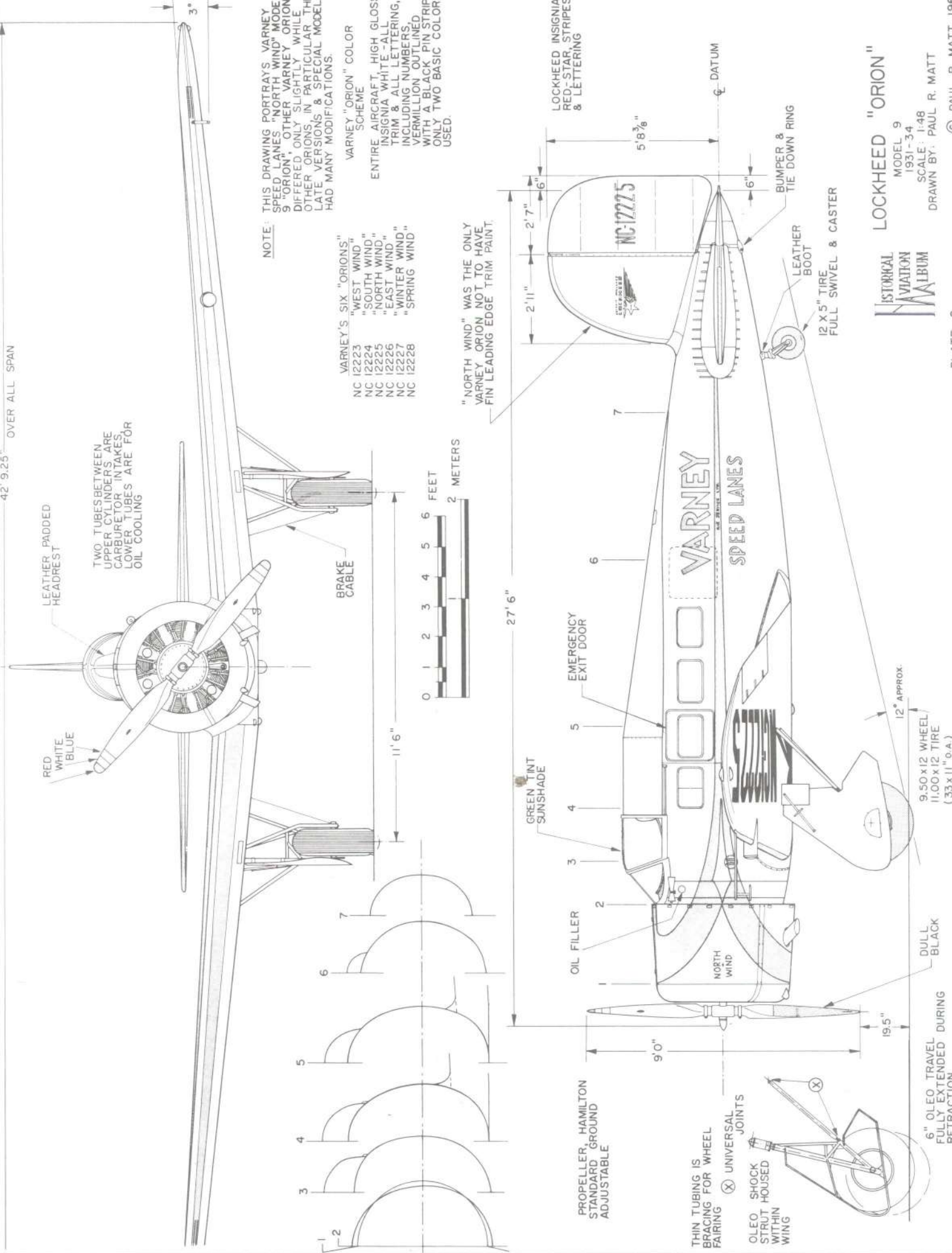
- VARNEY'S SIX "ORIONS"
- NC 12223 "WEST WIND"
  - NC 12224 "SOUTH WIND"
  - NC 12225 "NORTH WIND"
  - NC 12226 "EAST WIND"
  - NC 12227 "WINTER WIND"
  - NC 12228 "SPRING WIND"

VARNEY "ORION" COLOR SCHEME

ENTIRE AIRCRAFT, HIGH GLOSS INSIGNIA WHITE-ALL TRIM & ALL LETTERING, INCLUDING NUMBERS, VERMILLION OUTLINED WITH A BLACK PIN STRIPE ONLY TWO BASIC COLORS USED.

"NORTH WIND" WAS THE ONLY VARNEY ORION NOT TO HAVE FIN LEADING EDGE TRIM PAINT.

LOCKHEED INSIGNIA RED-STAR, STRIPES & LETTERING



27' 6"

5' 8 3/8"

2' 11"

2' 7"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

6"

PROPELLER, HAMILTON STANDARD GROUND ADJUSTABLE

THIN TUBING IS BRACING FOR WHEEL FAIRING

OLEO SHOCK STRUT HOUSED WITHIN WING

UNIVERSAL JOINTS

6" OLEO TRAVEL FULLY EXTENDED DURING RETRACTION

DULL BLACK

9.50x12 WHEEL / 11.00x12 TIRE (33x11" o.a.)

12" APPROX.

12 X 5" TIRE FULL SWIVEL & CASTER

LEATHER BOOT

BUMPER & TIE DOWN RING

DATUM

LOCKHEED "ORION"

LOCKHEED HISTORICAL AVIATION MUSEUM

MODEL 9

1931-34

SCALE: 1:48



DRAWN BY: PAUL R. MATT

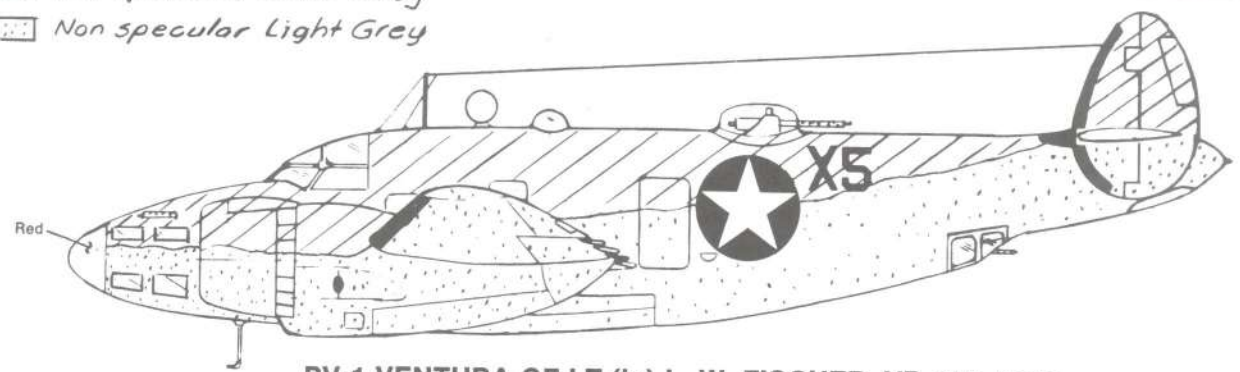
© PAUL R. MATT 1962

PLATE 2



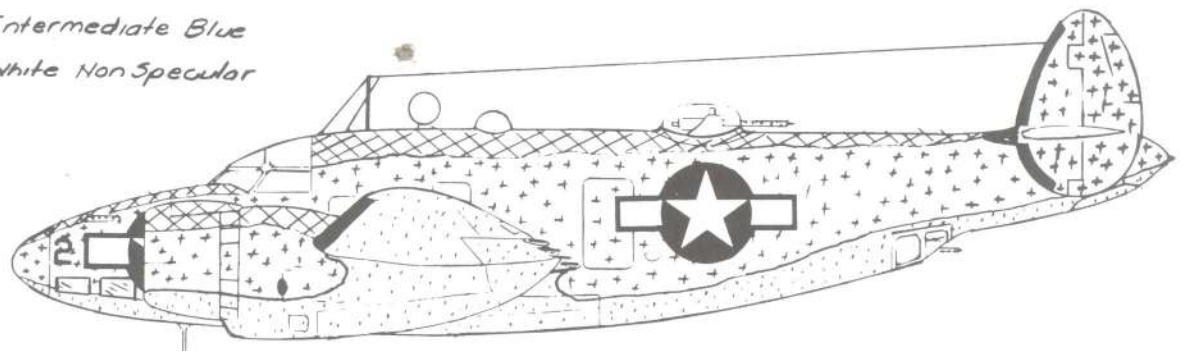
# Lockheed Vega PV-1 "Ventura"

-  Non specular Blue Grey
-  Non specular Light Grey

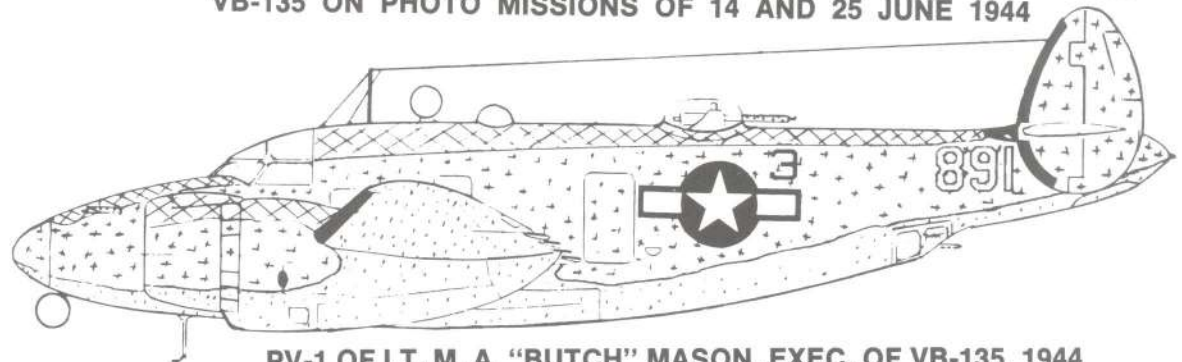


PV-1 VENTURA OF LT.(jg) L. W. FISCHER, VB-135, 1943

-  Dark Sea Blue Non Specular
-  Intermediate Blue
-  White Non Specular

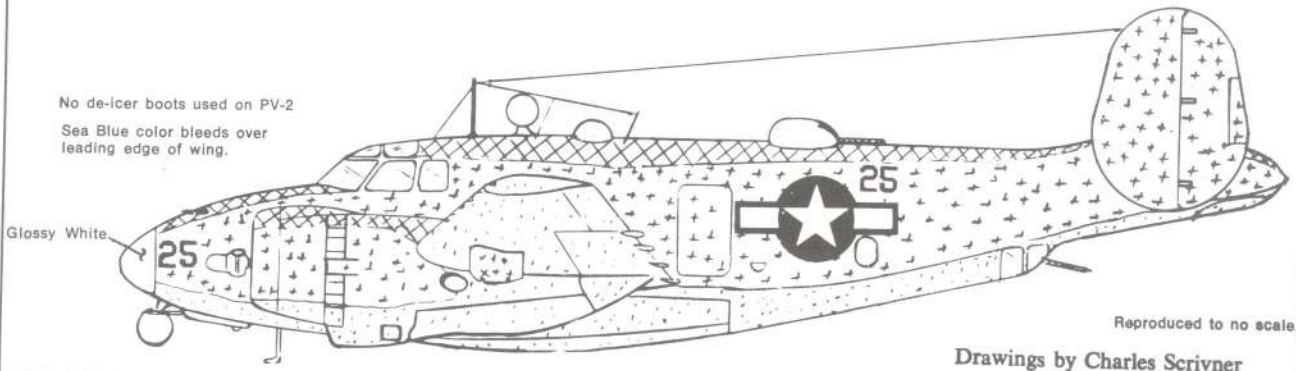


SPECIALLY EQUIPPED PV-1 FLOWN BY LT. L. A. "PAT" PATTESON  
VB-135 ON PHOTO MISSIONS OF 14 AND 25 JUNE 1944



PV-1 OF LT. M. A. "BUTCH" MASON, EXEC. OF VB-135, 1944

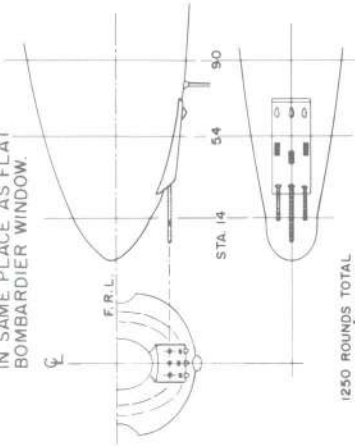
No de-icer boots used on PV-2  
Sea Blue color bleeds over  
leading edge of wing.



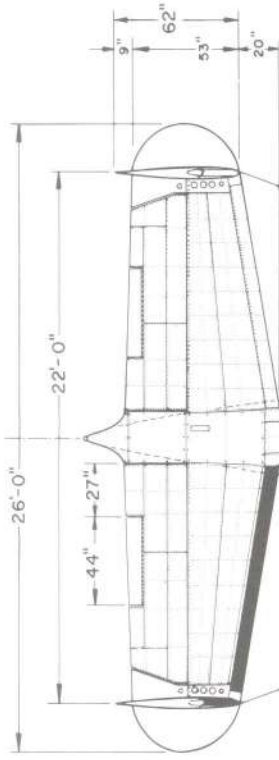
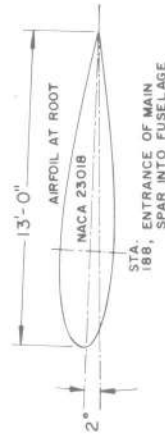
PV-2 HARPOON OF LCDR. GLENN DAVID, SKIPPER OF VPB-139, 1945

Reproduced to no scale.  
Drawings by Charles Scrivner

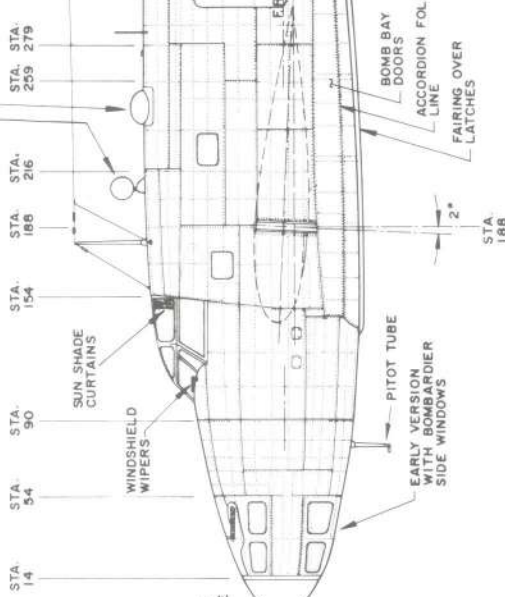
3--50 Cal. CHIN GUN PACK,  
 FITTED ON LATE MODELS,  
 MID-1943, REPLACED AND  
 IN SAME PLACE AS FLAT  
 BOMBARDIER WINDOW.



1250 ROUNDS TOTAL



INBOARD PROFILE  
 FORWARD FUSELAGE  
 AREA



PLEXIGLASS, FABRIC  
 COVERED NOSE CONE

F.R.L.

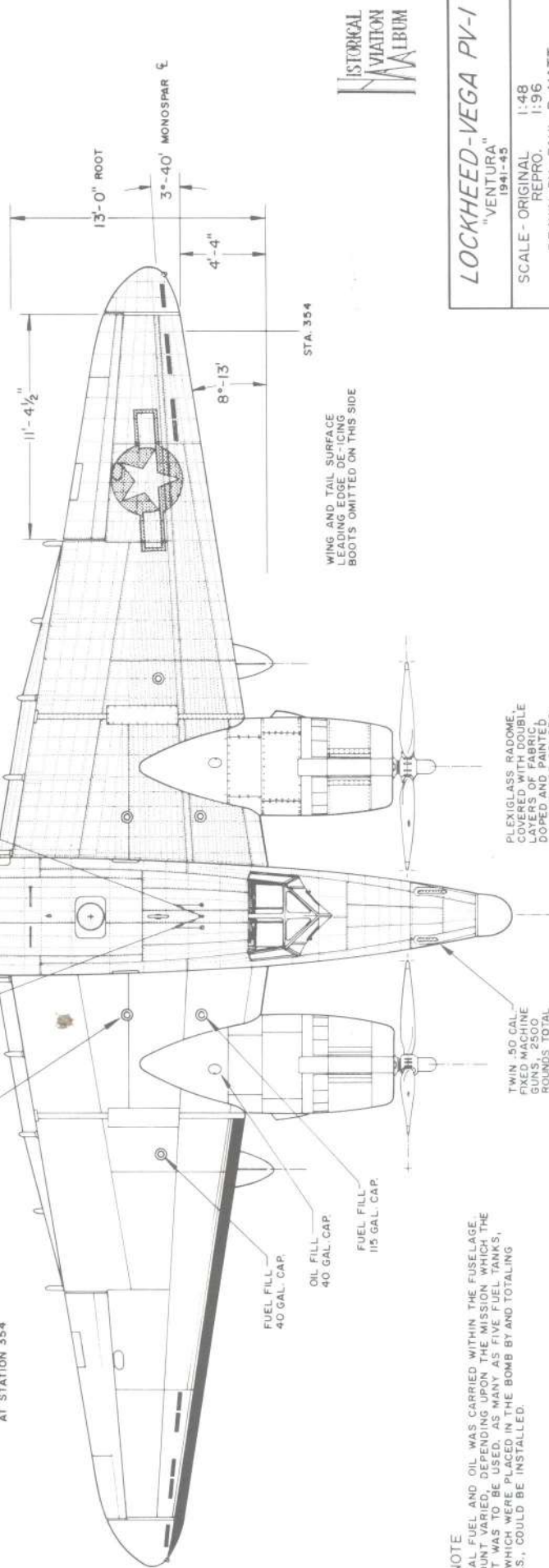
TWIN .50 Cal. BROWNING M.G.  
 MOUNT IN 350 CE 12 ELECTRIC TURRET,  
 MOUNT NOT TO EXCEED 85° ELEVATION,  
 800 ROUNDS TOTAL



SCALE BARS

STARBOARD  
 NATIONAL INSIGNIA  
 MOVED FORWARD TO  
 CLEAR WINDOW JUST  
 AFT OF STA. 392

FUEL FILL  
 132 GAL. CAP.



WING AND TAIL SURFACE  
 LEADING EDGE SCULPTURE  
 BOOTS OMITTED ON THIS SIDE

STA. 354

TWIN .50 CAL.  
 FIXED MACHINE  
 GUNS, 2500  
 ROUNDS TOTAL

PLEXIGLASS RADOME  
 COVERED WITH DOUBLE  
 LAYERS OF FABRIC,  
 DOPED AND PAINTED  
 CAMOUFLAGE COLORS,  
 OR DISCREETIVE RED  
 OR WHITE

NOTE  
 ADDITIONAL FUEL AND OIL WAS CARRIED WITHIN THE FUSELAGE  
 THE AMOUNT VARIED, DEPENDING UPON THE MISSION WHICH THE  
 AIRCRAFT WAS TO BE USED, AS MANY AS FIVE FUEL TANKS,  
 TWO OF WHICH WERE PLACED IN THE BOMB BAY AND TOTALING  
 896 GALS., COULD BE INSTALLED.

HISTORICAL  
 AVIATION  
 ALBUM

LOCKHEED-VEGA PV-1

"VENTURA"  
 1941-45

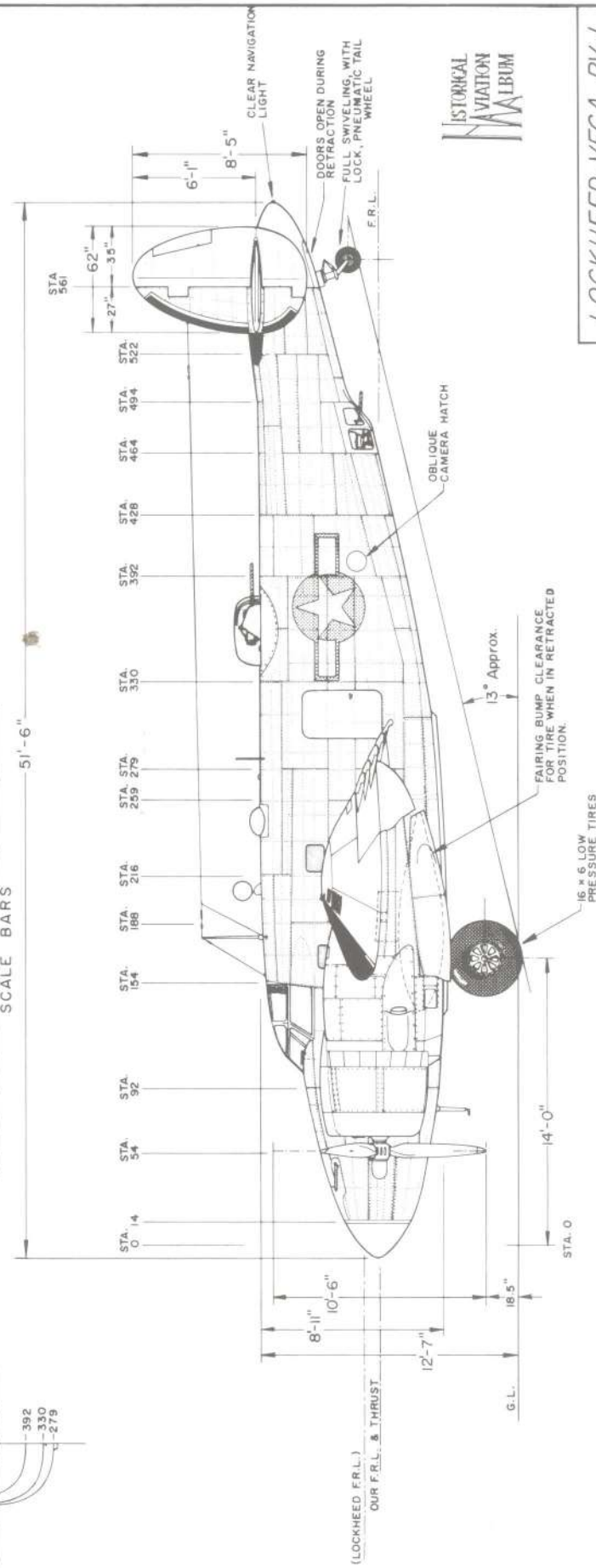
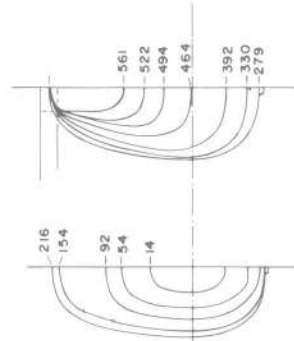
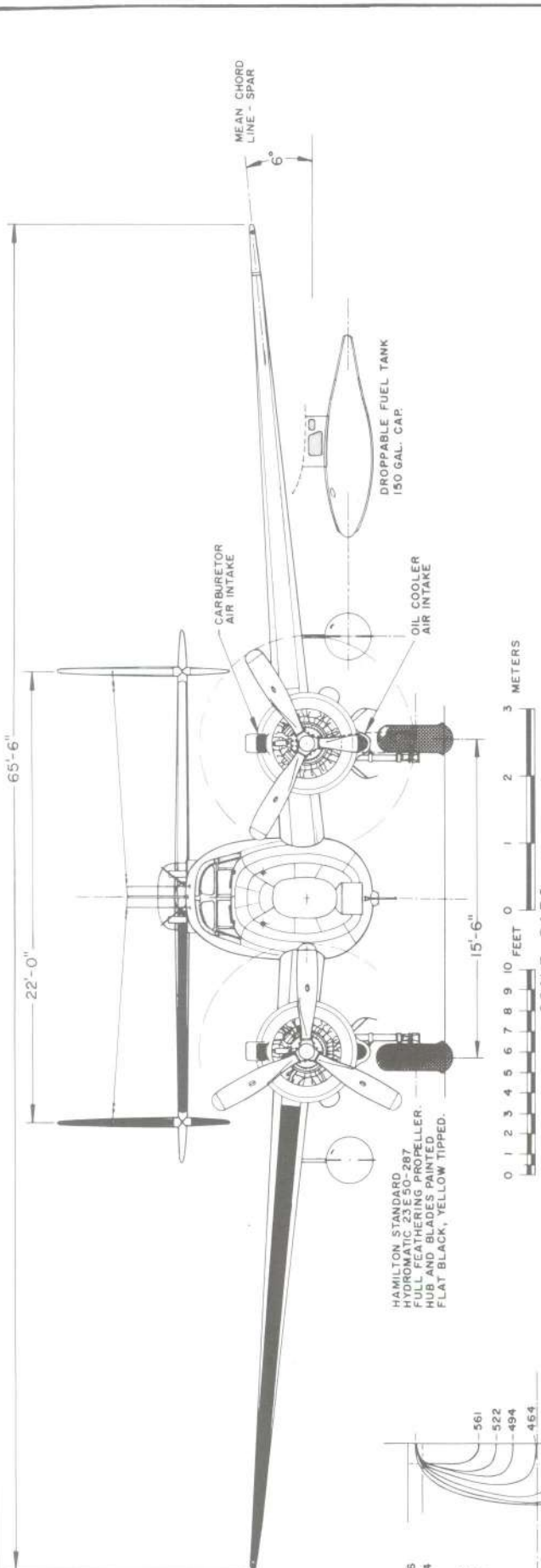
SCALE - ORIGINAL 1:48  
 REPRO. 1:96

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 P.O. BOX 33  
 TEMPLE CITY, CALIF. 91780

DRAWING No. EE-101-C

PLATE 1 of 3



HISTORICAL AVIATION ALBUM

**LOCKHEED-VEGA PV-1**  
"VENTURA"  
1941-45

SCALE - ORIGINAL 1:48  
REPRO. 1:96

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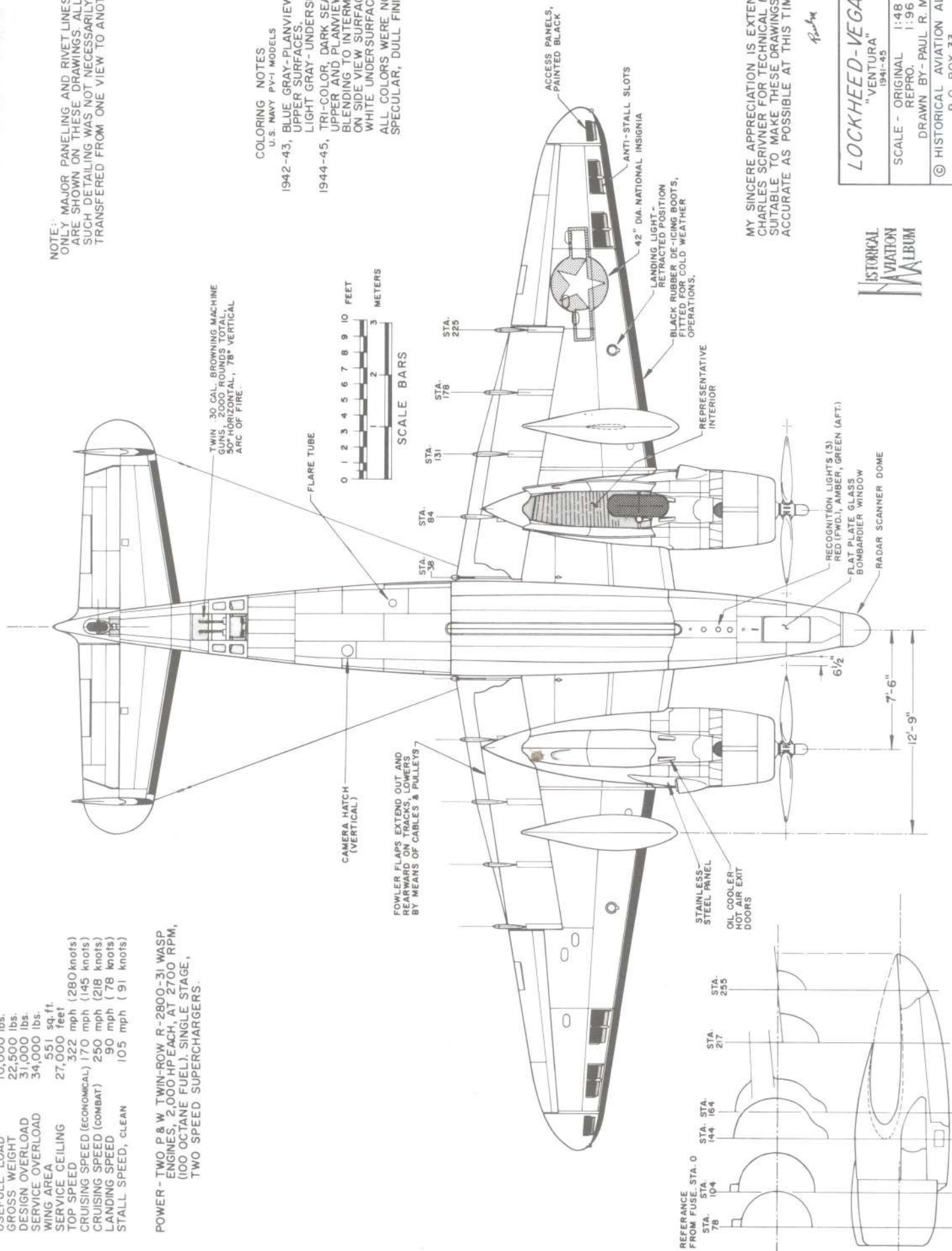
GENERAL SPECIFICATIONS

WEIGHT - EMPTY 12,500 lbs.  
 USEFUL LOAD 10,000 lbs.  
 GROSS WEIGHT 22,500 lbs.  
 DESIGN OVERLOAD 31,000 lbs.  
 SERVICE OVERLOAD 34,000 lbs.  
 WING AREA 551 sq. ft.  
 SERVICE CEILING 27,000 feet  
 TOP SPEED 322 mph (280 knots)  
 CRUISING SPEED (ECONOMICAL) 170 mph (145 knots)  
 CRUISING SPEED (COMBAT) 250 mph (218 knots)  
 LANDING SPEED 90 mph (78 knots)  
 STALL SPEED, CLEAN 105 mph (91 knots)

POWER - TWO P & W TWIN-ROW, R-2800-31 WASP ENGINES, 2,000 H.P. EACH, AT 2700 RPM, (100 OCTANE FUEL), SINGLE STAGE, TWO SPEED SUPERCHARGERS.

NOTE: ONLY MAJOR PANELING AND RIVET LINES ARE SHOWN ON THESE DRAWINGS. ALL SUCH DETAILING WAS NOT NECESSARILY TRANSFERRED FROM ONE VIEW TO ANOTHER.

COLORING NOTES  
 U.S. NAVY PV-1 MODELS  
 1942-43, BLUE GRAY-PLANVIEW AND UPPER SURFACES.  
 LIGHT GRAY-UNDERSURFACES.  
 1944-45, TRI-COLOR, DARK SEA BLUE UPPER AND PLANVIEW SURFACES BLENDING TO INTERMEDIATE ON SIDE VIEW SURFACES - WHITE UNDERSURFACES.  
 ALL COLORS WERE NON-SPECULAR, DULL FINISH.



MY SINCERE APPRECIATION IS EXTENDED TO CHARLES SCRIVNER FOR TECHNICAL MATERIAL SUITABLE TO MAKE THESE DRAWINGS AS ACCURATE AS POSSIBLE AT THIS TIME.

*Paul R. Matt*

**LOCKHEED-VEGA PV-1**  
 "VENTURA"  
 1941-45

SCALE - ORIGINAL 1:48  
 REPRO. 1:96  
 DRAWN BY - PAUL R. MATT

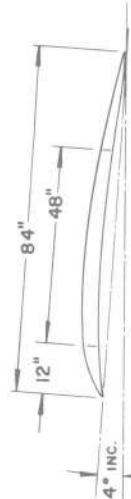
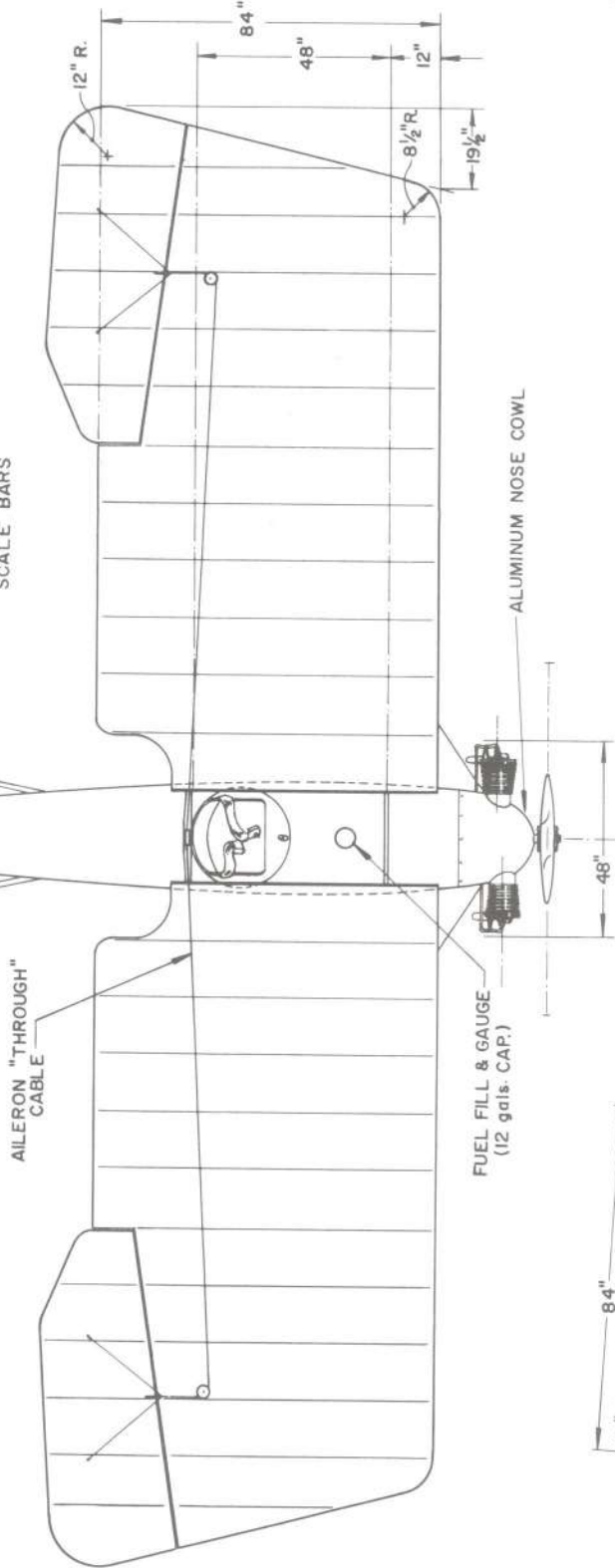
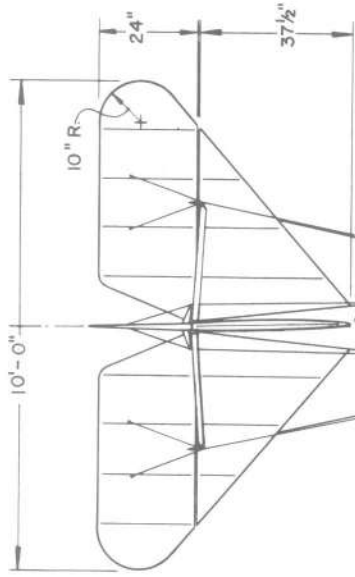
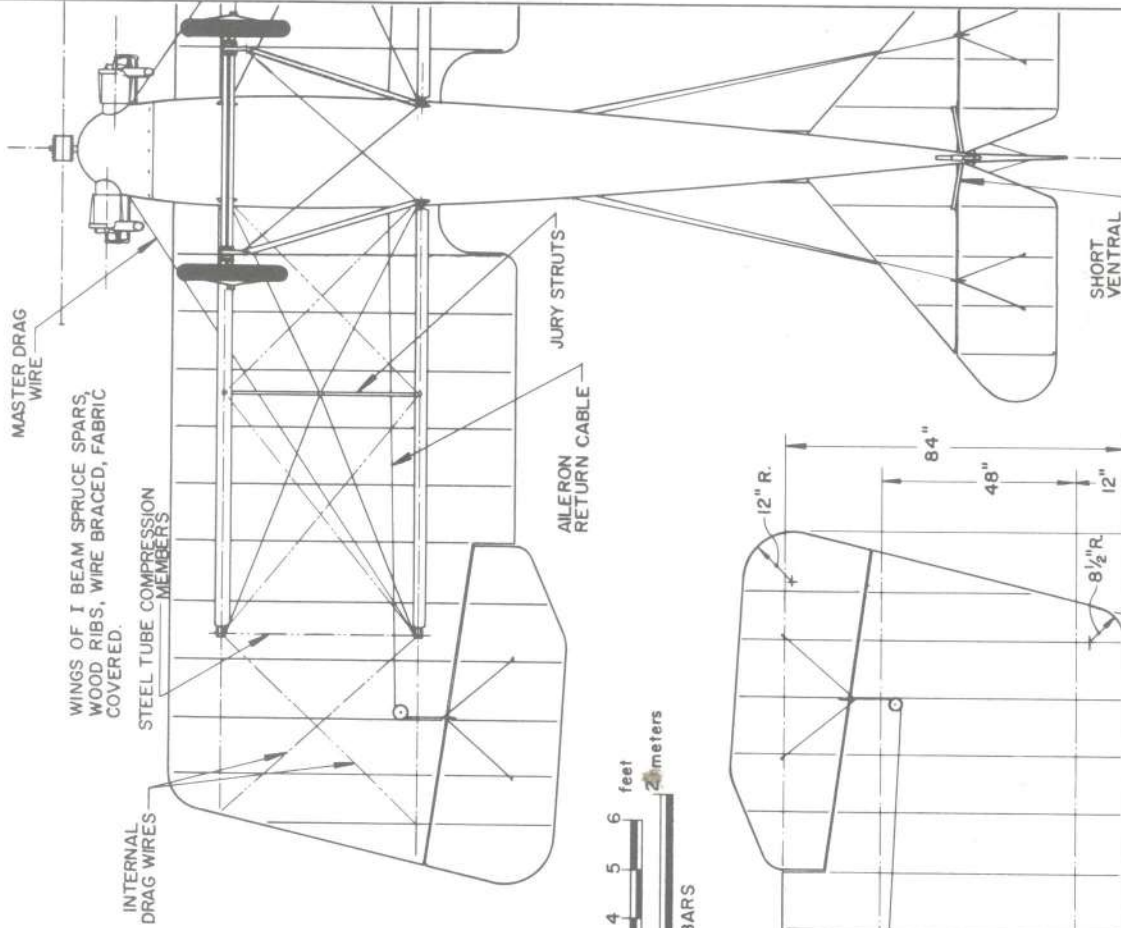
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**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 595 lbs.  
 USEFUL LOAD 393 lbs.  
 GROSS WEIGHT 978 lbs.  
 TOP SPEED 72 mph.  
 CRUISING SPEED 60 mph.  
 LANDING SPEED 30 mph.  
 CLIMB 4,800 FT. IN 10 MIN.  
 RANGE AT CRUISE 240 miles  
 WING AREA, INCL. AILERONS 187 sq. ft.  
 WING LOADING 5.2 lbs./sq. ft.  
 POWER LOADING 13.5 lbs./h.p.

POWER: CATO AIR COOLED 2-CYL.  
 HORIZONTALLY OPPOSED ENGINE  
 5" BORE 6" STROKE  
 NORMAL RATING 68 h.p.  
 MAX. RATING 72 h.p. AT 1825 r.p.m.



CATO No. 4 AIRFOIL  
 (MODIFIED U.S.A. 6 SECTION)  
 ORDINATES UPON REQUEST

O.A. OPERATING CLEARANCE  
 OF ENGINE

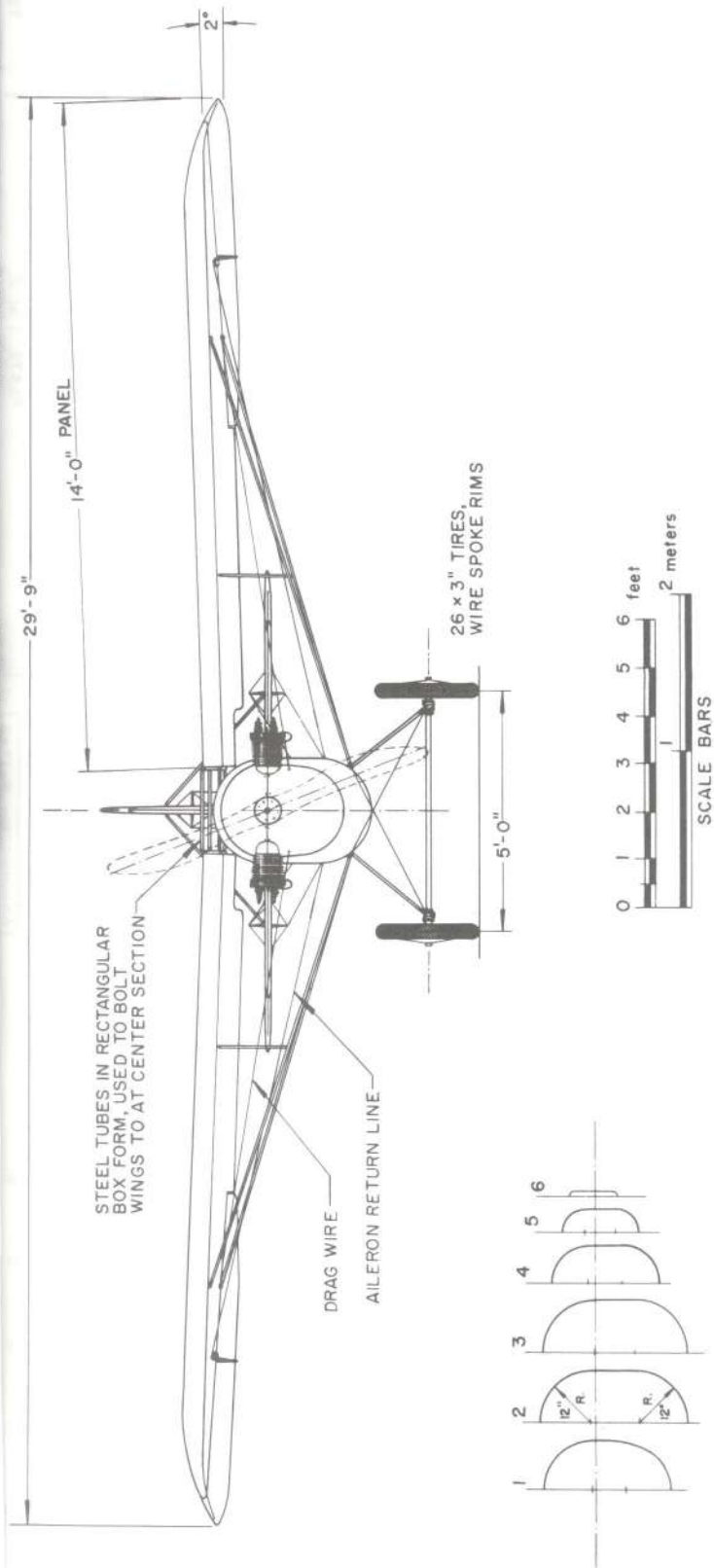


LWF-CATO Model L  
 "BUTTERFLY"  
 1919-1920

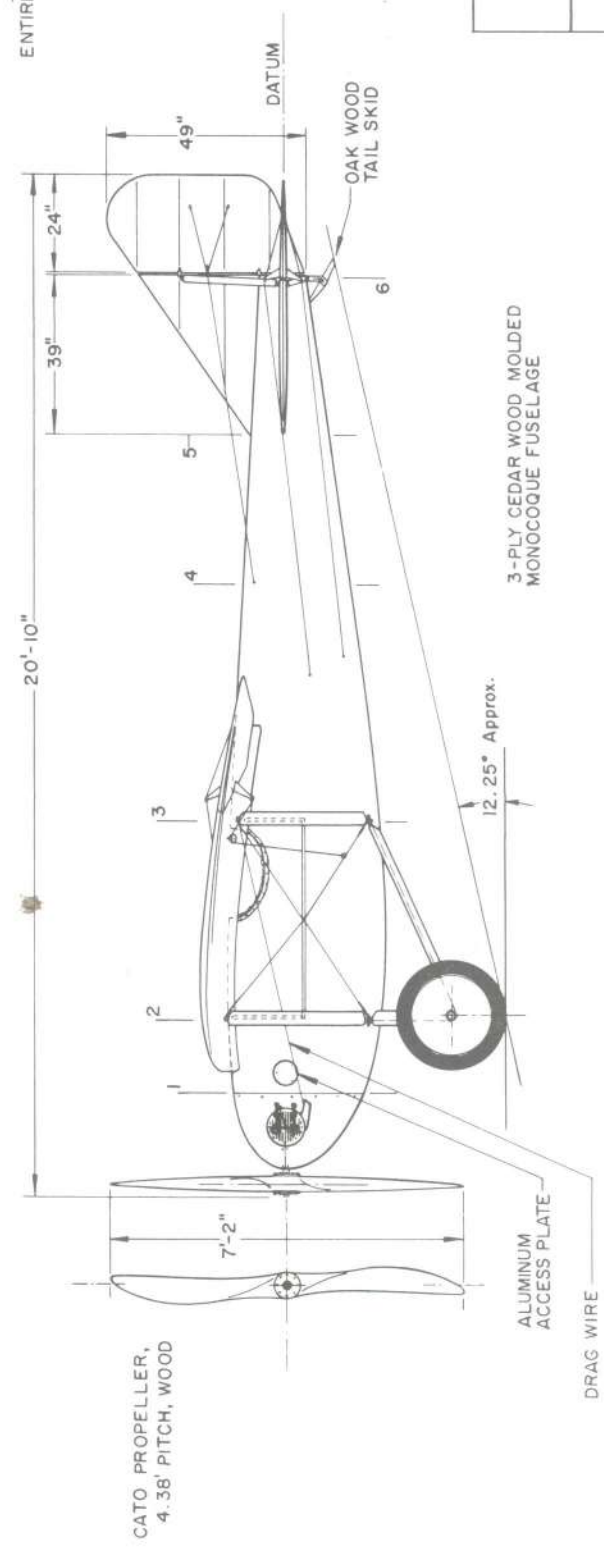
SCALE - ORIGINAL 1:24  
 REPRO. 1:48

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 TAMPA, FLORIDA 33610



COLORING NOTE  
ENTIRE AIRCRAFT SILVER DOPED



ELEVATOR FIXED AT 0°

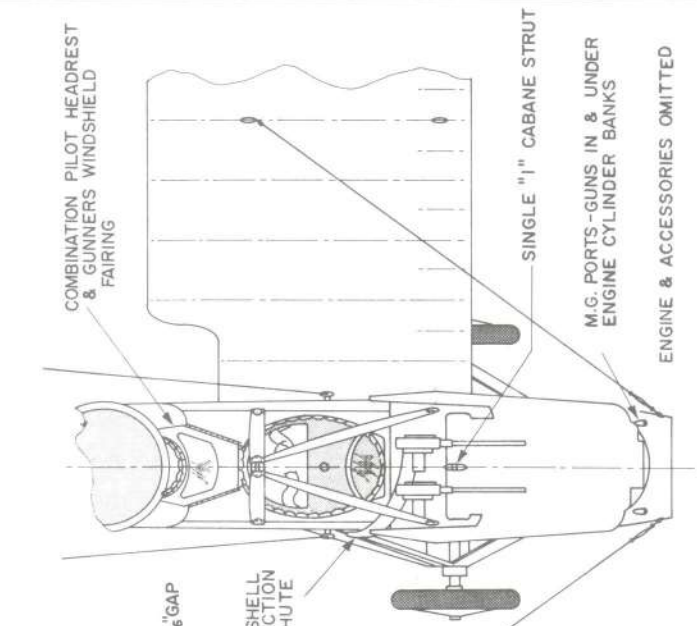


<b>LWF-CATO Model L</b>	
<b>"BUTTERFLY"</b>	
1919-1920	
SCALE - ORIGINAL	1:24
REPRO.	1:48
DRAWN BY- PAUL R. MATT	
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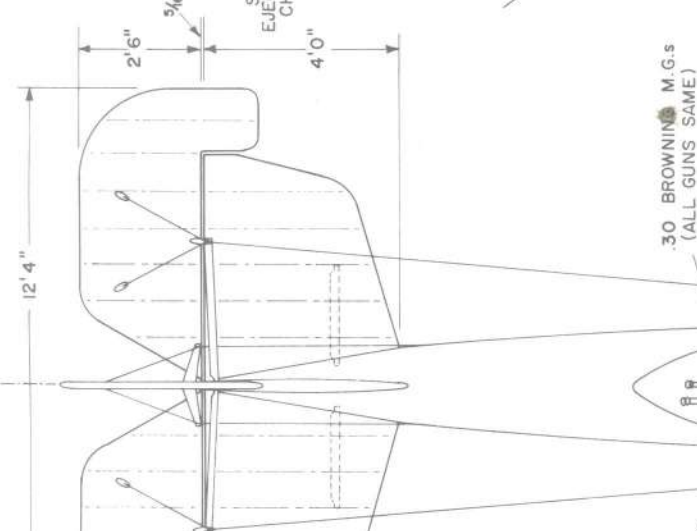
**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 2,675 lbs.  
 PILOT & GUNNER 330 "  
 WATER (14 gals.) 118 "  
 FUEL (90 gals.) & OIL (6 gals.) 598 "  
 ARMAMENT, 7 GUNS 302 "  
 GROSS WEIGHT 4,023 "  
 TOP SPEED 134  
 SERVICE CEILING 24,000 ft.  
 CLIMB to 10,000 feet 9 min 20 sec.  
 WING AREA 516 sq. ft.  
 ENDURANCE at FULL SPEED 3 hrs.  
 CRUISING SPEED 90 m.p.h.  
 LANDING SPEED 50 m.p.h.  
 CRUISE as BOMBER, 90 m.p.h., - 4 hr. duration  
 ENGINE, LIBERTY 12 rated 435 B.H.P. at 2,100 r.p.m.  
 CRUISE, at 1,800 r.p.m.

PERF. FIGURES, FULL LOAD - NO BOMBS

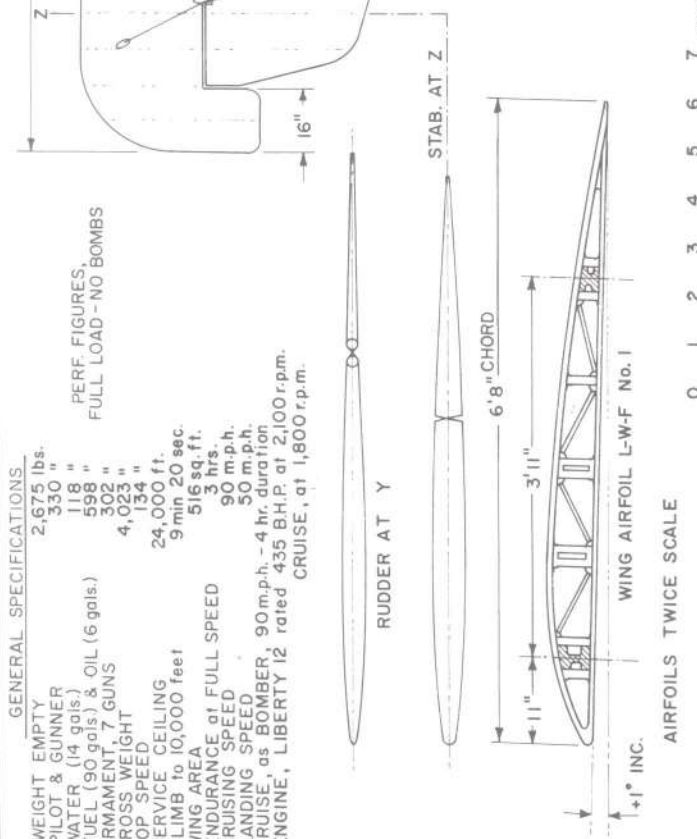


M.G. PORTS - GUNS IN & UNDER ENGINE CYLINDER BANKS  
 ENGINE & ACCESSORIES OMITTED  
 COLORING NOTES  
 ALL PLAN VIEW SURFACES - DARK EARTH BROWN  
 (UPPER SURFACES OF WINGS, TAIL SURFACES & TOP OF FUSELAGE TO COLOR LINE)  
 UNDER SURFACES - PALE SKY BLUE  
 STRUTS - CLEAR VARNISHED

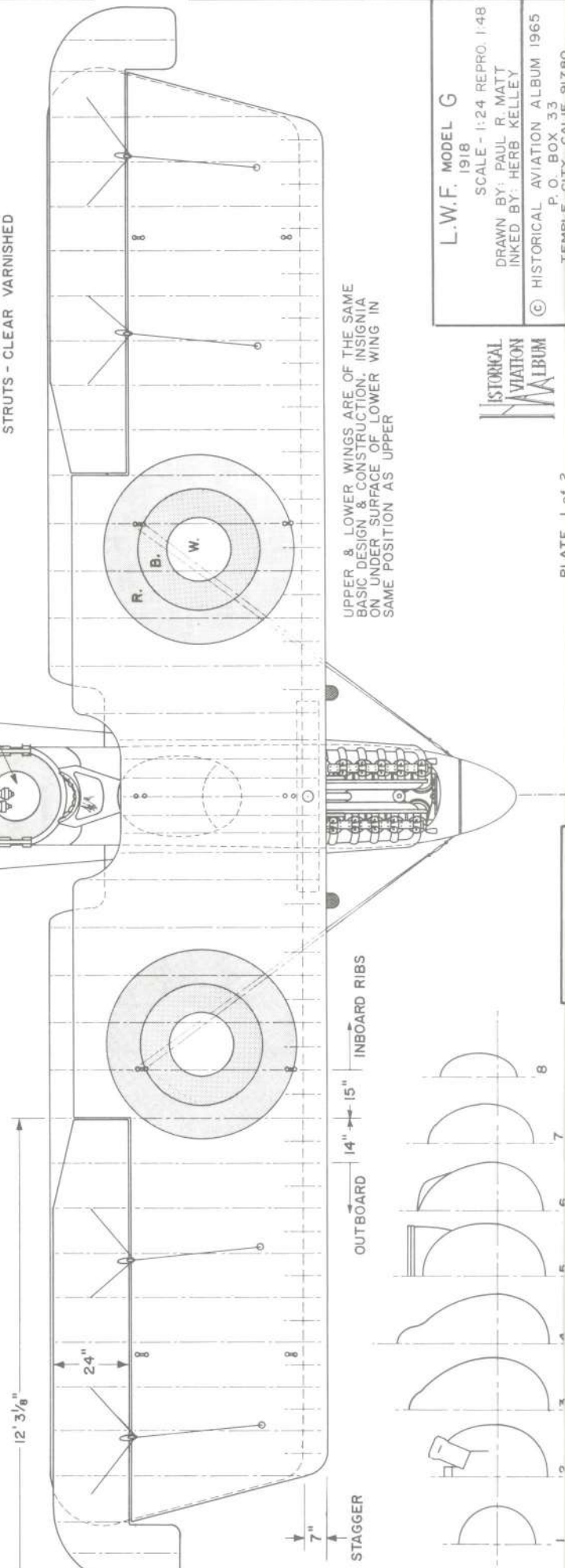
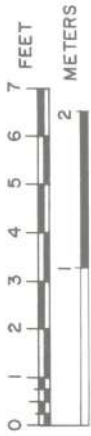


.30 BROWNING M.G.s (ALL GUNS SAME)

GUNNER'S STOOL



AIRFOILS TWICE SCALE



UPPER & LOWER WINGS ARE OF THE SAME BASIC DESIGN & CONSTRUCTION, INSIGNIA ON UNDER SURFACE OF LOWER WING IN SAME POSITION AS UPPER

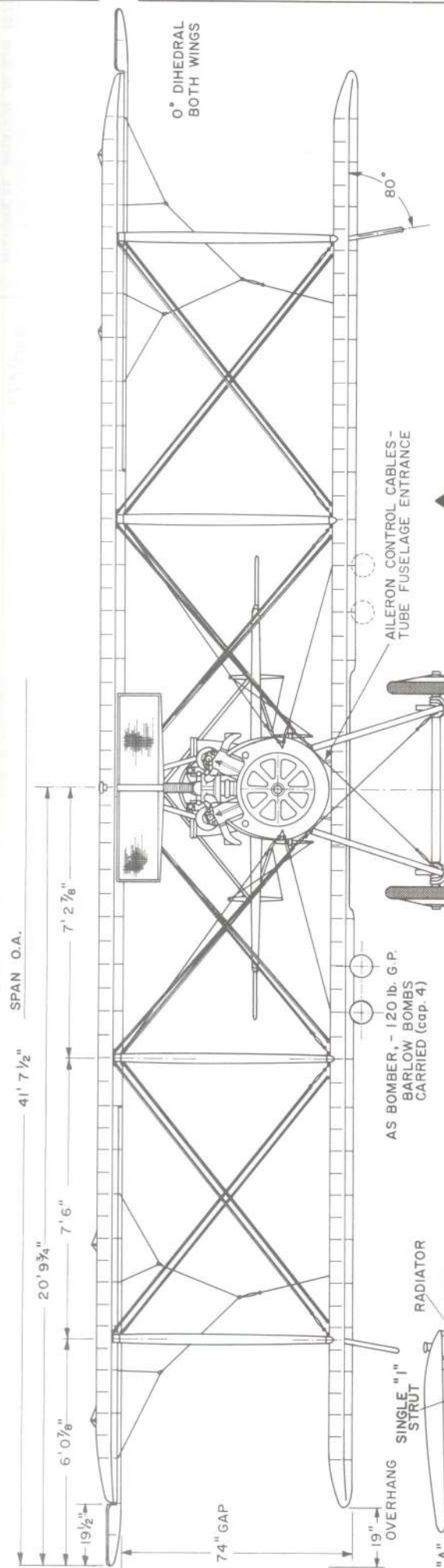
L.W.F. MODEL G

SCALE - 1:24 REPRO. 1:48

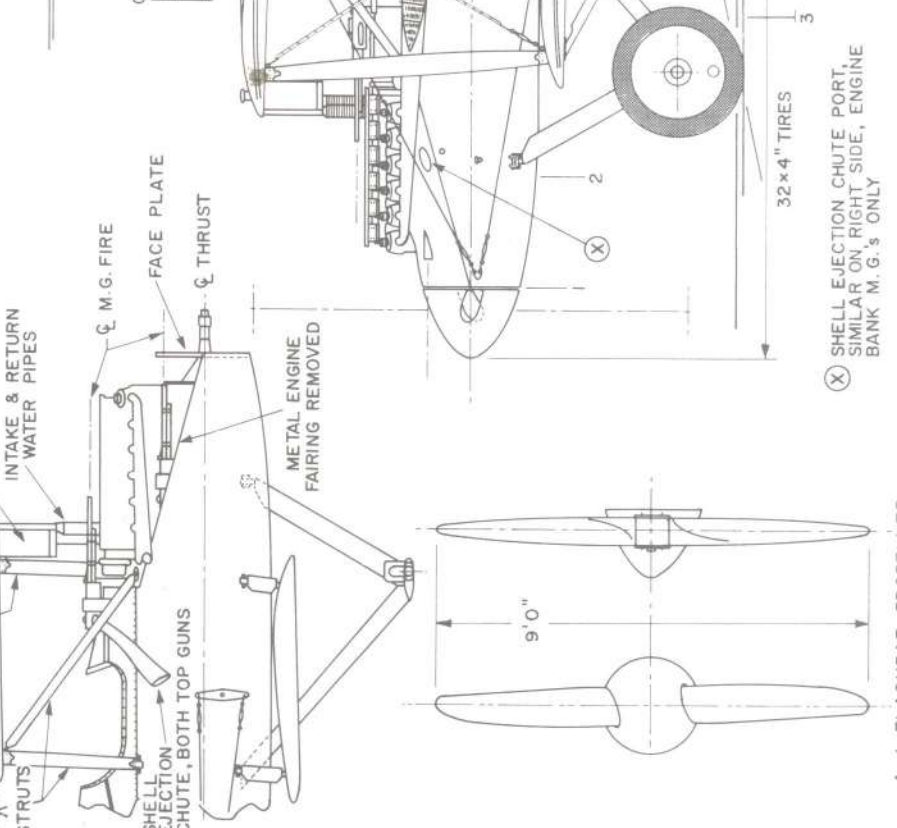
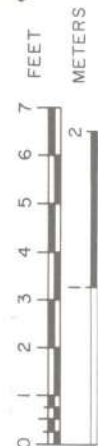
DRAWN BY: PAUL R. MATT  
INKED BY: HERB KELLEY

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 P. O. BOX 33  
 TEMPLE, CITY, CALIF. 91780





TRADEMARK OF THE L.W.F. ENGINEERING COMPANY, INC.  
 NOT IN ANY WAY AFFILIATED WITH THE  
 ORIGINAL LOWE, WILLARD, FOWLER COMPANY



L.W.F. MODEL G  
 1918  
 SCALE - 1:24 REPRO. 1:48  
 DRAWN BY: PAUL R. MATT  
 INKED BY: HERB KELLEY



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A. J. FLACHBAR PROPELLER,  
 WOOD, ALUMINUM SPINNER

(X) SHELL EJECTION CHUTE PORT,  
 SIMILAR ON RIGHT SIDE, ENGINE  
 BANK M. G.'s ONLY



INTERPLANE BRACING REF

⊗ STRUTS

CENTER VERTICAL, RUDDER ONLY, NO FIN EMPLOYED

24'-0"

10'-0"

28'-0"

5'-6"

2'-6"

11"

18'-6"

11'-0"

6'-4"

16"

106'-8" O. A. SPAN

53'-4"

PITOT VENTURI MAST

FLACHBAR WOOD PROPELLER

OUTER WING PANEL ERECTION LUGS

AUX. FUEL TANKS (CAPACITY UNKNOWN)

PLY VEENER LEADING EDGE

AILERON CABLE AND GUIDE SLEEVES

AILERON CABLE PULLEY HOUSING & SLIP GUIDES

60" NATIONAL INSIGNIA

MAIN FUEL TANKS (CAPACITY UNKNOWN)

TWIN .30 CAL. LEWIS GUNS ON SCARFF MOUNT

ENGINE SERVICE 'CATWALK'

BOMBARDIER'S WINDOW

SLATTED OPENING FOR IMPROVED DOWNWARD VISION FROM COCKPIT

WIND DRIVEN GENERATORS

BALL SOCKET

CUTOUT FOR SINGLE VENTRAL 30 CAL. LEWIS M. G. ON SOCKET SWIVEL

CENTER SECTION PLY VEENER COVERED LOWER WING ONLY

FUSELAGE POD & OUTBOARD BOOMS OF 3-PLY WOOD MONOCOQUE CONSTRUCTION. EXCEPTIONALLY SMOOTH AND FREE OF IMPERFECTIONS.

SCALE BARS

0 1 2 3 4 5 6 7 8 9 10 feet

0 1 2 3 meters

GENERAL SPECIFICATIONS

WEIGHT EMPTY 12,400 LBS.

USEFUL LOAD 7,600 LBS.

GROSS WEIGHT 20,000 LBS.

WING AREA (INCL. AILERONS) 2,000 SQ.FT.

POWER LOADING 110 M.P.H.

TOP SPEED, S. L. CRUISE ENDURANCE, COMPUTED 10 HRS

CLIMB, INITIAL, S. L. 650 FT./MIN

SERVICE CEILING, COMPUTED 17,000 FT

LANDING SPEED 55 M.P.H.

POWER: 3 LIBERTY 12s 400 HP @ 1700 RPM

COLORING NOTES

ENTIRE AIRCRAFT GLOSS OLIVE DRAB (GREEN)

A. S. NUMBER & WHEEL COVERS - WHITE NATIONAL INSIGNIA, RED, WHITE & BLUE

LWF Model H-1

"OWL"

1919-23

SCALE - ORIGINAL 1:48

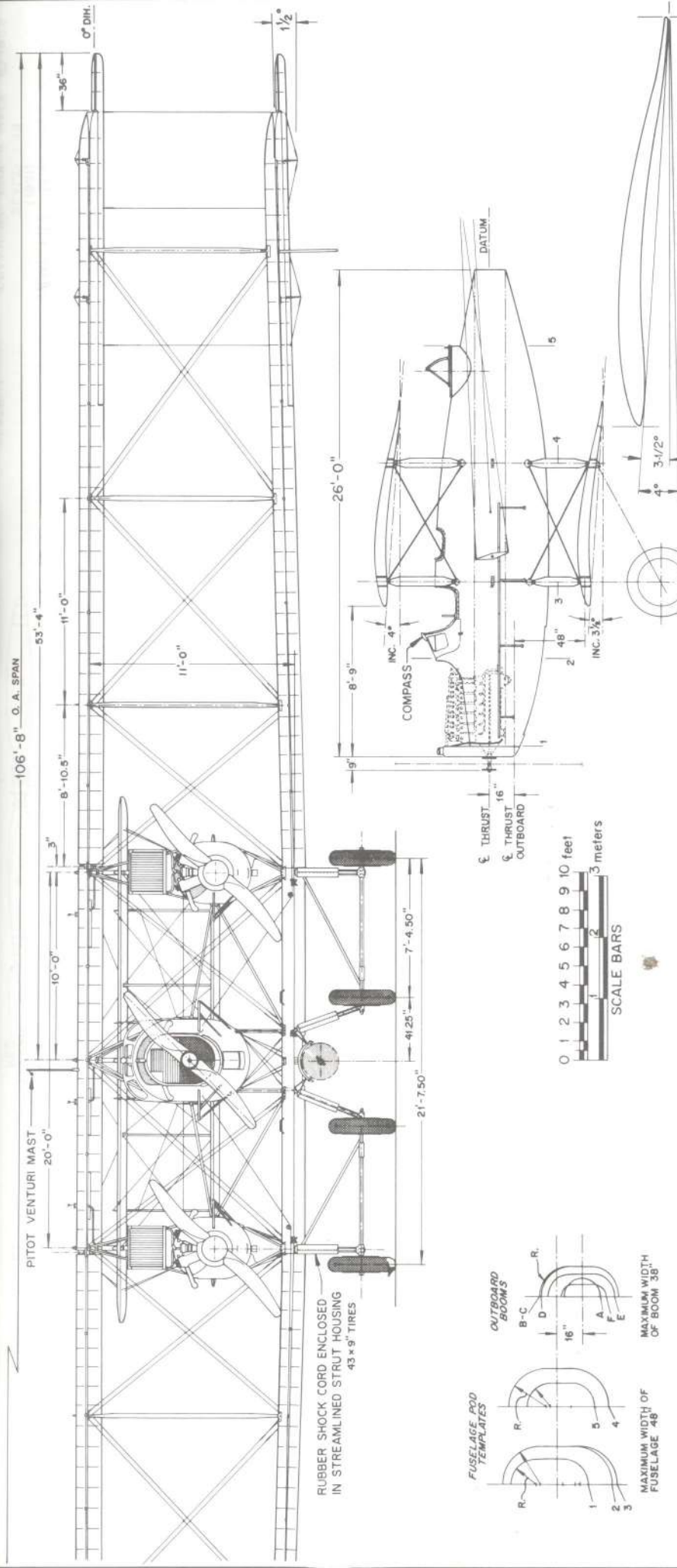
REPRO. 1:96

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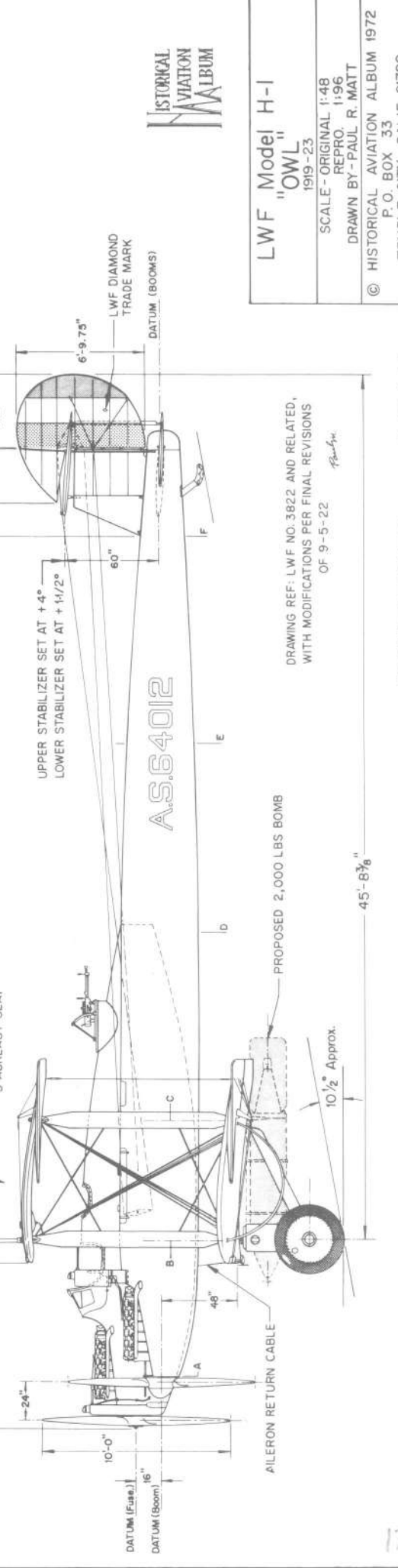
P. O. BOX 33

HISTORICAL AVIATION ALBUM

UPPER AND LOWER WINGS OF SAME PHYSICAL SHAPE, SIZE AND CONSTRUCTION



U.S.A. 6 AIRFOIL AT 4.7%  
MAXIMUM THICKNESS  
SCALE: TWICE GENERAL ARRANGEMENT DWGS.  
NOTE: UPPER WING SET AT +4°  
LOWER WING 1/2° LESS OR +3-1/2°



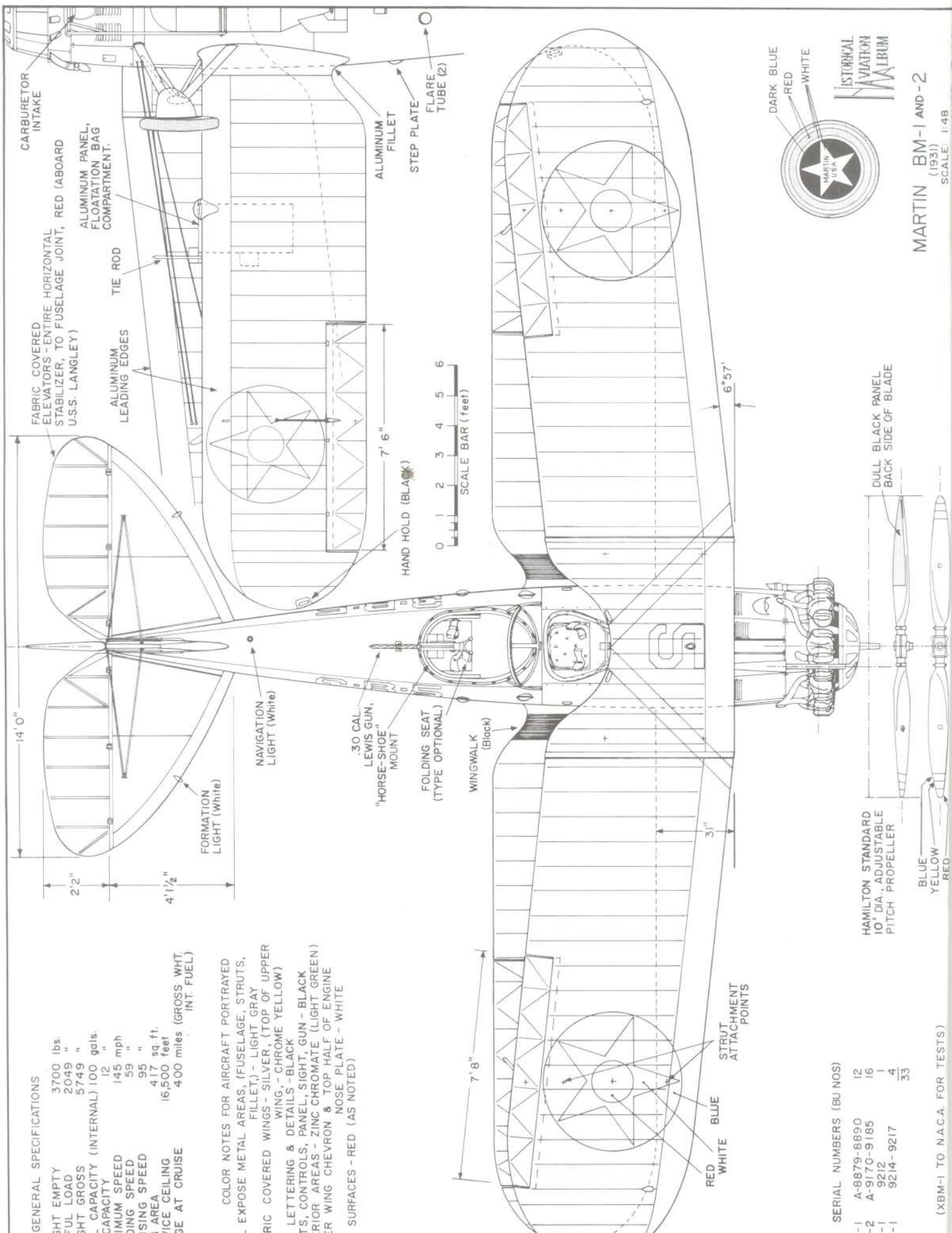
LWF Model H-1  
"OWL"  
1919-23  
SCALE - ORIGINAL 1:48  
REPRO. 1:96  
DRAWN BY - PAUL R. MATT  
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DRAWING REF: LWF NO. 3822 AND RELATED,  
WITH MODIFICATIONS PER FINAL REVISIONS  
OF 9-5-22  
P.R.M.

**GENERAL SPECIFICATIONS**

WEIGHT EMPTY	3700 lbs.
USEFUL LOAD	2049 "
WEIGHT GROSS	5749 "
FUEL CAPACITY (INTERNAL)	100 gals.
OIL CAPACITY	12 "
MAXIMUM SPEED	145 mph
LANDING SPEED	59 "
CRUISING SPEED	95 "
WING AREA	417 sq. ft.
SERVICE CEILING	16,500 feet
RANGE AT CRUISE	400 miles (GROSS WHIT INT. FUEL)

**COLOR NOTES FOR AIRCRAFT PORTRAYED**  
 ALL EXPOSE METAL AREAS, (FUSELAGE, STRUTS, FILLET) - LIGHT GRAY  
 FABRIC COVERED WINGS - SILVER, (TOP OF UPPER WING, - CHROME YELLOW)  
 ALL LETTERING & DETAILS - BLACK  
 SEATS, CONTROLS, PANEL, SIGHT, GUN - BLACK  
 INTERIOR AREAS - ZINC CHROMATE (LIGHT GREEN)  
 UPPER WING CHEVRON & TOP HALF OF ENGINE NOSE PLATE - WHITE  
 TAIL SURFACES - RED (AS NOTED)



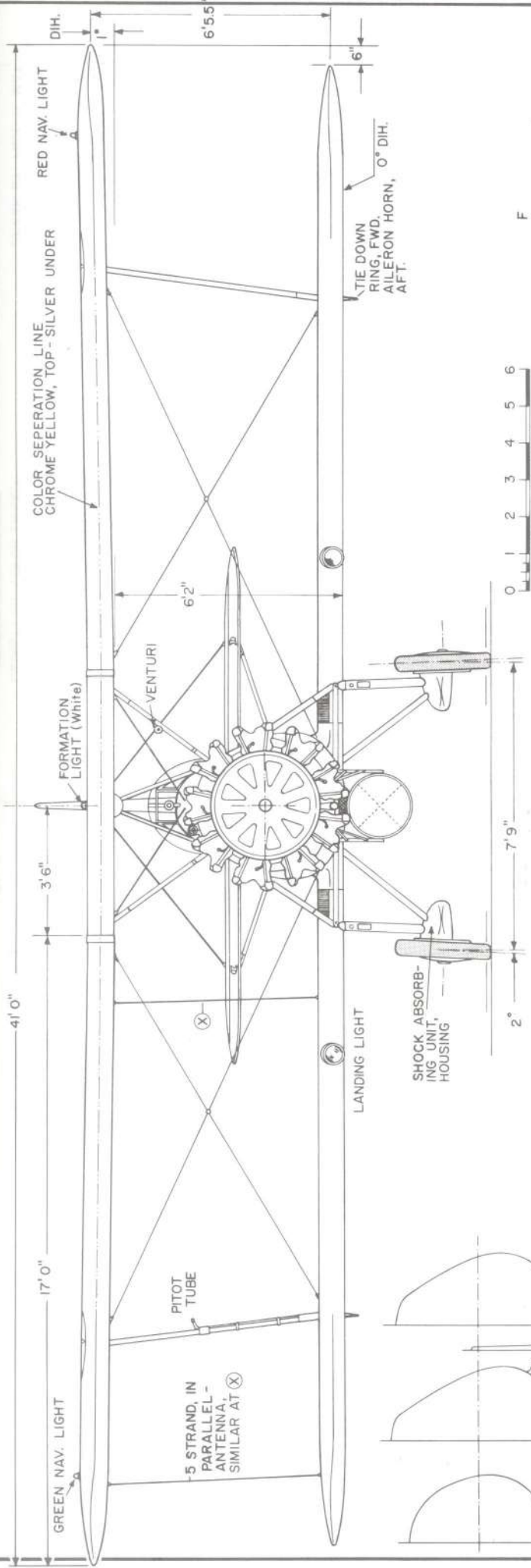
**SERIAL NUMBERS (BU NOS)**

BM-1	A-8879-8890	12
BM-2	A-9170-9185	16
XBM-1	9212	1
BM-1	9214-9217	4
		33

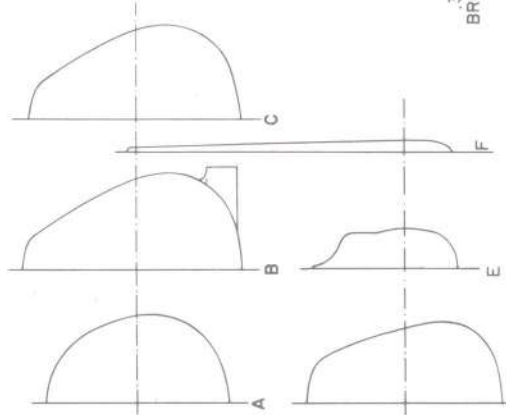
(XBM-1 TO N.A.C.A. FOR TESTS)



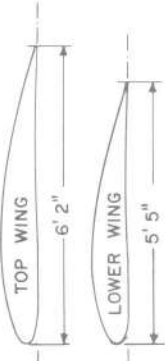
**MARTIN BM-1 AND -2**  
 (1931)  
 SCALE: 1:48



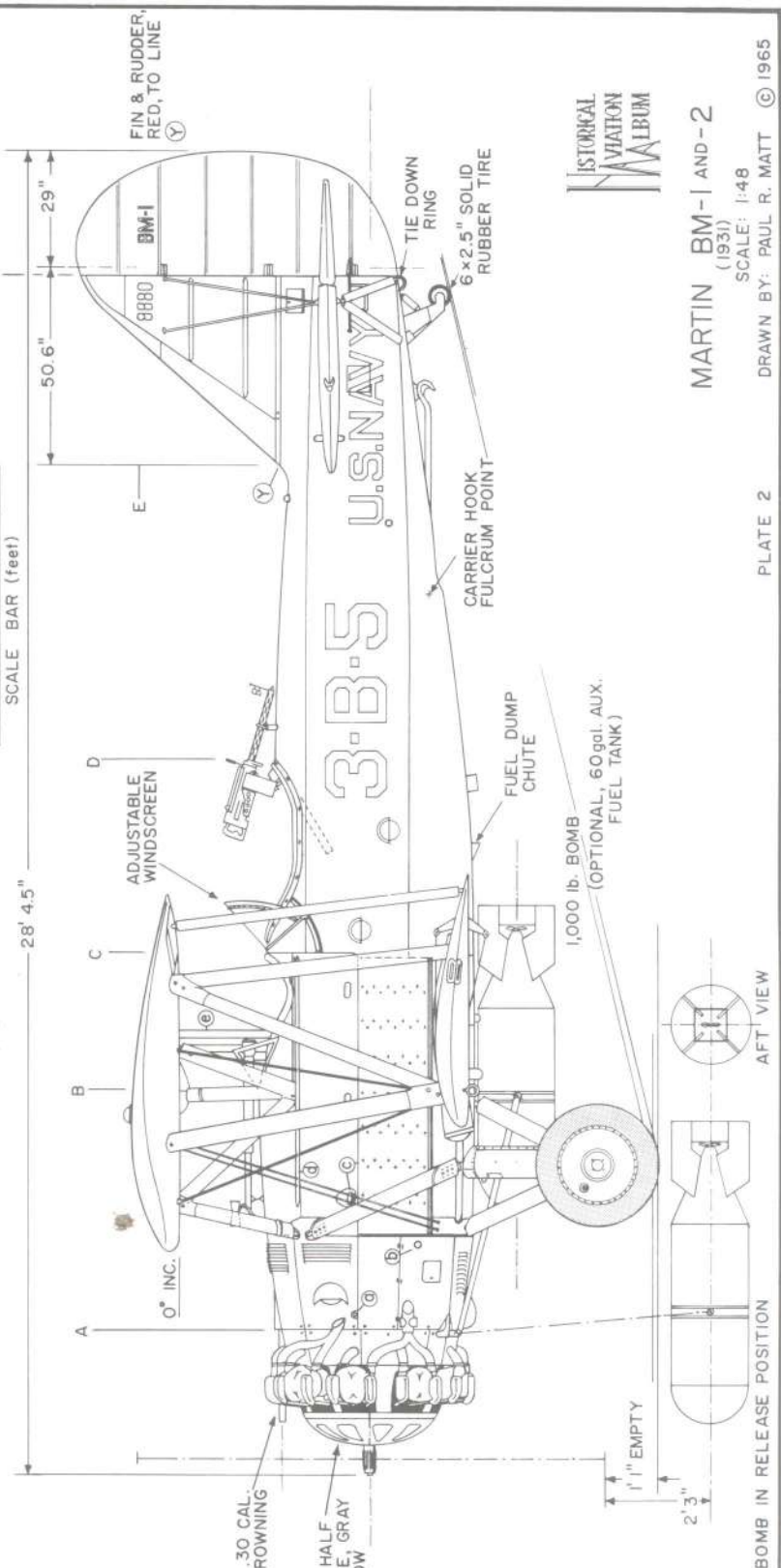
5 STRAND, IN PARALLEL-ANTENNA, SIMILAR AT (X)



CENTER SECTION at C



- (D) FWD AREA CODE
- (E) ENGINE STARTING CRANK COUPLING
- (F) FOOT REST BAR
- (G) FUEL TANKS & FILLER CAP
- (H) INTER-PLANE TIE ROD
- (I) 5 STRAND ANTENNA (STBD. ONLY)



# MARTIN BM-1 AND -2

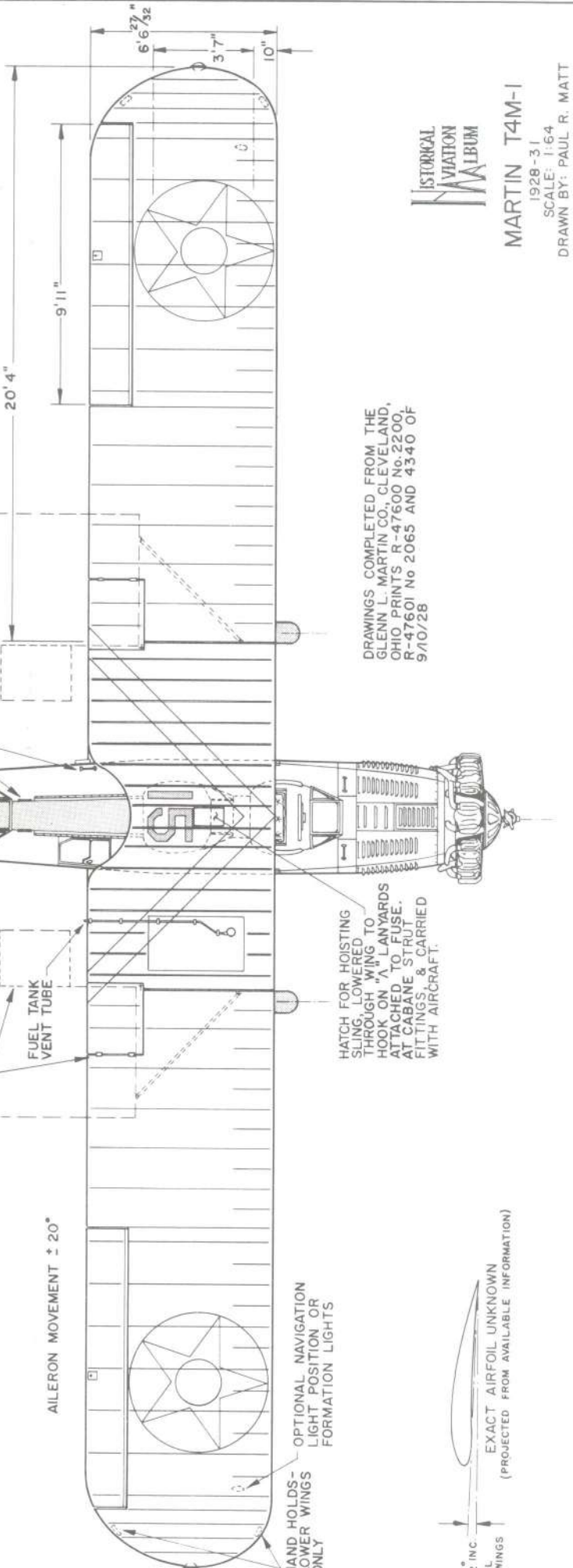
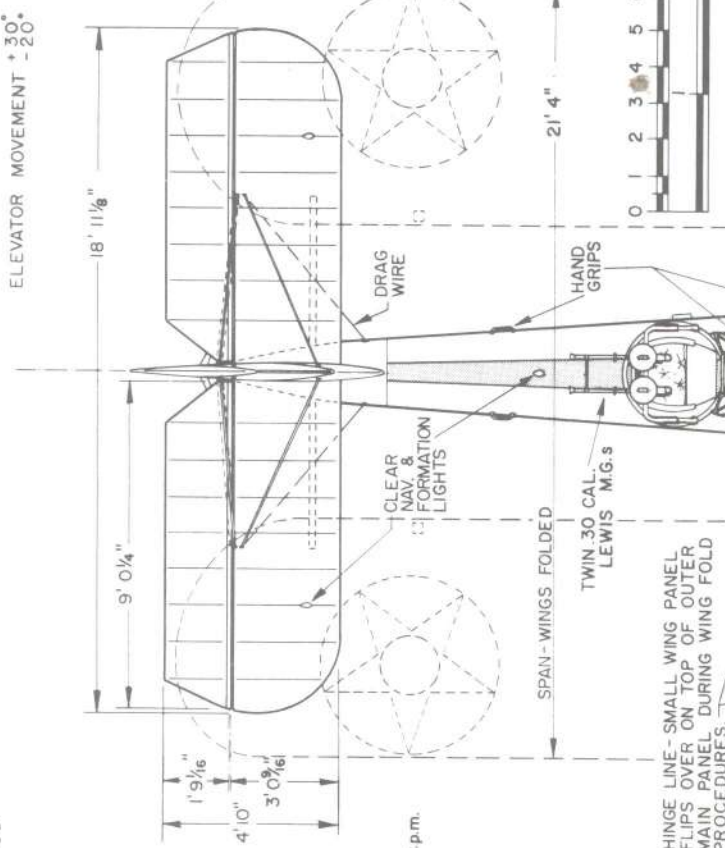
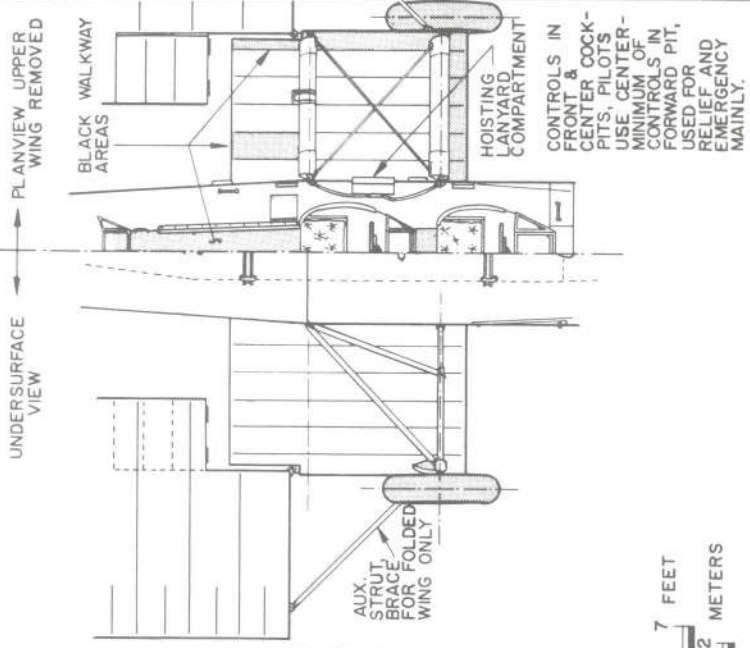
(1931)  
SCALE: 1:48  
DRAWN BY: PAUL R. MATT © 1965

**GENERAL SPECIFICATIONS**  
**LANDPLANE TYPE, MARTIN SPECS. R-47600**

WEIGHT EMPTY	3890 lbs.
USEFUL LOAD	347 lbs.
CREW	400 lbs.
EQUIPMENT	308 lbs.
ORDNANCE	2079 lbs.
FUEL (104 gals. normal)	624 lbs.
OIL (8 gals.)	60 lbs.
GROSS WEIGHT (Scout)	6547 lbs.
GROSS WEIGHT (With Torpedo)	7309 lbs.
WING LOADING (Full Load)	110 lbs./sq. ft.
POWER LOADING (Full Load)	140 lbs./H.P.
CLIMB IN 10 min	3850 ft.
SERVICE CEILING	10,150 ft.
ENDURANCE (Full Power)	3.5 hrs.
ENDURANCE (Cruise)	7.5 hrs.
RANGE	435 miles
MAXIMUM SPEED (Cruise)	650 miles
MAXIMUM SPEED (Military load)	113.2 m.p.h. S.L.
CRUISING SPEED	98 m.p.h.
LANDING SPEED (Light Condition)	56 m.p.h.
LANDING SPEED (Normal)	104 gals.
FUEL CAPACITY (Maximum)	200 gals.
POWER, PRATT & WHITNEY R-1690 "HORNET"	525 H.P. at 1900 r.p.m.

**BU. NO. ASSIGNMENTS**

T4M-1 (XT4M-1)	A 7566	1
T4M-1	A 7596-7649	54
T4M-1	A 7852-7899	48
TWIN SISTER VERSIONS		
BUILT BY GREAT LAKES AS		
THE TG SERIES		
TG-1	A 8458-8475	18
TG-2	A 8697-8728	32
<b>TOTAL</b>		<b>153</b>

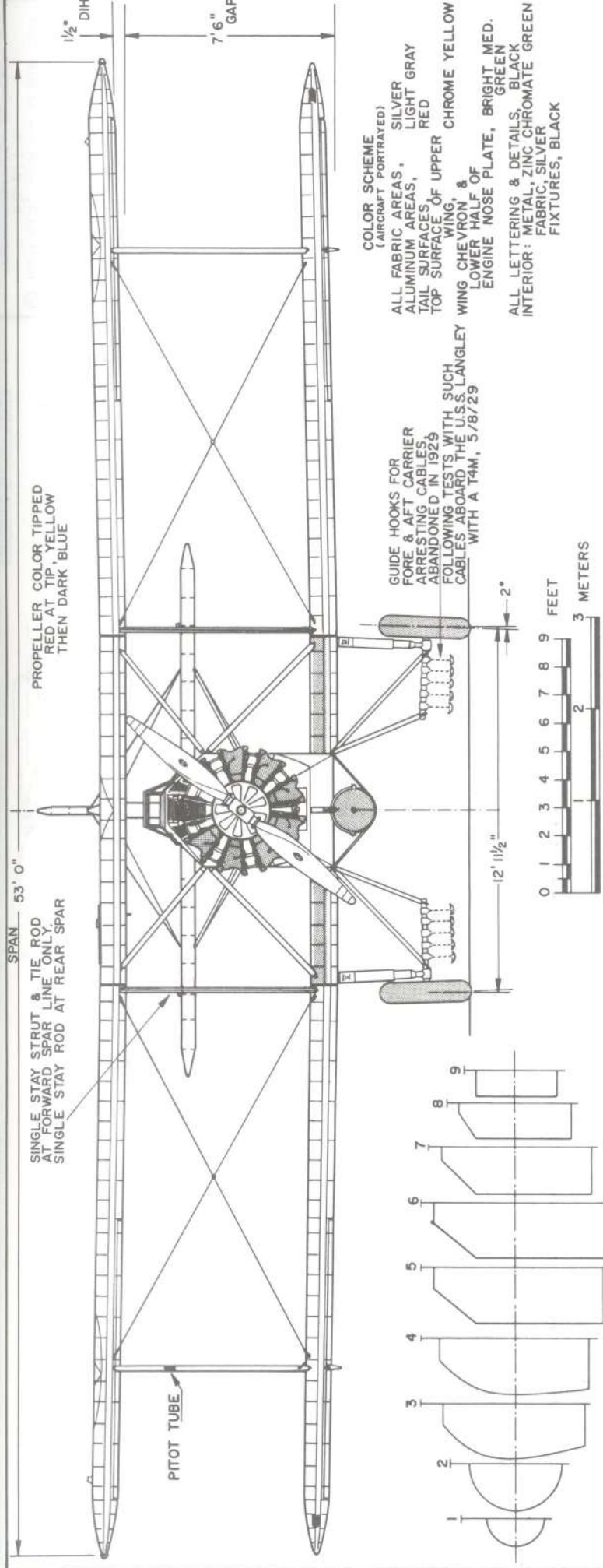


DRAWINGS COMPLETED FROM THE  
 GLENN L. MARTIN CO., CLEVELAND,  
 OHIO PRINTS R-47600 No. 2200,  
 R-47601 No. 2065 AND 4340 OF  
 9/10/28



**MARTIN T4M-1**

1928-31  
 SCALE: 1:64  
 DRAWN BY: PAUL R. MATT



FUSELAGE FABRIC COVERED AFT OF TEMPLATE 4, ALUMINUM FORWARD AS WELL AS FAIRINGS AND INSPECTION PLATES.

HAMILTON STANDARD GROUND ADJUSTABLE PROPELLER

VT-2B  
(TORPEDO SQUADRON TWO)  
FIRE BREATHING FLYING DRAGON  
DRAGON - RED  
SPINE - GREEN  
CLAWS & TAIL TIP - YELLOW  
TORPEDO - BLACK

REF. U.S. NAVY AIRCRAFT, 1921-1941  
by W.T. LARKINS &  
artist W. McINTYRE



COLOR SCHEME (AIRCRAFT PORTRAYED)

ALL FABRIC AREAS, SILVER

ALUMINUM AREAS, LIGHT GRAY

TAIL SURFACES, RED

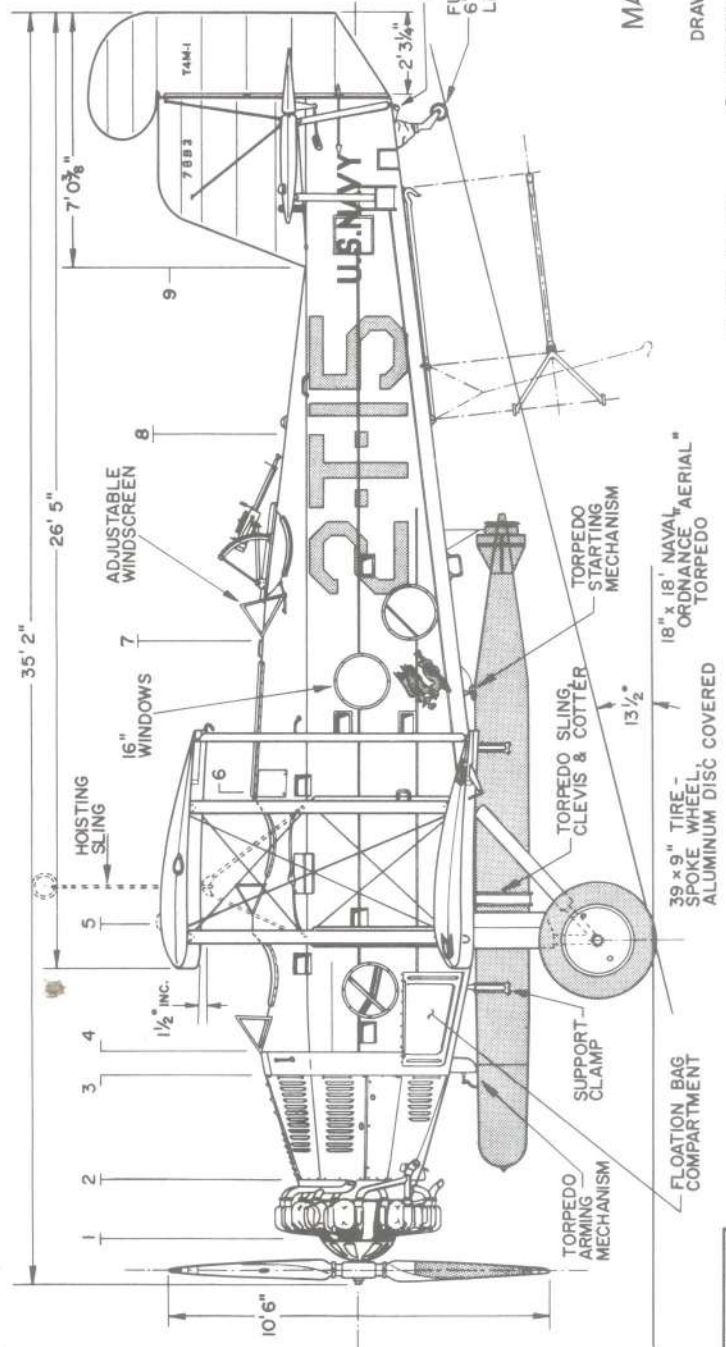
TOP SURFACE OF UPPER WING, CHROME YELLOW

LOWER HALF OF WING CHEVRON, & ENGINE NOSE PLATE, BRIGHT MED. GREEN

ALL LETTERING & DETAILS, BLACK

INTERIOR: METAL, ZINC CHROMATE GREEN FABRIC, SILVER FIXTURES, BLACK

GUIDE HOOKS FOR FORE & AFT CARRIER ARRESTING CABLES ABANDONED IN 1925 FOLLOWING TESTS WITH SUCH CABLES ABOARD THE U.S.S. LANGLEY WITH A T4M, 5/8/29



HISTORICAL AVIATION ALBUM

MARTIN T4M-1

1928-31

SCALE: 1:64

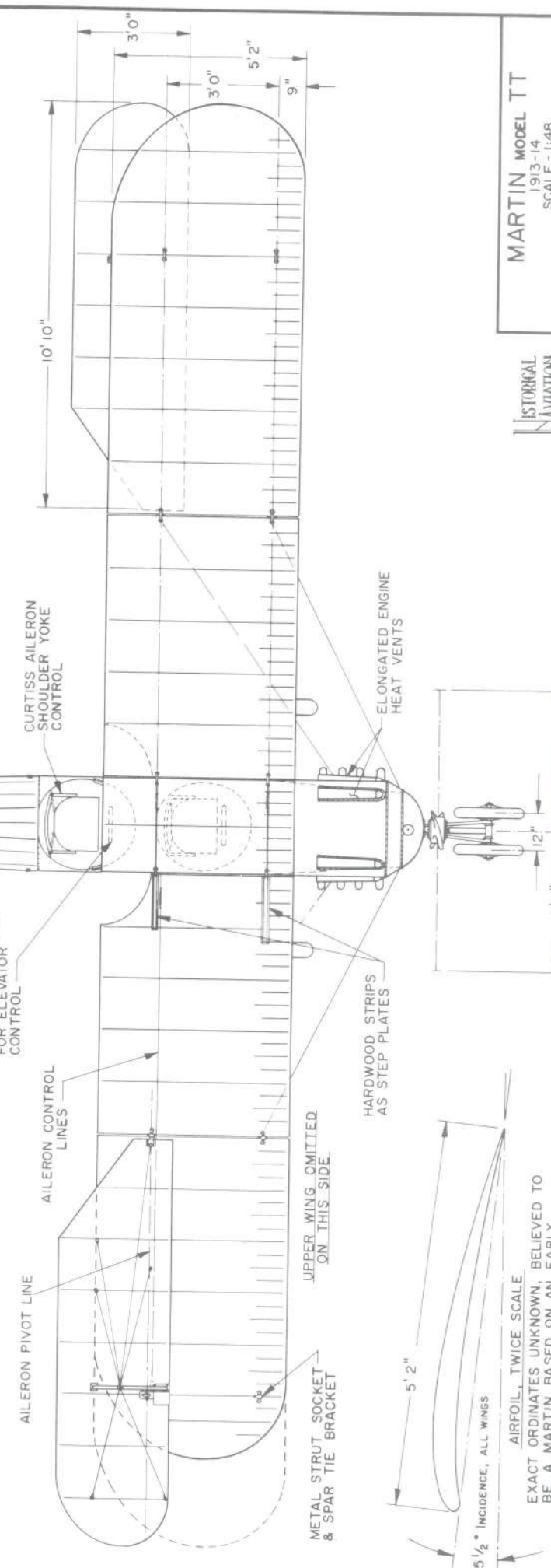
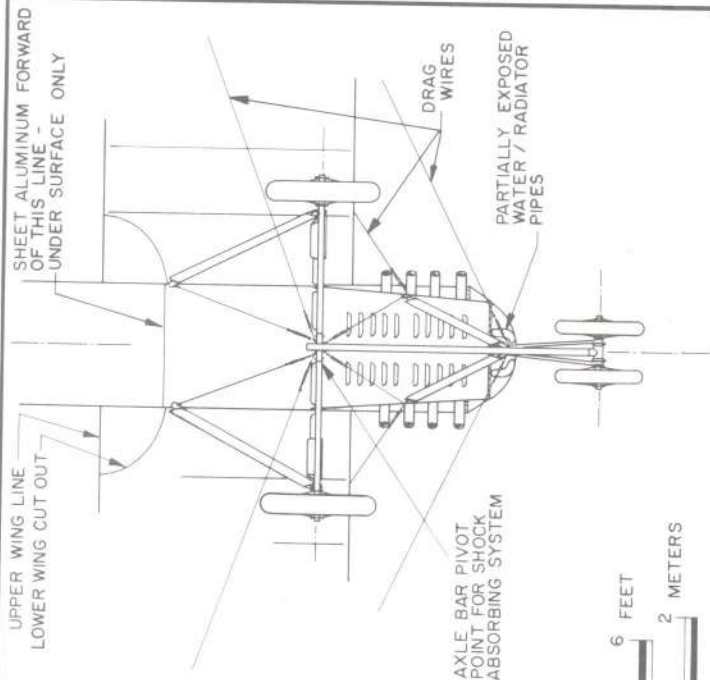
DRAWN BY: PAUL R. MATT

**GENERAL SPECIFICATION**

WEIGHT EMPTY 1320 lbs.  
 USEFUL LOAD 400 lbs. APPROX.  
 GROSS WEIGHT 1720 lbs. (LAND PLANE VERSION)  
 TOP SPEED 96 m.p.h.  
 CRUISING SPEED 80 m.p.h.  
 LANDING SPEED 45 m.p.h.  
 GLIDE RATIO 12:1  
 FUEL CAPACITY 50 gals.  
 CLIMB TO 3500 FEET 10 min.  
 RECORD CLIMB, 1915 - 5,200 feet in 10 min. 15 sec. (MARTIN TT No. 31)  
 SERVICE CEILING, 2 PERSONS ABOARD, 9,500 feet  
 WING AREA 379 sq. ft. (NOT INCL. AILERONS)  
 POWER - CURTISS OX-2 90 hp

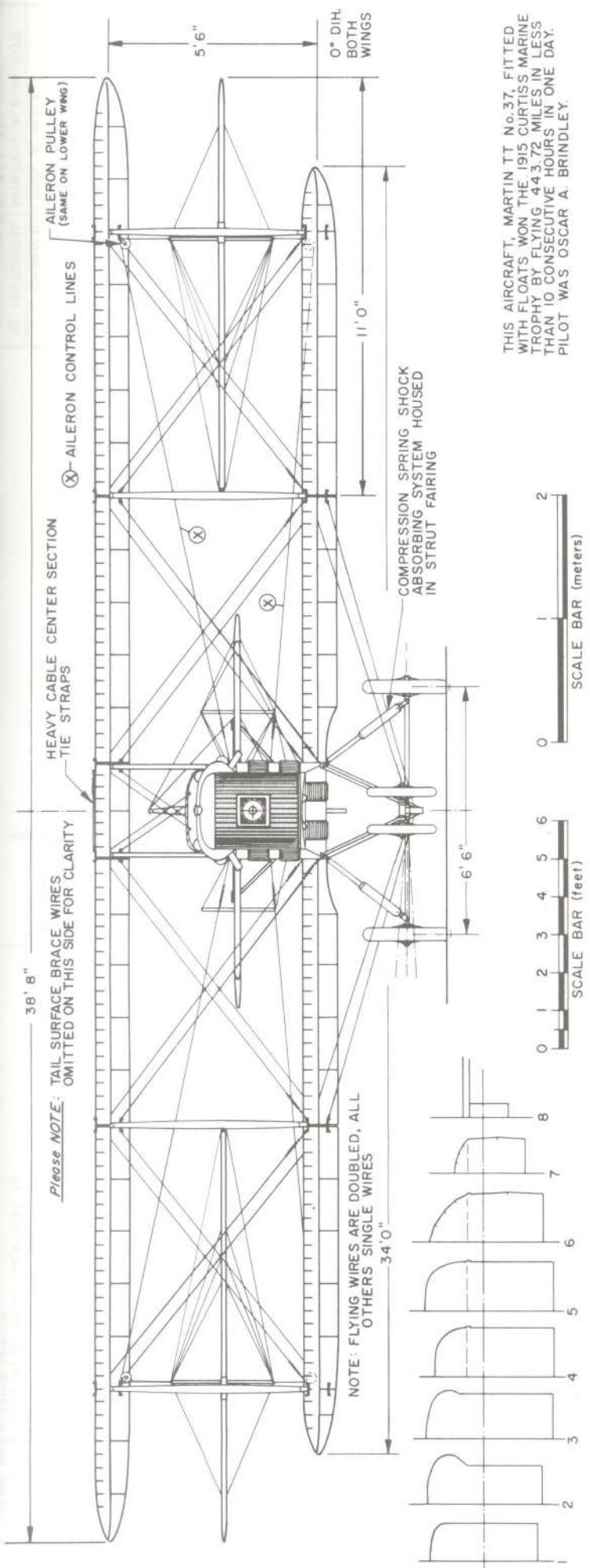
**COLORING NOTES**

ALUMINUM ENGINE COWLING AREA, COCKPIT COMBING - MEDIUM GRAY  
 BALANCE OF AIRCRAFT - CLEAR DOPED FABRIC  
 INTER-PLANE STRUTS - CLEAR VARNISHED ASH  
 MAIN LANDING GEAR METAL STRUTS - BLACK

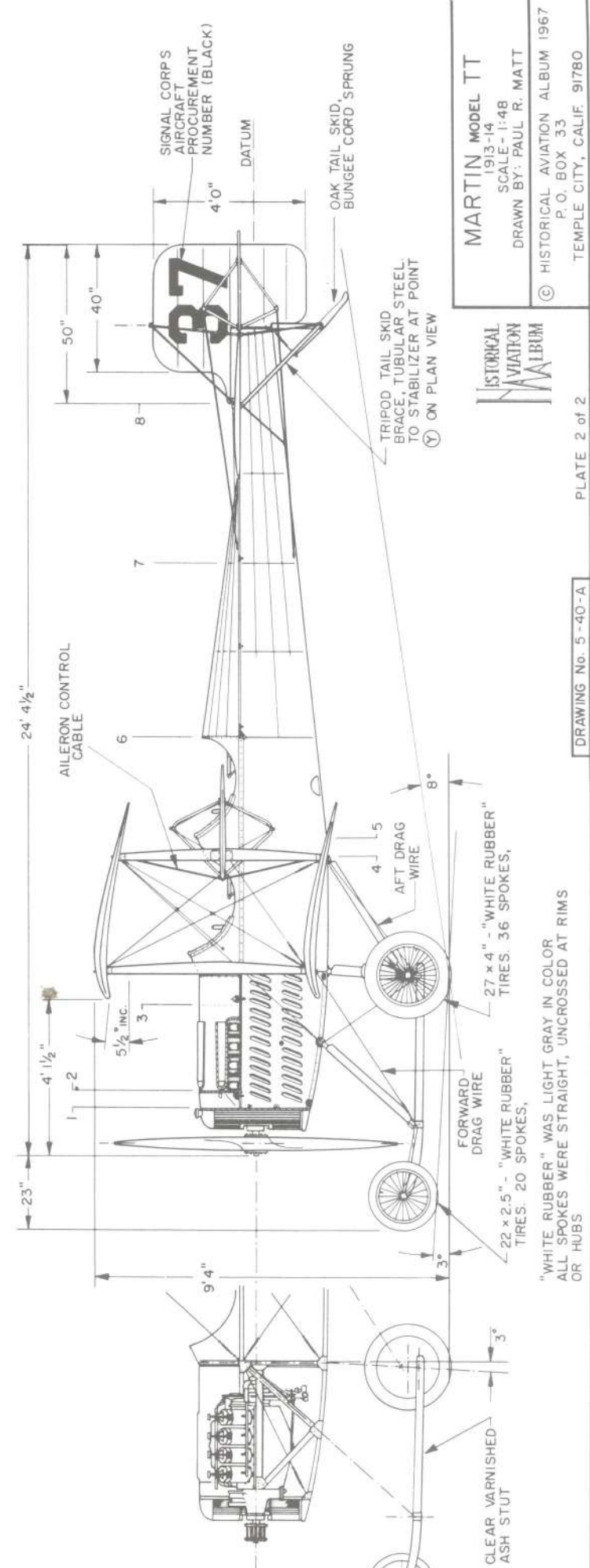


**MARTIN MODEL TT**  
 1913-14  
 SCALE - 1:48

**HISTORICAL AVIATION**



THIS AIRCRAFT, MARTIN TT No.37, FITTED WITH FLOATS WON THE 1915 CURTISS MARINE TROPHY BY FLYING 443.72 MILES IN LESS THAN 10 CONSECUTIVE HOURS IN ONE DAY. PILOT WAS OSCAR A. BRINDLEY.



"WHITE RUBBER" WAS LIGHT GRAY IN COLOR ALL SPOKES WERE STRAIGHT, UNCROSSED AT RIMS OR HUBS

MARTIN MODEL TT  
1913-14  
SCALE-1:1-48  
DRAWN BY: PAUL R. MATT  
HISTORICAL AVIATION ALBUM 1967  
P.O. BOX 33  
TEMPLE CITY, CALIF. 91780





**GENERAL SPECIFICATIONS**

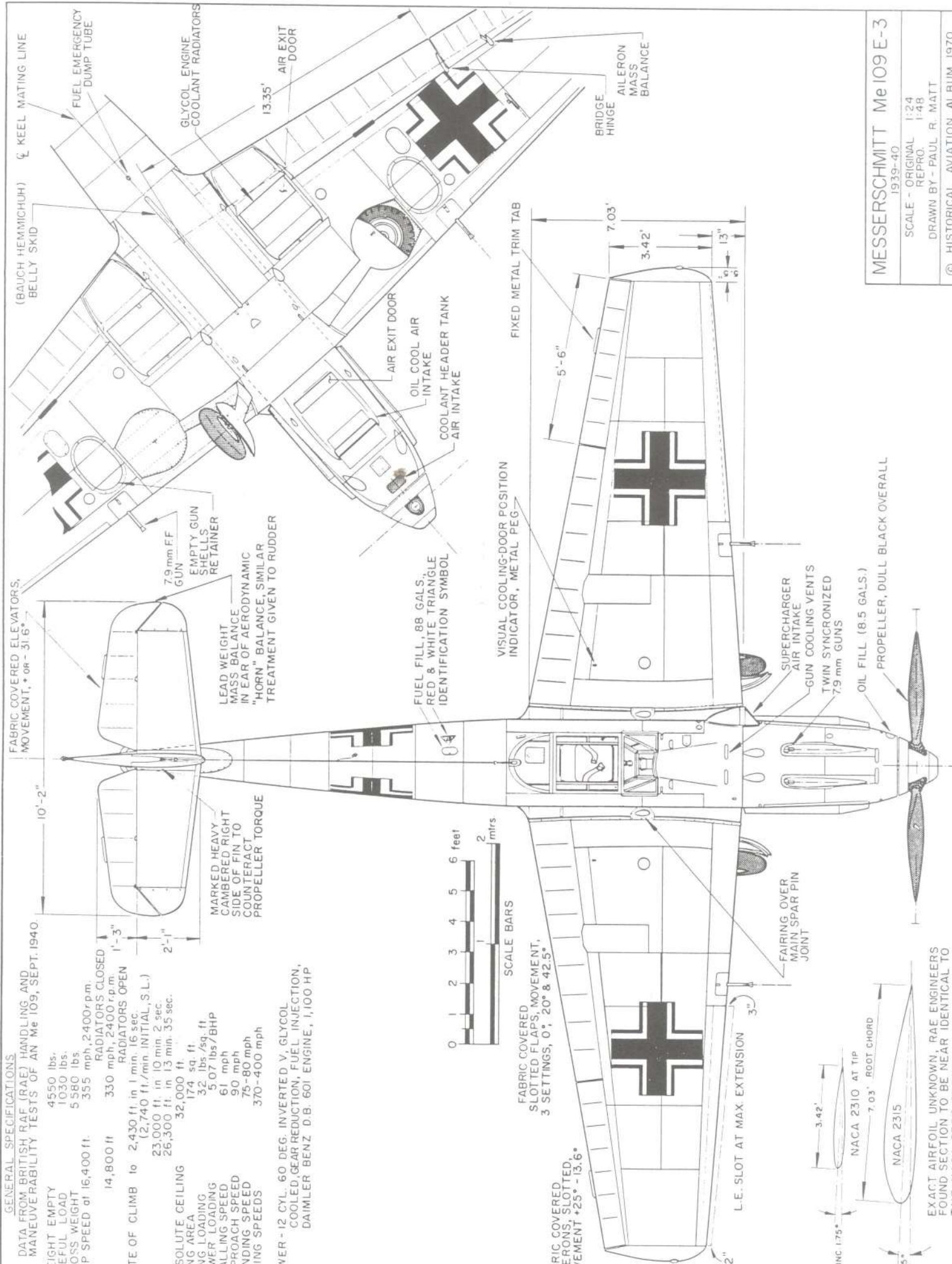
DATA FROM BRITISH RAF (RAE) HANDLING AND MANEUVERABILITY TESTS OF AN Me 109, SEPT. 1940.

EIGHT EMPTY WEIGHT 4550 lbs.  
 USEFUL LOAD 1030 lbs.  
 GROSS WEIGHT 5580 lbs.  
 TOP SPEED at 16,400 ft. 355 mph, 2400 r.p.m.

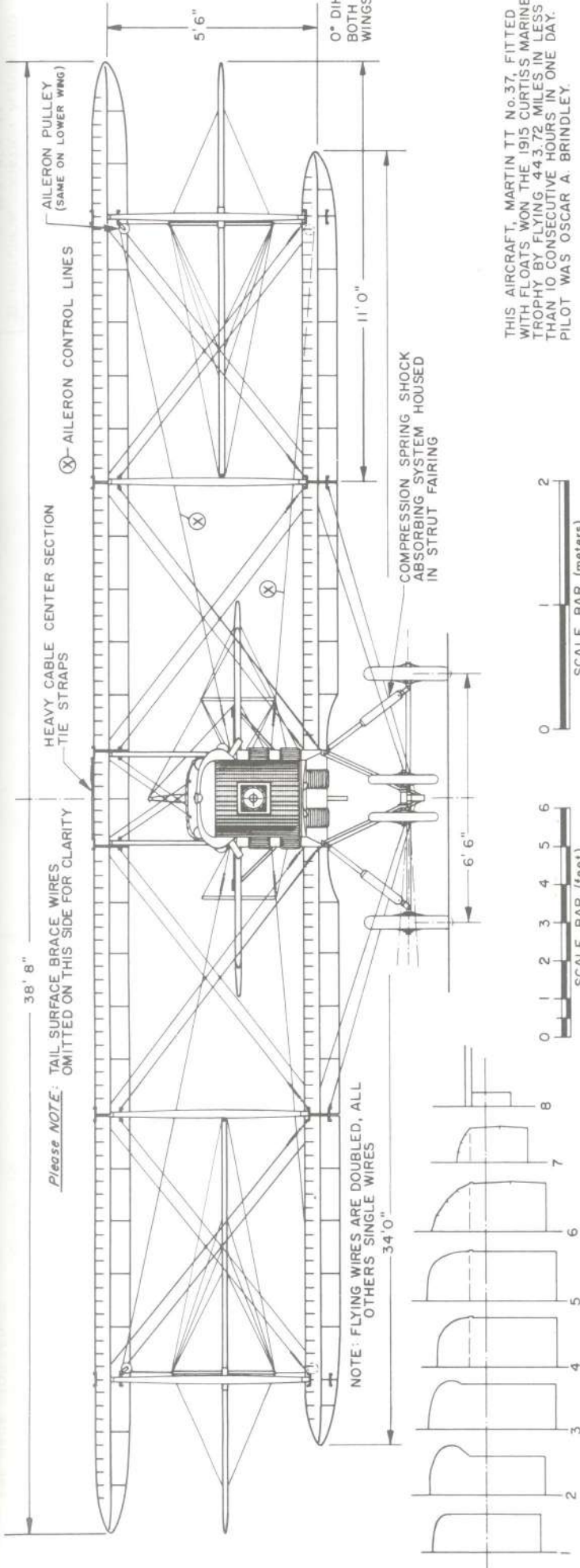
14,800 ft. 330 mph, 2400 r.p.m.  
 RATE OF CLIMB to 2,430 ft. in 1 min. 16 sec.  
 (2,740 ft./min. INITIAL, S.L.)  
 23,000 ft. in 10 min. 2 sec.  
 26,300 ft. in 13 min. 35 sec.

ABSOLUTE CEILING 32,000 ft.  
 WING AREA 174 sq. ft.  
 POWER LOADING 32 lbs./sq. ft.  
 TURNING LOADING 5.07 lbs./BHP  
 STALLING SPEED 61 mph  
 APPROACH SPEED 90 mph  
 LANDING SPEED 75-80 mph  
 CRUISING SPEEDS 370-400 mph

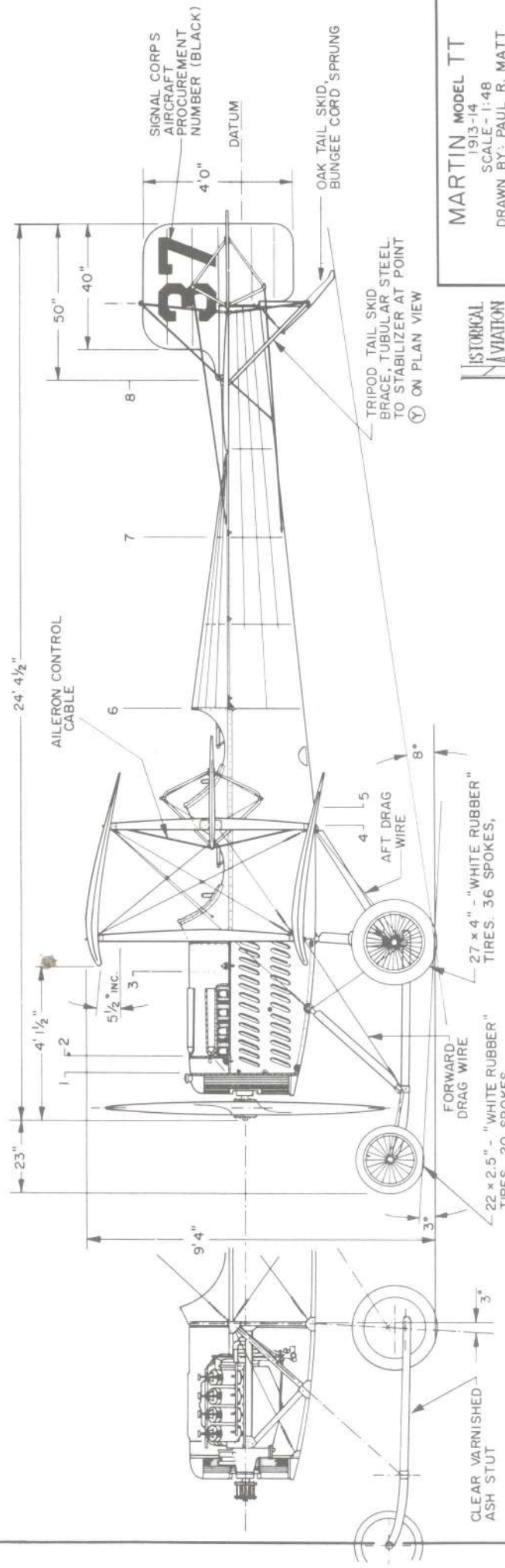
POWER - 12 CYL., 60 DEG. INVERTED V, GLYCOL COOLED, GEAR REDUCTION, FUEL INJECTION, DAIMLER BENZ D.B. 601 ENGINE, 1,100 HP.



**MESSERSCHMITT Me 109 E-3**  
 1939-40  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT  
 © HISTORICAL AVIATION ALBUM 1970  
 P.O. BOX 33



THIS AIRCRAFT, MARTIN TT No. 37, FITTED WITH FLOATS WON THE 1915 CURTIS'S MARINE TROPHY BY FLYING 443.72 MILES IN LESS THAN 10 CONSECUTIVE HOURS IN ONE DAY. PILOT WAS OSCAR A. BRINDLEY.



"WHITE RUBBER" WAS LIGHT GRAY IN COLOR ALL SPOKES WERE STRAIGHT, UNCROSSED AT RIMS OR HUBS



MARTIN MODEL TT  
1913-14  
SCALE - 1:48  
DRAWN BY: PAUL R. MATT  
© HISTORICAL AVIATION ALBUM 1967  
P.O. BOX 33  
TEMPLE CITY, CALIF. 91780

**GENERAL SPECIFICATIONS**

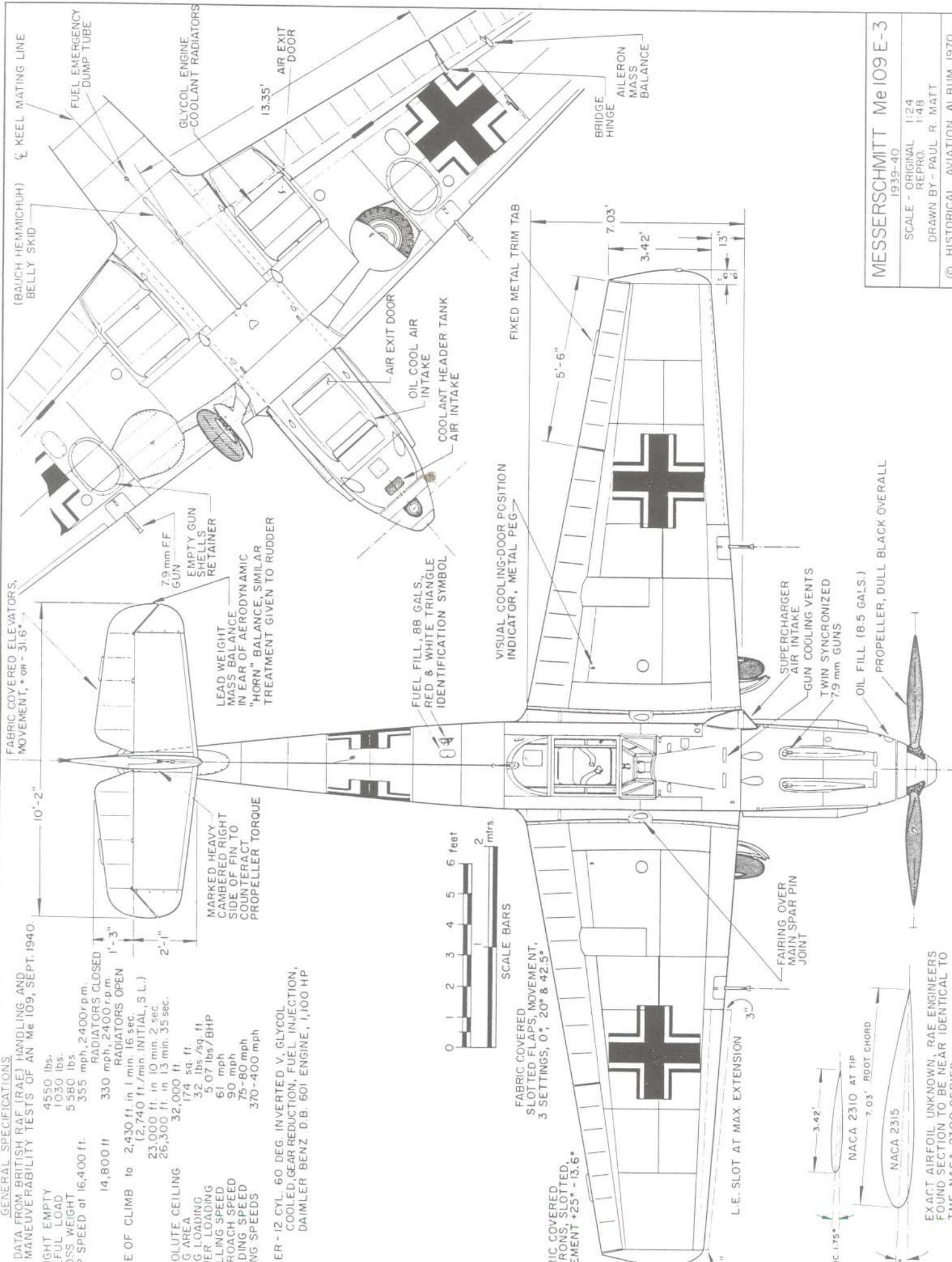
DATA FROM BRITISH RAF (RAE) HANDLING AND MANEUVERABILITY TESTS OF AN Me 109, SEPT. 1940.

WEIGHT EMPTY 4550 lbs.  
 USEFUL LOAD 1030 lbs.  
 GROSS WEIGHT 5580 lbs.  
 TOP SPEED at 16,400 ft. 355 mph, 2400rpm.

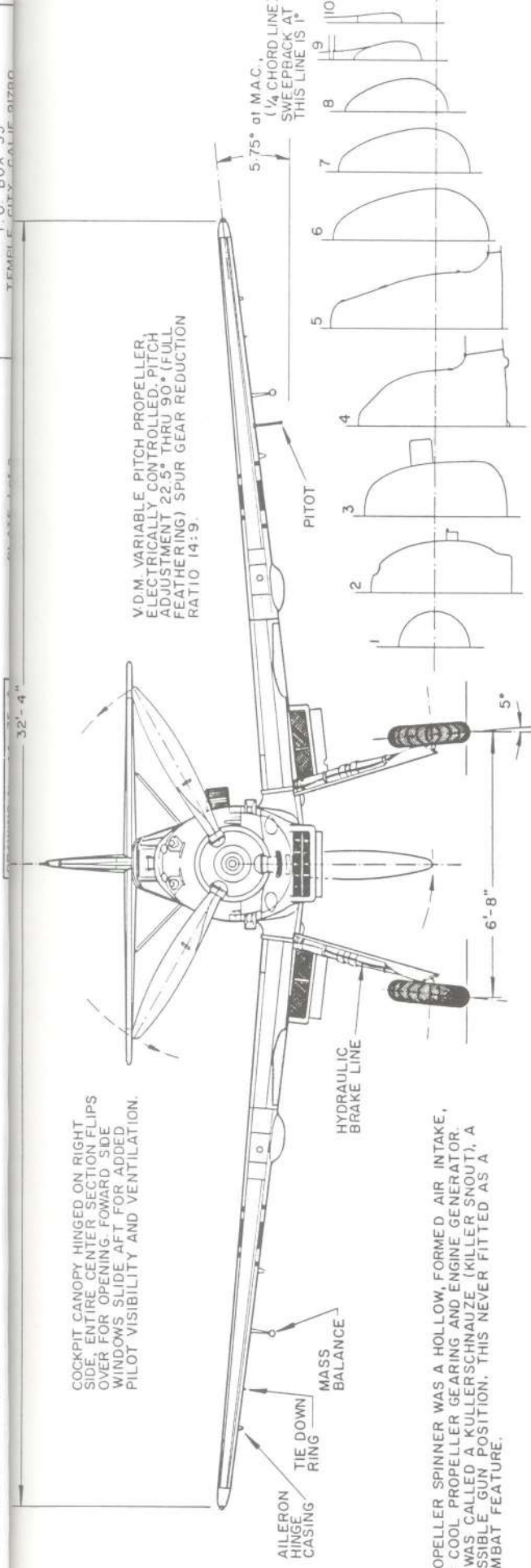
14,800 ft. RADIATORS CLOSED 330 mph, 2400 r.p.m.  
 RADIATORS OPEN 1'-3"  
 RATE OF CLIMB to 2,430 ft. in 1 min. 16 sec.  
 (2,740 ft./min. INITIAL, S.L.)  
 23,000 ft. in 10 min. 2 sec.  
 26,300 ft. in 13 min. 35 sec.

ABSOLUTE CEILING 32,000 ft.  
 WING AREA 174 sq. ft.  
 WING LOADING 32 lbs./sq. ft.  
 POWER LOADING 5.07 lbs./BHP  
 STALLING SPEED 61 mph  
 APPROACH SPEED 90 mph  
 LANDING SPEED 75-80 mph  
 CRUISING SPEED 370-400 mph

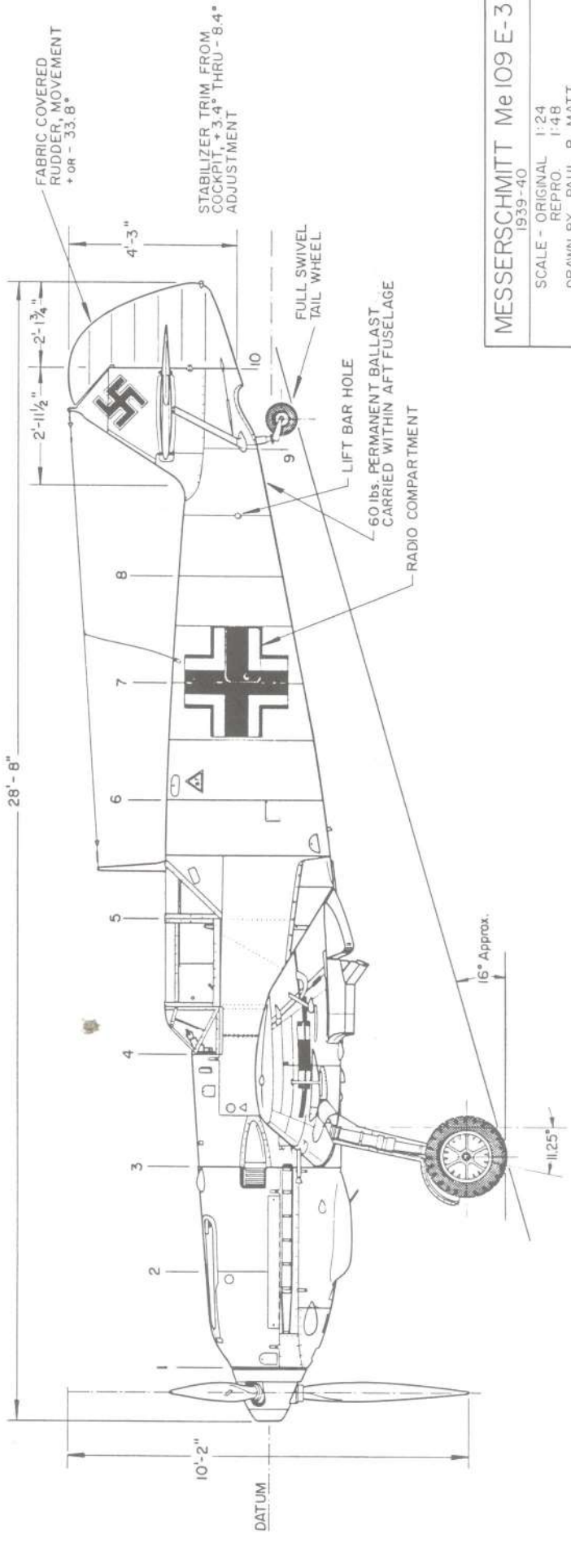
POWER - 12 CYL. 60 DEG. INVERTED V, GLYCOL COOLED, GEAR REDUCTION, FUEL INJECTION, DAIMLER BENZ D.B. 601 ENGINE, 1,100 HP



**MESSERSCHMITT Me 109 E-3**  
 1939-40  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT  
 © HISTORICAL AVIATION ALBUM 1970  
 P.O. BOX 33



PROPELLER SPINNER WAS A HOLLOW, FORMED AIR INTAKE, TO COOL PROPELLER GEARING AND ENGINE GENERATOR. IT WAS CALLED A KULLERSCHNAUZE (KILLER SNOOT), A POSSIBLE GUN POSITION. THIS NEVER FITTED AS A COMBAT FEATURE.



**MESSERSCHMITT Me 109 E-3**  
1939-40

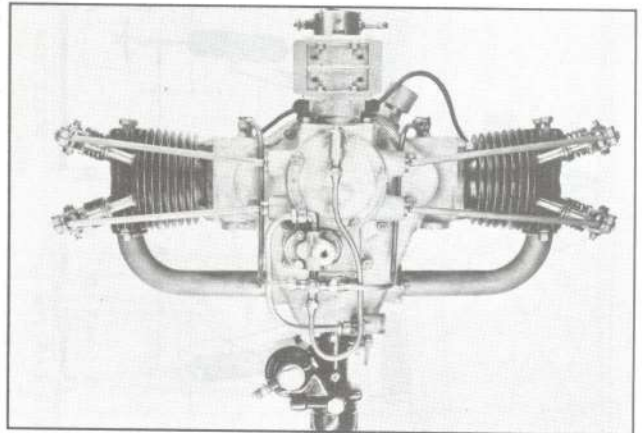
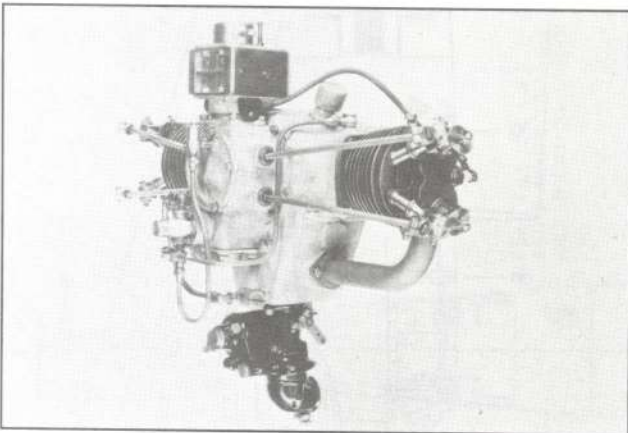
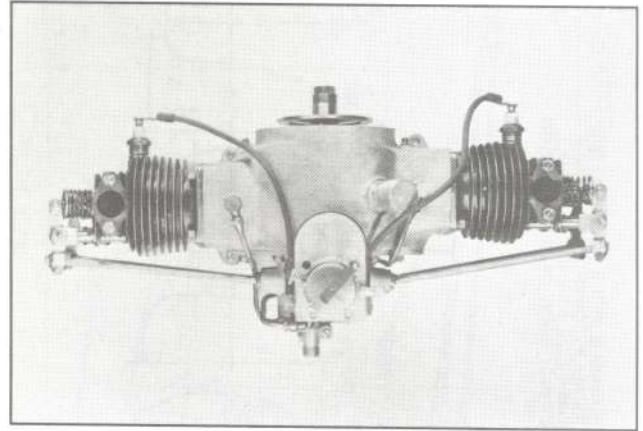
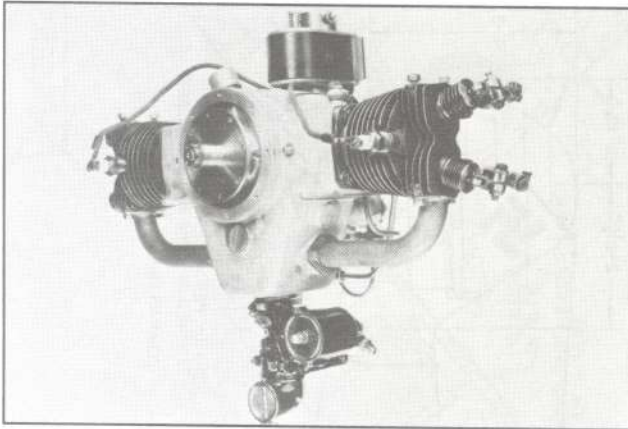
SCALE - ORIGINAL 1:24  
REPRO 1:48

DRAWN BY PAUL R. MATT

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P.O. BOX 33  
TEMPLE CITY, CALIF. 91780

# Morehouse 29.H.P. Aircraft Engine

1925



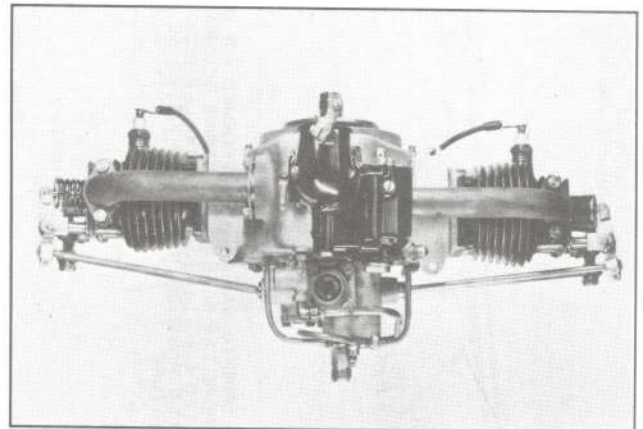
*Top left: Front view*

*Top right: Top view*

*Middle left: Right rear view*

*Middle right: Direct rear view*

*Bottom right: Bottom view*



- SPECIFICATIONS -

THE FOLLOWING DATA & PERFORMANCE FIGURES ARE AS REPORTED BY THE POWER PLANT SECTION, MCCOOK FIELD, ENGINEERING DIVISION, JUNE 15, 1925.

BORE : 3.750

STROKE : 3.625

DISPLACEMENT : 80.10 CU. IN.

COMPRESSION RATIO : 5.10:1

RATED H.P. : 29.1 AT 2500 RPM AT SEA LEVEL

WEIGHT DRY : 89.50 LBS.

OIL PRESSURE AT CRUISE R.P.M. : 12.16 LB. / SQ. IN.

FUEL CONSUMPTION : 51.3 LBS. / H.P. / HR.

THE FOLLOWING H.P. RATINGS ARE AT SEA LEVEL:

24.0 H.P. @ 2,050 R.P.M.

24.8 H.P. @ 2,100 R.P.M.

26.0 H.P. @ 2,200 R.P.M.

27.2 H.P. @ 2,300 R.P.M.

28.3 H.P. @ 2,400 R.P.M.

29.1 H.P. @ 2,500 R.P.M.

29.6 H.P. @ 2,600 R.P.M.

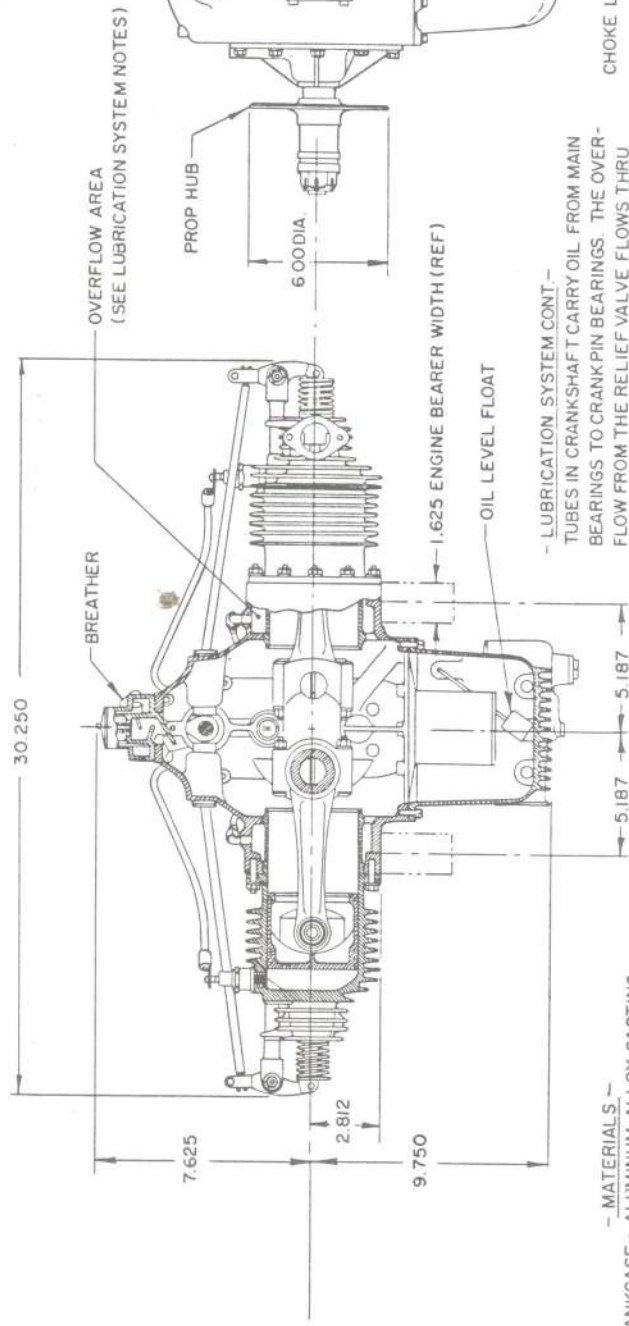
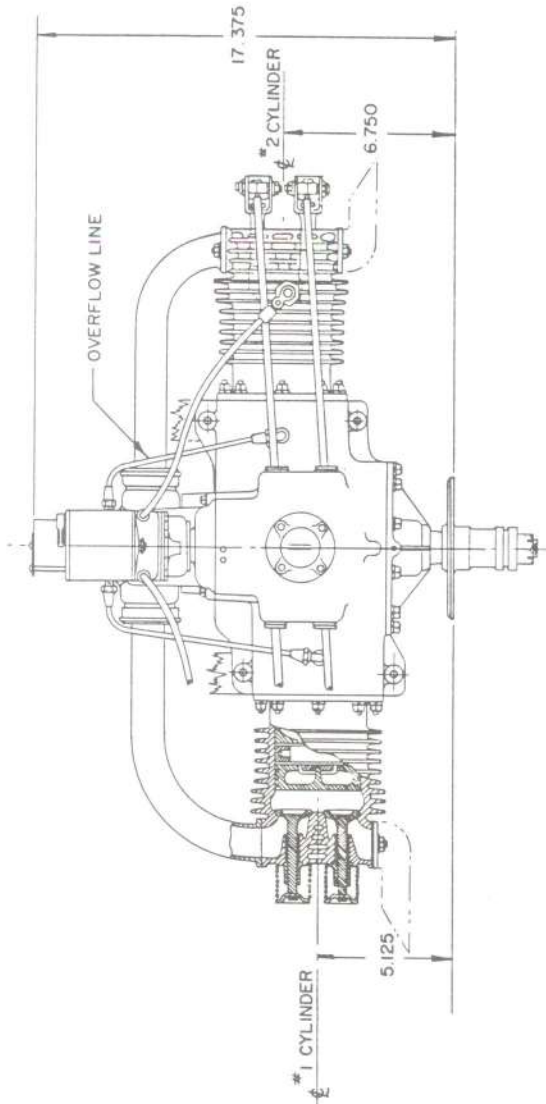
29.8 H.P. @ 2,650 R.P.M.

CARBURETOR : STROMBERG MODEL OX-2

IGNITION : SCINTILLA MAGNETO, DELCO SYSTEM & CHAMPION SPARK PLUGS.

LUBRICATION SYSTEM : SINGLE GEAR PUMP IN REAR COVER SUPPLIES OIL THRU DRILLED CRANKSHAFT PASSAGES TO MAIN BEARINGS, IDLER & CAMSHAFT GEAR BEARINGS.

CONT. BELOW



MOREHOUSE 29.1 H.P. AIRCRAFT ENGINE

1925

SCALE: 1:16 (3/4" = 1")

DRAWN BY: ROB LAMBERT

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- LUBRICATION SYSTEM CONT. -  
TUBES IN CRANKSHAFT CARRY OIL FROM MAIN BEARINGS TO CRANKPIN BEARINGS. THE OIL FLOW FROM THE RELIEF VALVE FLOWS THRU THE COMPARTMENTS AROUND THE CYLINDERS SKIRTS.  
THE OIL SUMP IS PROVIDED WITH AN OIL LEVEL INDICATOR, FILTERS & A THERMOMETER FITTING.

- MATERIALS -  
CRANKCASE : ALUMINUM ALLOY CASTING  
CRANKSHAFT : S A E 3240 STEEL FORGING  
CONNECTING RODS : FORGED DURALUMINUM WITH BRONZE PISTON PIN BUSHINGS  
PISTONS : MACHINED ALUM. WITH 4.125 TEEFOR RINGS.  
CYLINDERS : CAST IRON WITH INTEGRAL FINS & VALVE SEATS.  
VALVES : COBALT CHROME.  
CAMSHAFT & VALVE GEARS : S A E 6120 STEEL.

**GENERAL SPECIFICATIONS.**

WEIGHT EMPTY 2480 lbs.  
 USEFUL LOAD 520 lbs.  
 GROSS WEIGHT 3000 lbs.  
 MAXIMUM SPEED 209 m.p.h. DURING RACE  
 FUEL CAPACITY 56 gals. (337 lbs. incl. in useful load)  
 OIL CAPACITY 4 gals.  
 LANDING SPEED 71.2 m.p.h.  
 WING AREA 180 sq. ft., incl. ailerons

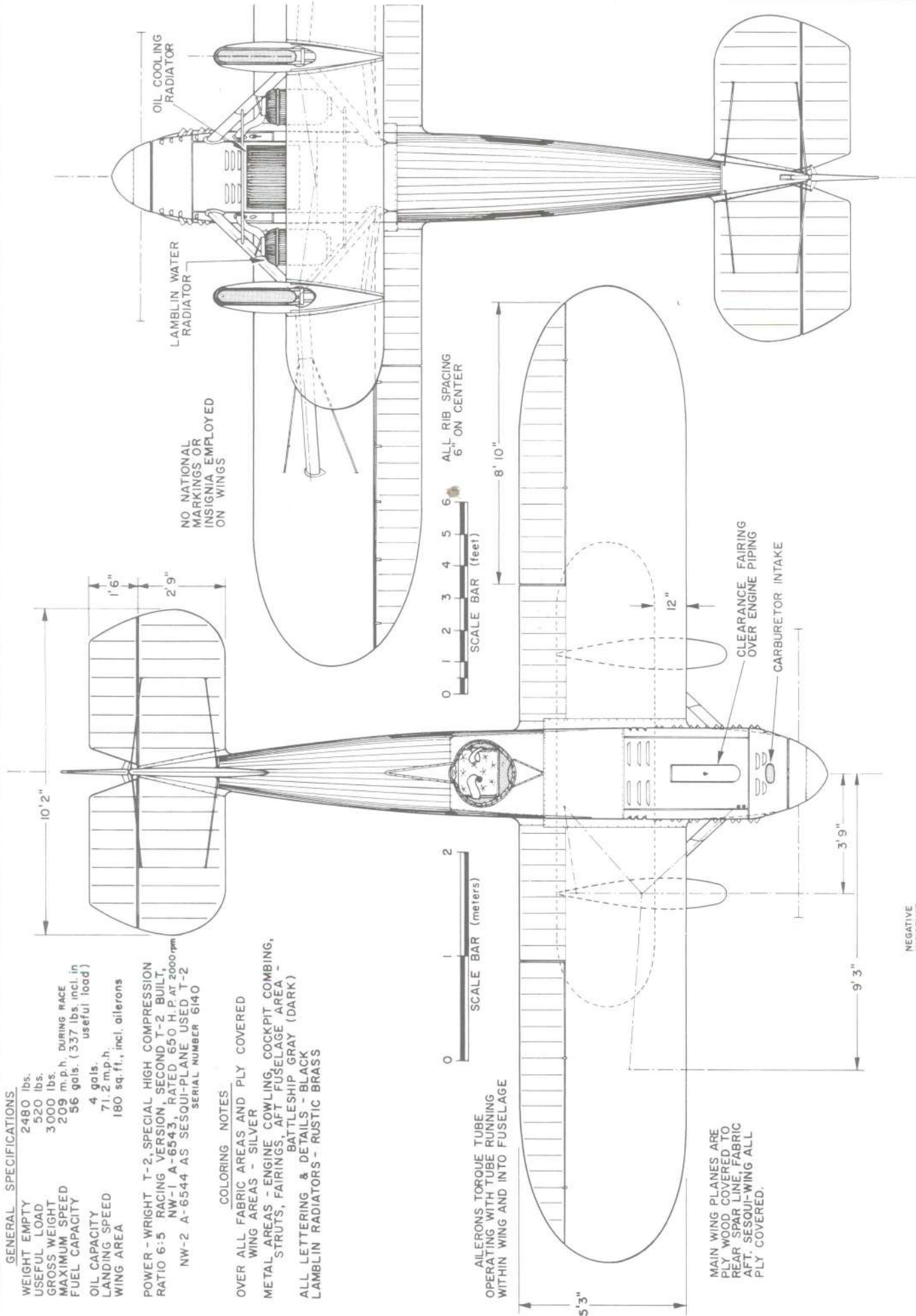
POWER - WRIGHT T-2, SPECIAL HIGH COMPRESSION  
 RATIO 6:5 RACING VERSION, SECOND T-2 BUILT,  
 NW-1 A-6543, RATED 650 H.P. AT 2000 rpm  
 NW-2 A-6544 AS SESQUI-PLANE USED T-2  
 SERIAL NUMBER 6140

**COLORING NOTES.**

OVER ALL FABRIC AREAS AND PLY COVERED  
 WING AREAS - SILVER  
 METAL AREAS - ENGINE COWLING, COCKPIT COMBING,  
 STRUTS, FAIRINGS, AFT FUSELAGE AREA -  
 BATTLESHIP GRAY (DARK)  
 ALL LETTERING & DETAILS - BLACK  
 LAMBLIN RADIATORS - RUSTIC BRASS

AILERONS TORQUE TUBE  
 OPERATING WITH TUBE RUNNING  
 WITHIN WING AND INTO FUSELAGE

MAIN WING PLANES ARE  
 PLY WOOD COVERED TO  
 REAR SPAR LINE, FABRIC  
 AFT. SESQUI-WING ALL  
 PLY COVERED.



NO NATIONAL  
 MARKINGS OR  
 INSIGNIA EMPLOYED  
 ON WINGS

SCALE BAR (feet)  
 0 1 2 3 4 5 6  
 ALL RIB SPACING  
 6" ON CENTER

SCALE BAR (meters)  
 0 1 2

CLEARANCE FAIRING  
 OVER ENGINE PIPING  
 CARBURETOR INTAKE

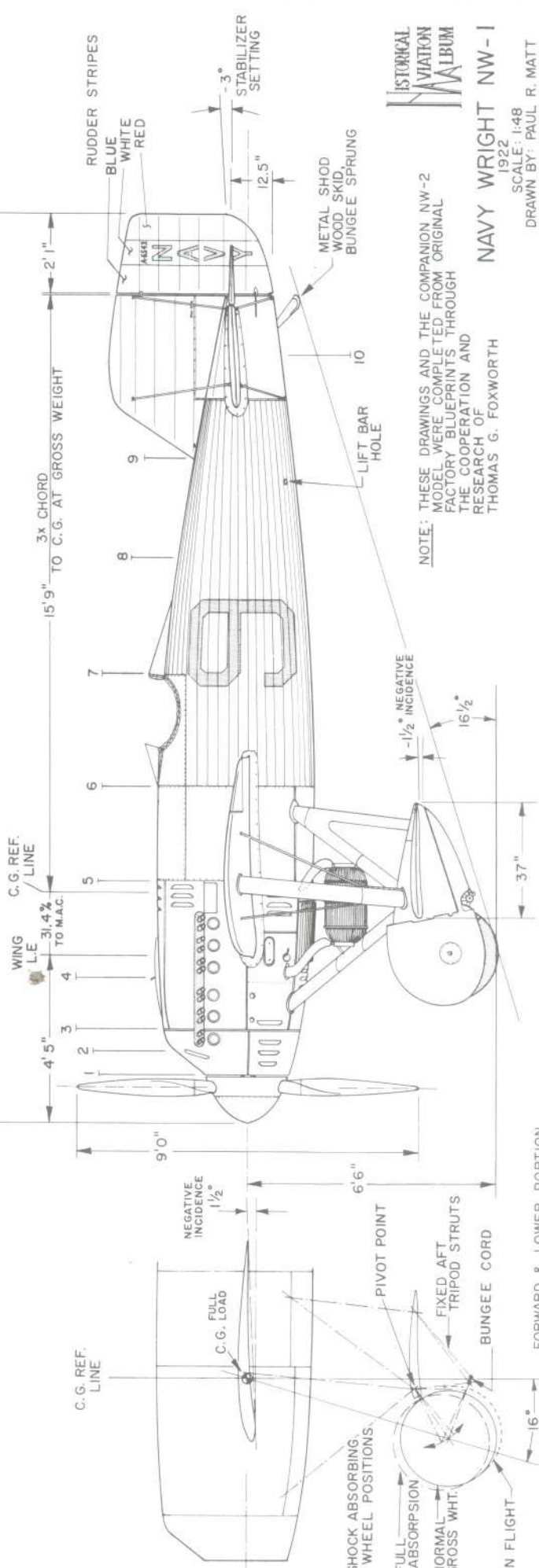
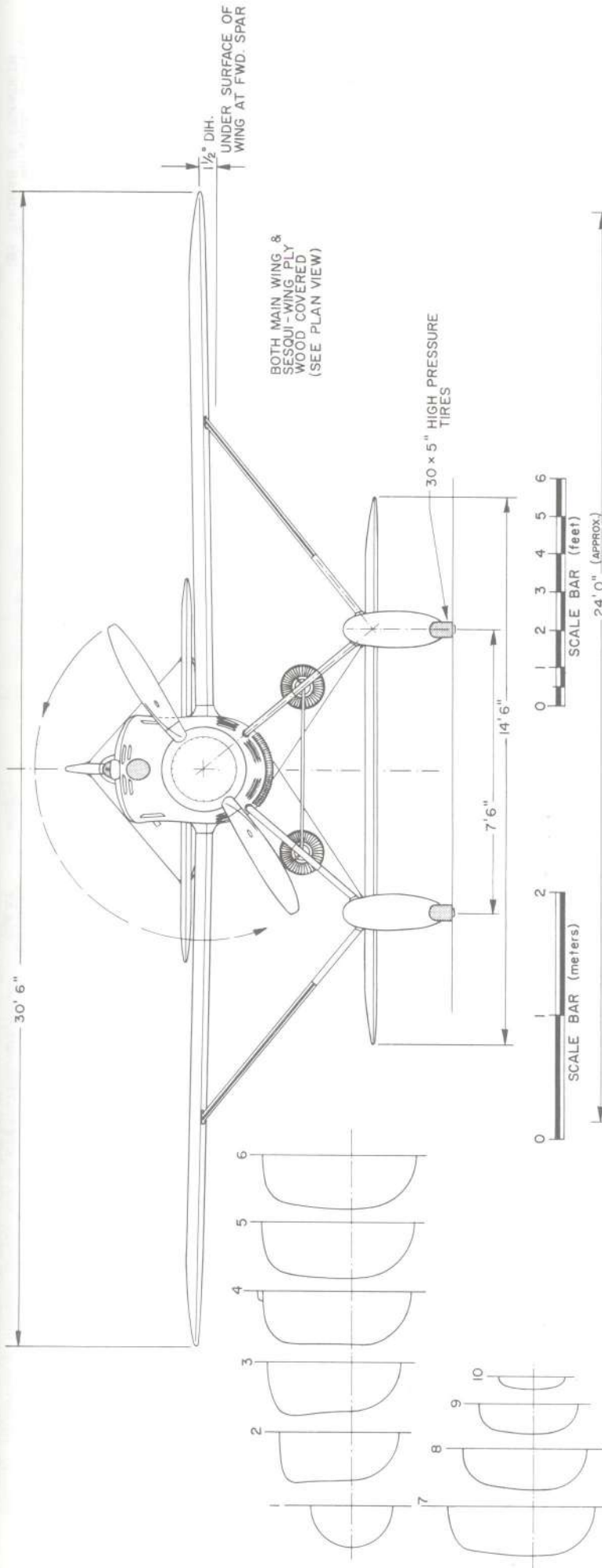
NEGATIVE  
 INCIDENCE

AIRFOIL M-80 (1921) TWICE SCALE

HISTORICAL  
 AVIATION  
 MUSEUM

NAVY WRIGHT NW-1

1922  
 SCALE: 1:48  
 DRAWN BY: PAUL R. MATT



**HISTORICAL AVIATION ALBUM**

**NAVY WRIGHT NW-1**

SCALE: 1:48

DRAWN BY: PAUL R. MATT

1922

NOTE: THESE DRAWINGS AND THE COMPANION NW-2 MODEL WERE COMPLETED FROM ORIGINAL FACTORY BLUEPRINTS THROUGH THE COOPERATION AND RESEARCH OF THOMAS G. FOXWORTH

PLATE 2 of 2

DRAWING No. 4-31-A

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**GENERAL SPECIFICATIONS**

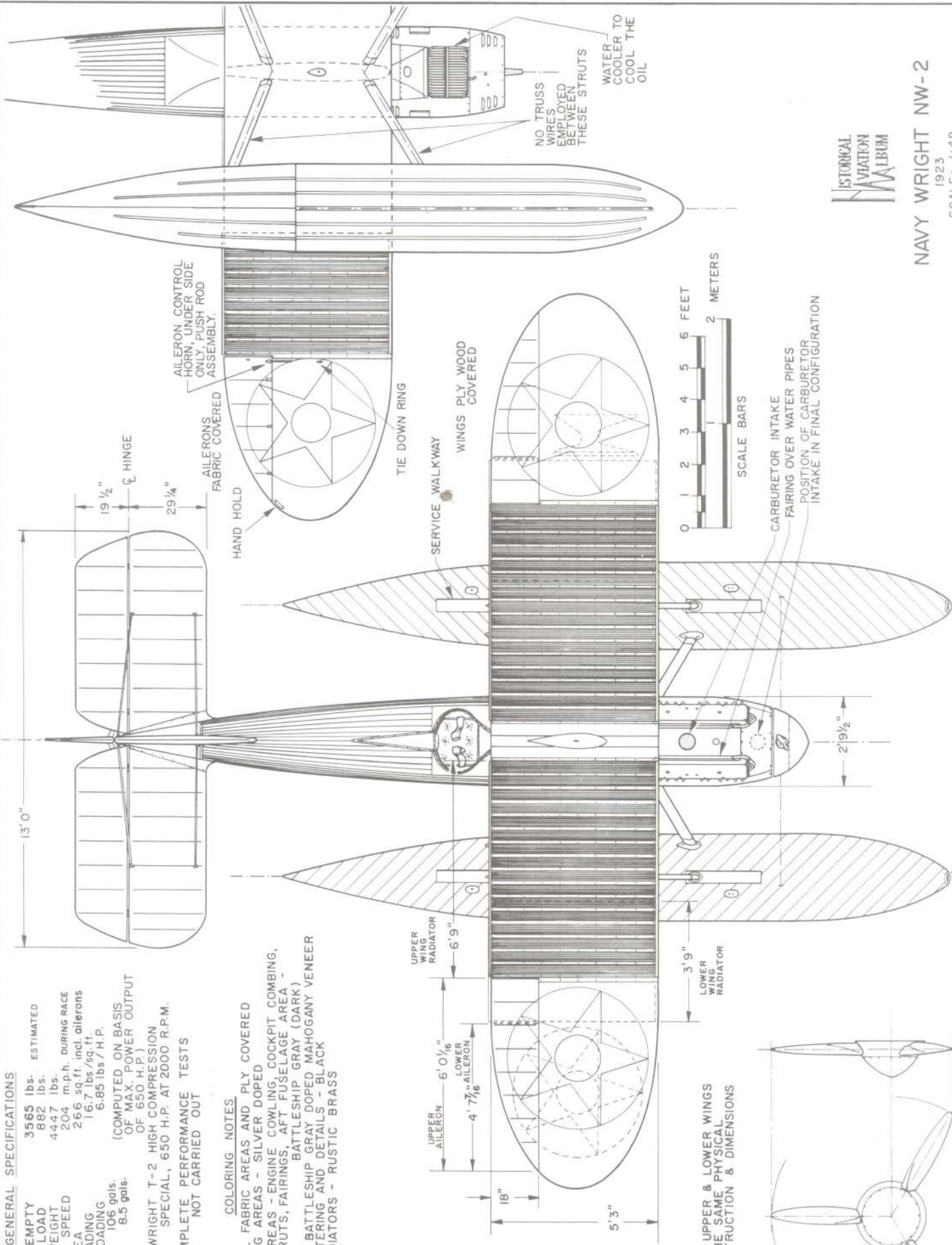
WEIGHT EMPTY 3565 lbs. ESTIMATED  
 USEFUL LOAD 882 lbs.  
 GROSS WEIGHT 4447 lbs.  
 MAXIMUM SPEED 204 m.p.h. DURING RACE  
 WING AREA 266 sq.ft. incl. ailerons  
 WING LOADING 16.7 lbs./sq.ft.  
 POWER LOADING 6.85 lbs / H.P.  
 FUEL CAP. 106 gals.  
 OIL CAP. 8.5 gals.  
 (COMPUTED ON BASIS OF MAX. POWER OUTPUT OF 650 H.P.)

POWER - WRIGHT T-2 HIGH COMPRESSION SPECIAL, 650 H.P. AT 2000 R.P.M.

COMPLETE PERFORMANCE TESTS NOT CARRIED OUT

**COLORING NOTES**

OVER ALL FABRIC AREAS AND PLY COVERED WING AREAS - SILVER DOPED METAL AREAS - ENGINE COWLING, COCKPIT COMBING, STRUTS, FAIRINGS, AFT FUSELAGE AREA - BATTLESHIP GRAY (DARK) FLOATS - BATTLESHIP GRAY DOPED MAHOGANY VENEER ALL LETTERING AND DETAILS - BLACK WING RADIATORS - RUSTIC BRASS



**NAVY WRIGHT NW-2**

1923

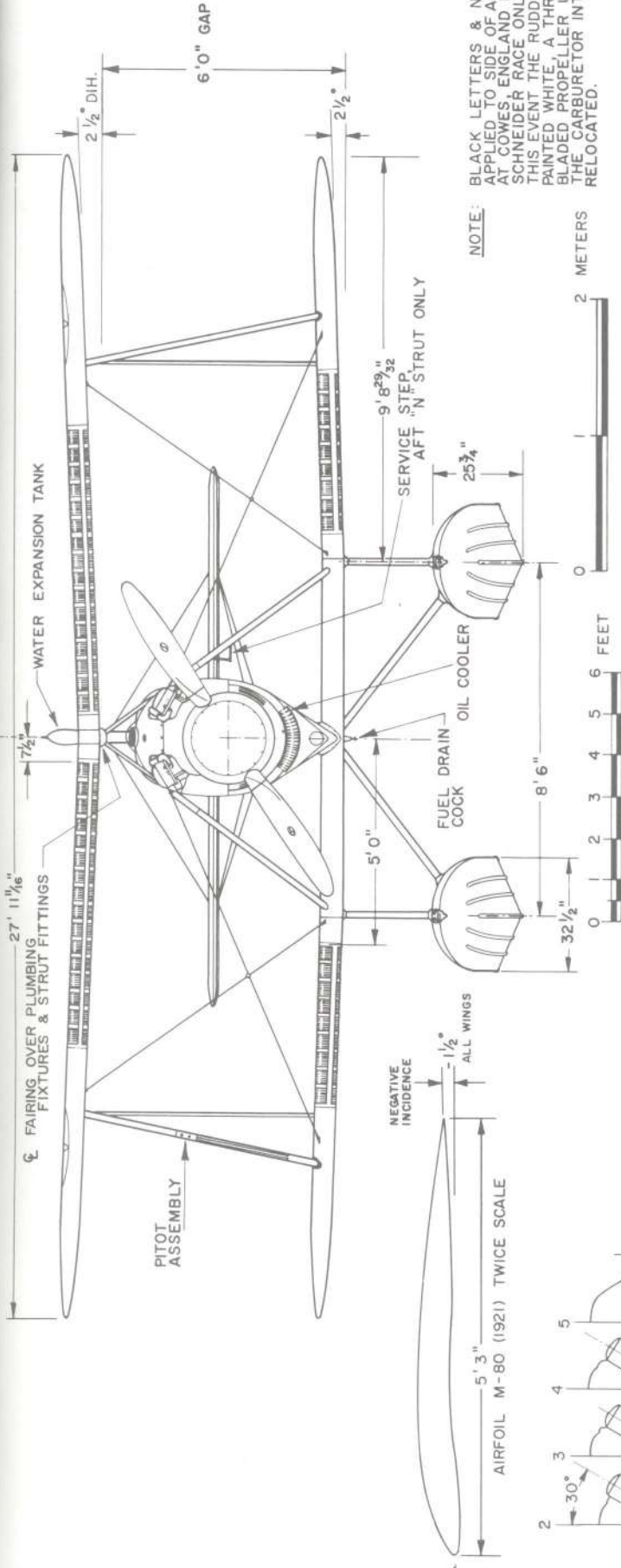
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DRAWN BY: PAUL R. MATT  
 FROM ORIGINAL MATERIAL SUPPLIED BY THOMAS G. FOXWORTH

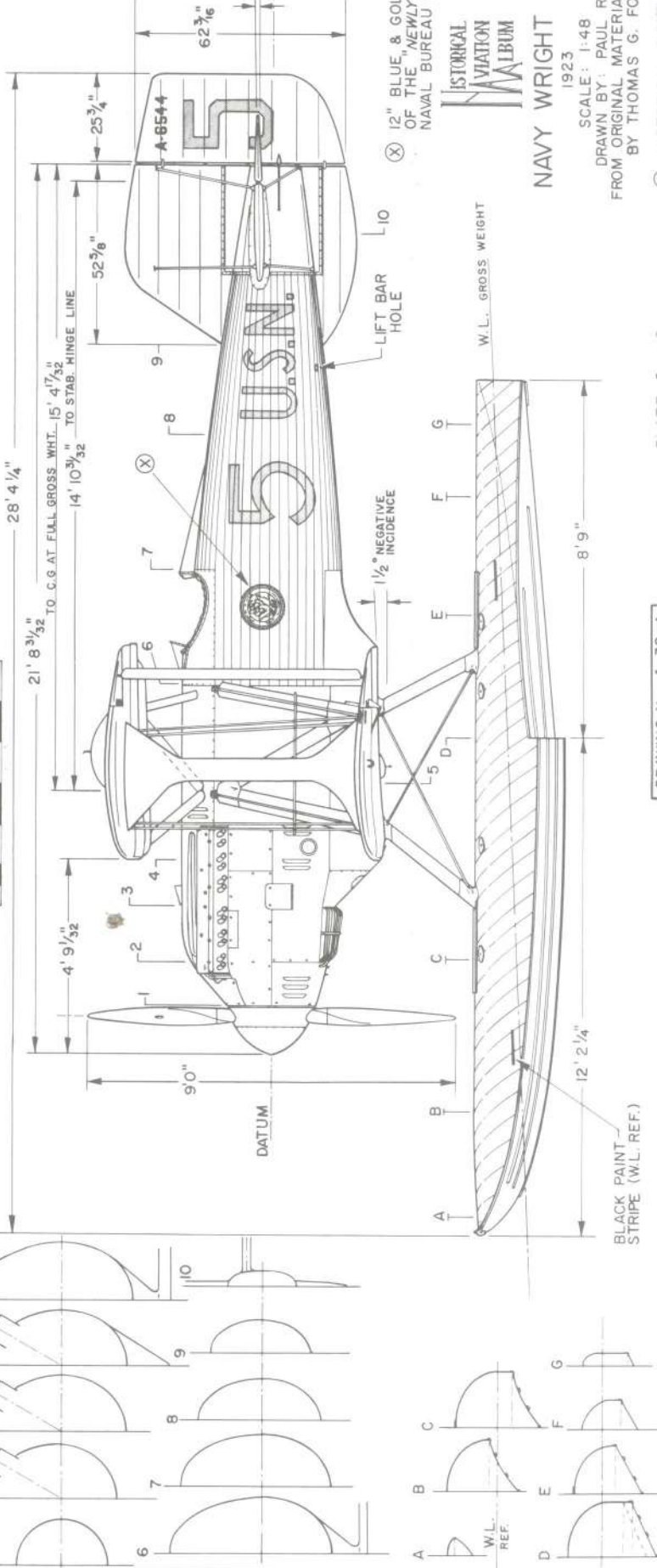
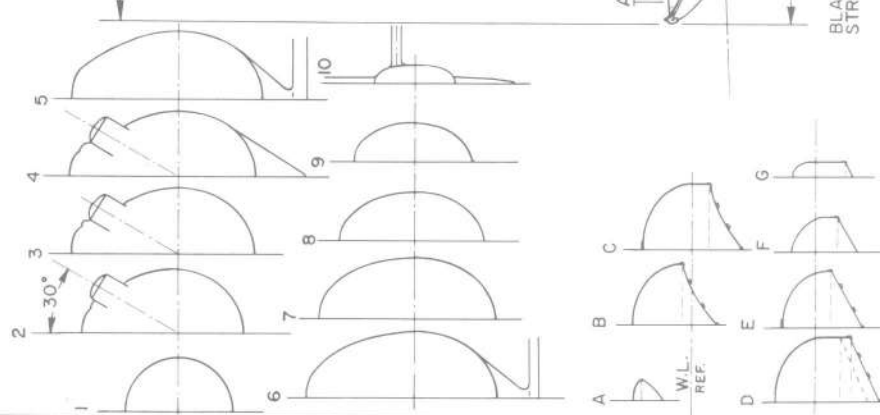
27' 11 1/16" (Overall length)

7 1/2" (Propeller diameter)

CL FAIRING OVER PLUMBING



**NOTE:** BLACK LETTERS & NUMBERS APPLIED TO SIDE OF AIRCRAFT AT COCKPIT ENGINE AND FOR THE SCHNEIDER RACE ONLY. FOR THIS EVENT THE RUDDER WAS PAINTED WHITE, A THREE BLADED PROPELLER USED & THE CARBURETOR INTAKE RELOCATED.



⊗ 12" BLUE & GOLD EMBLEM OF THE "NEWLY" FORMED NAVAL BUREAU OF AERONAUTICS

**HISTORICAL AVIATION ALBUM**

**NAVY WRIGHT NW-2**

1923

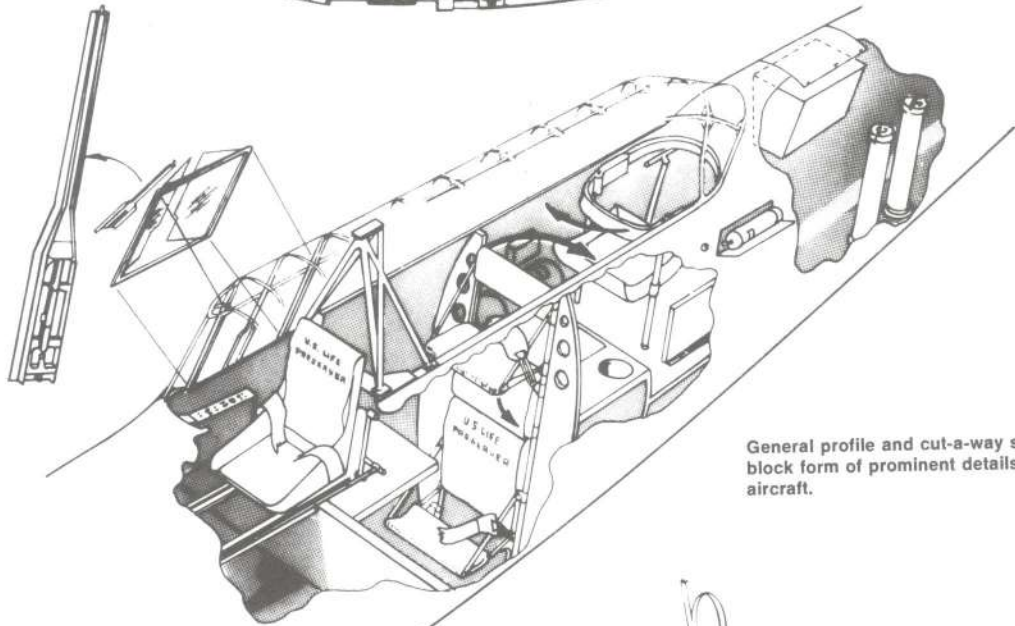
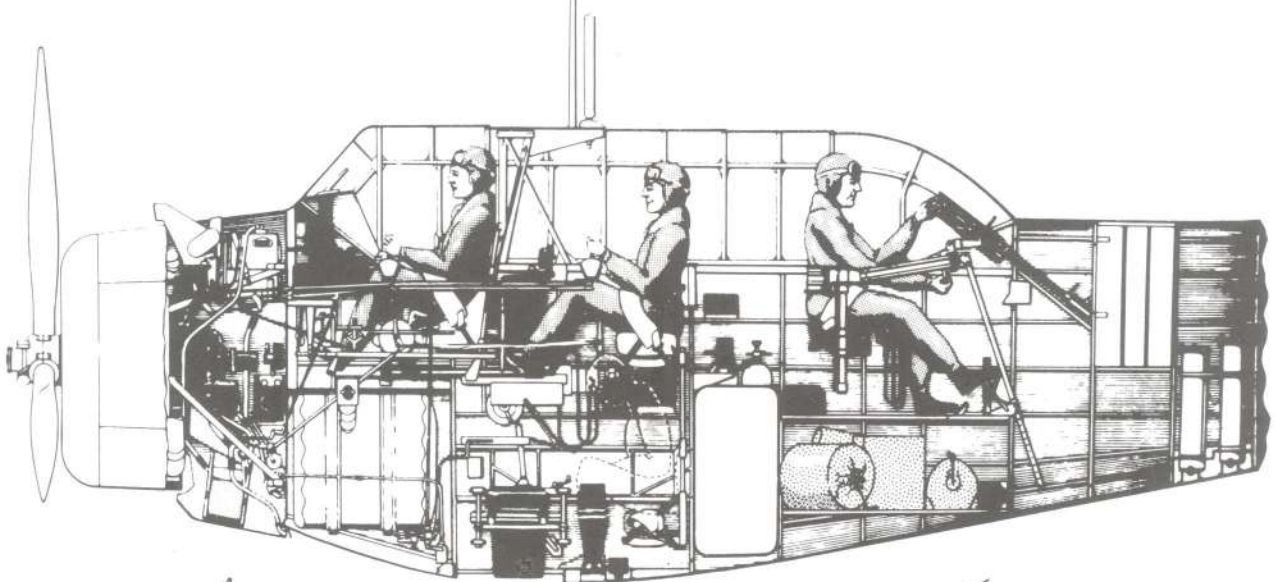
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DRAWN BY: PAUL R. MATT

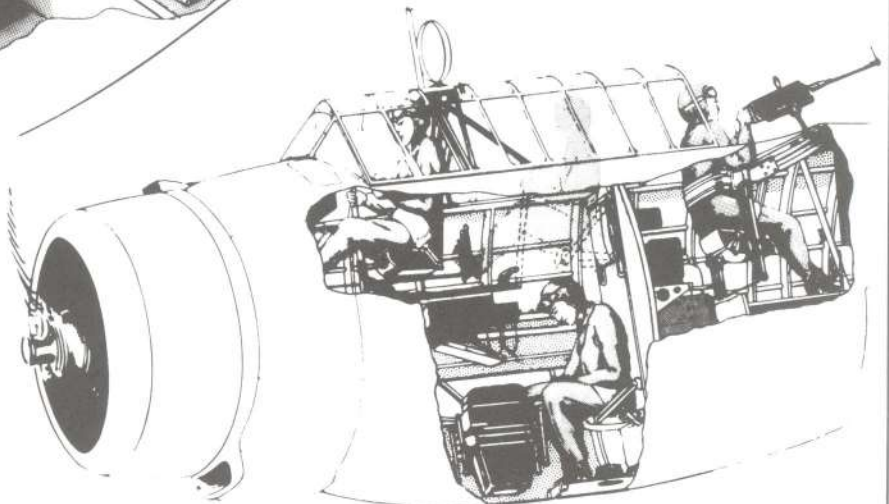
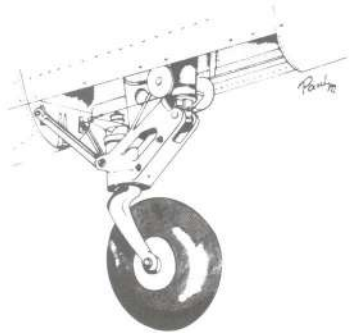
FROM ORIGINAL MATERIAL SUPPLIED BY THOMAS G. FOXWORTH

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# North American O-47A

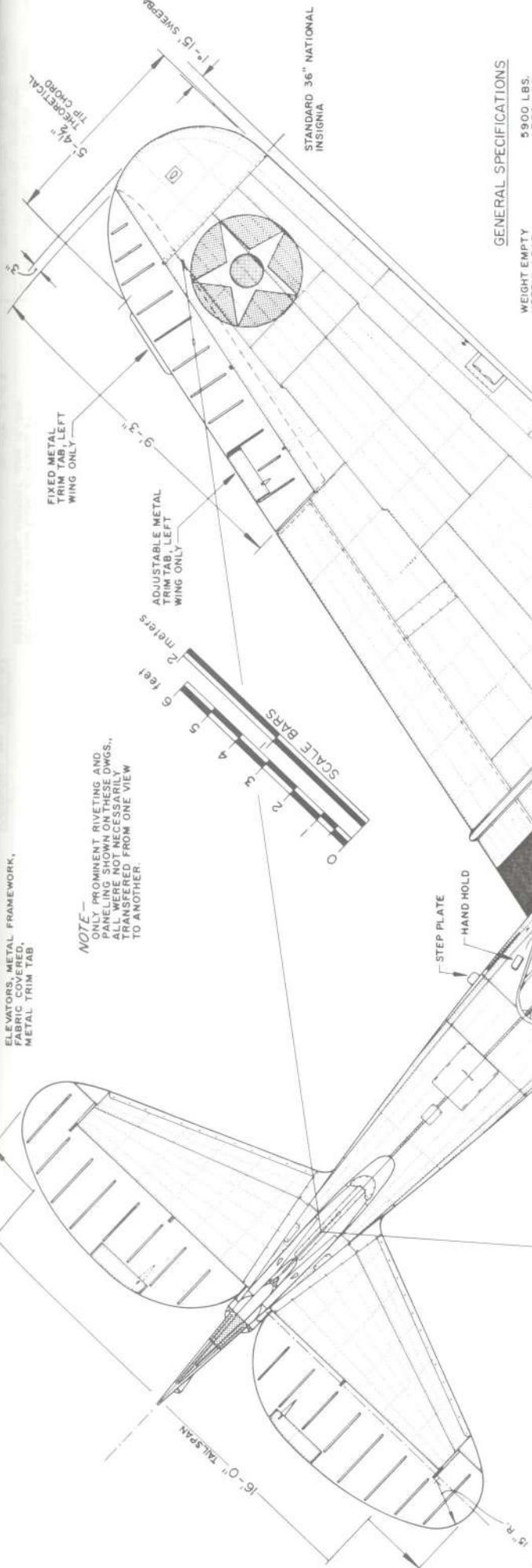
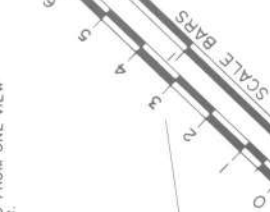


General profile and cut-a-way sketches in block form of prominent details. NAA O-47 aircraft.



ELEVATORS, METAL FRAMEWORK,  
ELEVATOR SURFACES,  
METAL TRIM TAB

**NOTE**— PROMINENT RIVETING AND  
ONLY PROMINENT RIVETING  
SHOULD BE SHOWN IN THE  
DRAWING. ALL WERE NOT NECESSARILY  
TRANSFERRED FROM ONE VIEW  
TO ANOTHER.



STANDARD 36" NATIONAL  
INSIGNIA

**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 5900 LBS.  
USEFUL LOAD 1736 LBS.  
TOTAL WEIGHT 7636 LBS.  
TOP SPEED 4,000 FT. 220.5 MPH  
OPERATING SPEED 2100 RPM 1840 RPM  
RANGE AT 7% THROTTLE 197 MPH  
LANDING SPEED 640 MILES  
CROSSWIND SPEED 175.6 MPH  
WING AREA (WINGS ONLY) 313.6 SQ. FT.  
WING LOADING 21.6 LBS./SQ. FT.  
POWER LOADING 9.4 LBS./HP  
SERVICE CEILING 23,200 FT.  
ABSOLUTE CEILING 24,600 FT.

POWER: WRIGHT R-1B20-49 "CYCLONE"  
RATINGS - S.L. 805 HP at 2100 RPM  
835 HP, 3900 FT. at 2100 RPM  
975 HP, 5000 FT. at 2200 RPM  
(TAKEOFF MAXIMUM)

COMPRESSION RATIO 6.45:1  
BLOWER RATIO 7:1

HAMILTON STANDARD HYDROMATIC CONSTANT SPEED  
PROPELLER, REDUCTION RATIO 16:11

HORSESHOE "U"  
GUN MOUNT, ONE  
30 CAL. FLEXIBLE  
BROWNING M-2 GUN,  
NORMAL ARMAMENT,  
WITH 600 ROUNDS.

**COLORING NOTES**

ENTIRE AIRCRAFT HIGHLY BUFFED,  
AND POLISHED NATURAL ALUMINUM,  
INTERIOR: GREEN ZINC CHROMATE,  
DETAILING BLACK OR AS NOTED

**NORTH AMERICAN O-47 PRODUCTION  
AND MILITARY SERIAL NUMBERS**

XO-47 (GA-15) 1	BUILT	A.C. 35-145
O-47A (NA-29) 64	A.C. 37-260 / 323	
45	N.G. 37-324 / 318	
48	N.G. 38-271 / 318	
7	A.C. 38-319 / 325	
O-47B (NA-91) 24	A.C. 39-065 / 088	
50	N.G. 39-089 / 138	
QUANTITY	238	

FUEL TANKS, 3 TANKS IN EACH  
WING STUB, 45 GALS. TOTAL  
PER WING

FLAT ANTI-GLARE  
BLACK

COCKPIT -  
WARM AIR -  
COOL AIR MIXING  
CHAMBER

.30 CAL. FIXED BROWNING MACHINE GUN  
200 ROUNDS. DOTTED LINE INDICATES  
ALUMINUM BARRELL COVER

MY SINCERE APPRECIATION IS EXTENDED TO  
THE REV. BOARDMAN C. REED FOR HIS  
PERSONAL INTEREST AND HELP IN THE  
PREPARATION OF THESE DRAWINGS AND  
RELATED TECHNICAL FACTS REGARDING  
THE O-47 TYPE AIRCRAFT.



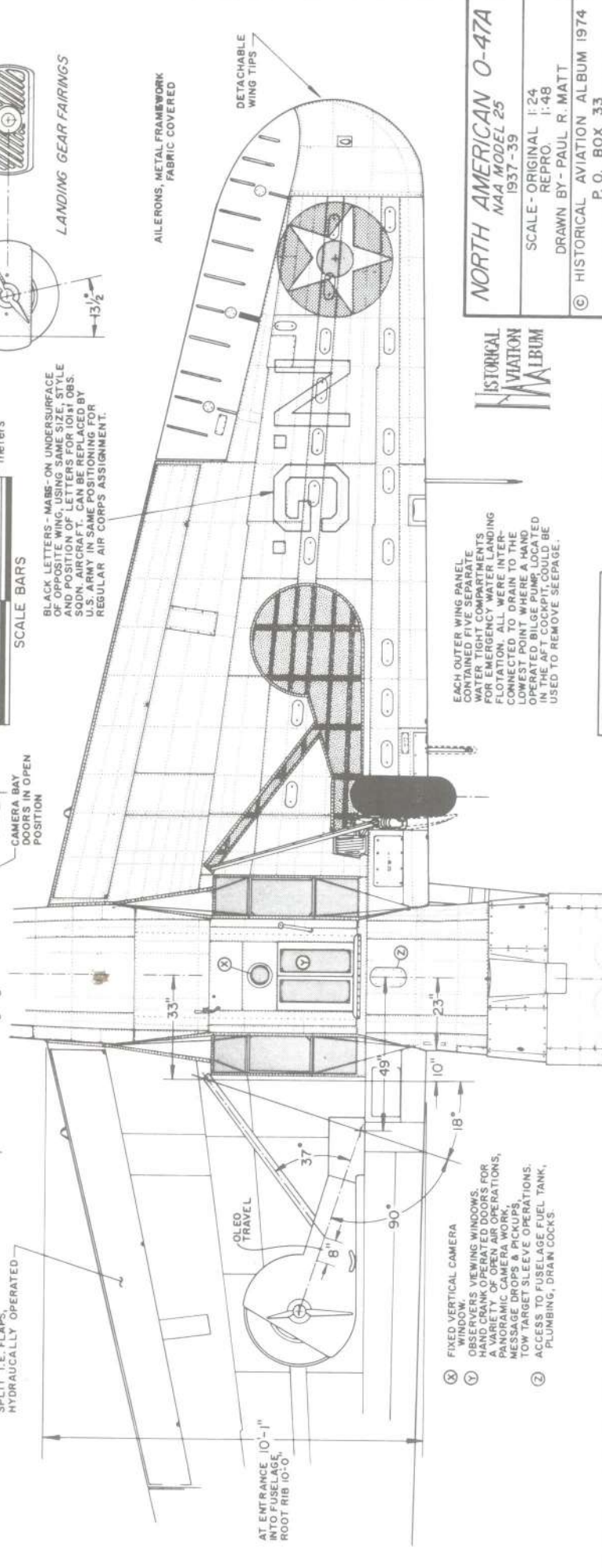
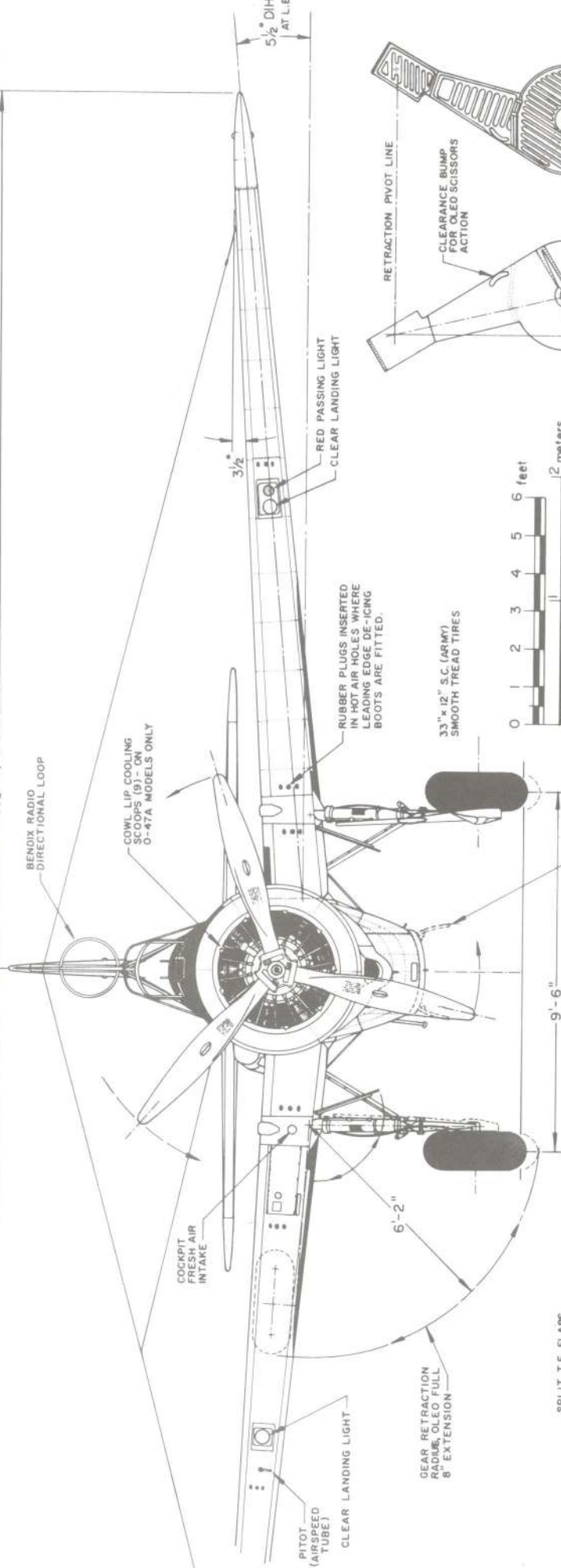
**NORTH AMERICAN O-47A**  
NAA MODEL 25  
1937-39

SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY - PAUL R. MATT

© HISTORICAL AVIATION ALBUM 1974  
P. O. BOX 33  
TEMPLE CITY, CALIF. 91780



46'-4" WINGSPAN



EACH OUTER WING PANEL CONTAINED FIVE SEPARATE FLOWMETERS FOR EMERGENCY WATER FLOTATION. ALL WERE INTERCONNECTED TO DRAIN TO THE LOWEST POINT WHERE A HAND OPERATED BILGE PUMP LOCATED IN THE AFT COCKPIT COULD BE USED TO REMOVE SEEPAGE.

- (X) FIXED VERTICAL CAMERA WINDOW.
- (Y) OBSERVERS VIEWING WINDOWS. HAND CRANK OPERATED DOORS FOR VARIETY OF OPEN AIR OPERATIONS, PARACHUTE PACKS, MESSAGE DROPS PICKUPS.
- (Z) TOW TARGET SLEEVE OPERATIONS. ACCESS TO FUSELAGE FUEL TANK, PLUMBING, DRAIN COCKS.

**NORTH AMERICAN O-47A**  
 NAA MODEL 25  
 1937-39

SCALE - ORIGINAL 1:24  
 REPRO. 1:48

DRAWN BY - PAUL R. MATT

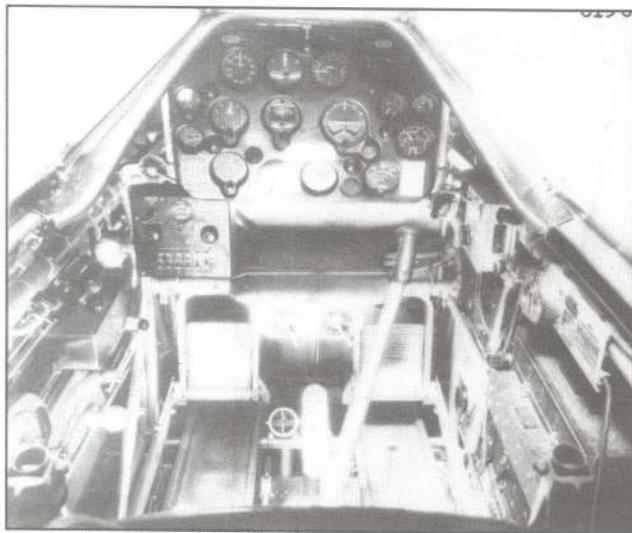
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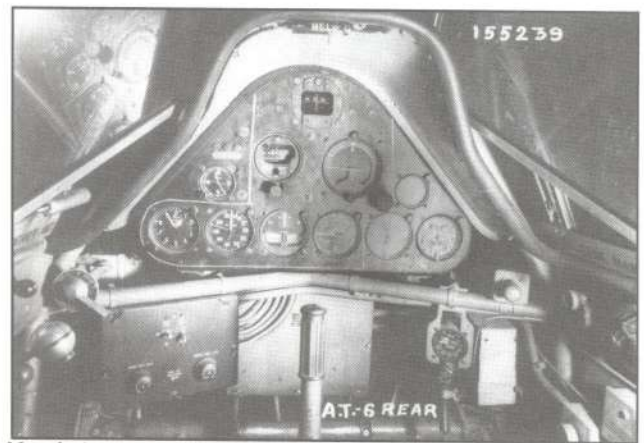
# North American AT-6D "Texan"



*North American AT-6D, September 6, 1948.*



*North American BT-9C. Front cockpit.*

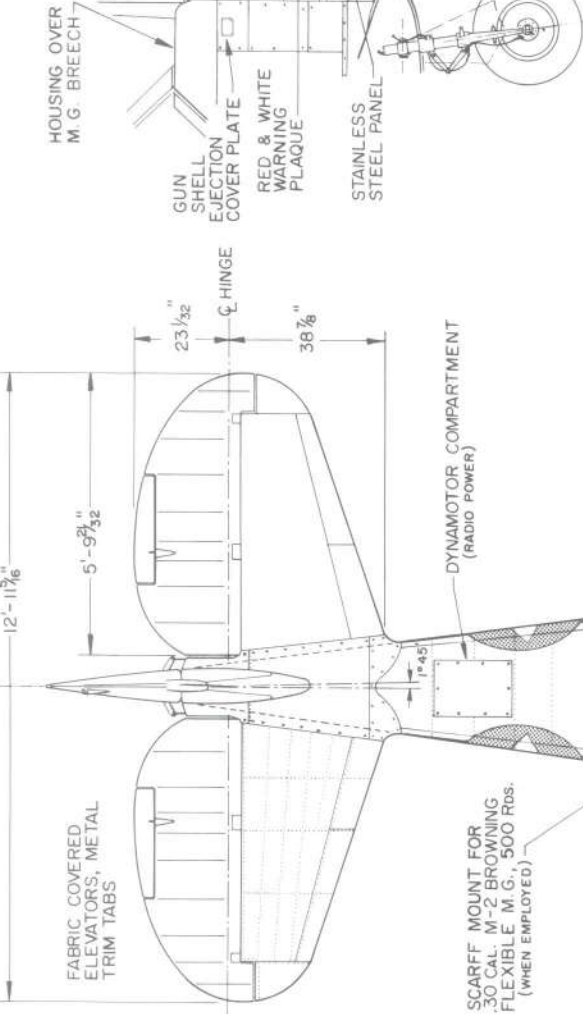
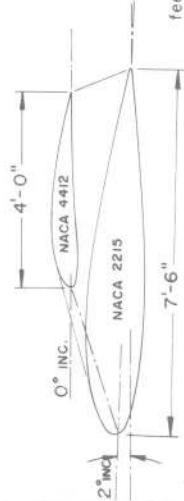


*North American AT-6. Rear cockpit.*

**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 4250 lbs.  
 USEFUL LOAD 905 lbs.  
 GROSS WEIGHT 5155 lbs.  
 TOP SPEED 210 mph  
 CRUISING SPEED 146 mph  
 LANDING SPEED (WITH FLAPS) 67 mph  
 RANGE (AT 70% POWER) 629 miles  
 WING AREA (INCL. AILERONS) 253.73 sq. ft.  
 WING LOADING 22.2 lbs./sq. ft.  
 SERVICE CEILING 9,377 lbs./HP  
 24,700 ft.  
 FUEL CAPACITY (2 WING TANKS) 110 U.S. GALS.  
 OIL CAPACITY (INCL. EXPANSION SPACE - 2 GAL.) 12.2 U.S. GALS.

POWER - PRATT & WHITNEY R-1340-AN-1  
 RATED - 600 HP at 2250 RPM at S.L.  
 550 HP at 2200 RPM at 5,000 ft.  
 USING 91 OCTANE FUEL



RIGHT SIDE PROFILE, ENGINE EXHAUST DETAIL

18" DIA. SPINNER USED ON REMANUFACTURED MODEL AS T-66

BENDIX SHOCK STRUTS HAYES HYDRAULIC BRAKES

INBOARD L.G. STRUT

DYNAMOTOR COMPARTMENT (RADIO POWER)

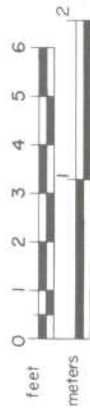
BAGGAGE COMPARTMENT

FIXED STEP

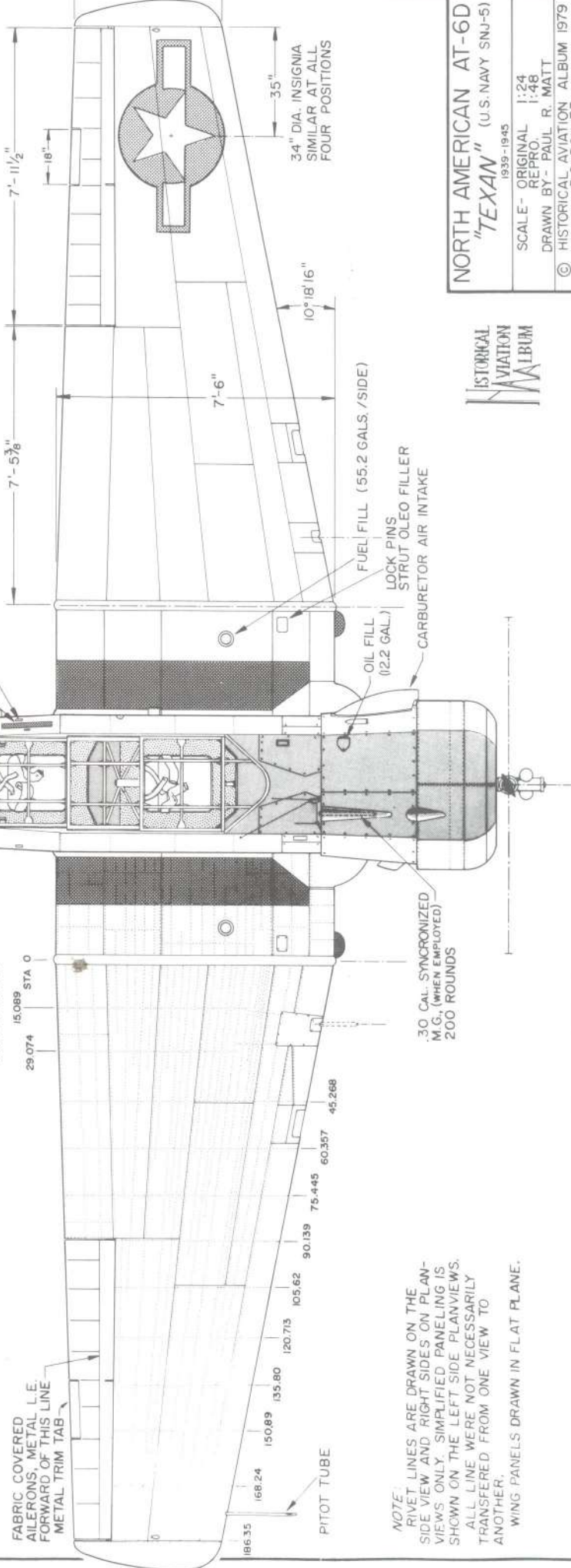
FIRE EXTINGUISHER PANEL (RED)

AIR INTAKE DOOR (REAR COCKPIT)

SCARFF MOUNT FOR 30 CAL. M-2 BROWNING FLEXIBLE M.G., 500 RDS. (WHEN EMPLOYED)



SCALE BARS



NOTE: RIVET LINES ARE DRAWN ON THE SIDE VIEW AND RIGHT SIDES ON PLAN-VIEWS ONLY. SIMPLIFIED PANELING IS SHOWN ON THE LEFT SIDE PLAN-VIEWS. ALL LINES WERE NOT NECESSARILY TRANSFERRED FROM ONE VIEW TO ANOTHER.

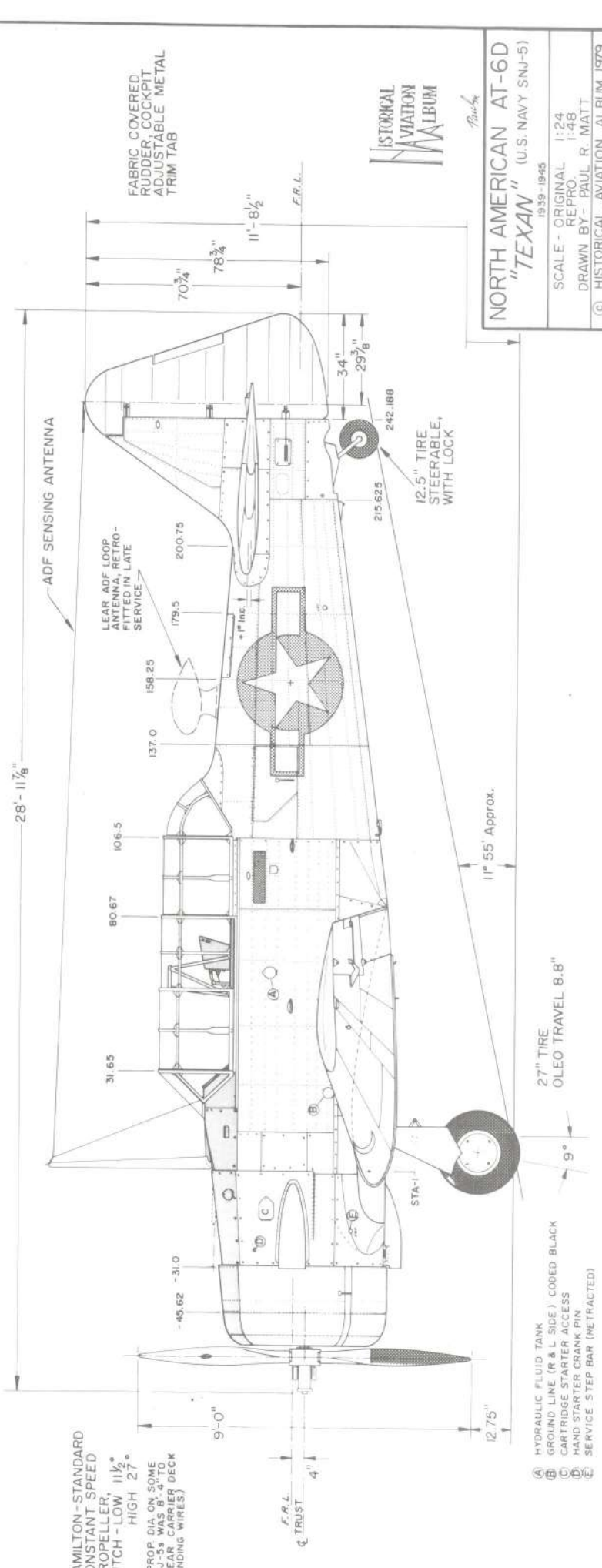
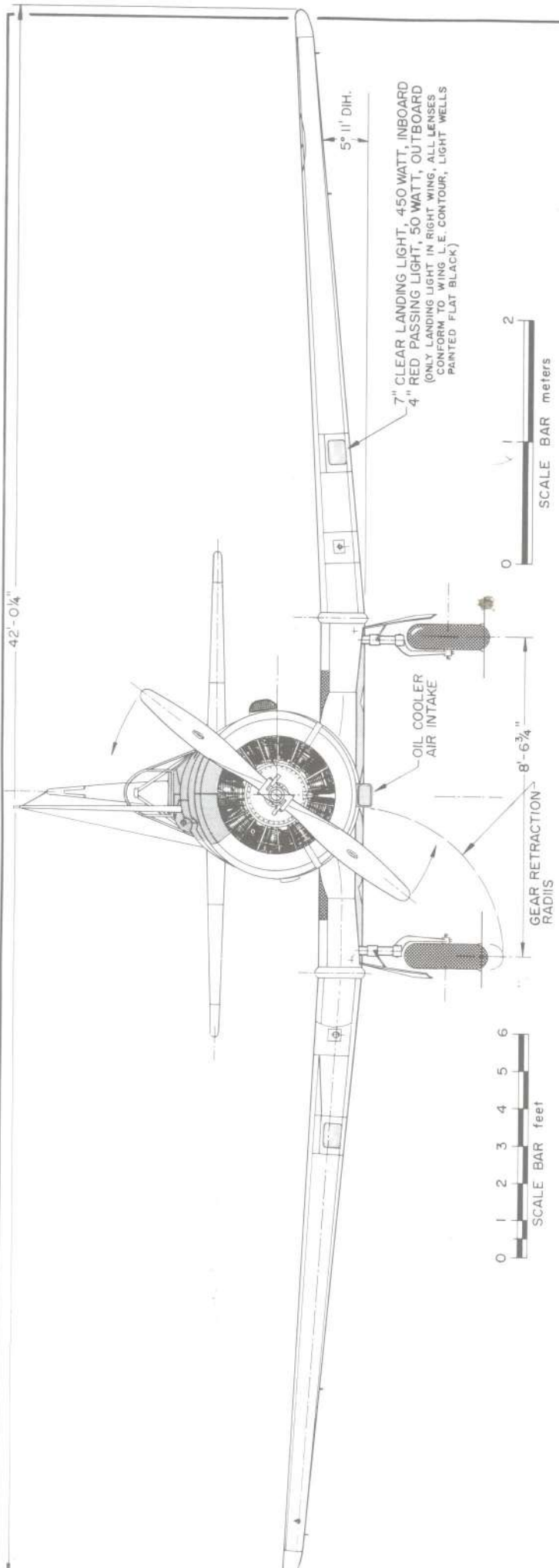
WING PANELS DRAWN IN FLAT PLANE.

NORTH AMERICAN AT-6D "TEXAN" (U.S. NAVY SNJ-5) 1939-1945

SCALE - ORIGINAL 1:24  
 REPRO 1:48  
 DRAWN BY - PAUL R. MATT  
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HAMILTON-STANDARD  
CONSTANT SPEED  
PROPELLER, 11 1/2"  
HIGH 27"  
(PROP DIA. ON SOME  
NUJ-5s WAS 8'-4" TO  
LEAR CARRIER DECK  
LANDING WIRES)

- (A) HYDRAULIC FLUID TANK
- (B) GROUND LINE (R & L SIDE), CODED BLACK
- (C) CARTRIDGE STARTER ACCESS
- (D) HAND STARTER CRANK PIN
- (E) SERVICE STEP BAR (RETRACTED)

**NORTH AMERICAN AT-6D**  
**"TEXAN"** (U.S. NAVY SNUJ-5)

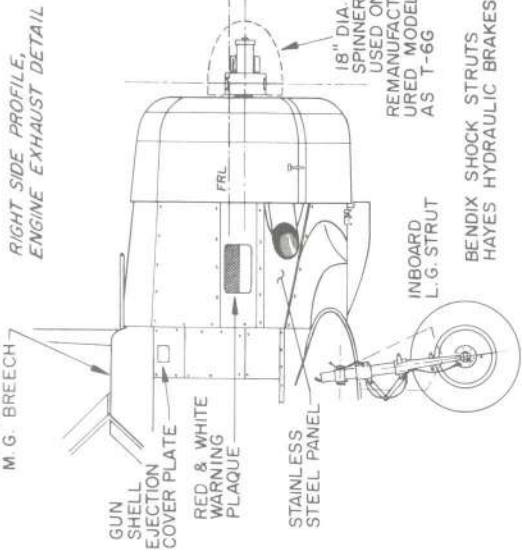
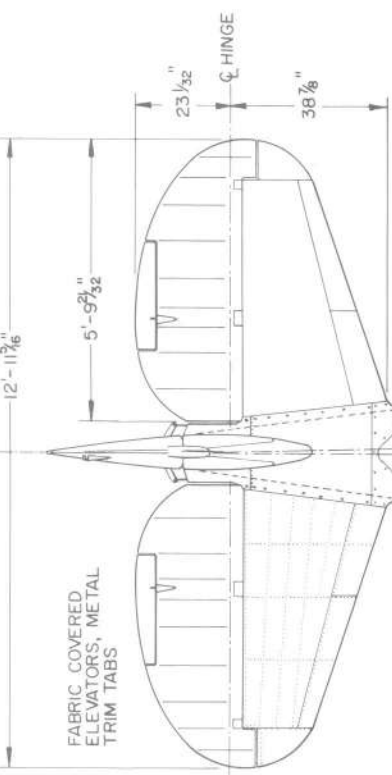
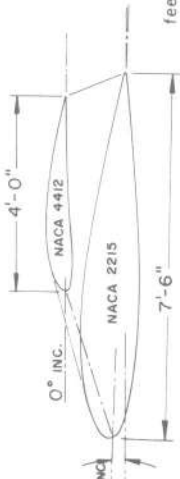


1939-1945  
SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY - PAUL R. MATT  
© HISTORICAL AVIATION ALBUM 1979  
P.O. BOX 33

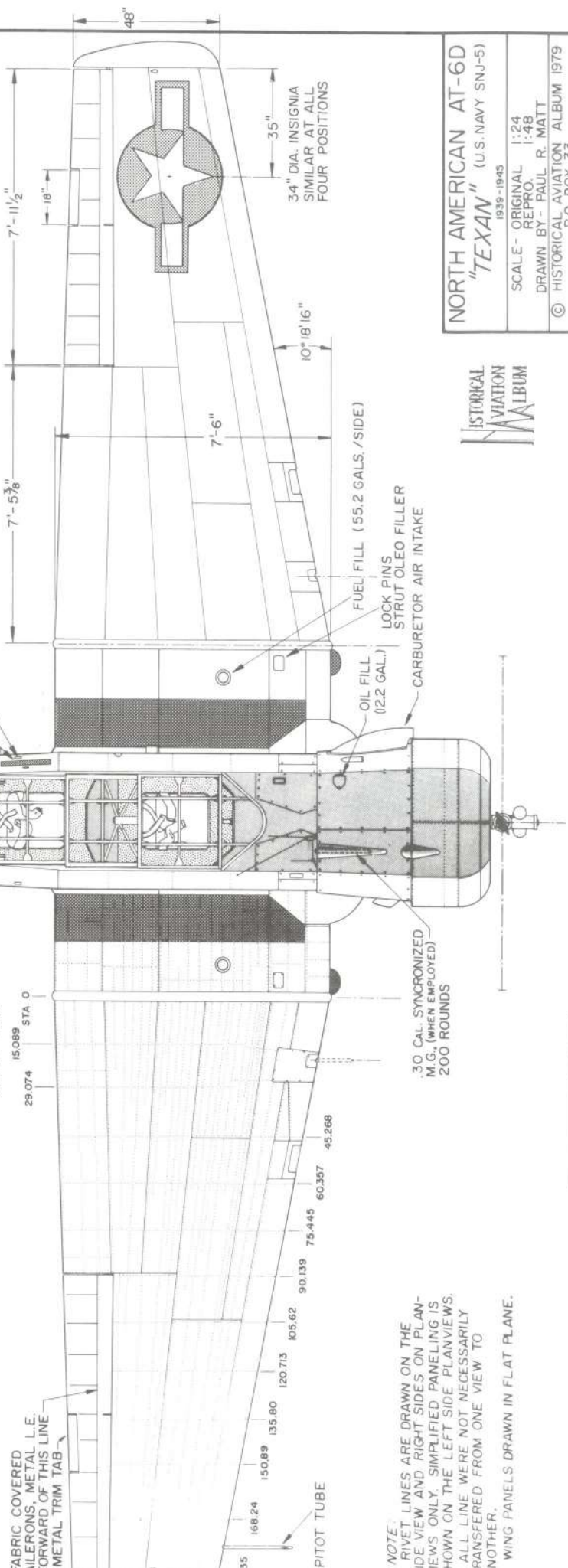
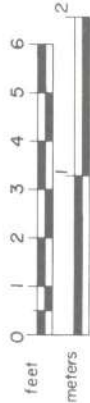
**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 4250 lbs  
 USEFUL LOAD 905 lbs  
 GROSS WEIGHT 5155 lbs  
 TOP SPEED 210 mph  
 CRUISING SPEED 146 mph  
 LANDING SPEED (WITH FLAPS) 67 mph  
 RANGE (AT 70% POWER) 629 miles  
 WING AREA (INCL. AILERONS) 253.73 sq. ft.  
 WING LOADING 22.2 lbs/sq. ft.  
 POWER LOADING 9.37 lbs/HP  
 SERVICE CEILING 24,700 ft.  
 FUEL CAPACITY (2 WING TANKS) 110 U.S. GALS.  
 OIL CAPACITY (INCL. EXPANSION SPACE - 2 GAL.) 12.2 U.S. GALS.

POWER - PRATT & WHITNEY R-1340-AN-1  
 RATED - 600 HP at 2250 RPM at S.L.  
 550 HP at 2200 RPM at 5,000 ft.  
 USING 91 OCTANE FUEL



SCARFF MOUNT FOR .30 CAL. M-2 BROWNING FLEXIBLE M.G., 500 Rds. (WHEN EMPLOYED)



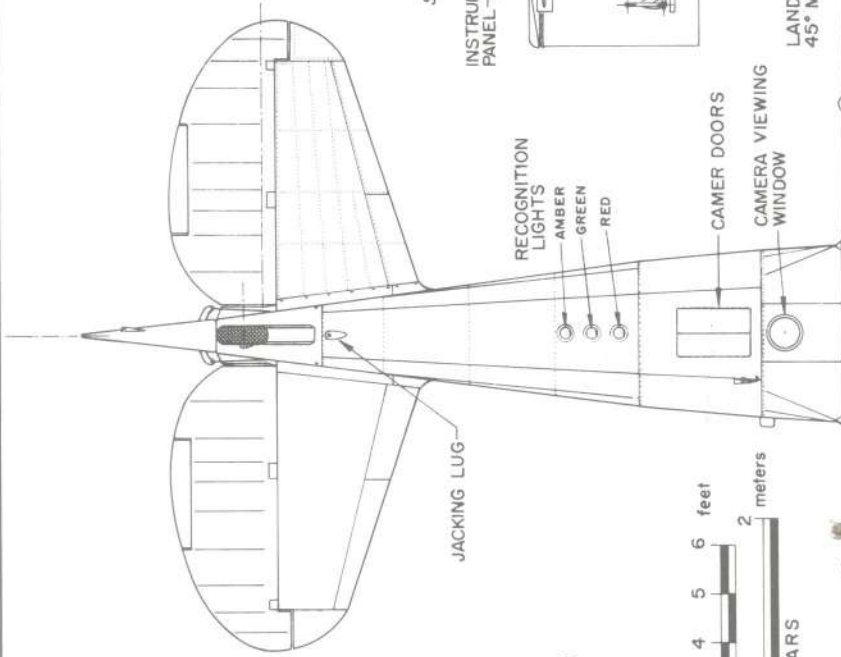
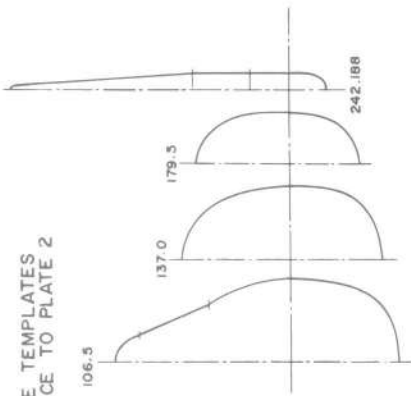
**NOTE:**  
 RIVET LINES ARE DRAWN ON THE  
 LEFT SIDE VIEW AND RIGHT SIDES ON PLAN-  
 SIDE VIEW ONLY. SIMPLIFIED PANELING IS  
 SHOWN ON THE LEFT SIDE PLANVIEWS.  
 ALL LINES WERE NOT NECESSARILY  
 TRANSFERRED FROM ONE VIEW TO  
 ANOTHER.  
 WING PANELS DRAWN IN FLAT PLANE.



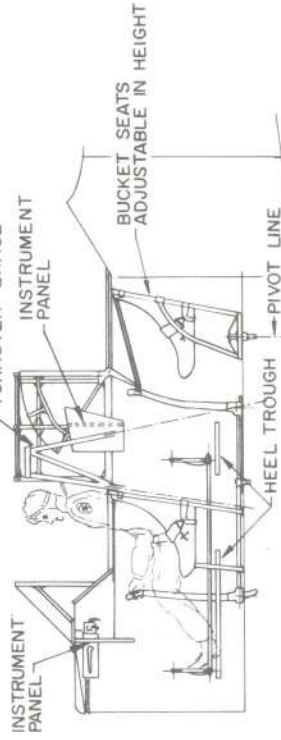
**NORTH AMERICAN AT-6D**  
 "TEXAN" (U.S. NAVY SNJ-5)  
 1939-1945

SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT  
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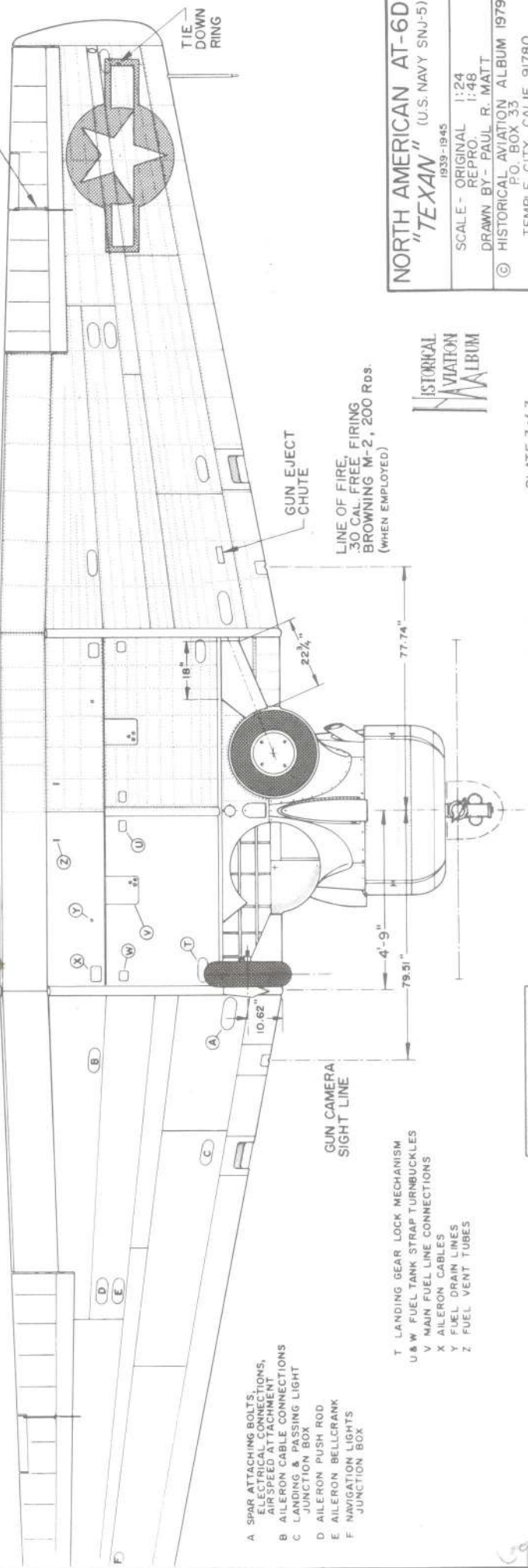
FUSELAGE TEMPLATES  
REFERENCE TO PLATE 2



SIMPLIFIED COCKPIT LAYOUT

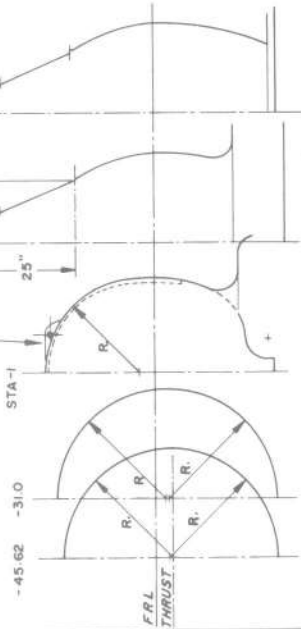


GROUND ADJUSTABLE  
TRIM TABS ON WINGS  
POSITION LOCKING ARM



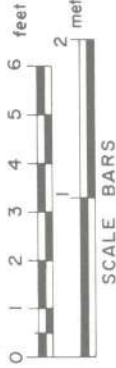
HOUSING OVER M. G.,  
RIGHT SIDE ONLY

31.65  
15 1/8  
7 1/8  
25  
-45.62 STA-1  
FBL THRUST



**COLORING NOTES**

ENTIRE AIRCRAFT NATURAL ALUMINUM  
FABRIC COVERED CONTROL SURFACES - SILVER DOPED  
ANTI-GLARE FUSELAGE DECKING - EARLY, FLAT BRONZE-GREEN  
LATE, FLAT BLACK  
INTERIOR - ZINC-CHROMATE YELLOW-GREEN PRIMER  
INSTRUMENT PANELS - BLACK CRINKLE FINISH  
SEATS & DETAILING - EARLY, FLAT BRONZE-GREEN  
LATE, FLAT BLACK



LANDING FLAPS  
45° MAX. DEFLECTION, IN  
10° INCREMENTS

- A SPAR ATTACHING BOLTS
- ELECTRICAL CONNECTIONS
- AIR SPEED TUBE CONNECTIONS
- B AIRLON CABLE CONNECTIONS
- C LANDING GEAR JACKING BOX
- D AIRLON PUSH ROD
- E AIRLON BELLCRANK
- F NAVIGATION LIGHTS JUNCTION BOX

- T LANDING GEAR LOCK MECHANISM
- U & W FUEL TANK STRAP TURNBUCKLES
- V MAIN FUEL LINE CONNECTIONS
- X AIRLON CABLES
- Y FUEL DRAIN LINES
- Z FUEL VENT TUBES

LINE OF FIRE  
30 CAL. FREE FIRING  
BROWNING M-2, 200 Rds.  
(WHEN EMPLOYED)



**NORTH AMERICAN AT-6D**  
"TEXAN" (U.S. NAVY SNJ-5)  
1939-1945

SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY - PAUL R. MATT  
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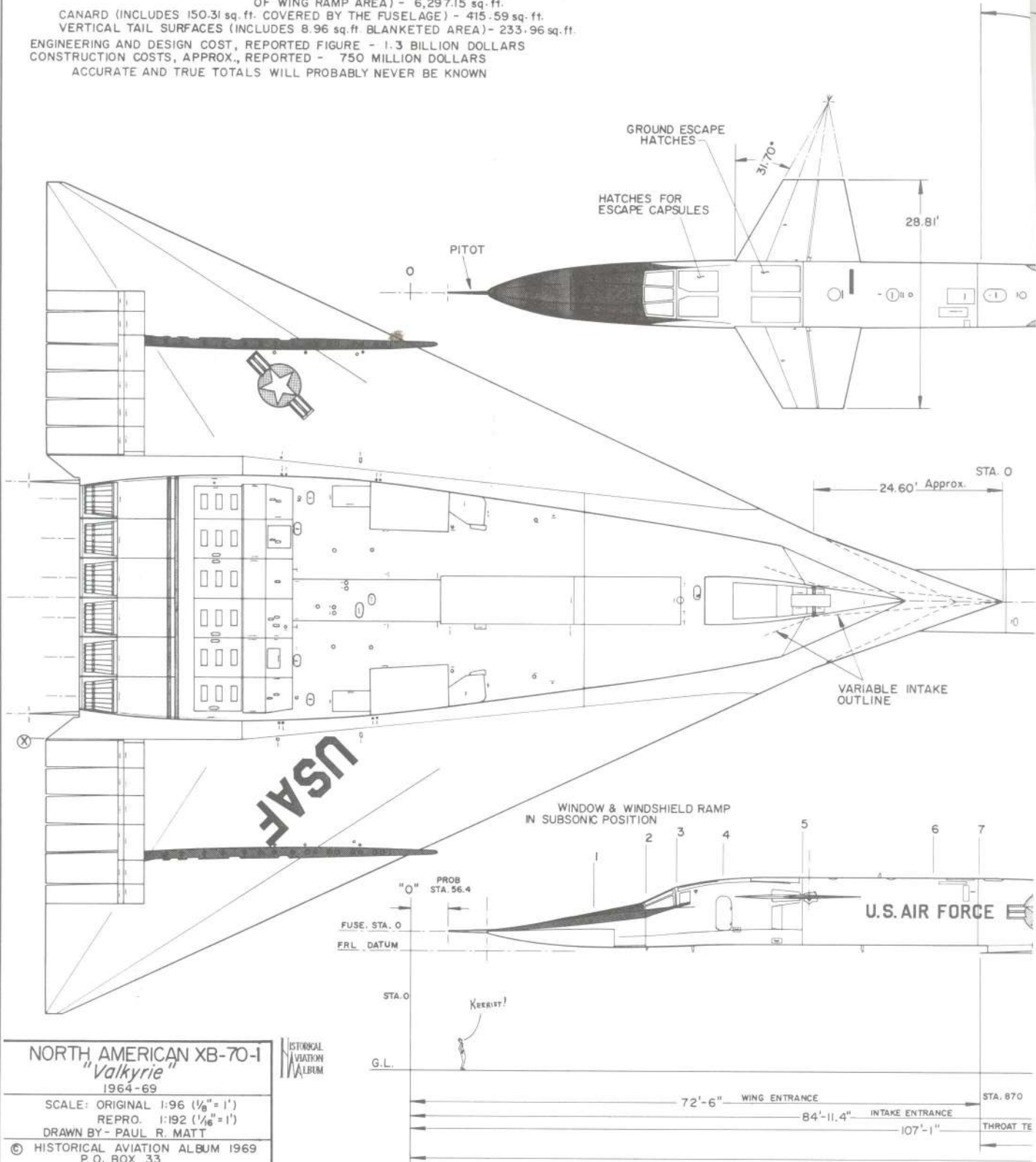
GENERAL SPECIFICATIONS AND DATA

MAXIMUM GROSS WEIGHT - 550,000 lbs.  
 TOP SPEED - MACH 3 (2,000 m.p.h.) AT 70,000 FEET  
 POWER - SIX GENERAL ELECTRIC YJ-93 TURBO JETS, 30,000 lbs. THRUST EACH  
 FUEL - 11 TANKS, 47,000 gals. TOTAL CAPACITY  
 TAKEOFF AT 500,000 lbs., 200 knots IN 7,000 feet  
 AT 400,000 lbs., 180 knots IN 4,000 feet  
 LANDING APPROACH SPEED - 270 knots  
 AREAS,

TOTAL WING (INCLUDES 2,482.34 sq. ft. COVERED BY FUSELAGE BUT NOT 33.53 sq. ft. OF WING RAMP AREA) - 6,297.15 sq. ft.  
 CANARD (INCLUDES 150.31 sq. ft. COVERED BY THE FUSELAGE) - 415.59 sq. ft.  
 VERTICAL TAIL SURFACES (INCLUDES 8.96 sq. ft. BLANKETED AREA) - 233.96 sq. ft.  
 ENGINEERING AND DESIGN COST, REPORTED FIGURE - 1.3 BILLION DOLLARS  
 CONSTRUCTION COSTS, APPROX., REPORTED - 750 MILLION DOLLARS  
 ACCURATE AND TRUE TOTALS WILL PROBABLY NEVER BE KNOWN

COLORING NOTES

ENTIRE AIRCRAFT - GLOSS WHITE  
 ENGINE BAYS AREA - NATURAL STEEL FINISH  
 TIRES - ALUMINUM PAINTED  
 ANTI-GLARE PANEL - FLAT BLACK  
 TURBO JET ENGINES - BLACK  
 ALL LETTERING - BLACK  
 WING TIP FOLD FAIRING - GLOSS BLACK  
 NATIONAL INSIGNIA - RED, WHITE & BLUE

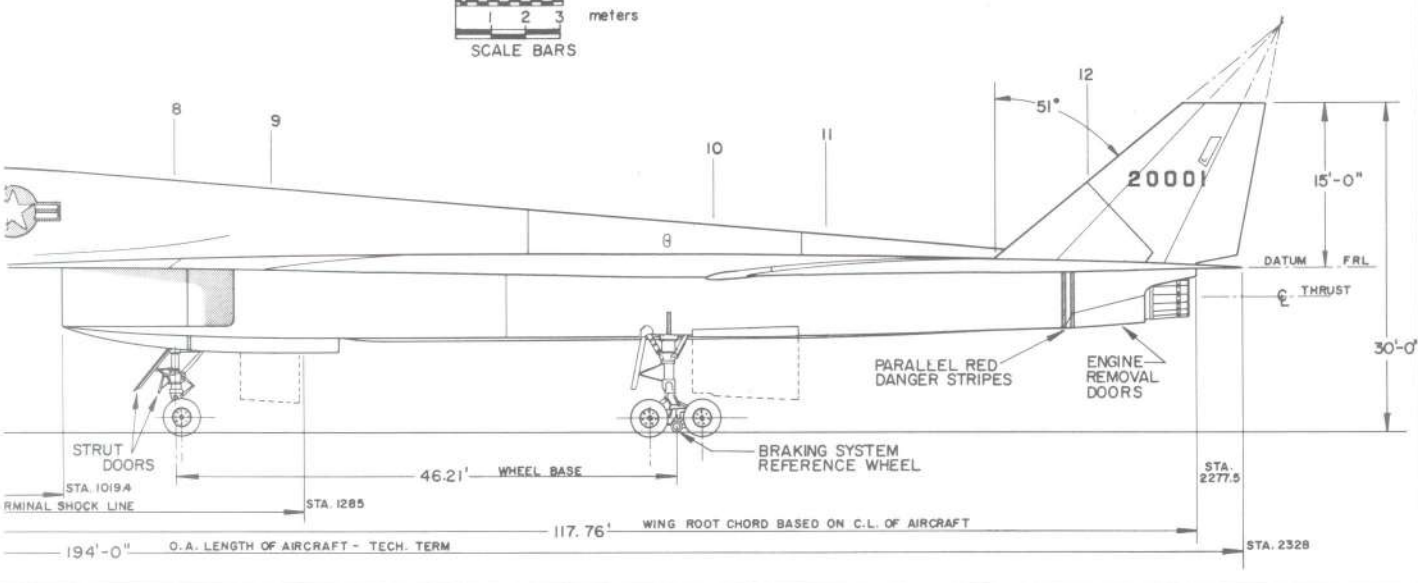
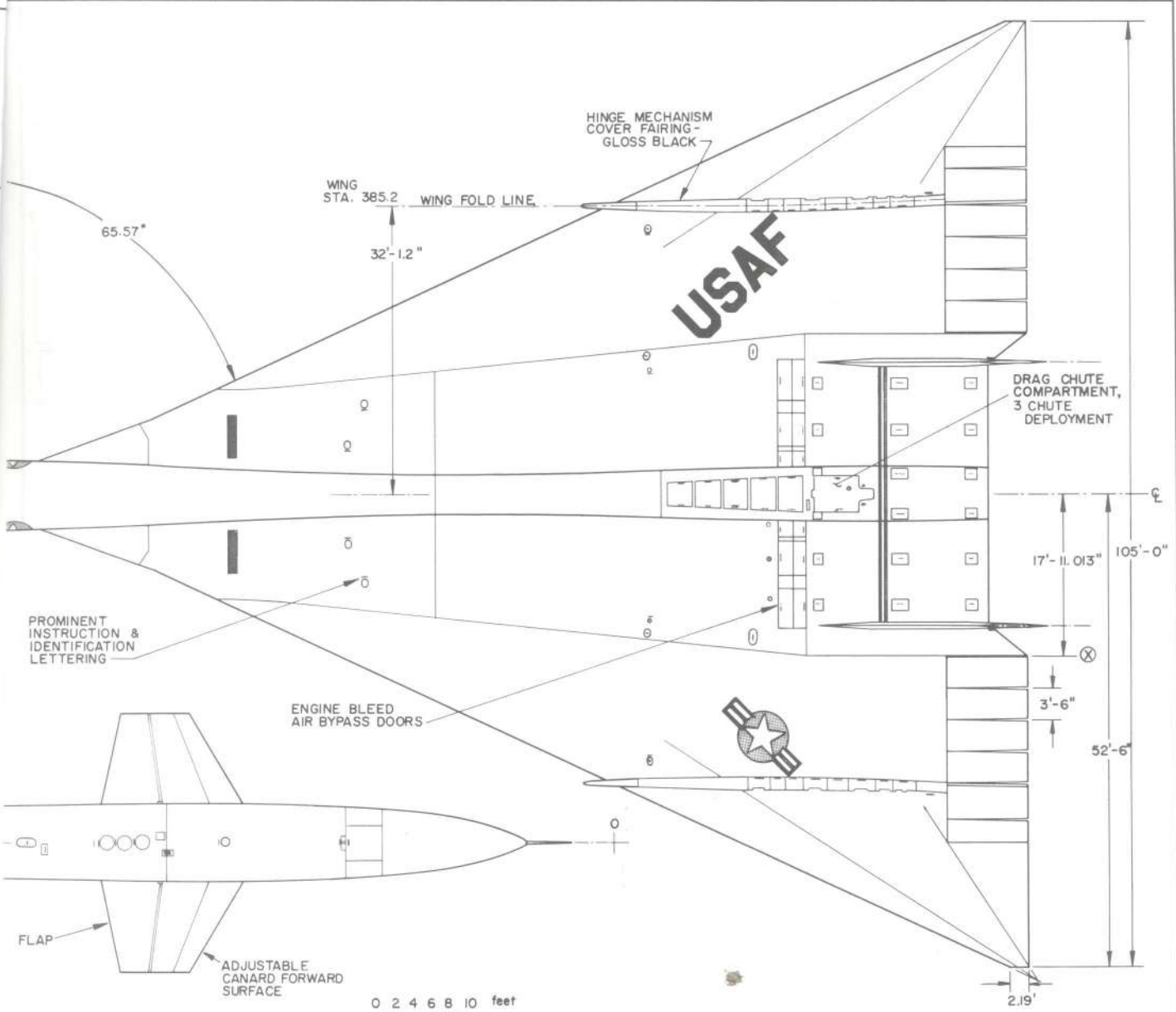


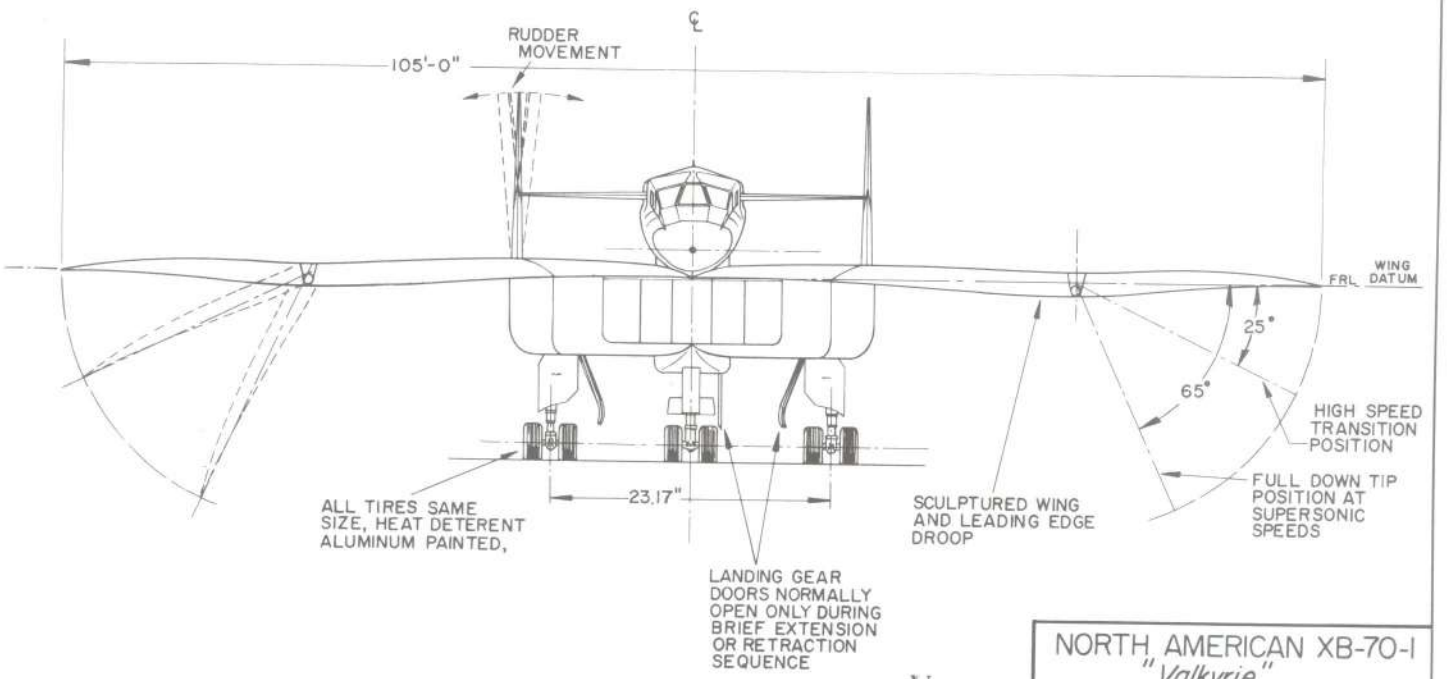
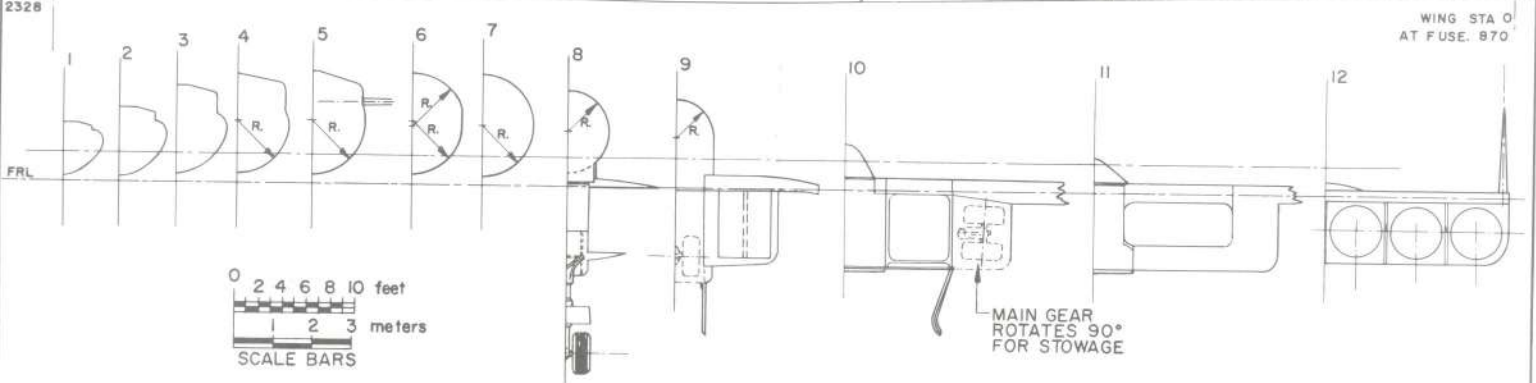
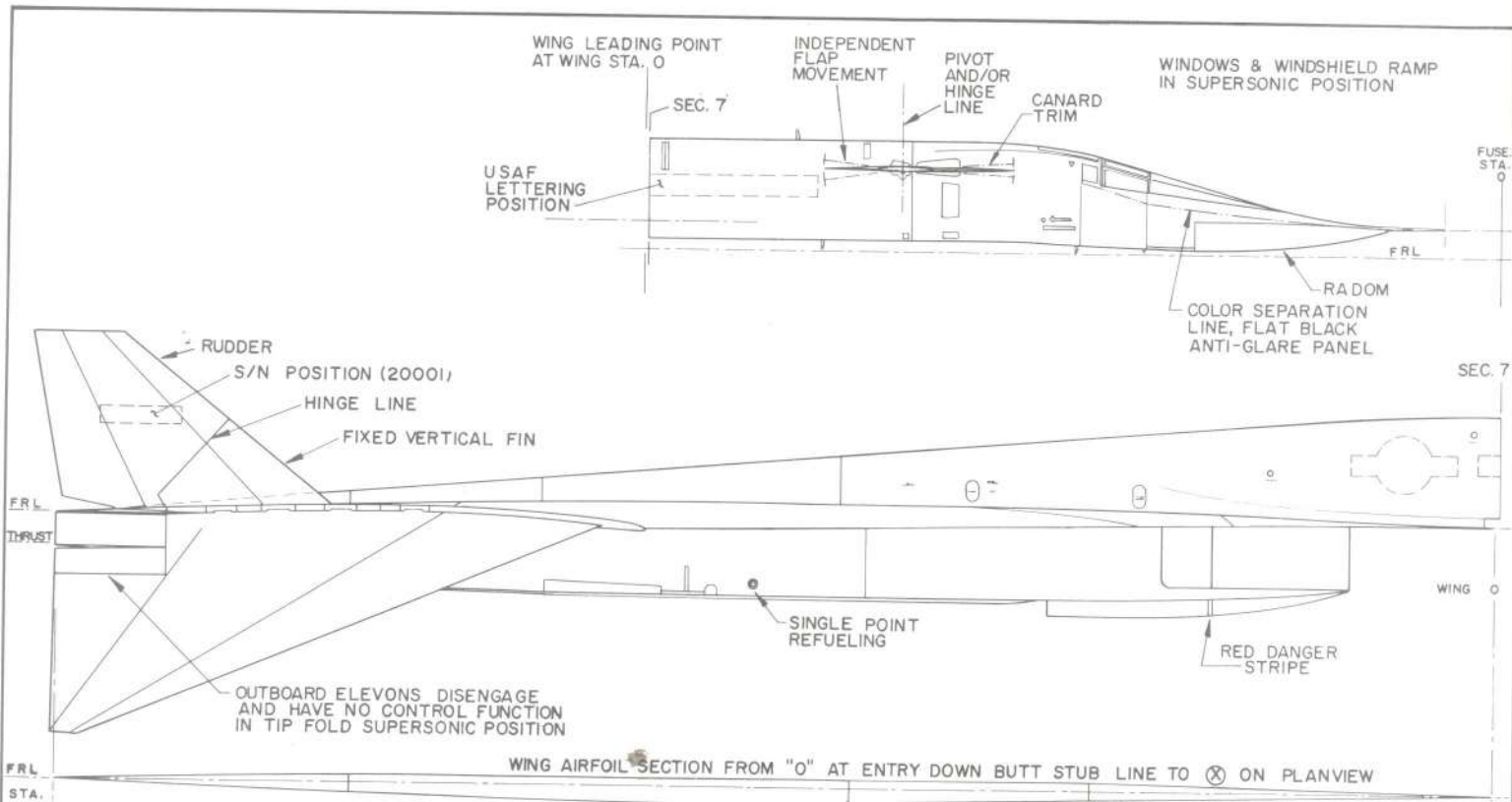
**NORTH AMERICAN XB-70-1**  
*"Valkyrie"*  
 1964-69

SCALE: ORIGINAL 1:96 (1/8" = 1')  
 REPRO. 1:192 (1/16" = 1')  
 DRAWN BY - PAUL R. MATT

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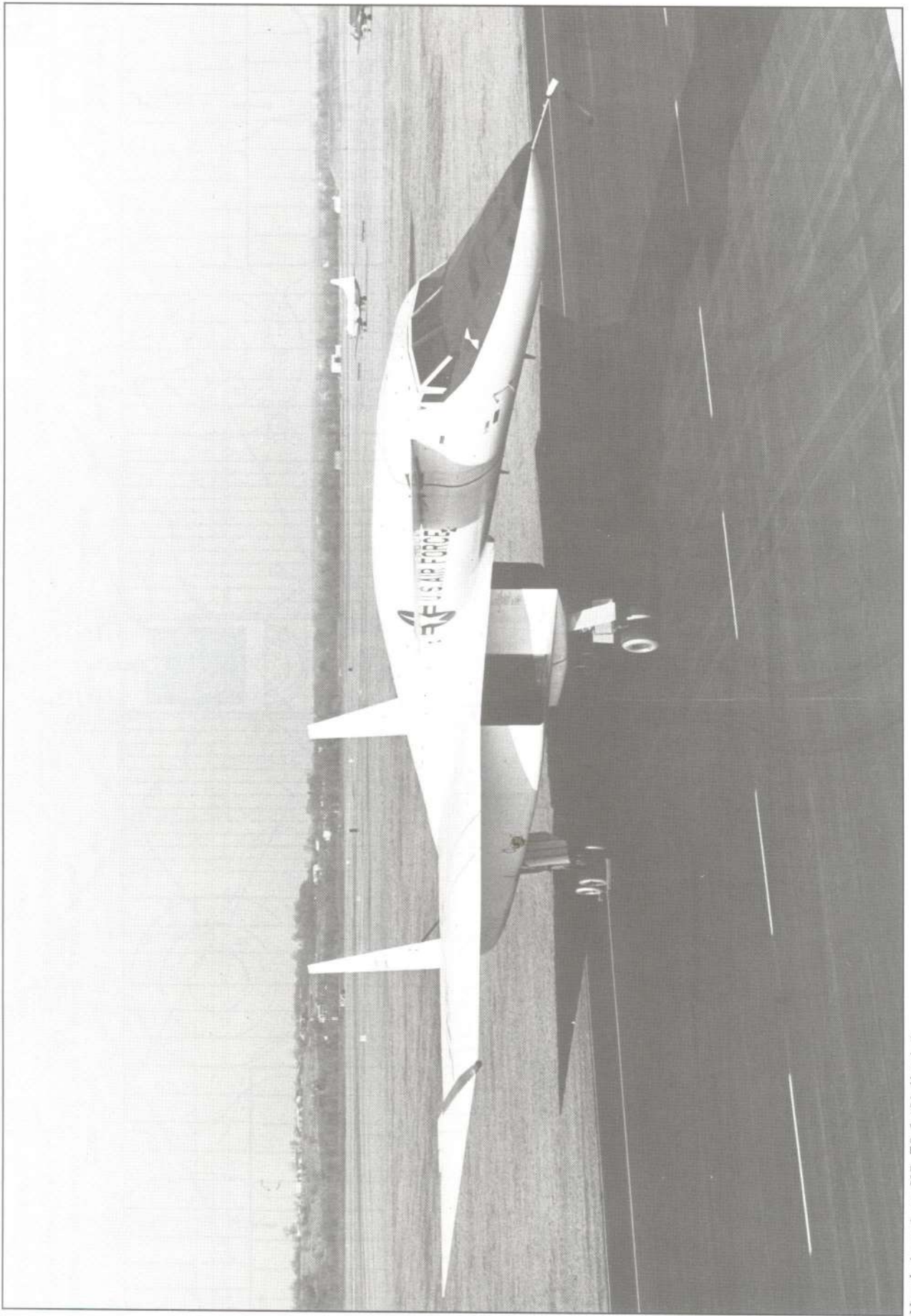


NORTH AMERICAN XB-70-1  
*"Valkyrie"*  
 1964-69  
 SCALE: ORIGINAL 1:96 (1/8" = 1')  
 REPRO. 1:192 (1/16" = 1')  
 DRAWN BY - PAUL R. MATT

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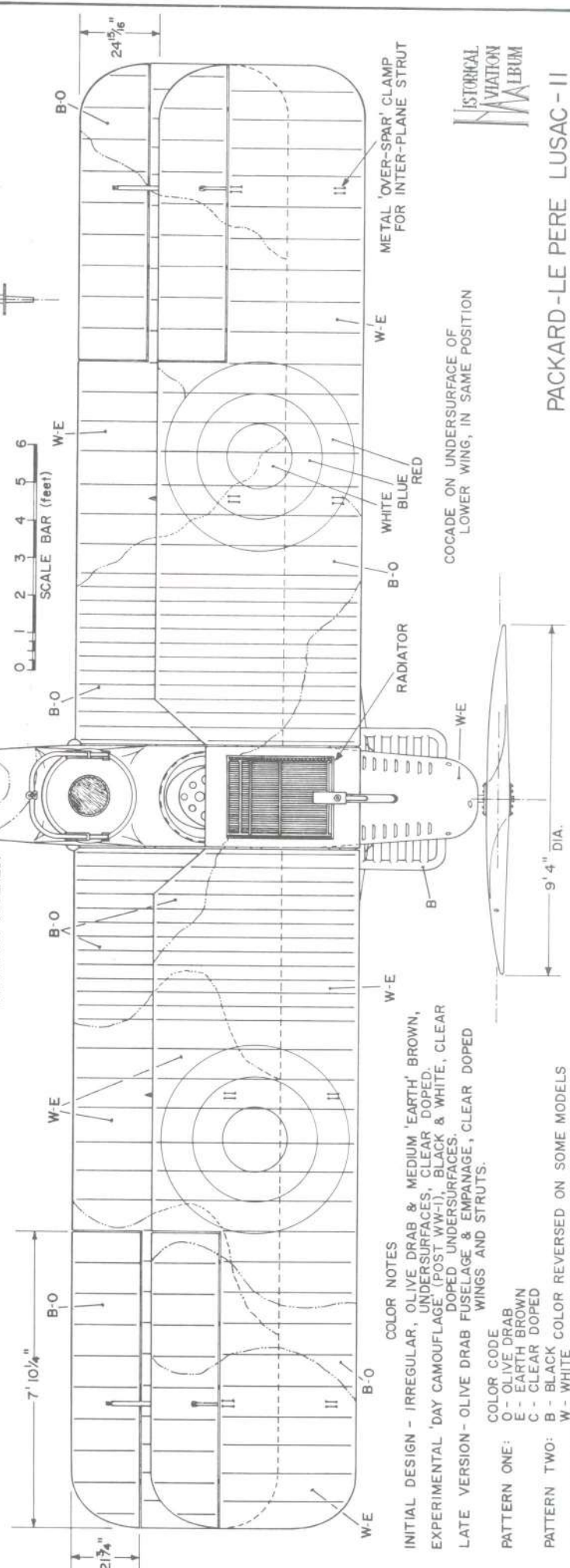
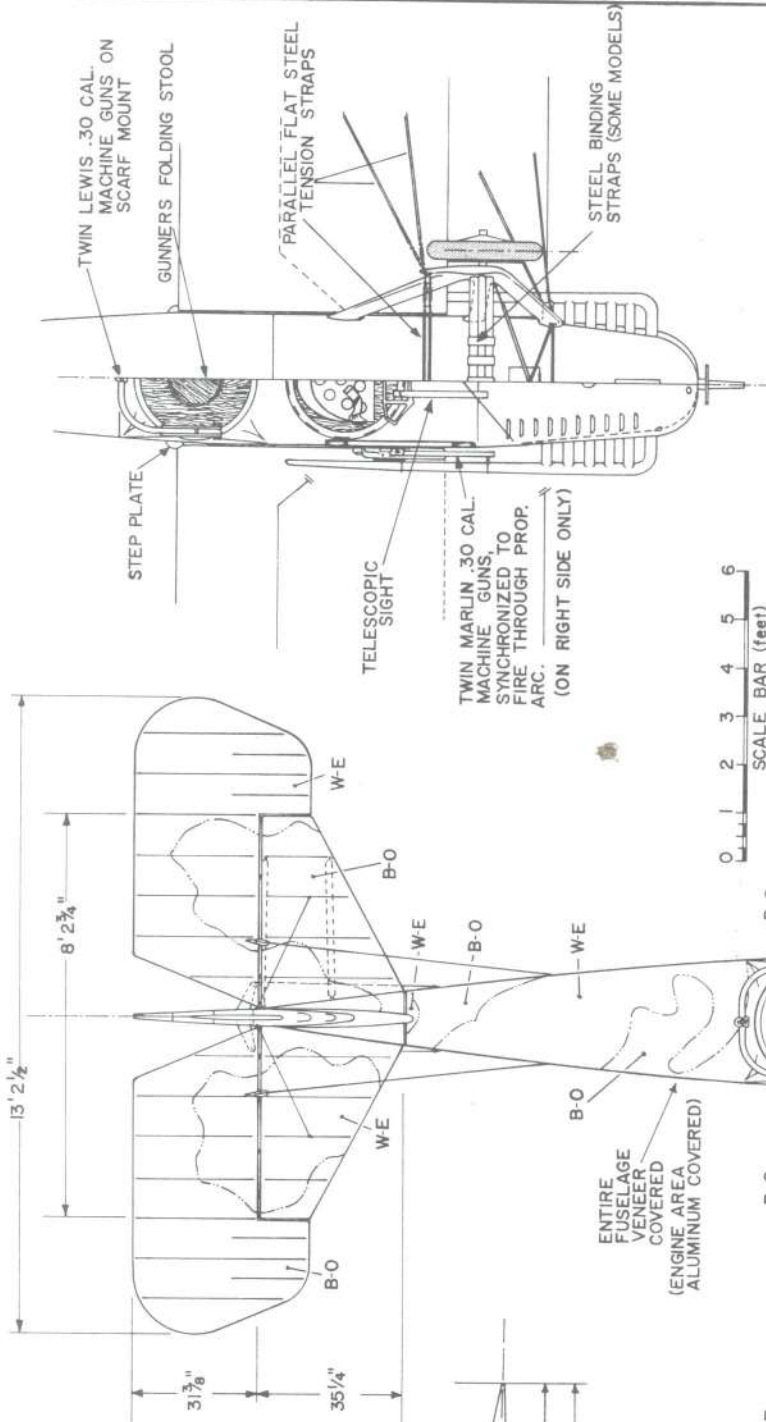
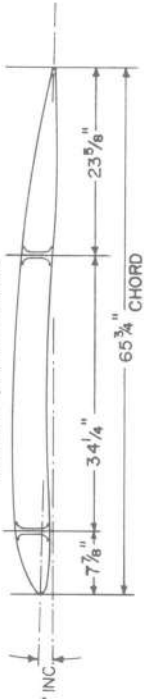


North American XB-70-1 "Valkyrie"

**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 2468 lbs.  
 PILOT & GUNNER 360 " "  
 FUEL & OIL 475 " "  
 ARMAMENT 352 " "  
 GROSS WEIGHT 3655 " "  
 TOP SPEED at SEA LEVEL (136) 132 mph  
 10,000 ft. 127 " "  
 20,000 ft. 102 " "  
 SERVICE CEILING 23,000 ft.  
 WING AREA (INCL. AILERONS) 415.6 sq. ft.  
 WING LOADING 84 lbs./sq. ft.  
 ENDURANCE, CRUISE at 10,000 ft. 5 hrs.  
 CRUISING SPEED 112 mph  
 LANDING SPEED 50

**AIRFOIL (TWICE SCALE)**



**COLOR NOTES**  
 INITIAL DESIGN - IRREGULAR, OLIVE DRAB & MEDIUM 'EARTH' BROWN, UNDERSURFACES, CLEAR DOPED.  
 EXPERIMENTAL 'DAY CAMOUFLAGE (POST WW-1), BLACK & WHITE, CLEAR DOPED UNDERSURFACES.  
 LATE VERSION - OLIVE DRAB FUSELAGE & EMPANAGE, CLEAR DOPED WINGS AND STRUTS.

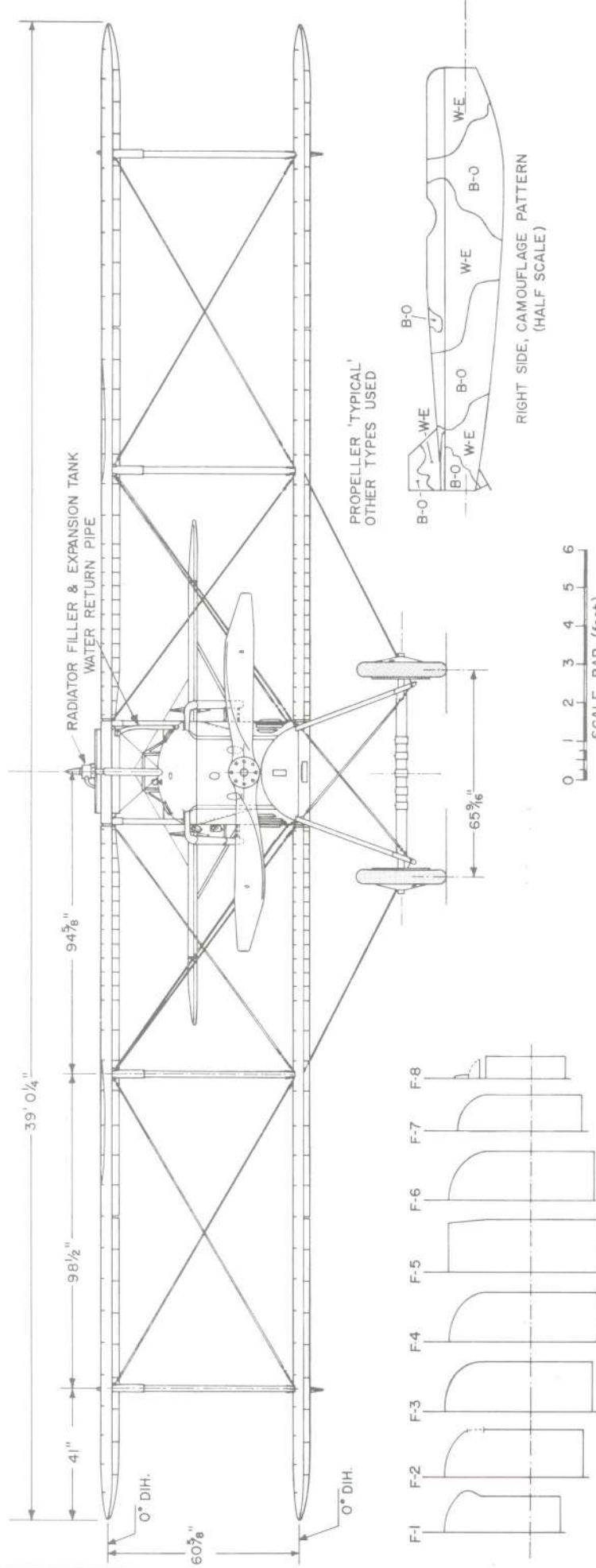
**COLOR CODE**  
 O - OLIVE DRAB  
 E - EARTH BROWN  
 C - CLEAR DOPED  
 B - BLACK COLOR REVERSED ON SOME MODELS  
 W - WHITE PATTERN AND OUTLINE DID NOT CHANGE

**PATTERN ONE:** \_\_\_\_\_  
**PATTERN TWO:** \_\_\_\_\_  
**BASIC CAMOUFLAGE PATTERN AND OUTLINE DID NOT CHANGE**  
**COLOR LINE** \_\_\_\_\_

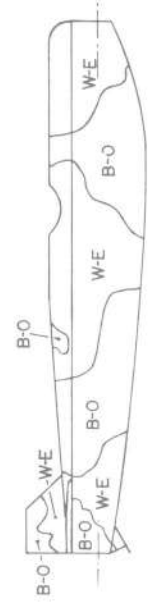


**PACKARD-LE PERE LUSAC - II**  
 (1918)  
 SCALE: 1:48

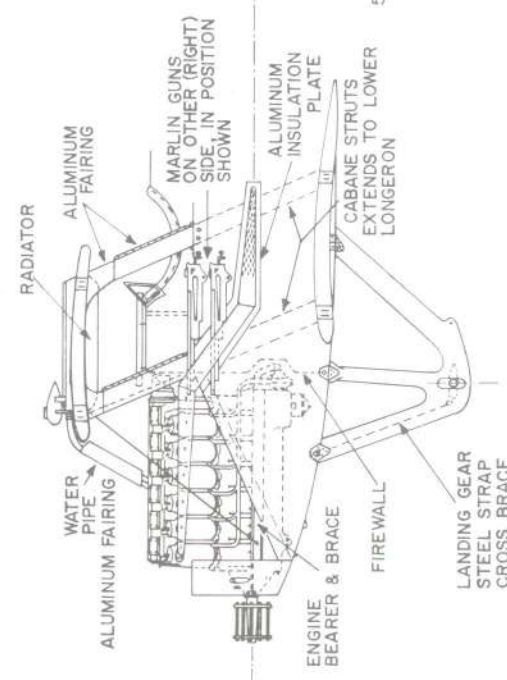
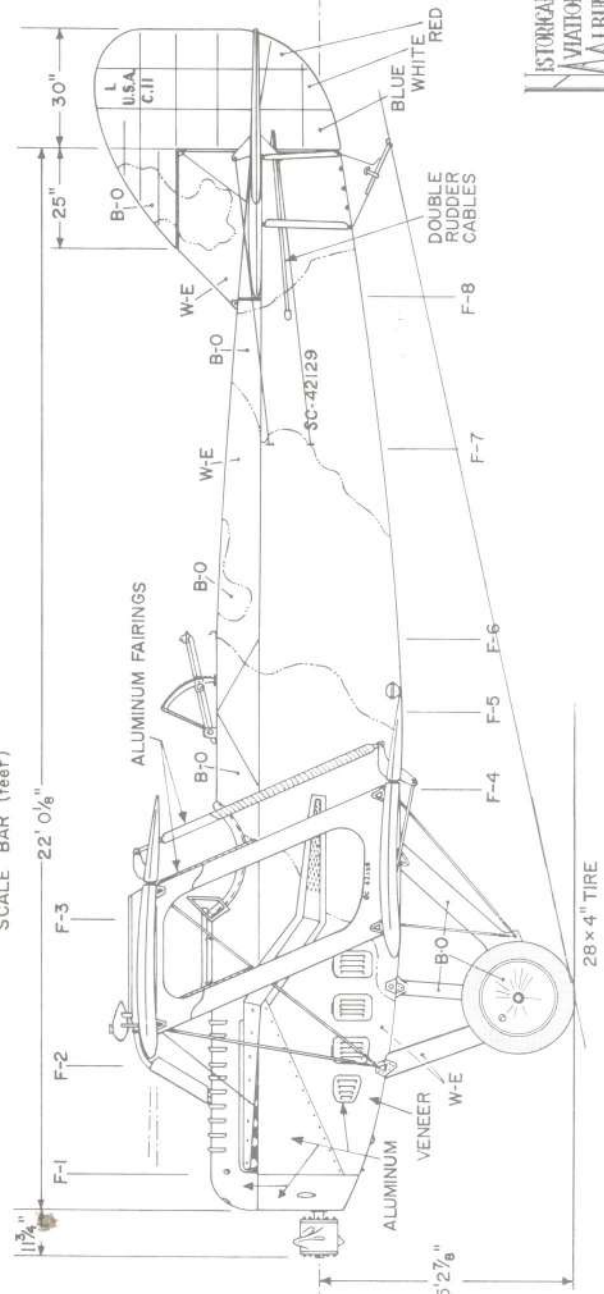




PROPELLER 'TYPICAL' OTHER TYPES USED



RIGHT SIDE, CAMOUFLAGE PATTERN (HALF SCALE)



INTERPLANE STRUTS SAME COLOR AS CONTACT AREA OF LOWER WING FOLLOWING CAMOUFLAGE PATTERN. ALUMINUM FAIRINGS LEFT NATURAL.

SERIAL NUMBER ASSIGNMENT  
 40013-40029  
 42129-42141  
 (42130-42133 TO FRANCE, A.E.F.)

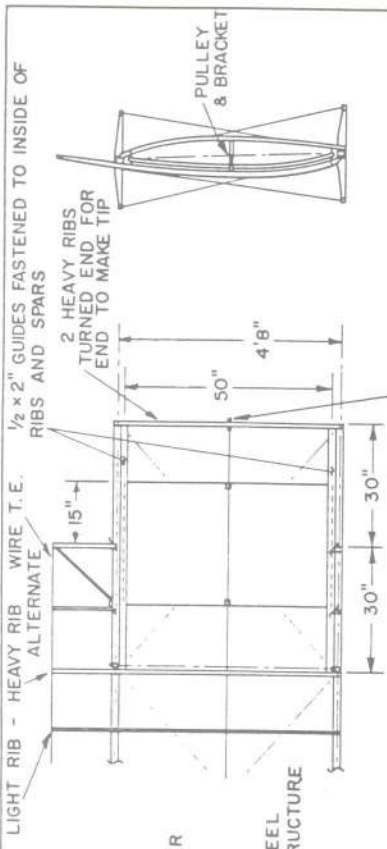
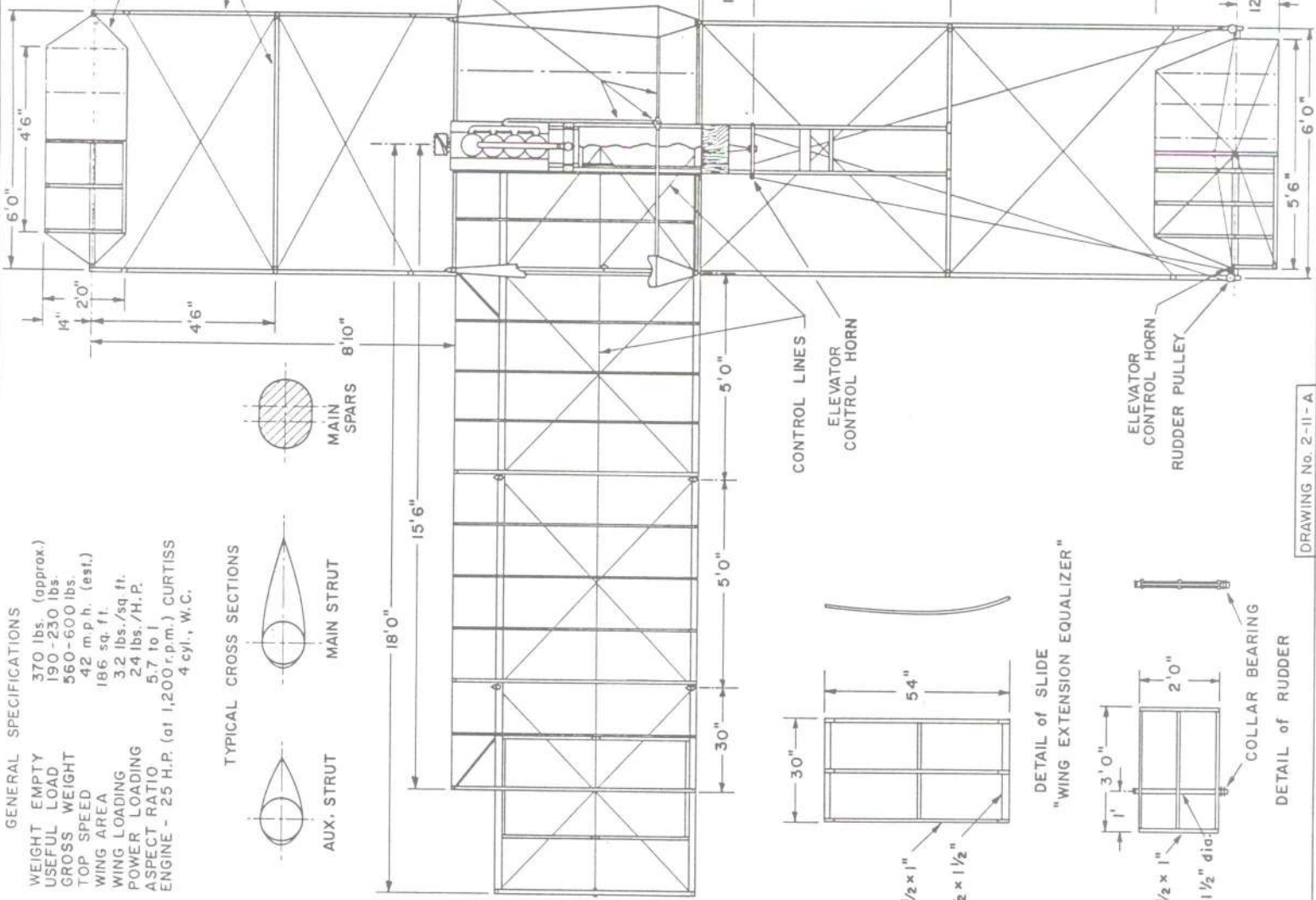
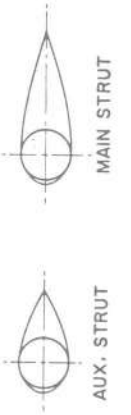


PACKARD-LE PERE LUSAC-11 (1918)

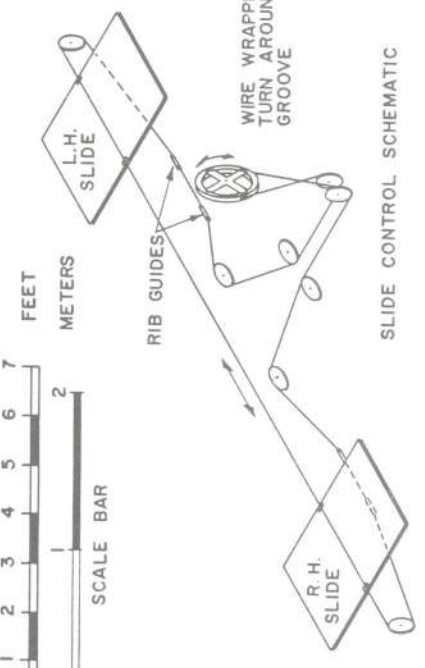
**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 370 lbs. (approx.)  
 USEFUL LOAD 190-230 lbs.  
 GROSS WEIGHT 560-600 lbs.  
 TOP SPEED 42 m.p.h. (est.)  
 WING AREA 186 sq. ft.  
 WING LOADING 3.2 lbs./sq. ft.  
 POWER LOADING 24 lbs./H.P.  
 ASPECT RATIO 5.7 to 1  
 ENGINE - 25 H.P. (at 1,200 r.p.m.) CURTISS  
 4 cyl., W.C.

**TYPICAL CROSS SECTIONS**

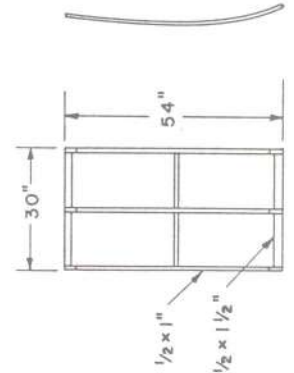


**NOTE: WINGS  
 DRAWN IN TRUE  
 PLANFORM NOT  
 AS 5° DIHEDRAL  
 PROJECTION**

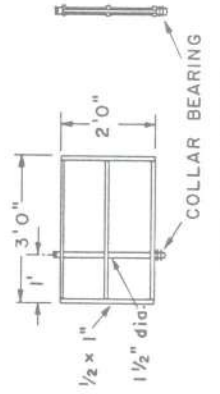


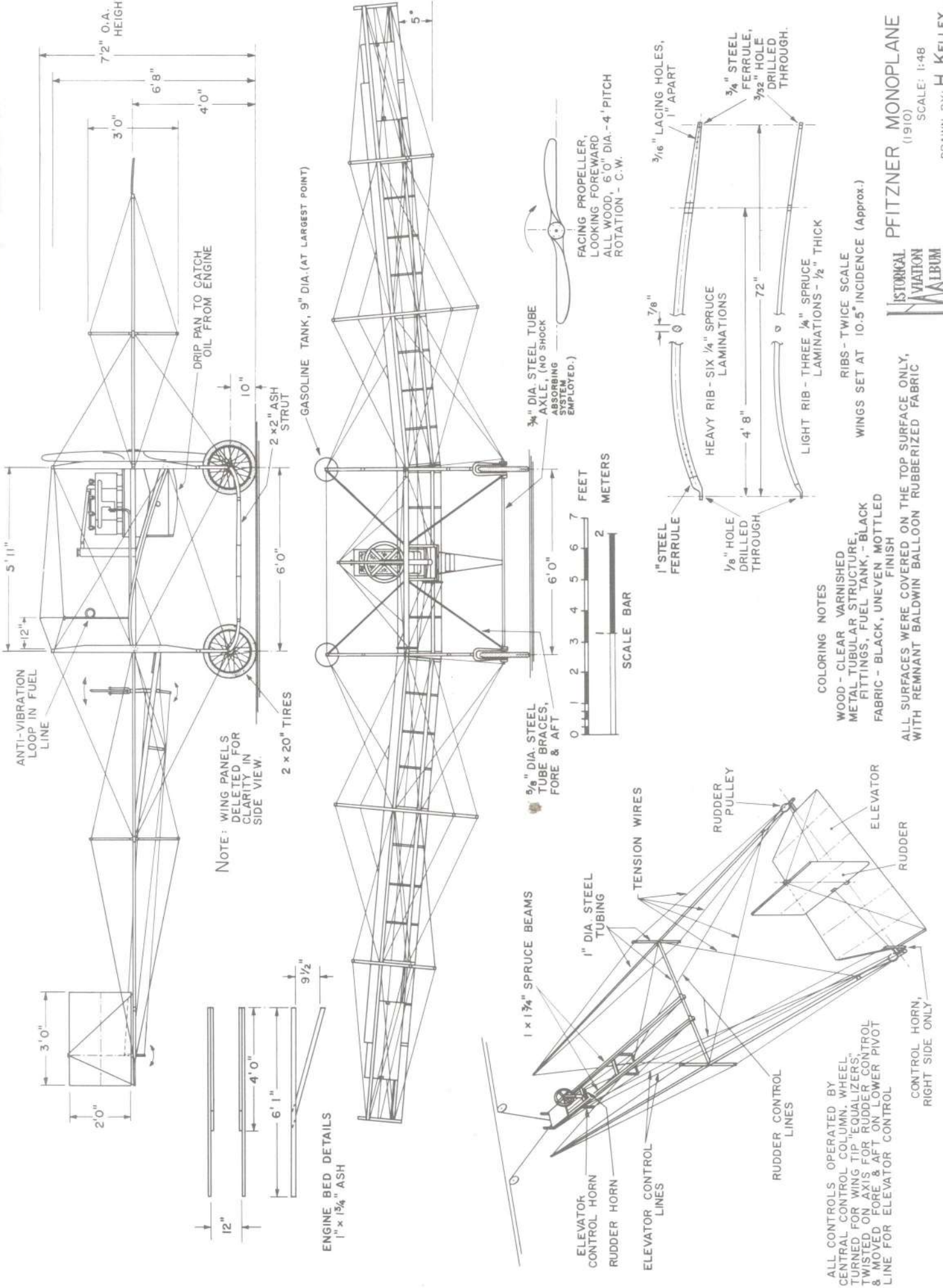
**SLIDE CONTROL SCHEMATIC**

**PfITZNER 1910 MONOPLANE**  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY: HERB KELLEY  
 © HISTORICAL AVIATION ALBUM 1965  
 P.O. BOX 33  
 TEMPE, ARIZONA 85288



**DETAIL of SLIDE  
 "WING EXTENSION EQUALIZER"**





**PFITZNER MONOPLANE**  
(1910)  
SCALE: 1:48

DRAWN BY: **H. KELLEY**  
© PAUL R. MATT 1966

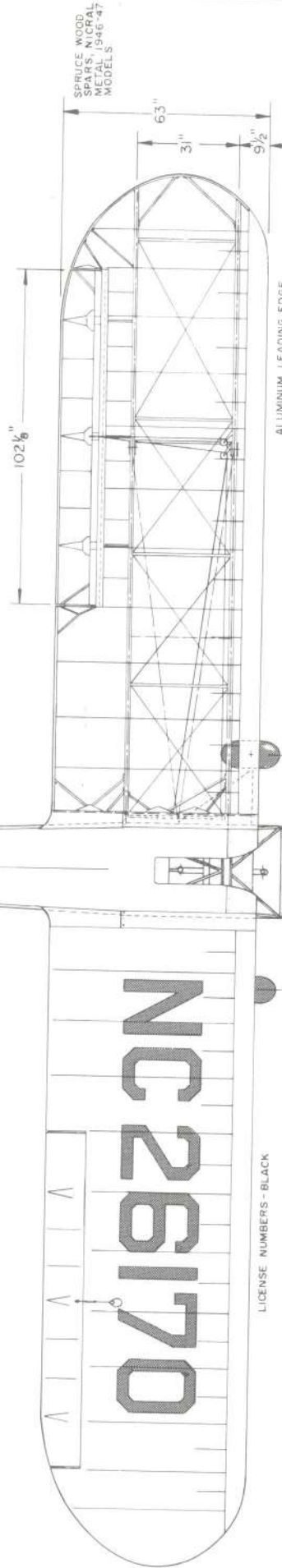
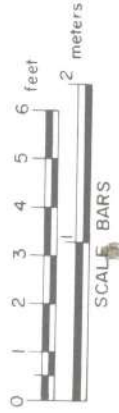
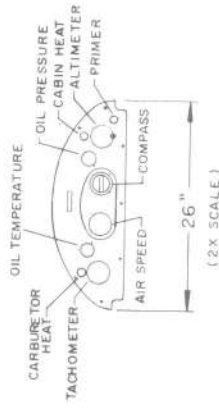
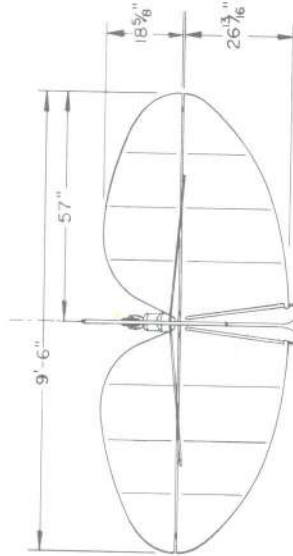
**GENERAL SPECIFICATION**

WEIGHT EMPTY 680 lbs  
 USEFUL LOAD 540 lbs  
 GROSS WEIGHT 1100 lbs  
 WING AREA 178.5 sq. ft.  
 WING LOADING 6.16 lbs/sq. ft.  
 POWER LOADING 22.0 lbs/HP  
 TOP SPEED 87 mph  
 CRUISING SPEED 73 mph  
 LANDING SPEED 38 mph  
 RANGE AT CRUISE 220 miles  
 MAXIMUM CEILING 12,000 feet  
 FUEL CAPACITY 12 gals.  
 OIL CAPACITY 1 gal.  
 FUEL CONSUMPTION 4.46 gals/hr

POWER: CONTINENTAL A-65-8  
 LYCOMING O-145  
 FRANKLIN 4AC-65

ALL 65 HP AT 2500/2550rpm

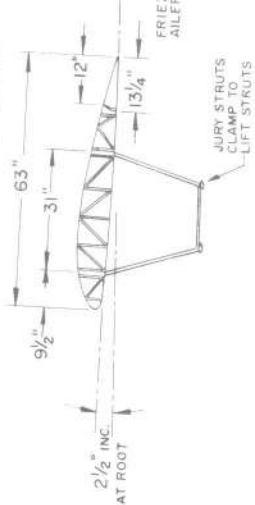
**COLORING NOTES**  
 STANDARD FACTORY ISSUE - OVERALL CUB YELLOW  
 (DEEP RED-YELLOW), BLACK TRIM  
 OTHER COLORS AT CUSTOMERS REQUEST



LOGO CENTERED ON FIN  
 FIGURE APPROX 10" HIGH

**COLORING**  
 CUB - LIGHT BROWN  
 EYES - WHITE  
 TONGUE - RED  
 DETAILING IN BLACK  
 SIGN: MARGON-RED, "PIPER CUB"  
 WHITE, OUTLINED IN BLACK  
 LETTERING - BLACK

AIRFOIL USA -358 MODIFIED



LICENSE NUMBERS - BLACK

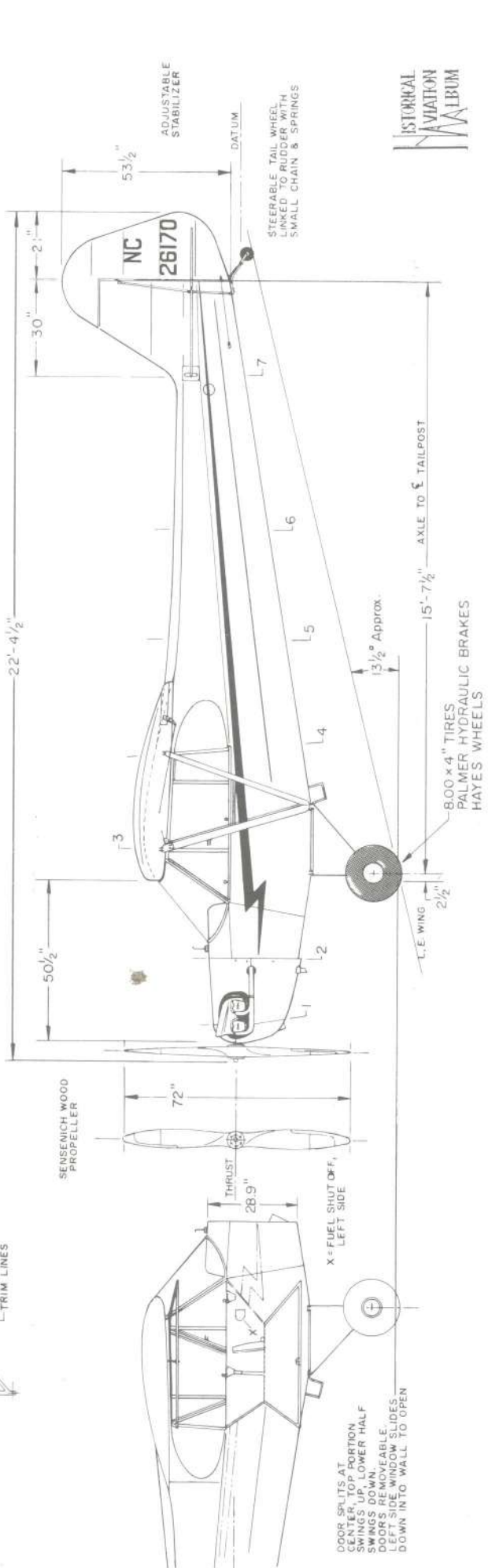
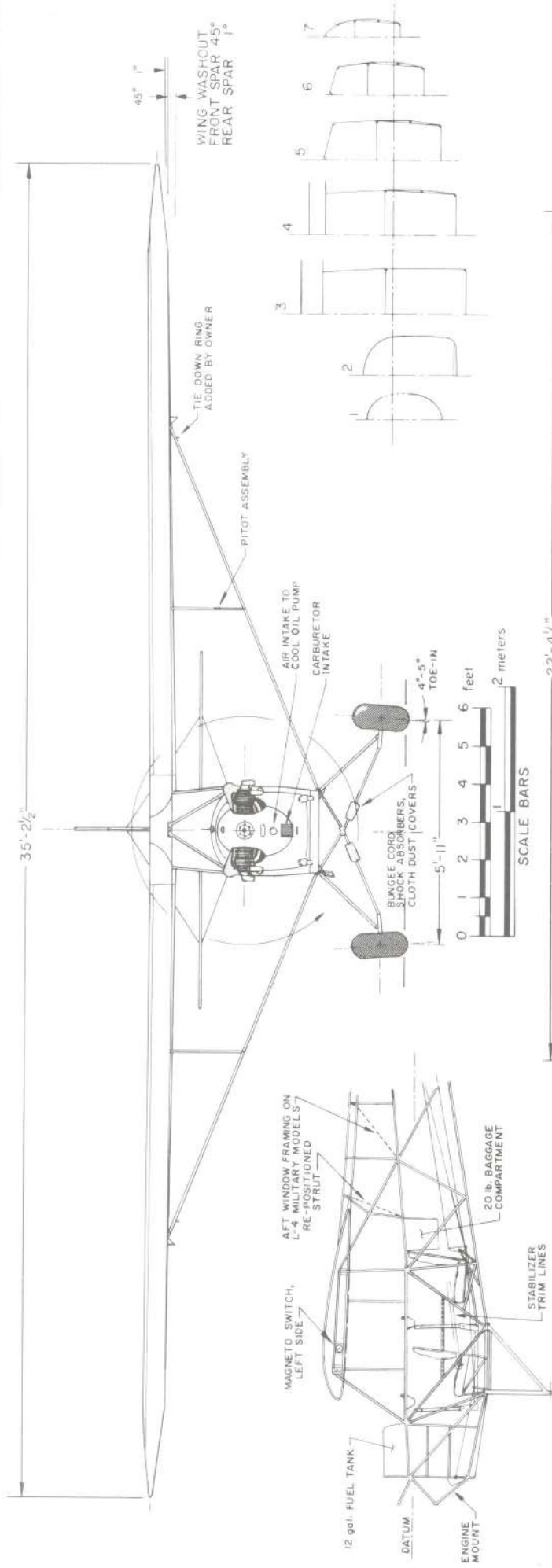
041920N  
 NC26170

WIRTH  
 AVIATION

PIPER J-3 "CUB"  
 1937-47

SCALE ORIGINAL - 1:24  
 REPRO. - 1:48  
 DRAWN BY: PAUL R. MATT

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PIPER J-3 "CUB"  
1937-47

SCALE: ORIGINAL - 1:24  
REPRO. - 1:48  
DRAWN BY: PAUL R. MATT

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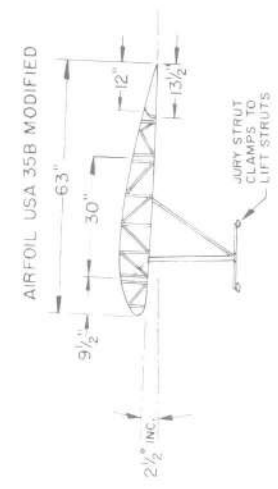
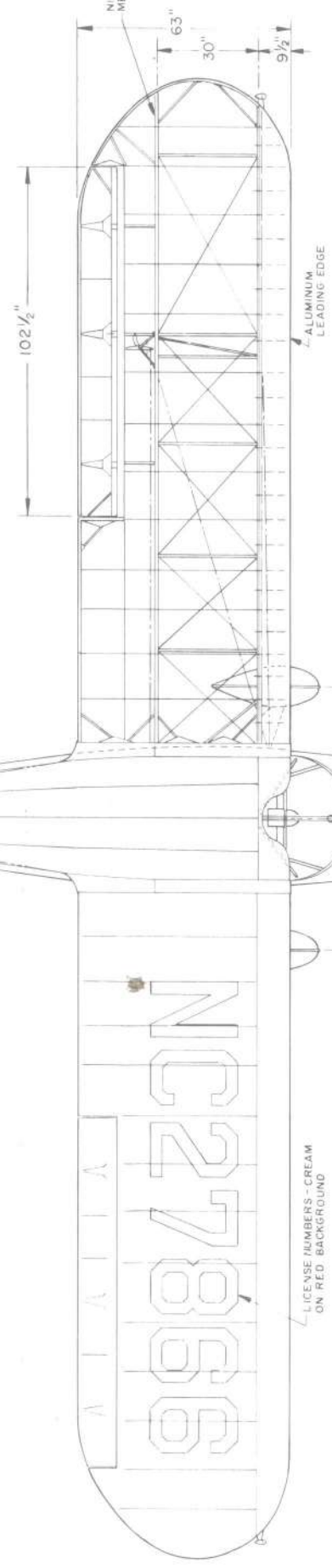
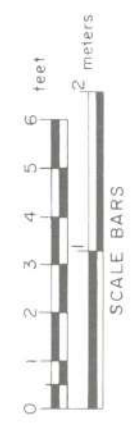
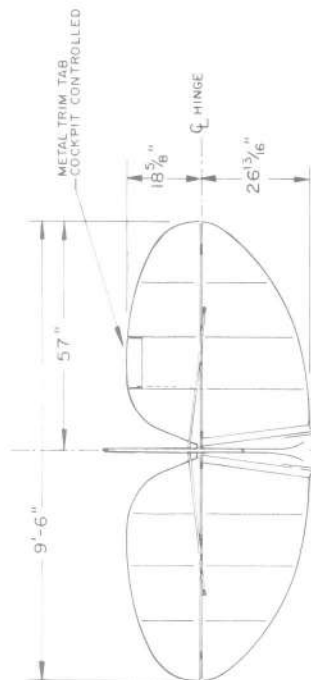
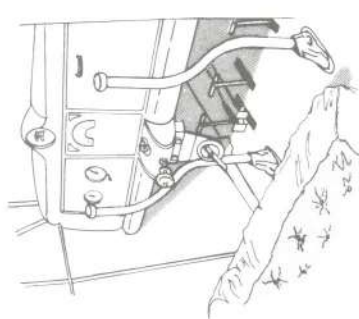
**GENERAL SPECIFICATIONS**

CONTINENTAL A-75-B, 75 HP	LYCOMING O-145, 65HP
WEIGHT EMPTY 880 lbs.	800 lbs.
USEFUL LOAD 520 lbs.	401 lbs.
GROSS WEIGHT 1400 lbs.	1301 lbs.
WING AREA 183 sq.ft.	183 sq.ft.
WING LOADING 7.65 lbs./sq.ft.	7.1 lbs./sq.ft.
POWER LOADING 18.66 lbs./HP	20.0 lbs./HP
TOP SPEED 96 mph	87 mph
CRUISING SPEED 83 mph	73 mph
LANDING SPEED 38 mph	35 mph
SERVICE CEILING 12,000 feet	12,000 feet
RANGE AT CRUISE 382 miles	340 miles
FUEL CAPACITY 25 gals.	16 gals.
OIL CAPACITY 1.25 gals.	1.25 gals.
FUEL CONSUMPTION 5 gal at S.L.	4 gals at S.L.

POWER: CONTINENTAL A-75-B,  
75 HP AT S.L. AT 2600 rpm  
OR LYCOMING O-145,  
65 HP AT S.L. AT 2550 rpm  
MAXIMUM POWER, TAKE OFF & EMERGENCY

**COLORING NOTES**

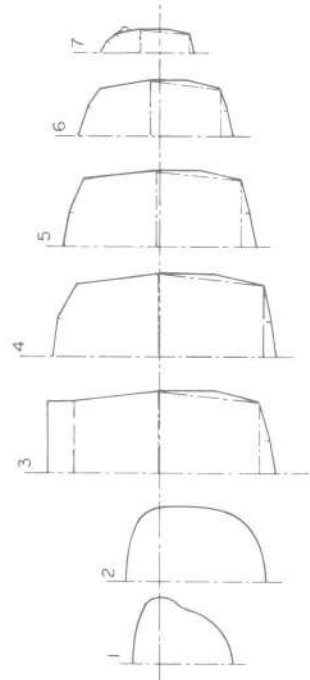
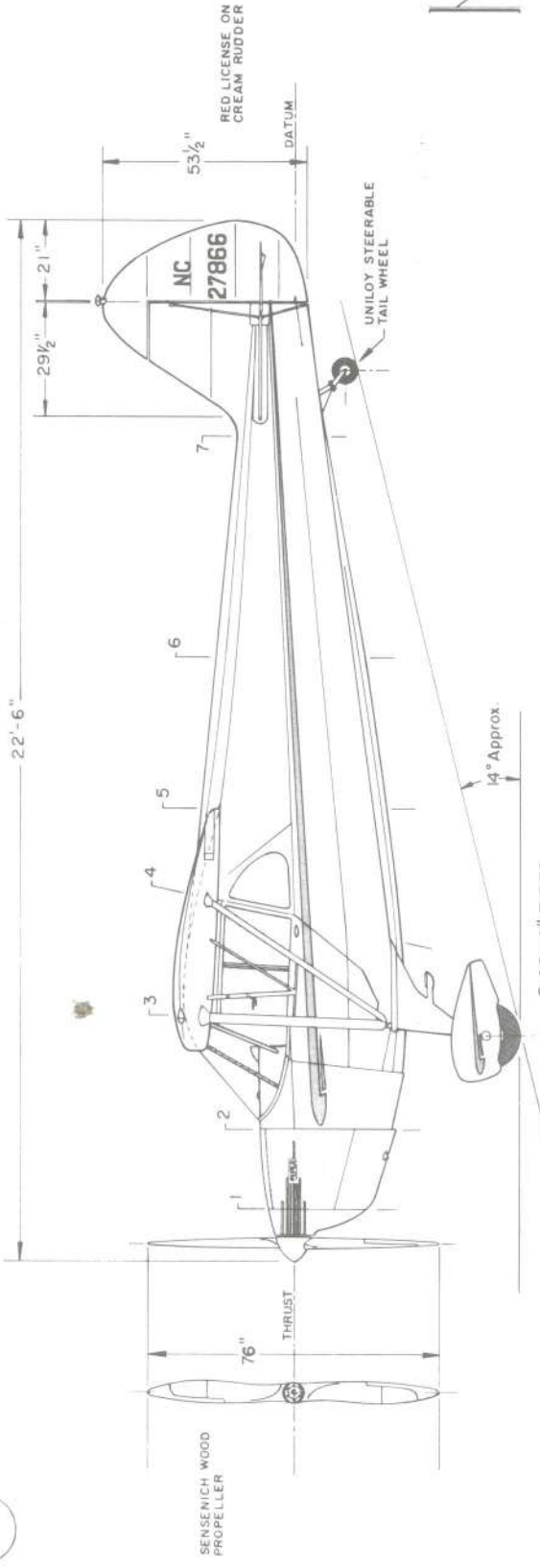
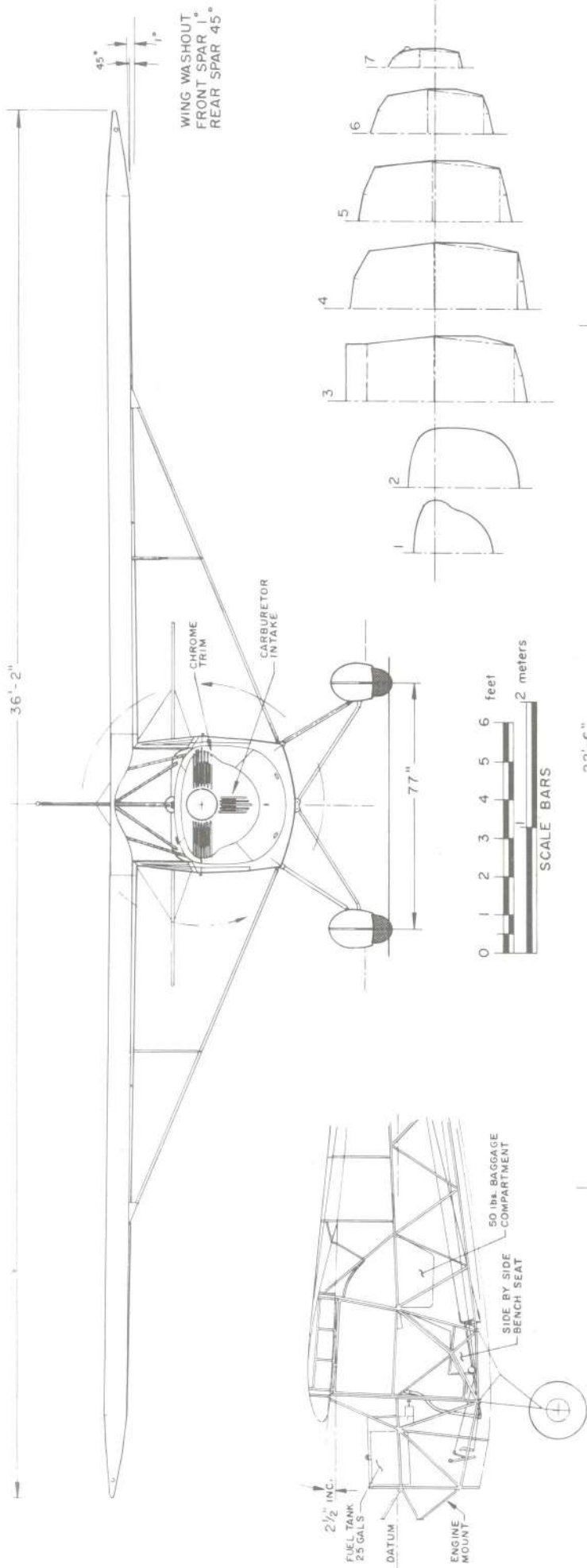
STANDARD FACTORY SCHEME - FUSELAGE, VERTICAL  
TAIL SURFACES & LANDING GEAR - CREAM.  
HORIZONTAL TAIL SURFACES, WINGS & PROFILE  
TRIM - RED... OR REVERSE COLORS.  
OTHER COLORS USED - BLUE & CREAM AS WELL AS  
SOLID COLORS OVERALL



SINCERE THANKS TO PAUL  
MCDANIEL, JOHN UNDERWOOD  
AND PIPER AIRCRAFT FOR  
THEIR HELP IN THE PREPARA-  
TIONS OF THESE DRAWINGS.



PIPER J-4E "CUB COUPE"  
1941 MODEL  
SCALE: ORIGINAL - 1:24  
REPRO. - 1:48  
DRAWN BY: PAUL R. MATT  
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PIPER J-4E "CUB COUPE"  
1941 MODEL

SCALE: ORIGINAL - 1:24  
REPRO. - 1:48  
DRAWN BY: PAUL R. MATT

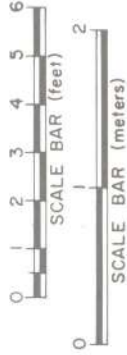
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**GENERAL SPECIFICATIONS**

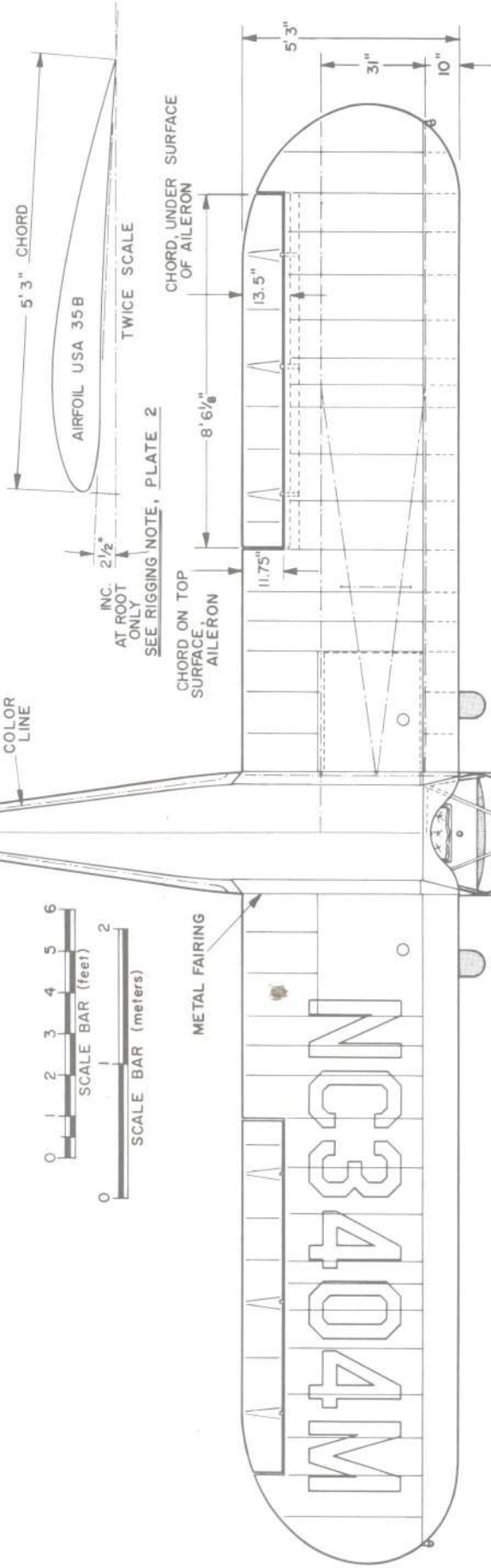
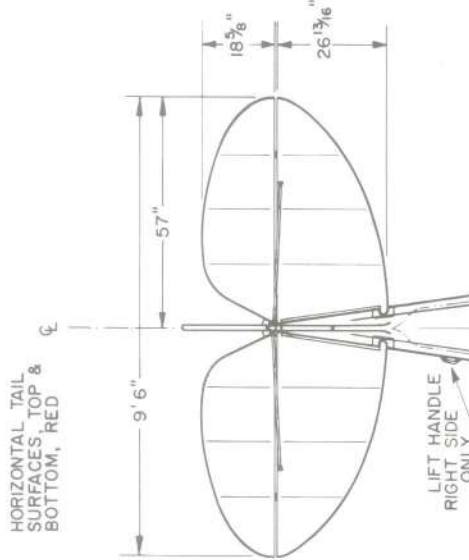
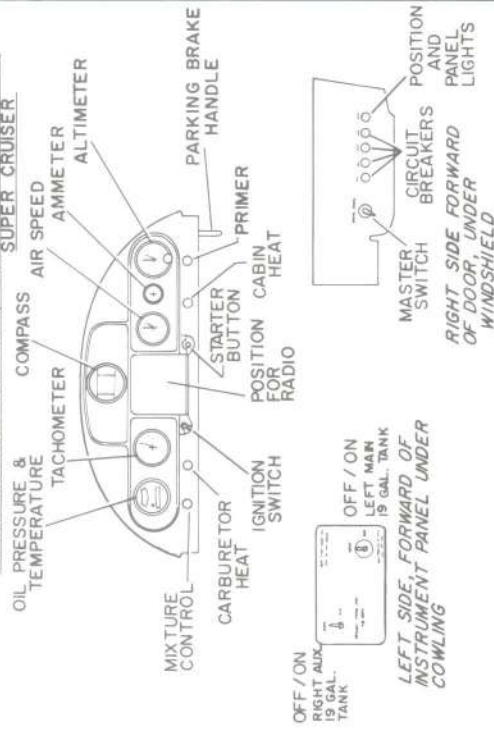
	NORMAL	UTILITY
WEIGHT EMPTY	950 lbs.	950 lbs.
GROSS WEIGHT	1750 lbs.	1500 lbs.
POWER LOADING	17.5 lbs./H.P.	15 lbs./H.P.
WING LOADING	9.8 lbs./sq. ft.	8.36 lbs./sq. ft.
BAGGAGE CAPACITY	41 lbs.	---
CRUISING SPEED	103 m.p.h.	103 m.p.h.
LIMITED TOP SPEED	110 m.p.h.	138 m.p.h.
RED LINE DIVING SPEED	138 m.p.h.	148 m.p.h.
STALLING SPEED	49 m.p.h.	---
RATE OF CLIMB, S.L.	600 ft./min.	750 ft./min.
BEST CLIMB SPEED	75 m.p.h.	70 m.p.h.
CRUISING RANGE	600 miles	600 miles
SERVICE CEILING	12,600 feet	15,700 feet
ABSOLUTE CEILING	15,500 feet	18,000 feet
GLIDING RATIO	11:1	---
FUEL CAPACITY (73/80 OCTANE)	38 gals.	38 gals.
OIL CAPACITY	6 quarts	6 quarts

POWER- LYCOMING O-235-C 100 H.P. at 2600 r.p.m.  
OR LATER  
LYCOMING O-235-C1 108 H.P. at 2600 r.p.m.

THE -C1 ENGINE BOOSTED CRUISING SPEED  
TO 105 m.p.h.



**TYPICAL INSTRUMENT PANEL, STANDARD PIPER PA-12 SUPER CRUISER**



AIRCRAFT PORTRAYED IS ONE OF THREE PIPER PA-12'S USED BY THE GAME WARDENS, STATE OF MAIN, 1946-50. AIRCRAFT WERE ALSO EQUIPPED WITH SKIS AND PONTONS. NOSE SPINNERS WERE REMOVED WHEN KOPPERS AEROMATIC PROPELLERS WERE INSTALLED IN 1947.

PIPER PA-12 SUPER CRUISERS BUILT

LOCK HAVEN, PA. S.N.	12-1 to 12-1900,	3,525 TOTAL
PONCA CITY, OKLA.	12-2001 to 12-3625, S.N. 12-1901 to 12-2000, 12-3901 to 12-4039,	239 TOTAL

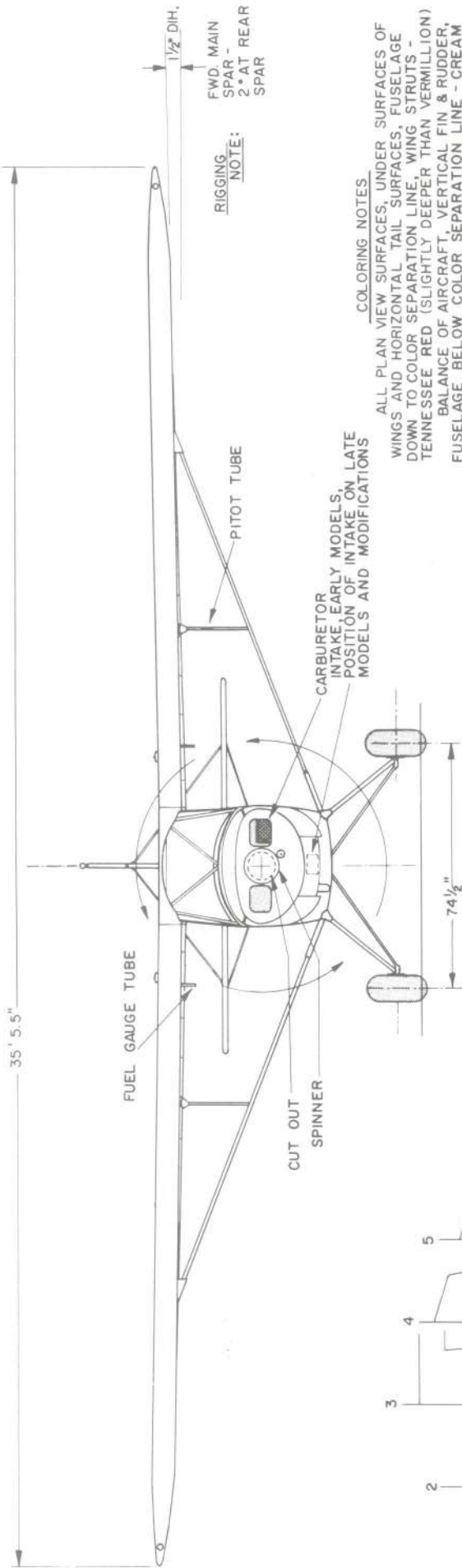


**PIPER PA-12 SUPER CRUISER**

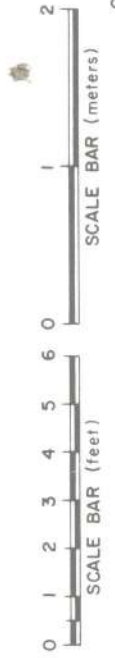
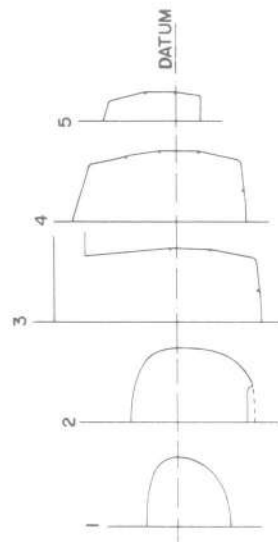
1946-48  
SCALE - 1:48

DRAWN BY: PAUL R. MATT

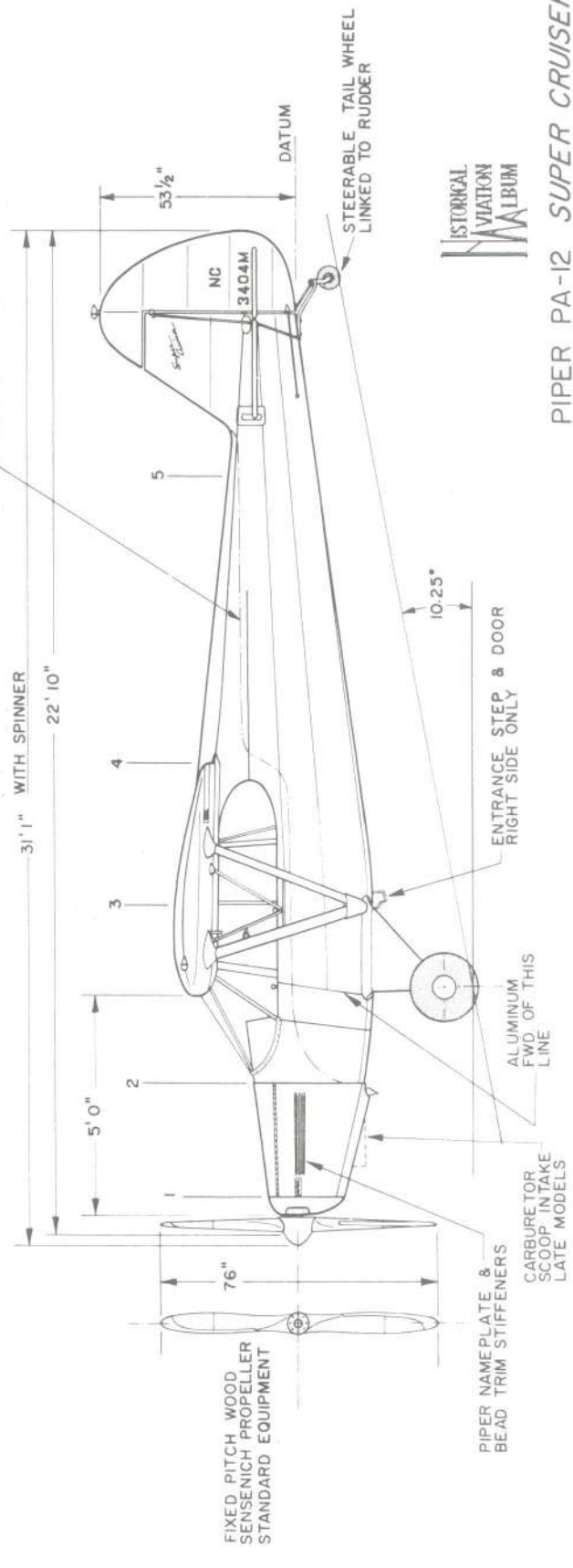




**COLORING NOTES.**  
 ALL PLAN VIEW SURFACES, UNDER SURFACES OF WINGS AND HORIZONTAL TAIL SURFACES, FUSELAGE DOWN TO COLOR SEPARATION LINE - WING STRUTS - TENNESSEE RED (SLIGHTLY DEEPER THAN VERMILLION) BALANCE OF AIRCRAFT, VERTICAL FIN & RUDDER, FUSELAGE BELOW COLOR SEPARATION LINE - CREAM LICENSE NUMBERS - BLACK ON RUDDER, CREAM ON WINGS.



COLOR SEPARATION LINE - RED ABOVE, CREAM BELOW

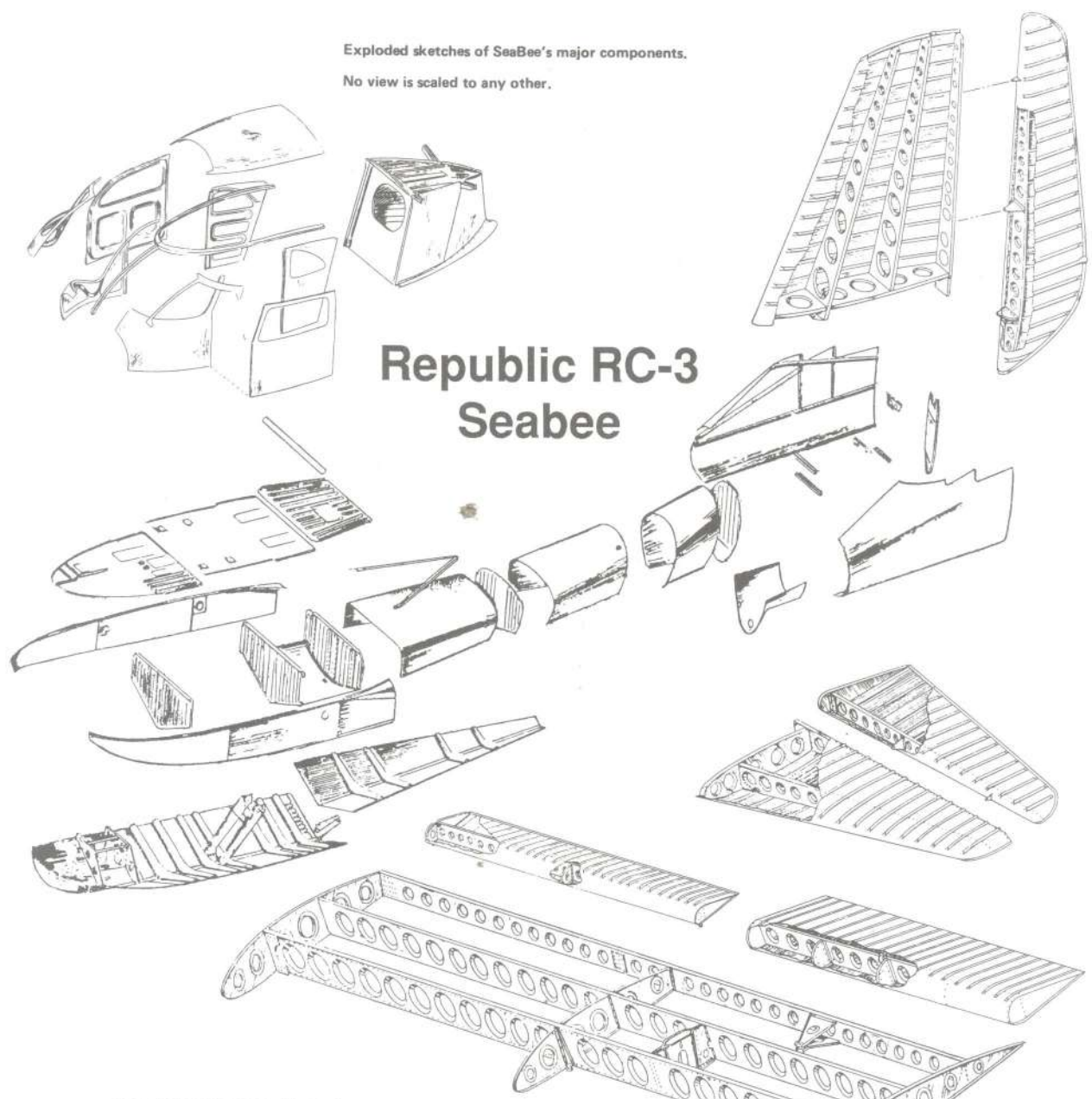


PIPER PA-12 SUPER CRUISER

1946-48  
 SCALE: 1:48

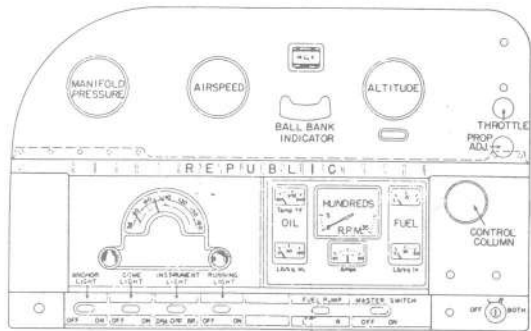
DRAWN BY: PAUL R. MATT

Exploded sketches of SeaBee's major components.  
 No view is scaled to any other.



# Republic RC-3 Seabee

Factory instrument panel layout.



**GENERAL SPECIFICATIONS**

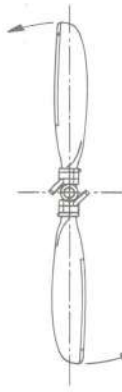
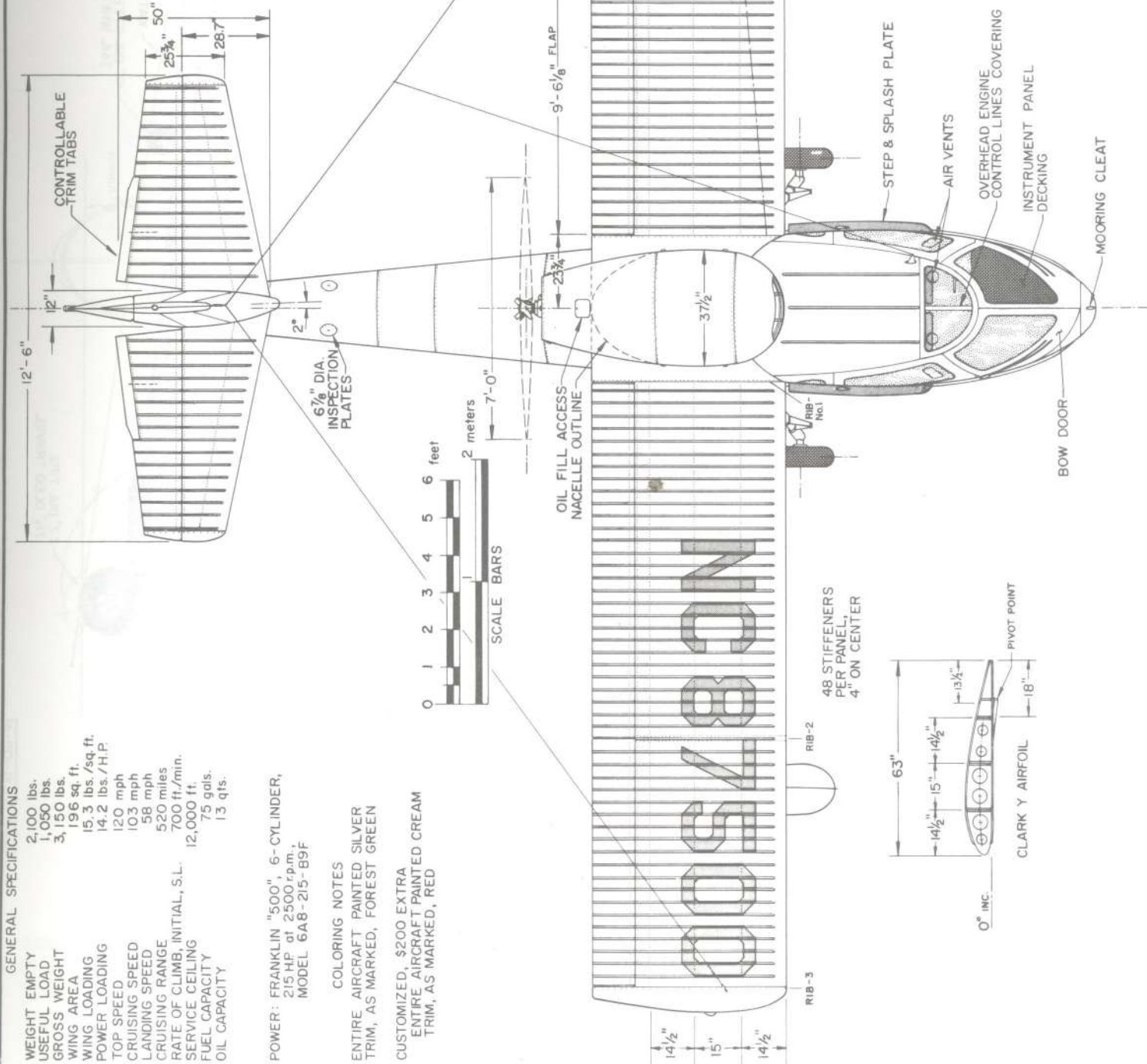
WEIGHT EMPTY 2,100 lbs.  
 USEFUL LOAD 1,050 lbs.  
 GROSS WEIGHT 3,150 lbs.  
 WING AREA 196 sq. ft.  
 POWER LOADING 15.3 lbs./sq. ft.  
 14.2 lbs./H.P.  
 TOP SPEED 120 mph  
 CRUISING SPEED 103 mph  
 LANDING SPEED 58 mph  
 CRUISING RANGE 520 miles  
 RATE OF CLIMB, INITIAL, S.L. 700 ft./min.  
 SERVICE CEILING 12,000 ft.  
 FUEL CAPACITY 75 gals.  
 OIL CAPACITY 13 qts.

POWER: FRANKLIN "500", 6-CYLINDER,  
 215 HP at 2500 r.p.m.,  
 MODEL 6A8-215-B9F

**COLORING NOTES**

ENTIRE AIRCRAFT PAINTED SILVER  
 TRIM, AS MARKED, FOREST GREEN

CUSTOMIZED, \$200 EXTRA  
 ENTIRE AIRCRAFT PAINTED CREAM  
 TRIM, AS MARKED, RED



KOPPERS "AEROMATIC", GROUND ADJUSTABLE  
 PROPELLER, 84" DIA.  
 (HARTZELL HYDRO-SELECTIVE HC-12x20, 84" DIA.,  
 VARIABLE & REVERSIBLE - OPTIONAL)

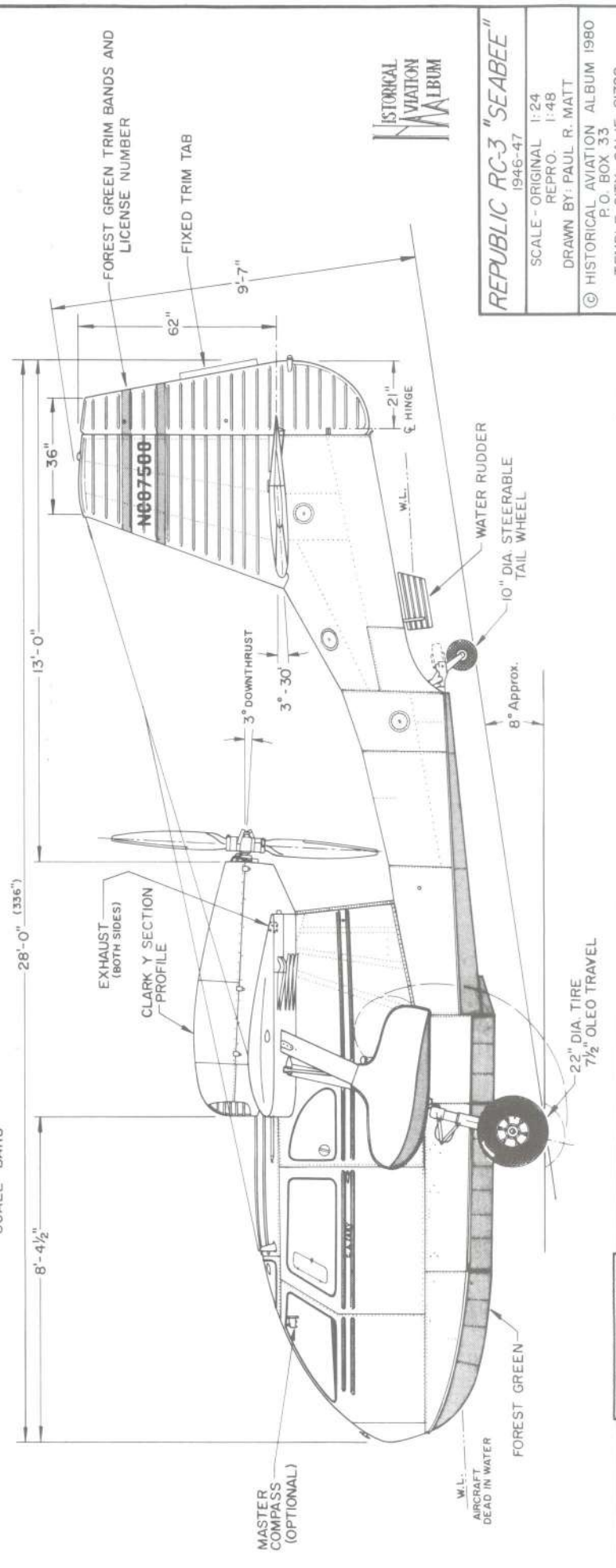
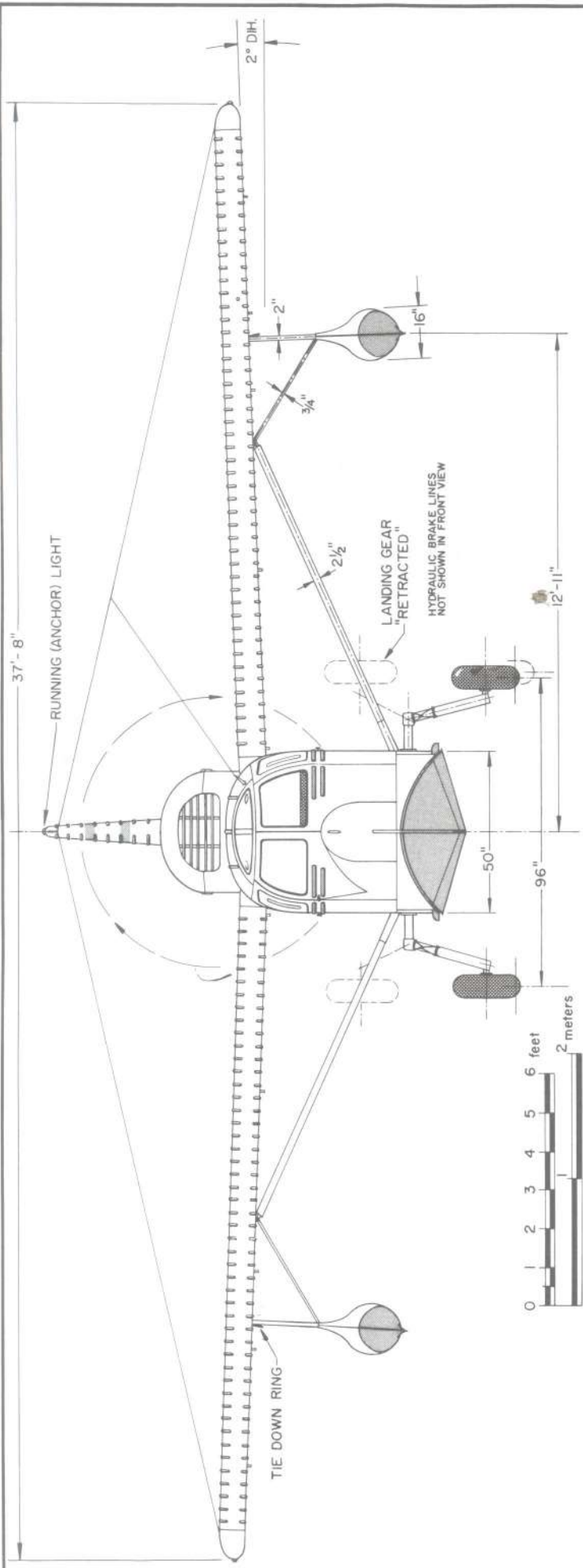
MY SINCERE APPRECIATION IS EXTENDED  
 TO MR. CHARLES A. SEABEE FOR  
 HIS UNTIRING HELP IN THE PREPARATION  
 OF THESE DRAWINGS. *Paul R. Matt*



REPUBLIC RC-3 "SEABEE"  
 1946-47

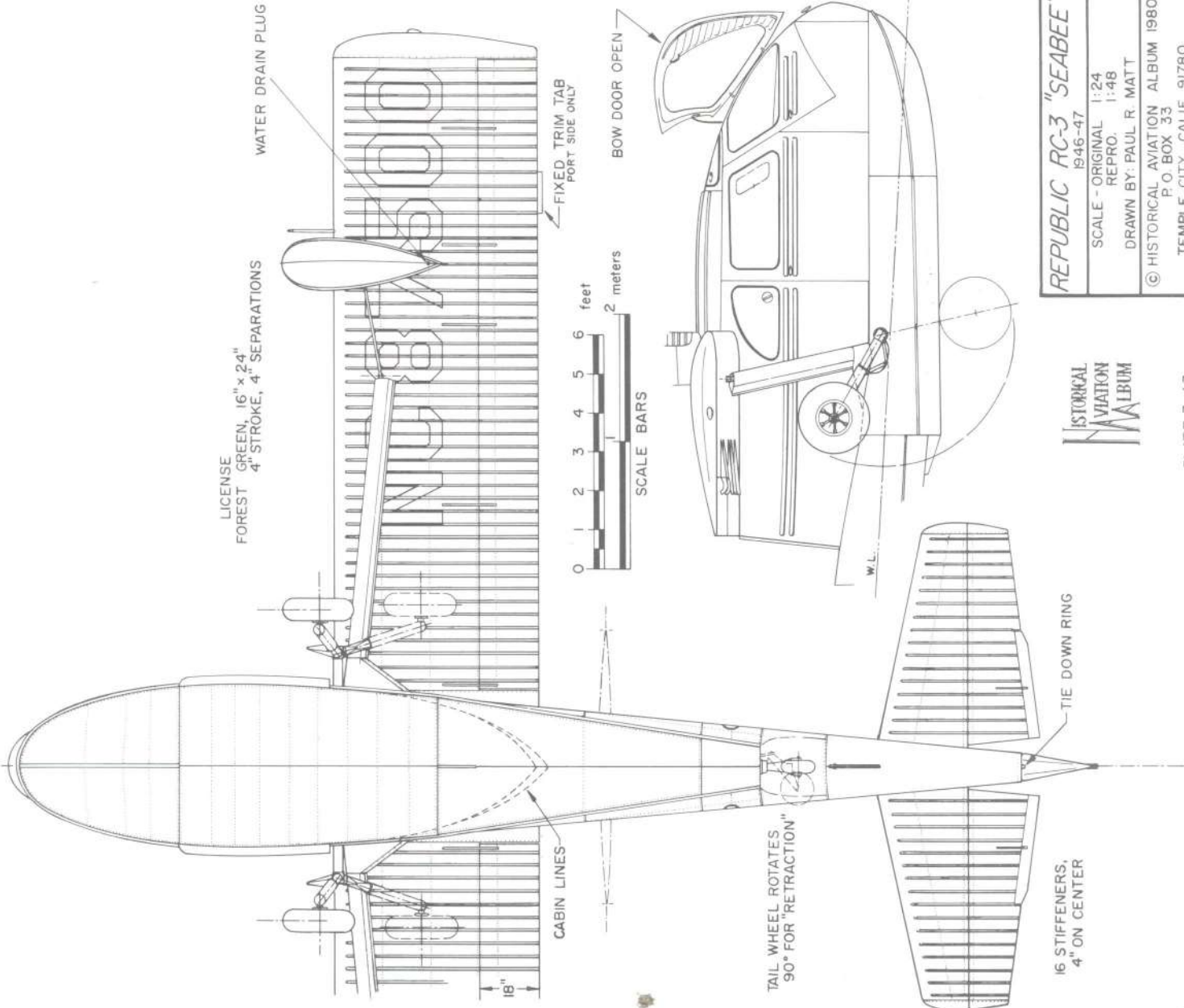
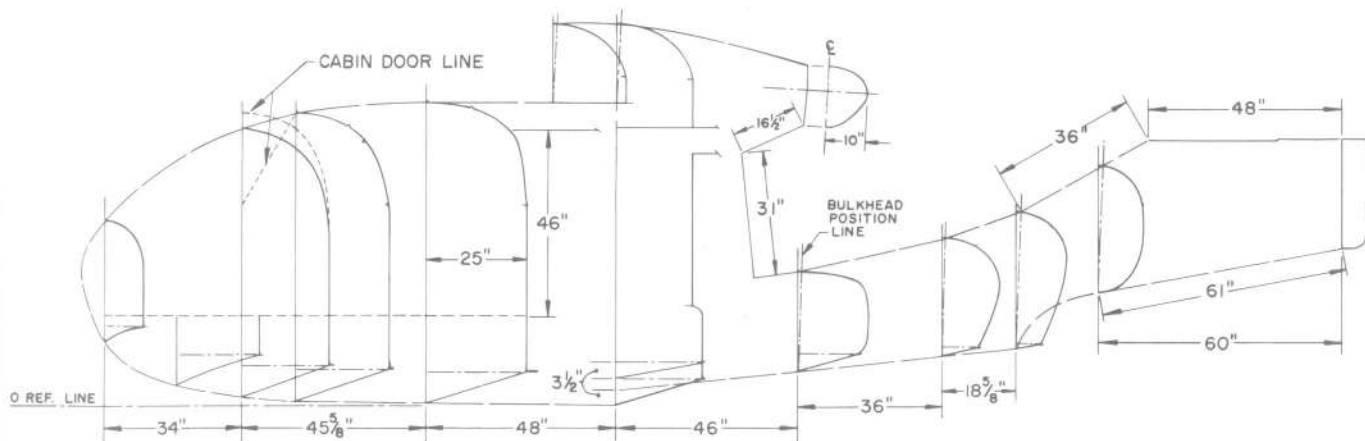
SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY: PAUL R. MATT

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HISTORICAL AVIATION MUSEUM

**REPUBLIC RC-3 "SEABEE"**  
 1946-47  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
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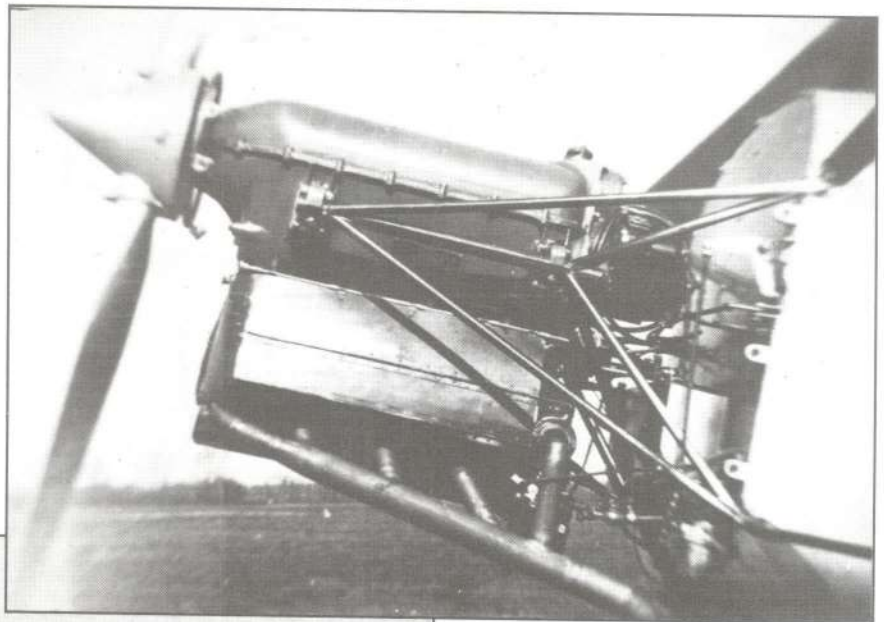


**REPUBLIC RC-3 "SEABEE"**  
 1946-47  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
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# Rover Aviation Engine



*Rover  
Aviation  
Engine*



*Rover engine  
installation in  
Driggs "Skylark".*



*Fairchild 22  
with Rover  
engine.*

BORE - 4.125" INVERTED AIR COOLED 4-CYCLE

DISPLACEMENT - 5.000"  
 WEIGHT DRY - 267.28 cu. in. TOTAL  
 FUEL CONSUMPTION - 5.1:1  
 OIL CONSUMPTION - .55-.58 lbs./H.P. HOUR  
 RATED H.P., NORMAL - .010-.015 lbs./H.P. HOUR  
 DEPT. OF COMMERCE APPROVED TYPE CERTIFICATE No. 37  
 RATINGS FROM BUREAU OF STANDARDS  
 POWER CURVE GRAPH

71 H.P. at 1800 r.p.m.  
 67 H.P. at 1700 r.p.m.  
 63 H.P. at 1600 r.p.m.  
 58 H.P. at 1500 r.p.m.

CARBURETION - STROMBERG MA-R-3  
 IGNITION - SCINTILLA MAGNETOS, DUAL IGNITION  
 LUBRICATION - OIL DRAWN BY CONVENTIONAL  
 TWO GEAR PRESSURE PUMP

**MATERIAL**  
 CRANKCASE - DEEP WELL RIBBED ALUMINUM ALLOY CASTING  
 CRANKSHAFT - 4 THROW, S BEARING, HOLLOW BORED,  
 MACHINED ALLOY STEEL  
 CONNECTING RODS - H SECTION, FORGED DURALUMIN,  
 BABBITT LINED, SHRUNK BRONZE  
 PISTONS - FULL TRUNK RIBBED TYPE DIE CAST  
 ALUMINUM ALLOY  
 CYLINDERS - ALUMINUM ALLOY HEADS, BOLTED TO CAST  
 NICKLE IRON CYLINDERS  
 VALVES - STEEL, BRONZE VALVE SEATS  
 CAMSHAFT - SINGLE FIVE BEARING, MACHINED STEEL  
 VALVE GEAR - BRONZE BUSHED CAM FOLLOWERS,  
 ALEMITE LUBRICATED

WE EXTEND OUR SINCERE APPRECIATION  
 TO MR. HAROLD MOREHOUSE FOR HIS  
 ASSISTANCE INTEREST AND PATIENCE IN  
 THE PREPARATION OF THIS DRAWING  
 AND ACCOMPANYING ARTICLE.



# ROVER AVIATION ENGINE Model L-267 CIRCA 1929-32

DESIGNED BY - HAROLD E. MOREHOUSE  
 MANUFACTURED BY - MICHIGAN AERO-ENGINE CORP.  
 DIVISION OF MICHIGAN SCREW  
 PRODUCTS CORP.  
 LANSING, MICH.

SCALE, ORIGINAL 1:6 (2" = 1")  
 REPRO. 1:12 (1" = 1")  
 DRAWN BY - PAUL R. MATT

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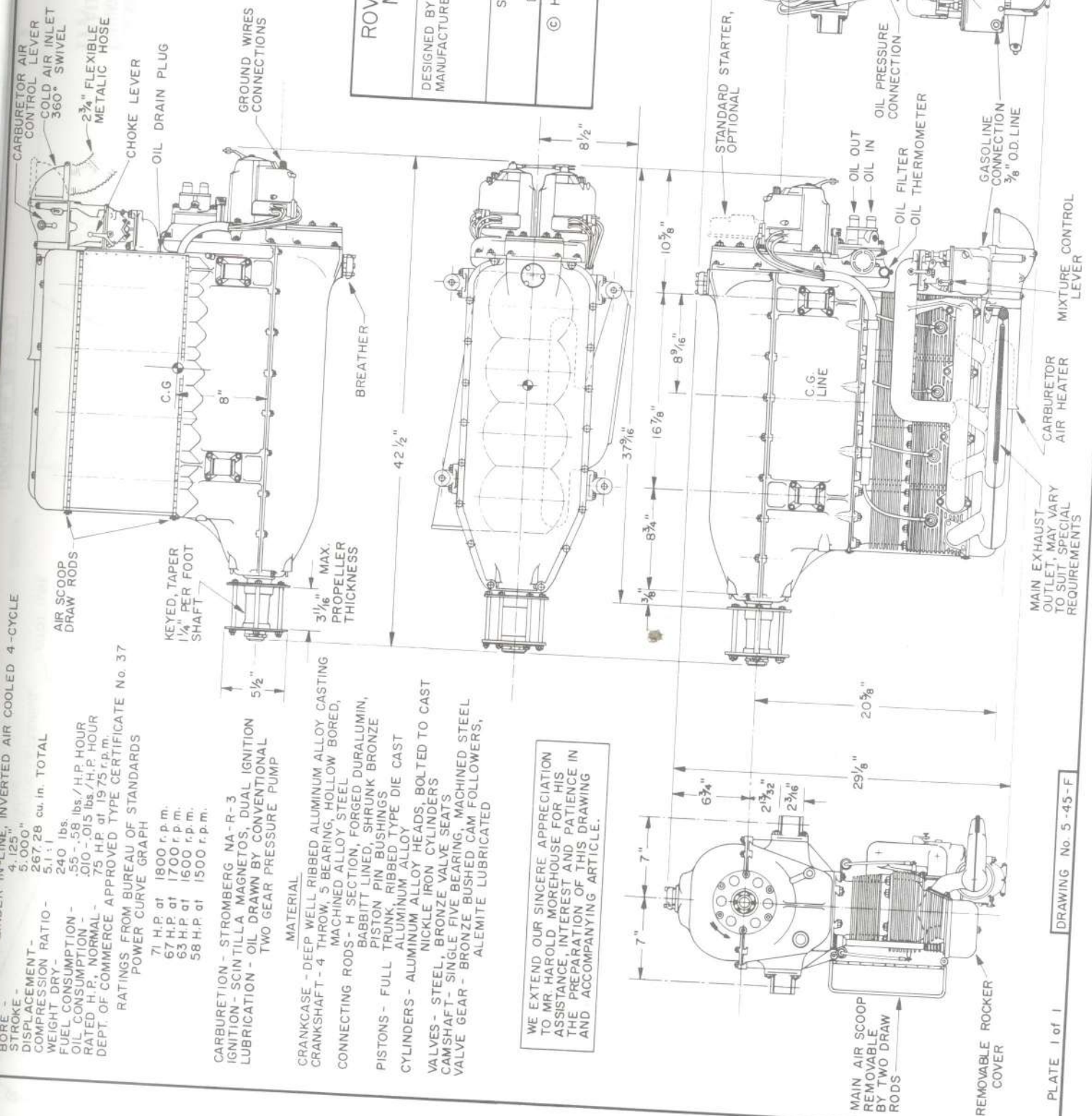


PLATE 1 of 1

DRAWING No. 5-45-F

**COLORING NOTES**  
 OVERALL SILVER DOPED,  
 DETAILING BLACK,  
 ALUMINUM NOSE AREA, BURNISHED  
 CABIN WINDOWS AND DOORS,  
 STAMPED ALUMINUM SHEET

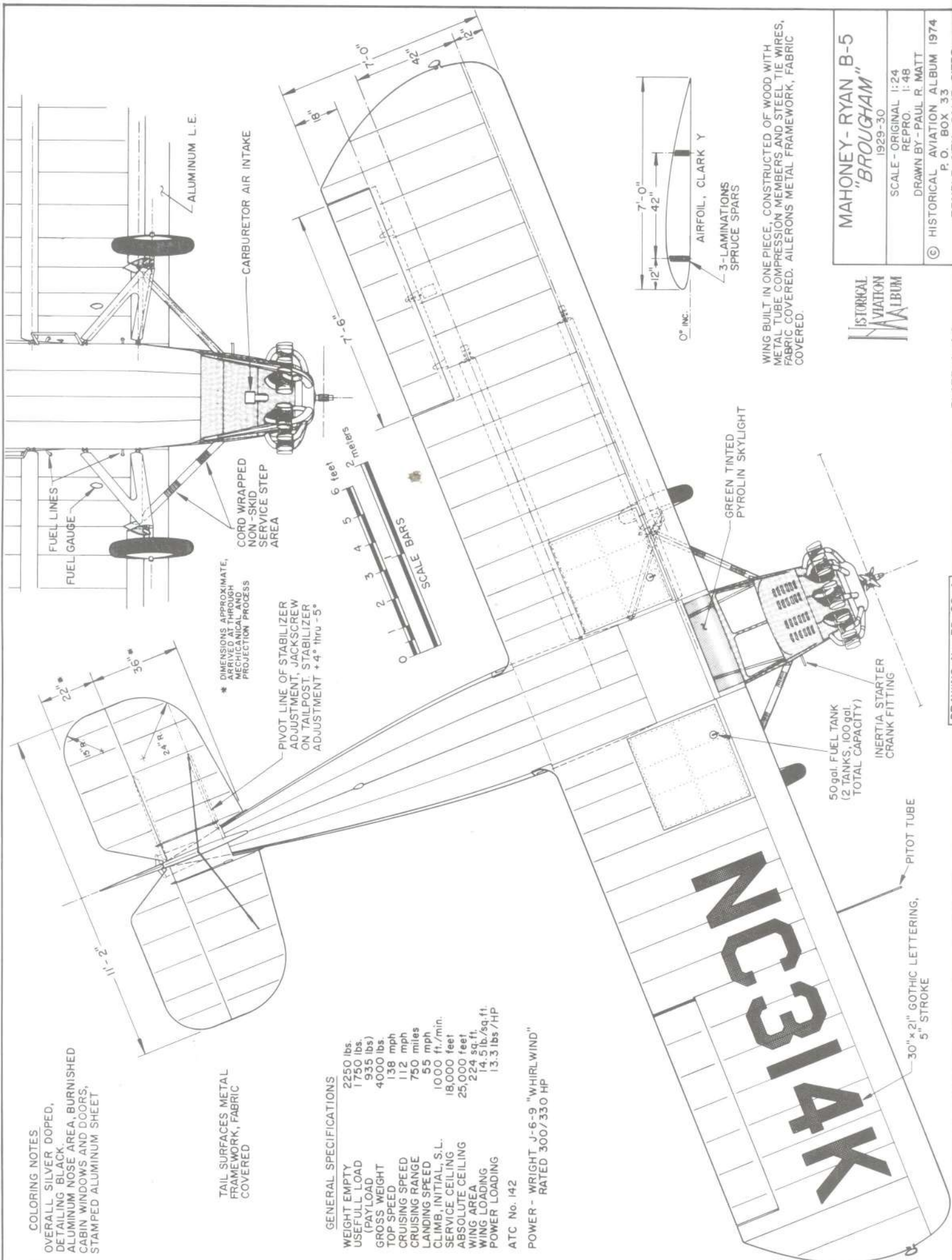
TAIL SURFACES METAL  
 FRAMEWORK, FABRIC  
 COVERED

**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 2250 lbs.  
 USEFUL LOAD (PAYLOAD) 1750 lbs.  
 GROSS WEIGHT 935 lbs.  
 TOP SPEED 4000 lbs.  
 CRUISING SPEED 138 mph  
 CRUISING RANGE 112 mph  
 LANDING SPEED 750 miles  
 CLIMB, INITIAL, S.L. 55 mph  
 SERVICE CEILING 1000 ft./min.  
 ABSOLUTE CEILING 18,000 feet  
 WING AREA 25,000 feet  
 WING LOADING 14.5 lb./sq. ft.  
 POWER LOADING 13.3 lbs./HP

ATC No. 142

POWER - WRIGHT J-6-9 "WHIRLWIND"  
 RATED 300/330 HP



\* DIMENSIONS APPROXIMATE,  
 ARRIVED AT THROUGH  
 MECHANICAL AND  
 PROJECTION PROCESS

WING BUILT IN ONE PIECE, CONSTRUCTED OF WOOD WITH  
 METAL TUBE COMPRESSION MEMBERS AND STEEL TIE WIRES,  
 FABRIC COVERED.AILERONS METAL FRAMEWORK, FABRIC  
 COVERED.



MAHONEY- RYAN B-5  
 "BROUGHAM"  
 1929-30

SCALE - ORIGINAL 1:24  
 REPRO. 1:48

DRAWN BY - PAUL R. MATT

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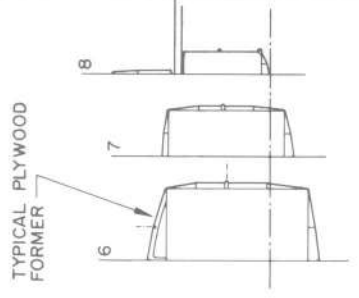
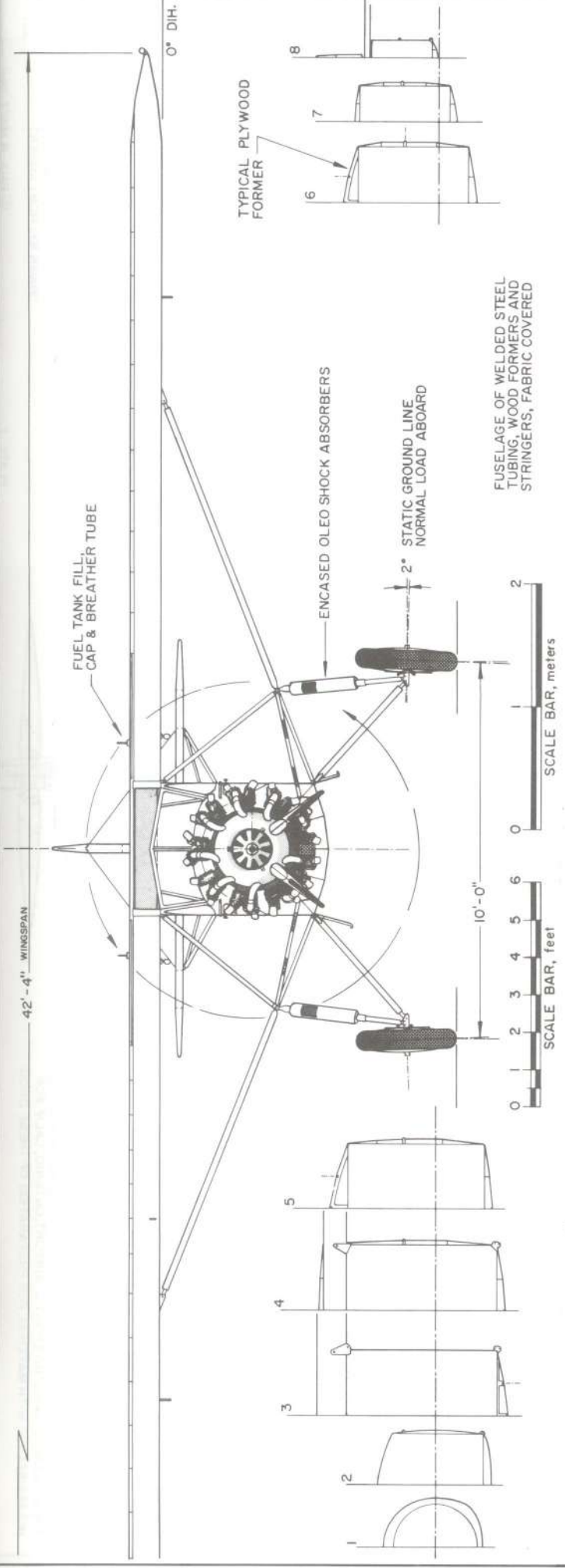
P. O. BOX 33

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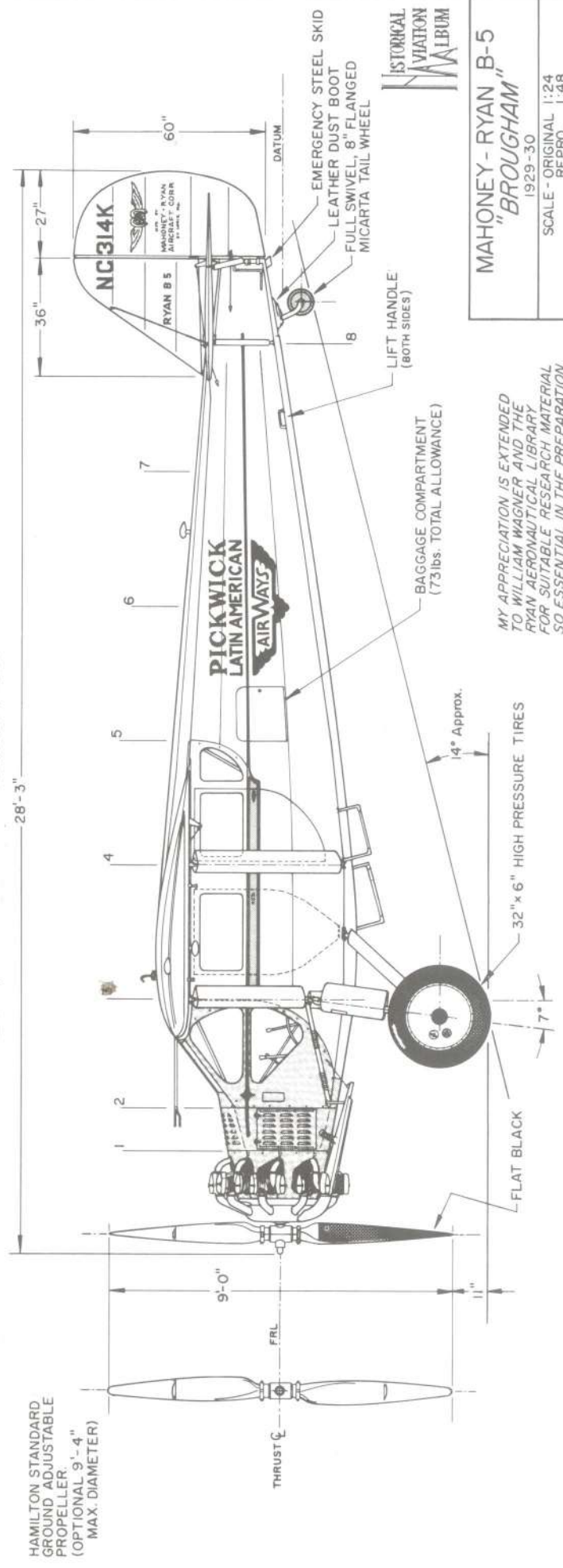
PLATE 102

DRAWING No. BB-96-A





FUSelage OF WELDED STEEL TUBING, WOOD FORMERS AND STRINGERS, FABRIC COVERED



MAHONEY-RYAN B-5  
"BROUGHAM"  
1929-30

SCALE - ORIGINAL 1:24  
REPRO. 1:48

DRAWN BY - PAUL R. MATT

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MY APPRECIATION IS EXTENDED TO WILLIAM WAGNER AND THE RYAN AERONAUTICAL LIBRARY FOR SUITABLE RESEARCH MATERIAL SO ESSENTIAL IN THE PREPARATION OF THESE DRAWINGS.

GENERAL SPECIFICATIONS -

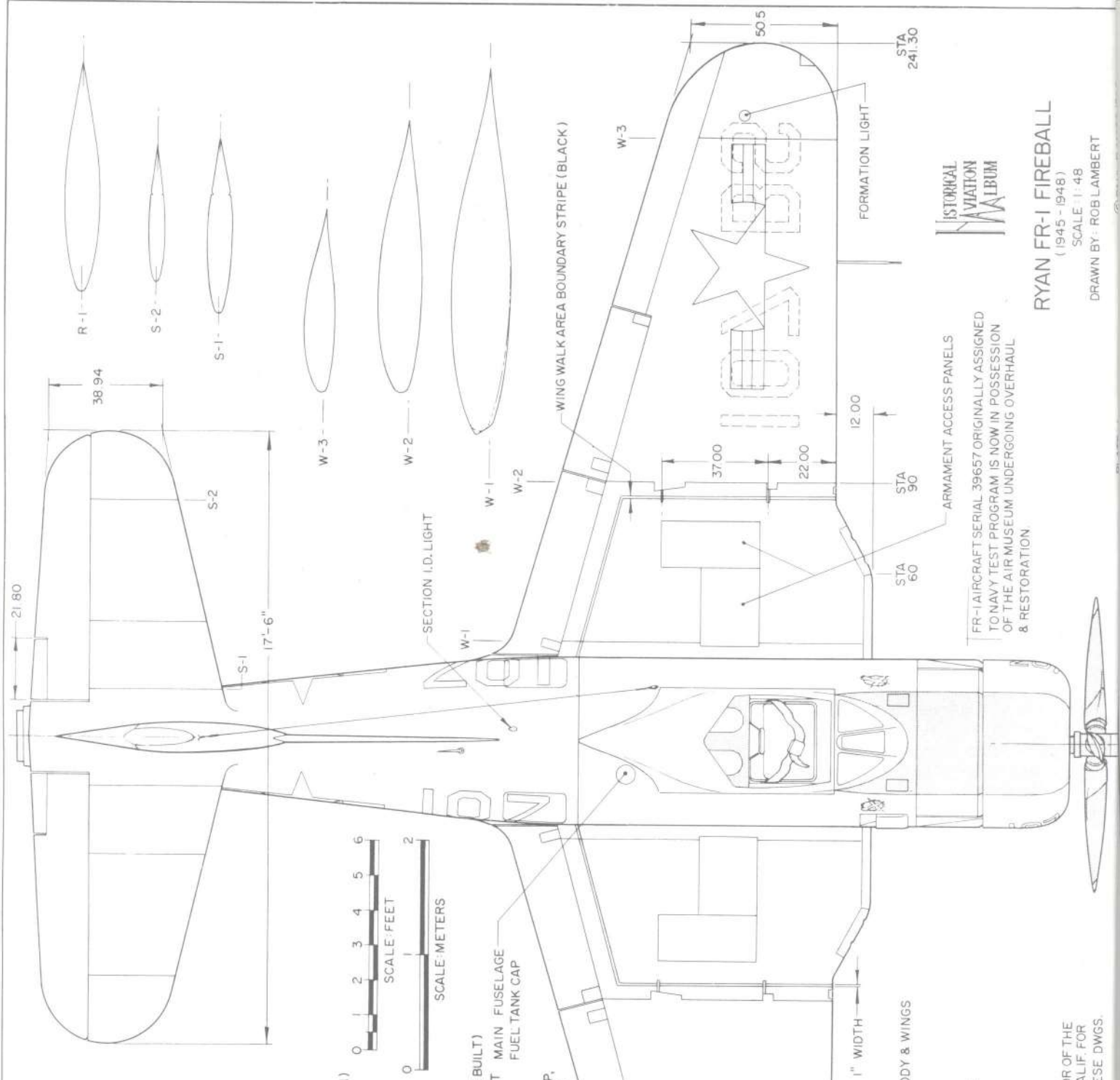
PERFORMANCE DATA  
 MAX SPEED (BOTH ENGINES) @ 18,000 FT. — 425 MPH  
 MAX SPEED (BOTH ENGINES) @ SEA LEVEL — 399 MPH  
 MAX SPEED (PISTON ENGINE ONLY) — 320 MPH  
 CRUISE SPEED (PISTON ENGINE ONLY) — 153 MPH  
 MAX SPEED (JET ENGINE ONLY) — 300 MPH  
 CLIMB TO 20,000 FT. (BOTH ENGINES) — 5.6 MIN  
 INITIAL CLIMB RATE (BOTH ENGINES) — 4,800 FPM  
 SERVICE CEILING — 40,000 FT.  
 RANGE (PISTON ENGINE ONLY @ 153 MPH) — 1,030 MILES

WEIGHTS  
 EMPTY — 7,635 LBS.  
 NORMAL LOADED — 9,958 LBS.  
 MAX GROSS A.U.W. — 10,595 LBS.

POWER PLANT  
 1 WRIGHT CYCLONE R1820-72W — 1,350 H.P.  
 1 GENERAL ELECTRIC I-16 (J-31) — 1,600 LB. THRUST  
 ARMAMENT (WITH AUX. FUEL TANK)  
 4 50 CALIBER MACHINE GUNS (IN WING CENTER SECTION)  
 1 1,000 LB BOMB & 8 60 LB HVAR'S

SERIAL NO. ASSIGNMENTS, RYAN FR-1

MODEL	SERIAL	DESCRIPTION
XFR-1	48232 - 48234	PROTOTYPES
FR-1	39647 - 39712	PROD. SERIES (VF-66)
XFR-2	104572-105175	IMPROVED VERSION (NONE BUILT)
XFR-3	NOT ASSIGNED	HIGHER H.P. PROP. NOT BUILT
XFR-4	39665 ONLY	HIGHER H.P. FLUSH AIR INTAKES, MODIFIED TAIL.
XFR-1	39661 ONLY	"DARK SHARK" TURBO-PROP, TURBO-JET COMBINATION



FR-1 AIRCRAFT SERIAL 396657 ORIGINALLY ASSIGNED TO NAVY TEST PROGRAM IS NOW IN POSSESSION OF THE AIR MUSEUM UNDERGOING OVERHAUL & RESTORATION

RYAN FR-1 FIREBALL

(1945 - 1948)  
 SCALE 1:48

DRAWN BY: ROB LAMBERT

OUR SINCERE APPRECIATION TO MR. ED MALONEY, DIRECTOR OF THE AIR MUSEUM, ONTARIO INTERNATIONAL AIRPORT, ONTARIO, CALIF. FOR HIS ASSISTANCE WITH MATERIAL FOR PREPARATION OF THESE DWGS.



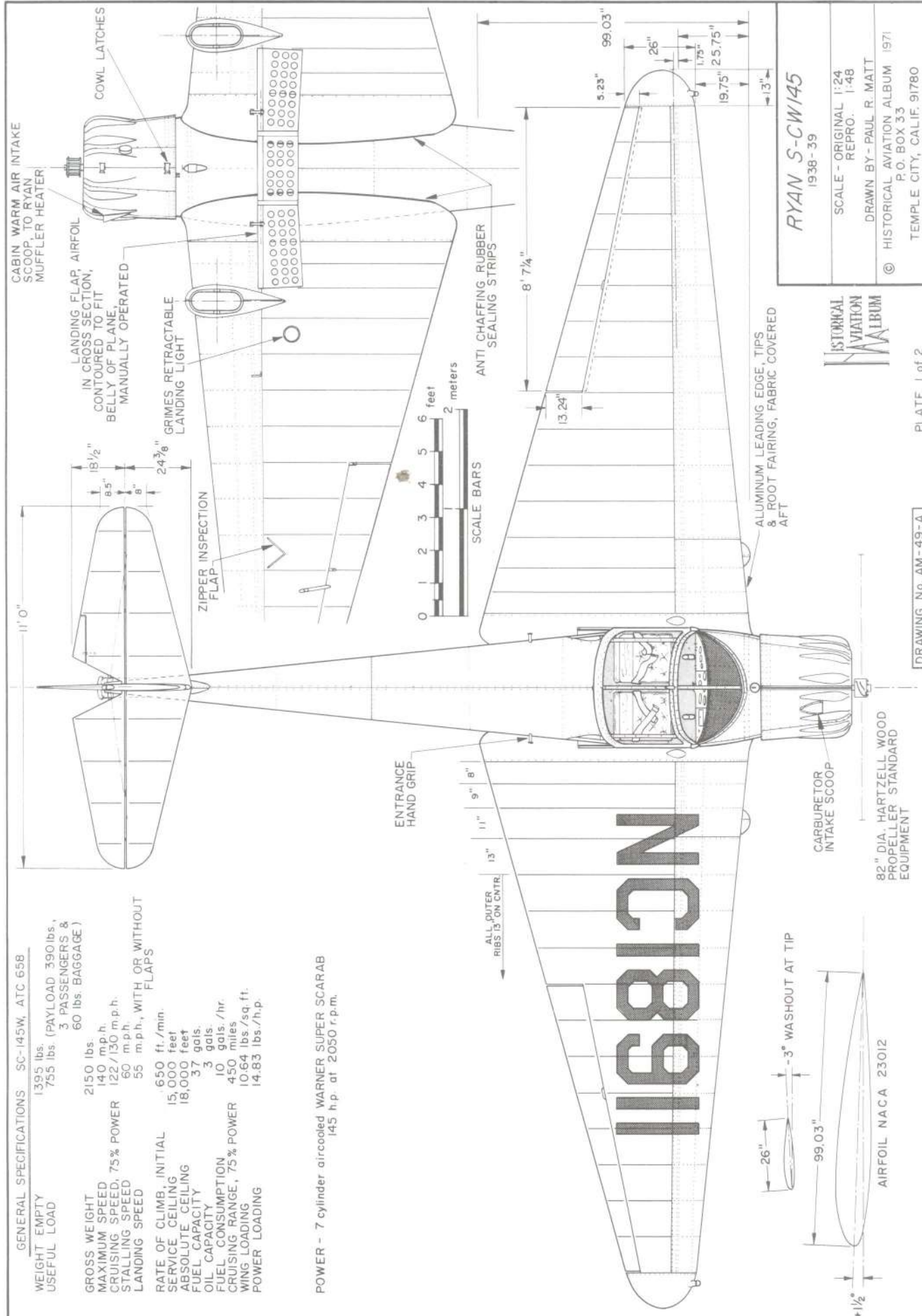
GENERAL SPECIFICATIONS SC-145W, ATC 658

WEIGHT EMPTY 1395 lbs.  
USEFUL LOAD 755 lbs. (PAYLOAD 390 lbs., 3 PASSENGERS & 60 lbs. BAGGAGE)

GROSS WEIGHT 2150 lbs.  
MAXIMUM SPEED 140 m.p.h.  
CRUISING SPEED, 75% POWER 122/130 m.p.h.  
STALLING SPEED 60 m.p.h.  
LANDING SPEED 55 m.p.h., WITH OR WITHOUT FLAPS

RATE OF CLIMB, INITIAL 650 ft./min.  
SERVICE CEILING 15,000 feet  
ABSOLUTE CEILING 18,000 feet  
FUEL CAPACITY 37 gals.  
OIL CAPACITY 3 gals.  
FUEL CONSUMPTION 10 gals./hr.  
CRUISING RANGE, 75% POWER 450 miles  
WING LOADING 10.64 lbs./sq. ft.  
POWER LOADING 14.83 lbs./h.p.

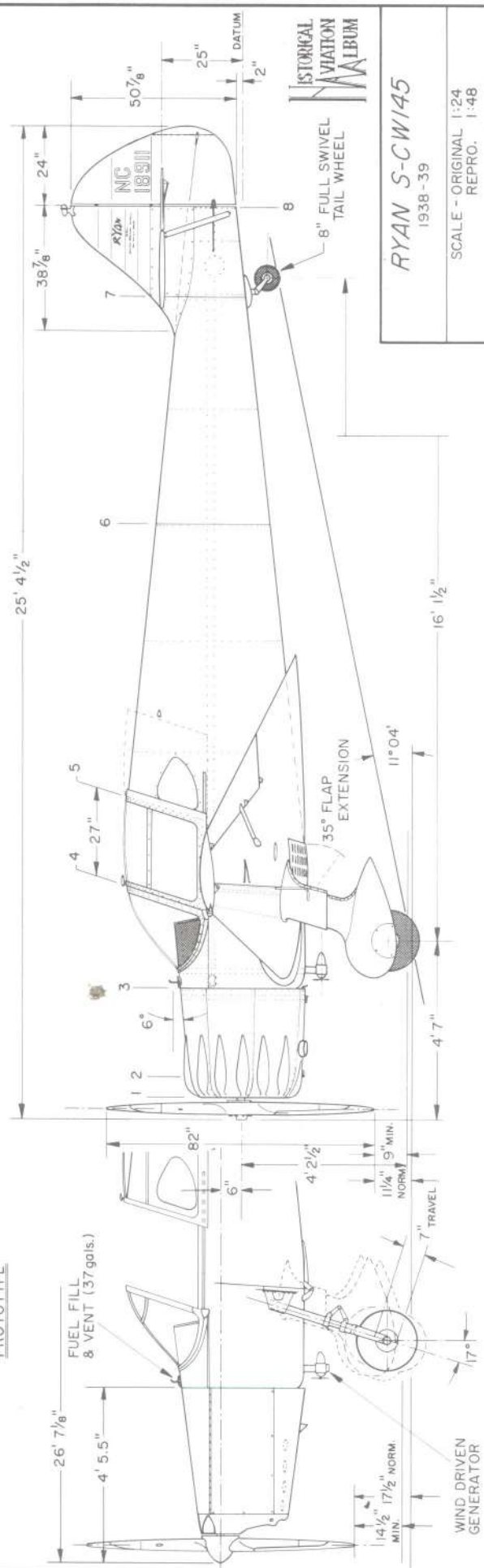
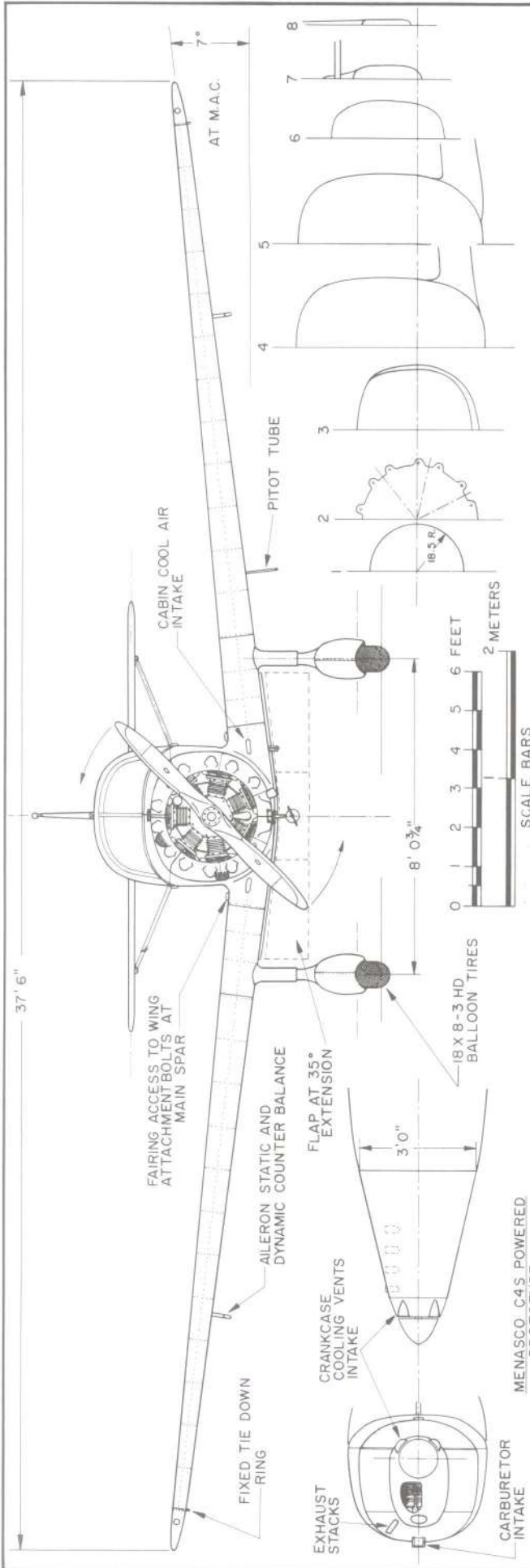
POWER - 7 cylinder aircooled WARNER SUPER SCARAB  
145 h.p. at 2050 r.p.m.



RYAN S-CW145  
1938-39

SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY - PAUL R. MATT  
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**RYAN S-CW145**  
1938-39

SCALE - ORIGINAL 1:24  
REPRO. 1:48

DRAWN BY - PAUL R. MATT  
P.O. BOX 33  
TEMPLE CITY, CALIF. 91780

**MENASCO POWERED PROTOTYPE ONLY**  
ONLY ONE BUILT, NX17372, CONVERTED TO WARNER RADIAL  
NO MENASCO S-Cs SOLD TO CUSTOMERS

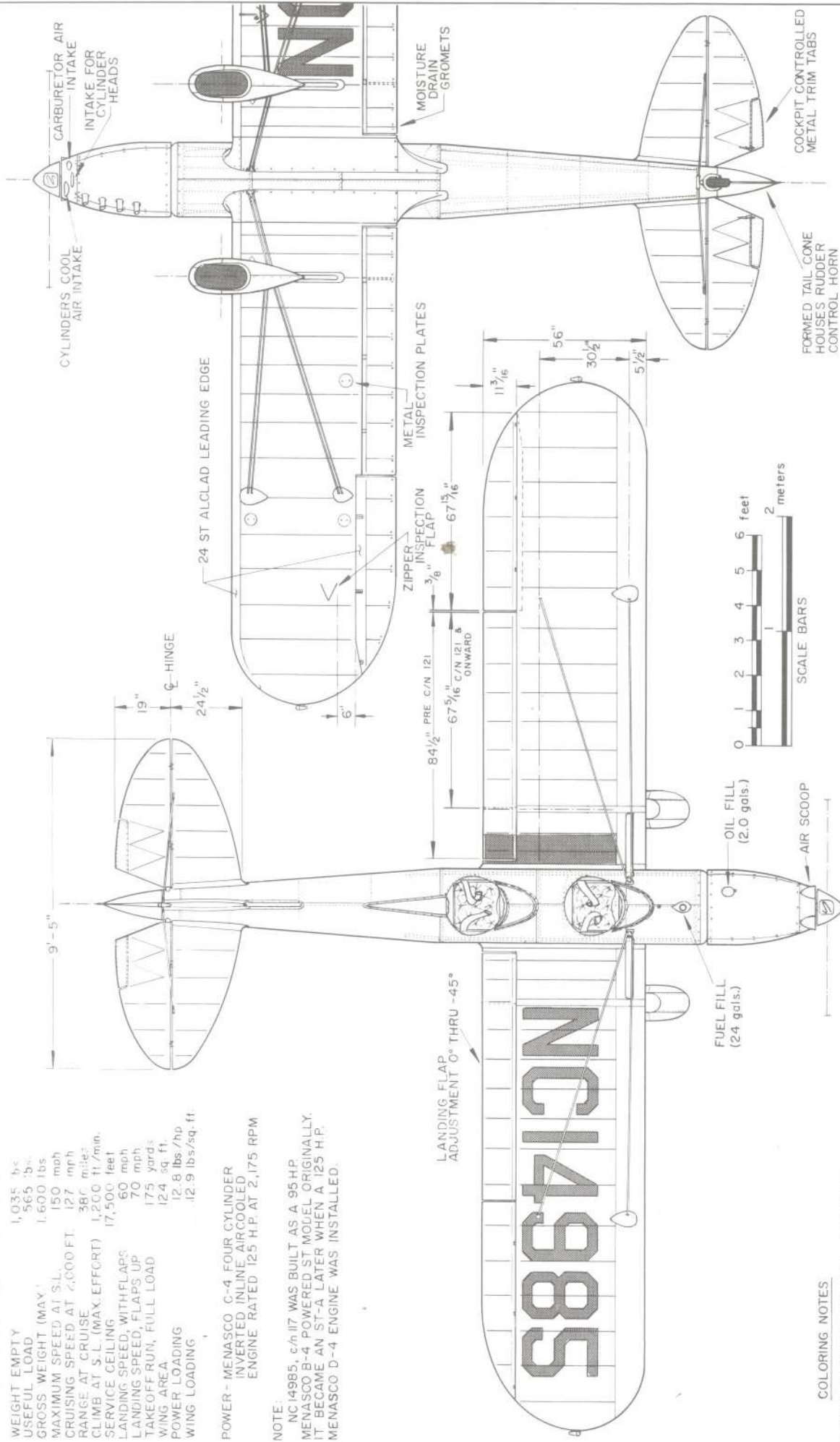
GENERAL SPECIFICATIONS  
ST-A, MENASCO C-4, 125 hp ENGINE

WEIGHT EMPTY 1,035 lb.  
USEFUL LOAD 565 lb.  
GROSS WEIGHT (MAX.) 1,600 lbs.  
MAXIMUM SPEED AT S.L. 150 mph  
CRUISING SPEED AT 2,000 FT. 127 mph  
RANGE AT CRUISE 380 miles  
CLIMB AT S.L. (MAX. EFFORT) 1,200 ft./min.  
SERVICE CEILING 17,500 feet  
LANDING SPEED, WITH FLAPS 60 mph  
LANDING SPEED, FLAPS UP 70 mph  
TAKEOFF RUN, FULL LOAD 175 yards  
WING AREA 124 sq. ft.  
POWER LOADING 12.8 lbs./hp  
WING LOADING 12.9 lbs./sq. ft.

POWER - MENASCO C-4 FOUR CYLINDER  
INVERTED INLINE, AIRCOOLED  
ENGINE RATED 125 H.P. AT 2,175 RPM

NOTE:

NC14985, c/n 117 WAS BUILT AS A 95 HP  
MENASCO B-4 POWERED ST MOUËL. ORIGINALLY,  
IT BECAME AN ST-A LATER WHEN A 125 H.P.  
MENASCO D-4 ENGINE WAS INSTALLED.



COLORING NOTES

ENTIRE AIRCRAFT NATURAL ALUMINUM  
FABRIC COVERED AREA, MATCHING SILVER DOPE  
LICENSE NUMBERS & DETAILS, BLACK  
INTERIOR OF COCKPIT AREA, UPHOLSTERED IN  
RED OR BLACK LEATHERETTE, INSTRUMENT  
PANEL BLACK "CRINKLE" FINISH, CONTROL  
STICK AND WING FLAP CONTROL LEVER  
CHROME PLATED.

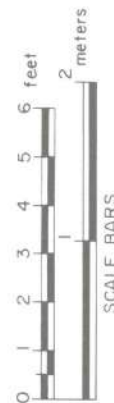
CONSTRUCTION NOTES

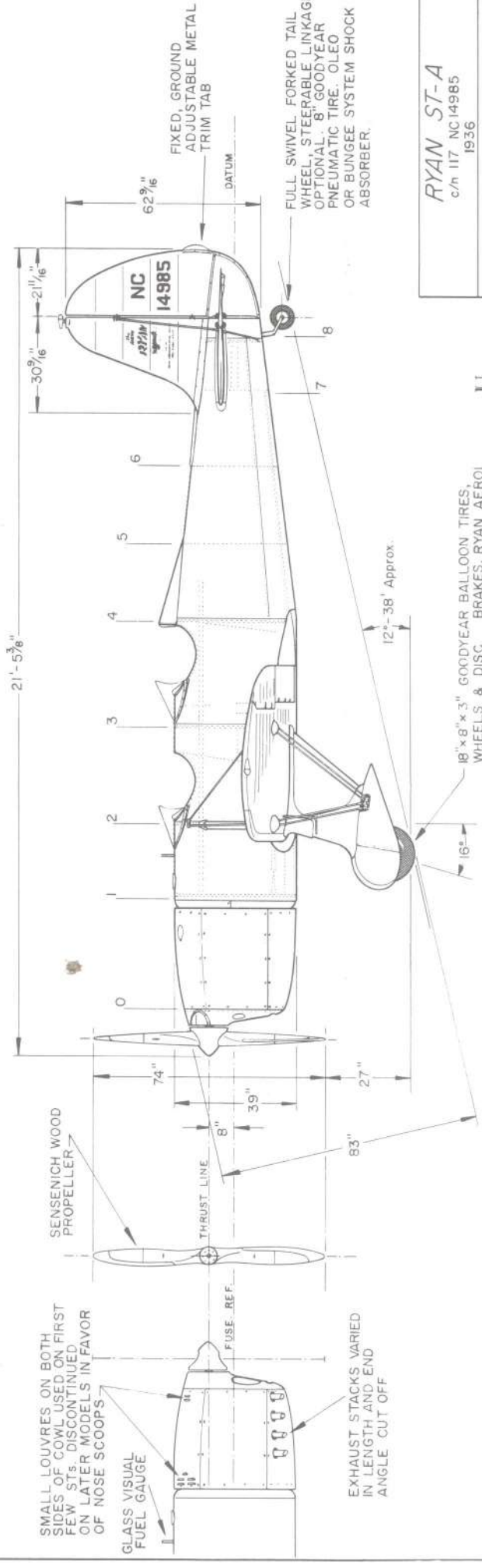
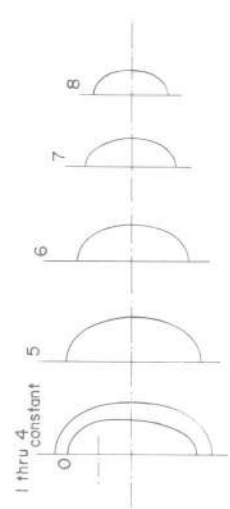
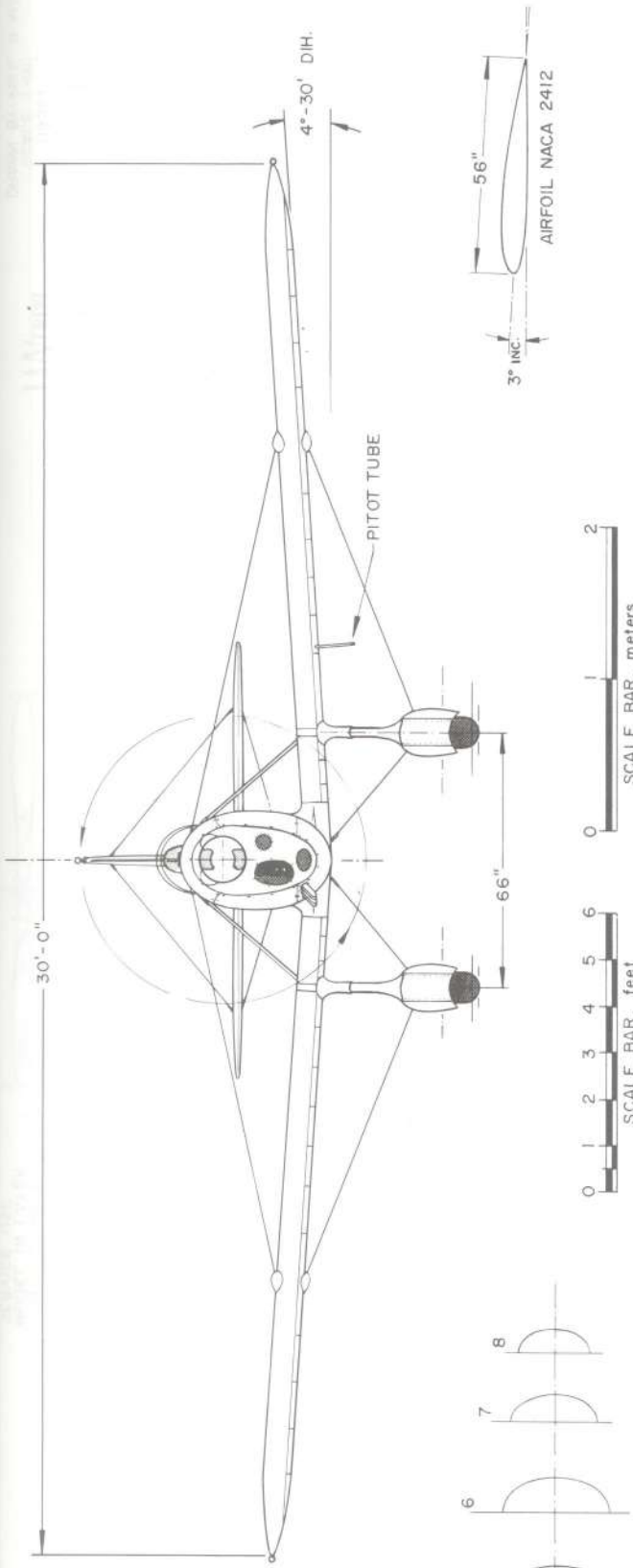
FUSELAGE - ALL METAL, MONOCOQUE, ALCLAD 24 ST SKIN.  
WINGS - SPRUCE SPARS, STAMPED ALUMINUM ALLOY RIBS,  
STEEL TIE COMPRESSION MEMBERS, STEEL  
CABLE TIE LINES, FABRIC COVERED.  
AILERONS & WING FLAPS - STEEL TUBE SPAR, ALUMINUM  
ALLOY RIBS, FABRIC COVERED.  
TAIL SURFACES - RIVETED 24 ST ALUMINUM TUBING AND  
ALLOY RIBS, FABRIC COVERED.

MY SINCERE APPRECIATION IS EXTENDED TO  
MESSRS. T. CLAUDE RYAN, WILLIAM WAGNER,  
AND MAC CATRELL OF THE RYAN AERONAUTICAL  
CORP., EV. CASSAGNERES AND FLOYD CARTER  
FOR THEIR VALUABLE AND UNSELFISH HELP  
IN THE PREPARATION OF THESE DRAWINGS



**RYAN ST-A**  
c/n 117 NC14985  
1936  
SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY - PAUL R. MATT  
© HISTORICAL AVIATION ALBUM 1971  
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**RYAN ST-A**  
 c/n 117 NC14985  
 1936

SCALE - ORIGINAL 1:24  
 REPRO. 1:48

DRAWN BY - PAUL R. MATT

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**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 2730 lbs.  
 USEFUL LOAD 1320 "  
 GROSS WEIGHT 4050 mph  
 TOP SPEED 168 "  
 CRUISING SPEED 120 "  
 LANDING SPEED, WITH FLAPS 60 "  
 RATE OF CLIMB 650 ft./min.  
 FUEL CAPACITY 200 gals.  
 OIL CAPACITY 12 "  
 SERVICE CEILING 15,000 ft.  
 WING AREA, INCL. AILERONS 220 sq ft.

PERFORMANCE FIGURES APPROXIMATE  
 BASED UPON PILOT'S EXPERIENCES,  
 EXACT DATA NOT AVAILABLE

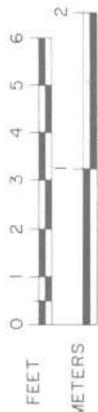
POWER - PRATT & WHITNEY R-985-II  
 400 H.P. AT 2,200 rpm at 5,000 ft.  
 450 H.P. AT 2,300 rpm - MILITARY RATING

**AIRFOILS FULL SCALE**

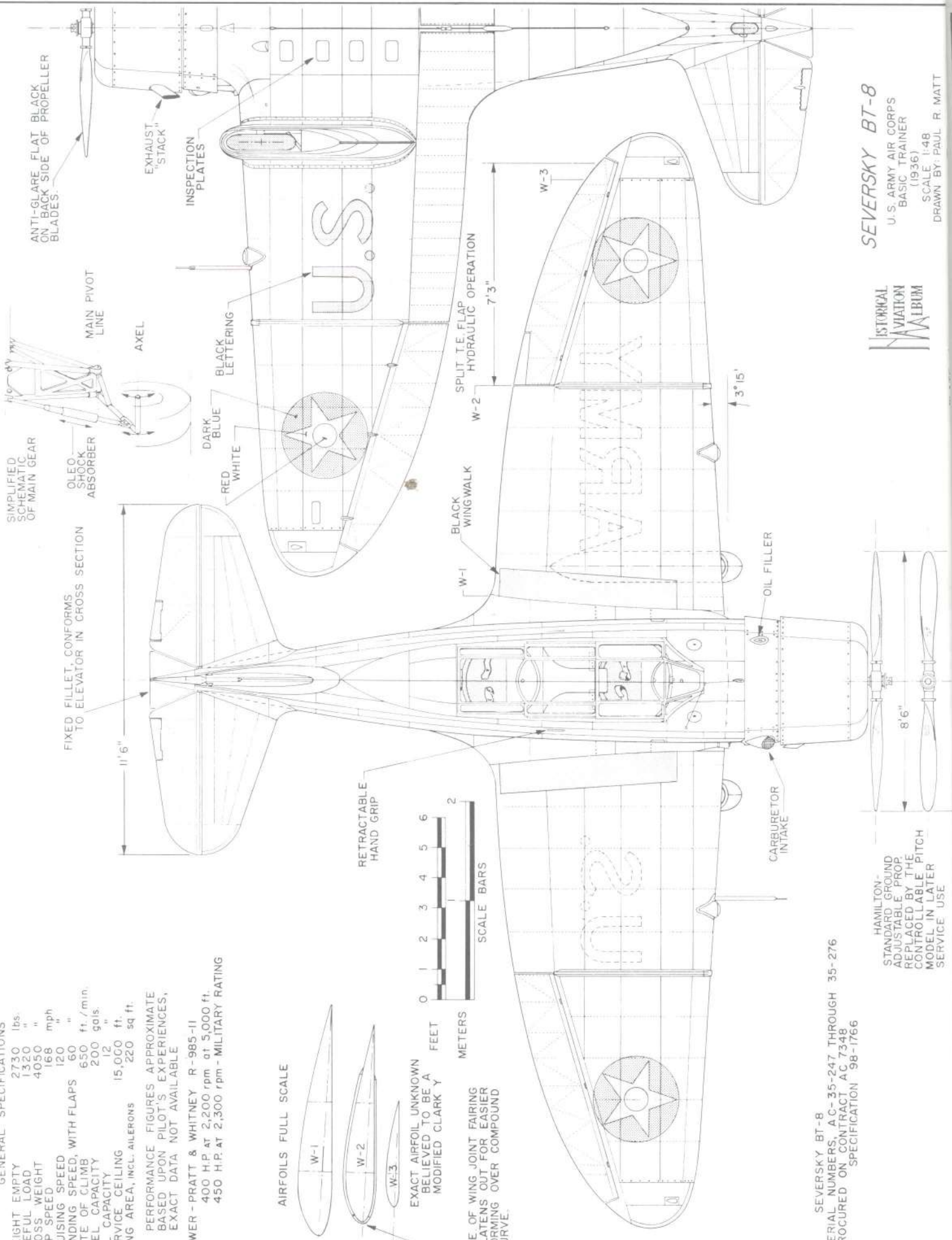


EXACT AIRFOIL UNKNOWN  
 BELIEVED TO BE A  
 MODIFIED CLARK Y

L.E. OF WING JOINT FAIRING  
 FLATENS OUT FOR EASIER  
 FORMING OVER COMPOUND  
 CURVE.



RETRACTABLE  
 HAND GRIP

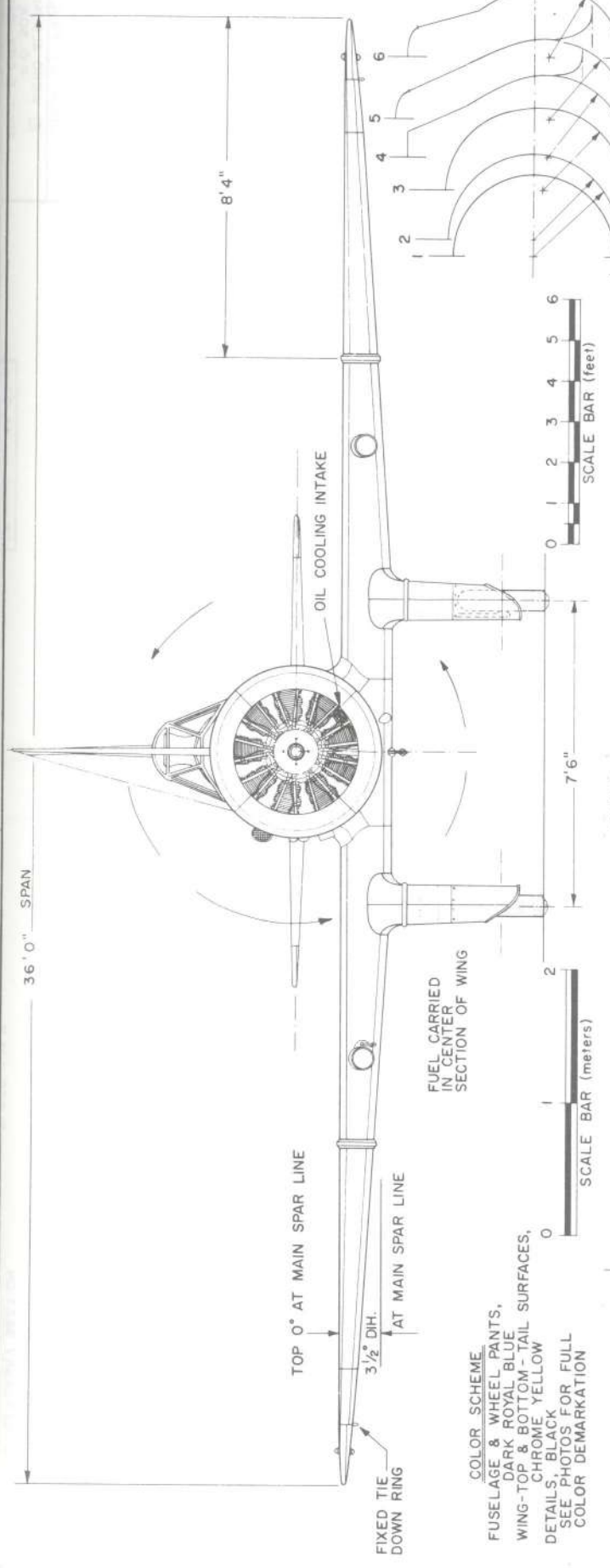


SEVERSKY BT-8  
 SERIAL NUMBERS, AC-35-247 THROUGH 35-276  
 PROCURED ON CONTRACT AC 7348  
 SPECIFICATION 98-1766

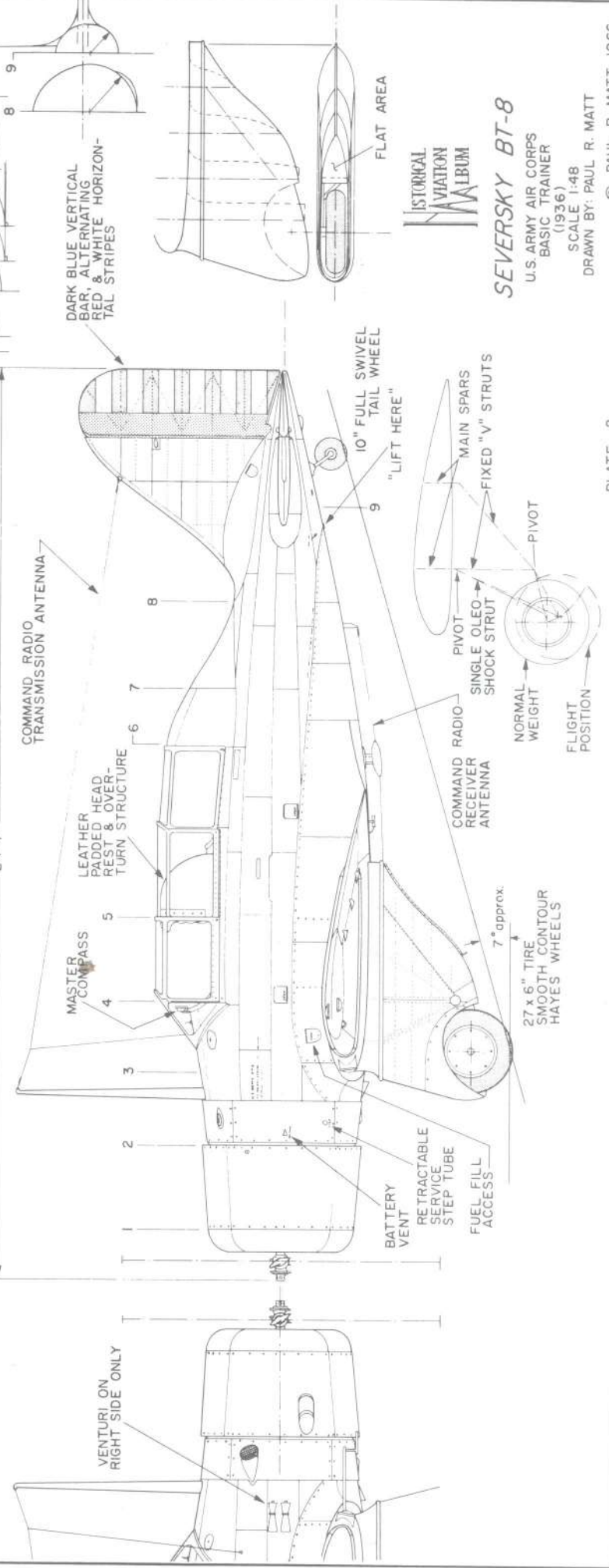
**SEVERSKY BT-8**  
 U.S. ARMY AIR CORPS  
 BASIC TRAINER  
 (1936)  
 SCALE 1:48  
 DRAWN BY: PAUL R. MATT







**COLOR SCHEME**  
 FUSELAGE & WHEEL PANTS,  
 DARK ROYAL BLUE  
 WING-TOP & BOTTOM-TAIL SURFACES,  
 CHROME YELLOW  
 DETAILS, BLACK  
 SEE PHOTOS FOR FULL  
 COLOR DEMARKATION



**SEVERSKY BT-8**

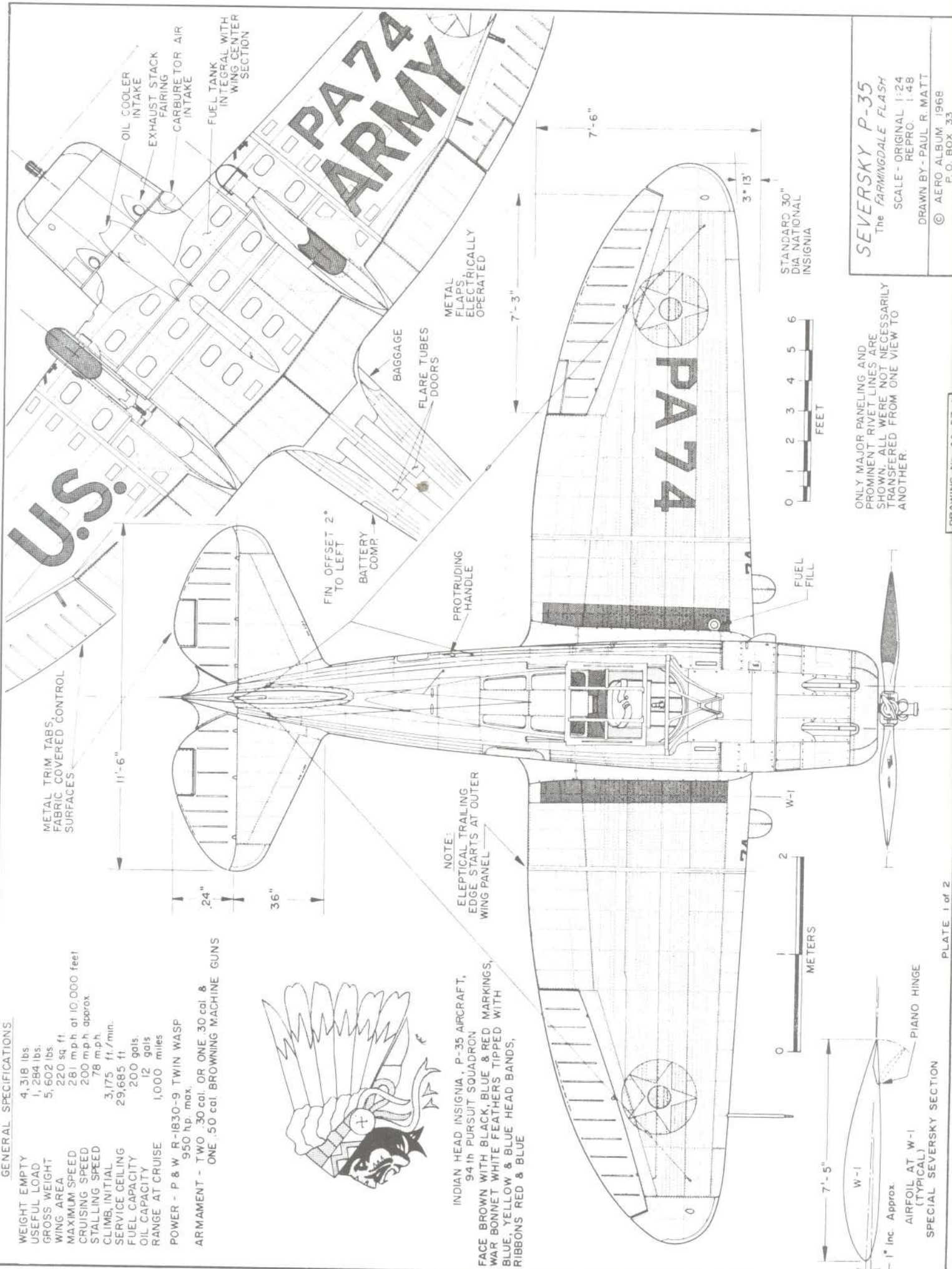
U.S. ARMY AIR CORPS  
 BASIC TRAINER  
 (1936)  
 SCALE 1:48  
 DRAWN BY: PAUL R. MATT

**GENERAL SPECIFICATIONS:**

- WEIGHT EMPTY 4,318 lbs
- USEFUL LOAD 1,284 lbs.
- GROSS WEIGHT 5,602 lbs
- WING AREA 220 sq ft
- MAXIMUM SPEED 281 m.p.h. at 10,000 feet
- CRUISING SPEED 200 m.p.h. approx.
- STALLING SPEED 78 m.p.h.
- CLIMB, INITIAL 3,175 ft./min.
- SERVICE CEILING 29,685 ft
- FUEL CAPACITY 20.0 gals.
- OIL CAPACITY 12 gals
- RANGE AT CRUISE 1,000 miles
- POWER - P & W R-1830-9 TWIN WASP 950 hp. max.
- ARMAMENT - TWO .30 cal. OR ONE .30 cal. & ONE .50 cal. BROWNING MACHINE GUNS



INDIAN HEAD INSIGNIA, P-35 AIRCRAFT,  
94th PURSUIT SQUADRON  
FACE BROWN WITH BLACK, BLUE & RED MARKINGS,  
WAR BONNET WHITE FEATHERS TIPPED WITH  
BLUE, YELLOW & BLUE HEAD BANDS,  
RIBBONS RED & BLUE



**SEVERSKY P-35**  
The FARMINGDALE FLASH  
SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY - PAUL R. MATT  
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ELECTRICALLY  
CONTROLLED,  
MIRROR  
GUNSIGHT

RED COWL  
Lip

74

74

HAYES WHEELS & BRAKES,  
CLEVELAND SHOCK ABSORBERS,  
GENERAL 27 SMOOTH CONTOUR  
TIRES, OLEO TRAVEL 7" LANDING  
GEARS ELECTRICALLY  
RETRACTED

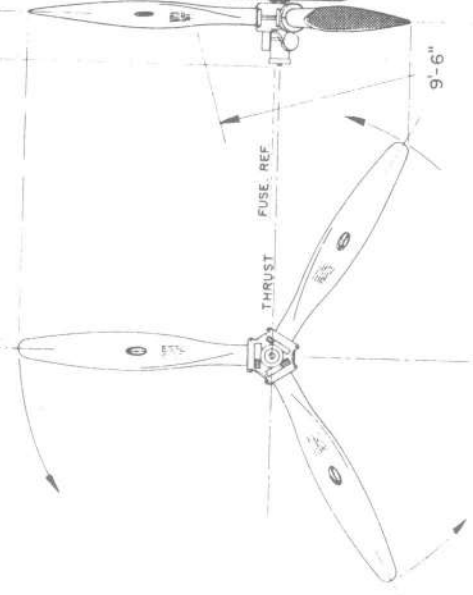
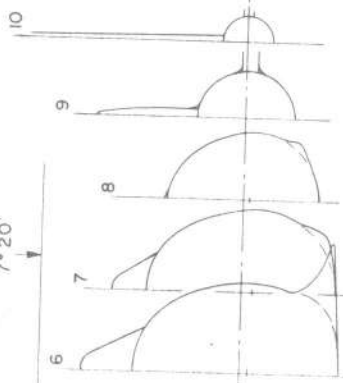
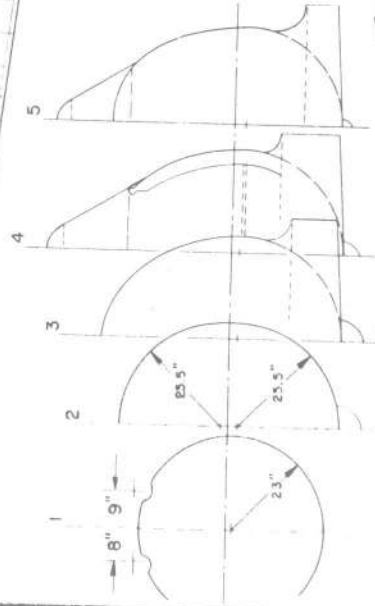
TOW RING

7'-10"

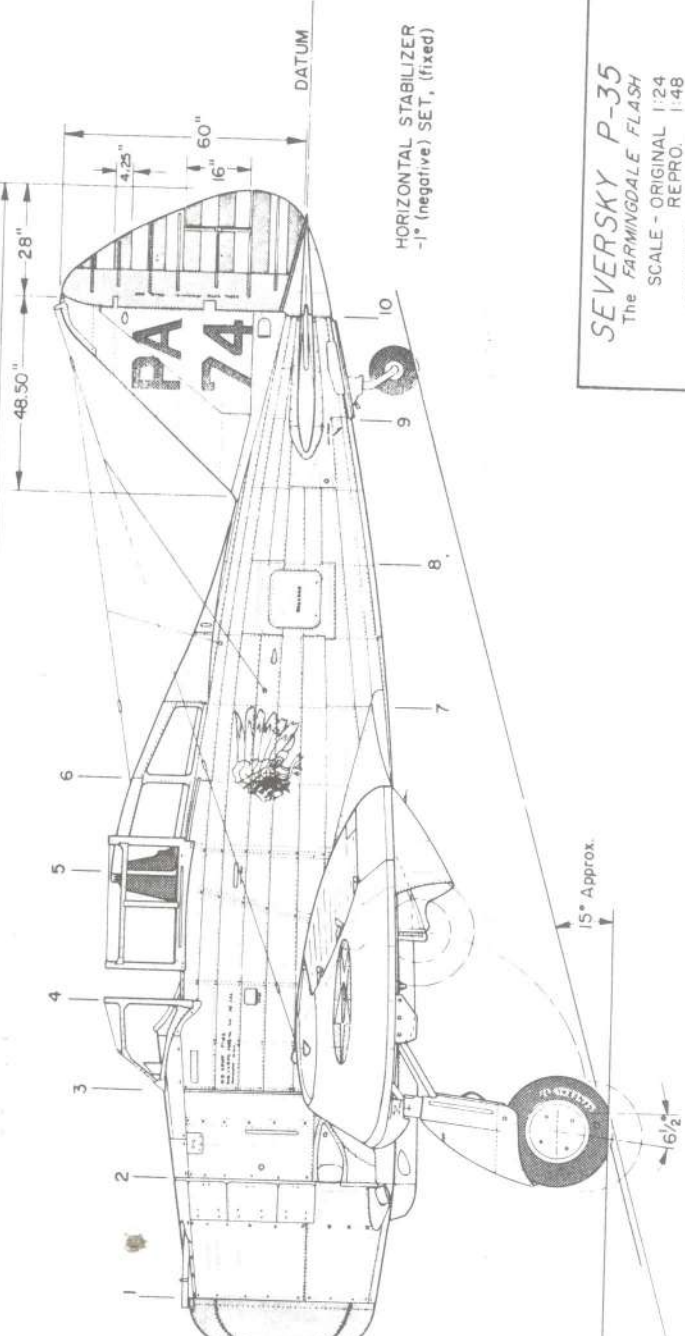
0 1 2 3 4 5 6  
FEET

25'-4"

0 1 2  
METERS



HAMILTON STANDARD CONSTANT  
SPEED PROPELLER, 10-6 DIAMETER



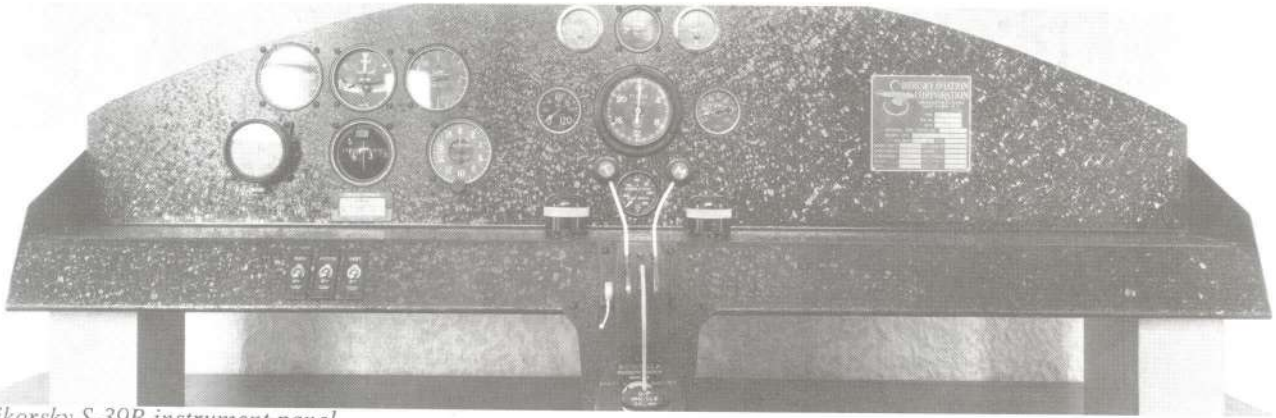
HORIZONTAL STABILIZER  
-1° (negative) SET, (fixed)

SEVERSKY P-35  
The FARMINGDALE FLASH  
SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY - PAUL R. MATT  
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DRAWING No AA-57-A

PLATE 2 of 2

# Sikorsky S-39B

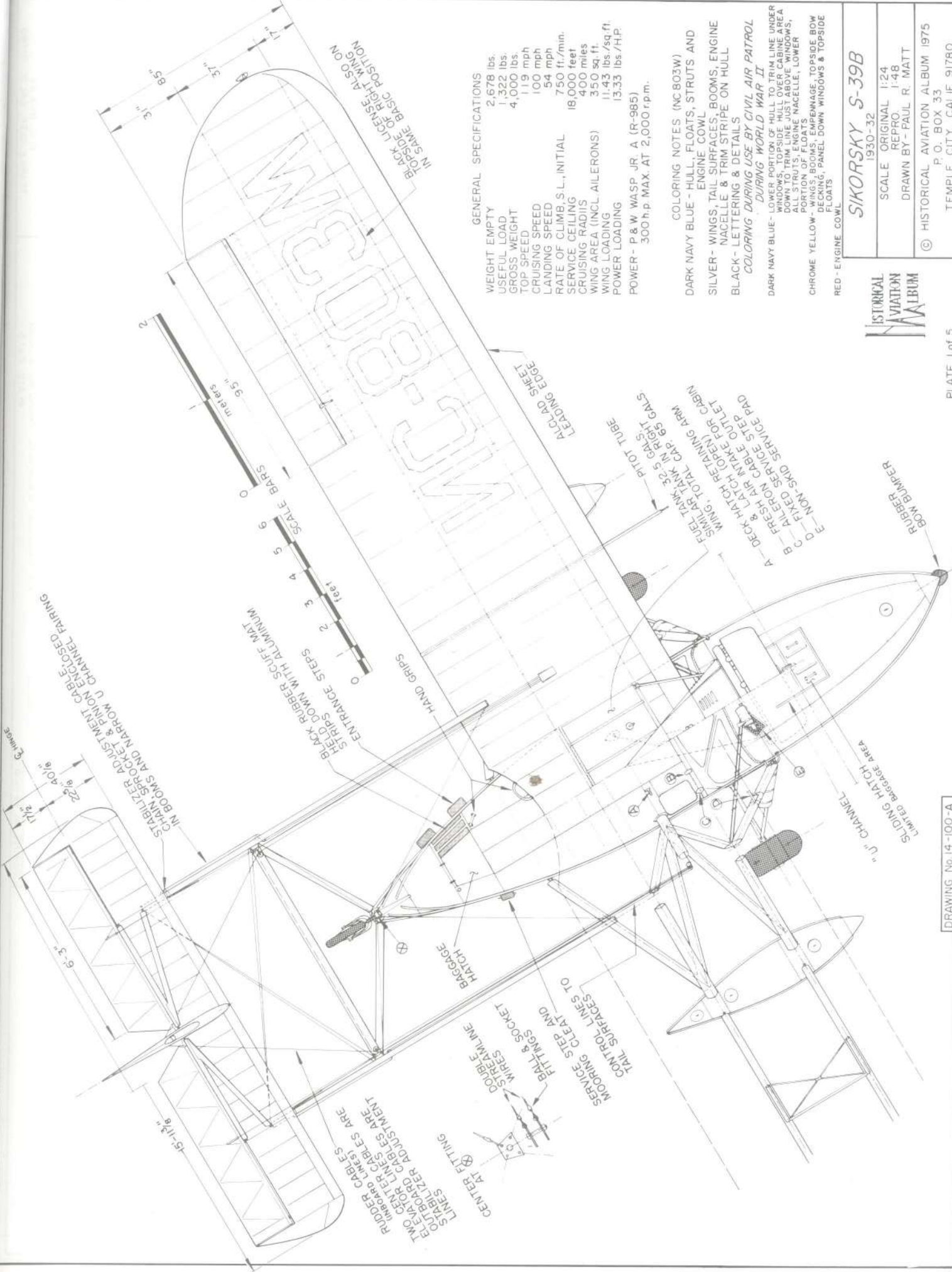


*Sikorsky S-39B instrument panel.*



*Sikorsky S-39B interior.*

CHANGE  
1/2"



**GENERAL SPECIFICATIONS**

WEIGHT EMPTY	2,678 lbs.
USEFUL LOAD	1,322 lbs.
GROSS WEIGHT	4,000 lbs.
TOP SPEED	119 mph
CRUISING SPEED	100 mph
LANDING SPEED	54 mph
RATE OF CLIMB, S.L., INITIAL	750 ft./min.
SERVICE CEILING	18,000 feet
CRUISING RADIUS	400 miles
WING AREA (INCL. AILERONS)	350 sq.ft.
WING LOADING	11.43 lbs./sq.ft.
POWER LOADING	13.33 lbs./H.P.
POWER - P & W WASP JR. A (R-985)	300 h.p. MAX. AT 2,000 r.p.m.

**COLORING NOTES (NC803W)**

DARK NAVY BLUE - HULL, FLOATS, STRUTS AND ENGINE COWL

SILVER - WINGS, TAIL SURFACES, BOOMS, ENGINE NACELLE & TRIM STRIPE ON HULL

BLACK - LETTERING & DETAILS

**COLORING DURING USE BY CIVIL AIR PATROL**

*DURING WORLD WAR II*

DARK NAVY BLUE - LOWER PORTION OF HULL TO TRIM LINE UNDER WINDOWS, TOPSIDE HULL OVER CABINE AREA

CHROME YELLOW - WINGS, BOOMS, EMPENNAGE, TOPSIDE BOW DECKING, PANEL DOWN WINDOWS & TOPSIDE FLOATS

RED - ENGINE COWL

**SIKORSKY S-39B**  
1930-32

SCALE ORIGINAL 1:24  
REFRO. 1:48

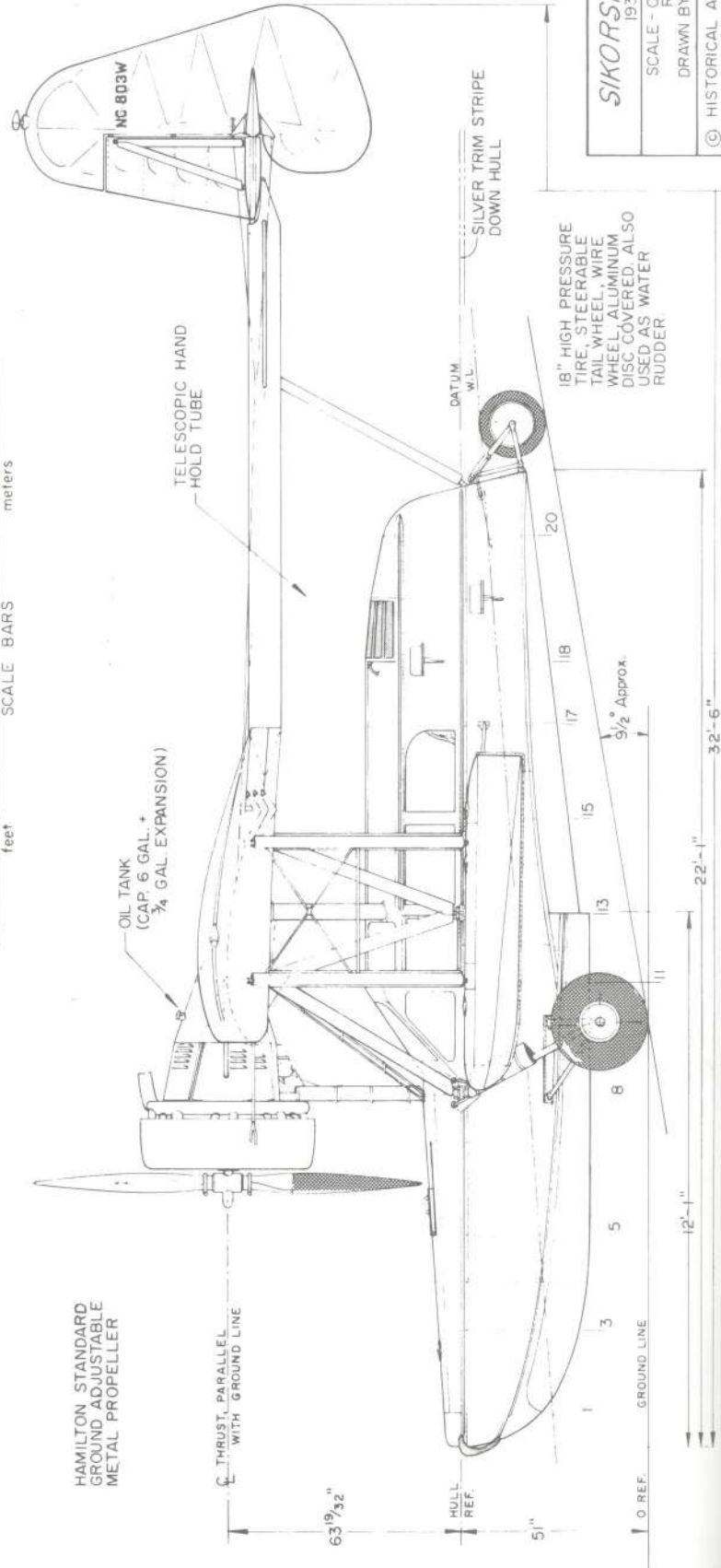
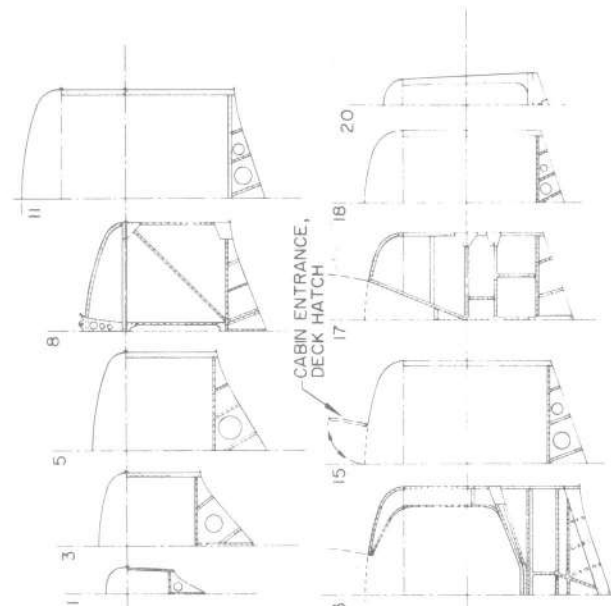
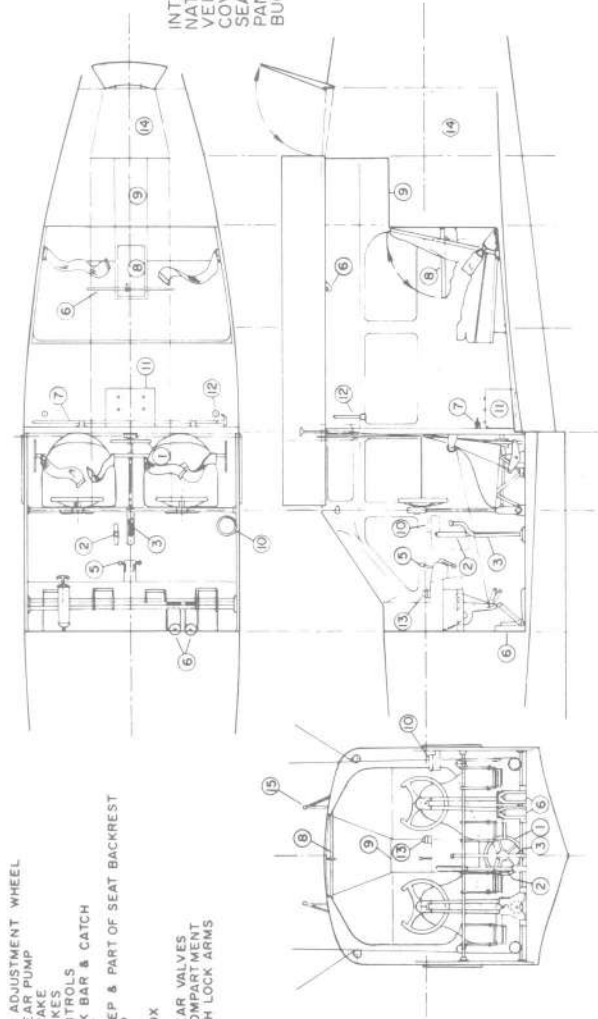
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1. STABILIZER ADJUSTMENT WHEEL
2. LANDING GEAR PUMP
3. WHEEL BRAKES
4. ENGINE CONTROLS
5. HATCH LOCK BAR & CATCH
6. BOAT HOOK
7. FOLDING STEP
8. COMPASS
9. BATTERY BOX
10. HANDHOLD
11. LANDING GEAR VALVES
12. BAGGAGE COMPARTMENT
13. FIXED HATCH LOCK ARMS

INTERIOR FINISH -  
NATURAL MAHOAGANY  
VENEER, LEATHER  
COVERED REAR BENCH  
SEAT, INSTRUMENT  
PANEL, CONTROLS, FRONT  
BUCKET SEATS - BLACK



DRAWING No. 14-100-A

PLATE 2 of 5

OUTRIGGER...

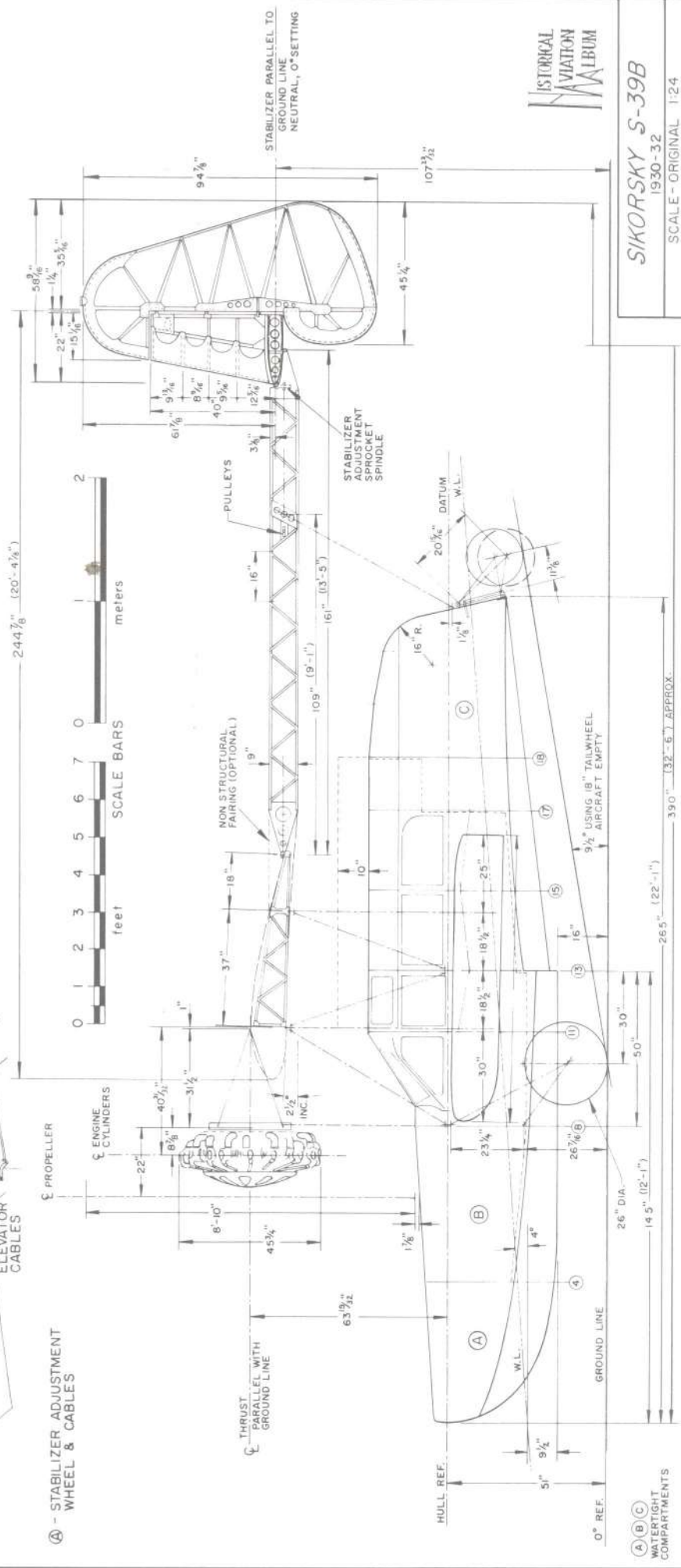
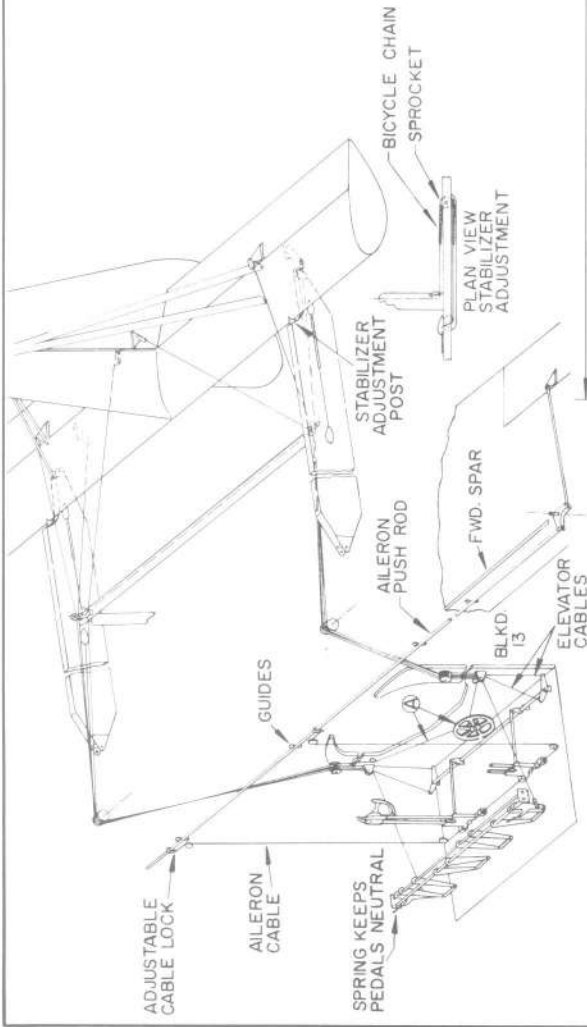
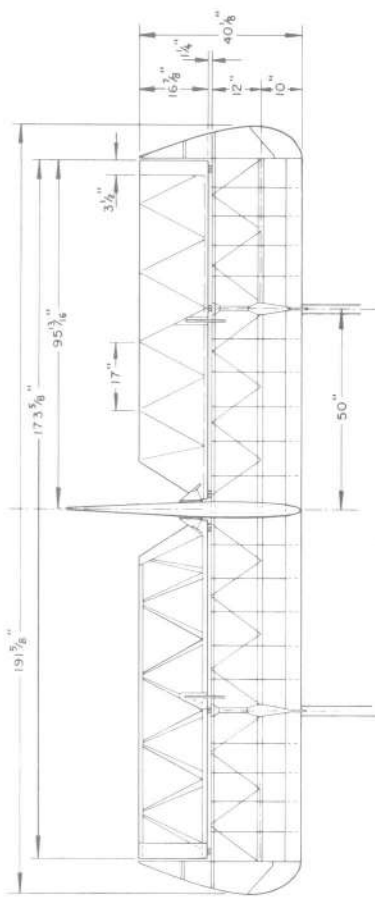
ALL DIMENSIONS IN WING PANEL LAYOUT ARE IN INCHES

HISTORICAL AVIATION ALBUM

**SIKORSKY S-39B**  
1930-32

SCALE - ORIGINAL 1:24  
REPRO 1:48  
DRAWN BY - PAUL R. MATT

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**SIKORSKY S-39B**  
1930-32  
SCALE - ORIGINAL 1:24  
REPRO. 1:48  
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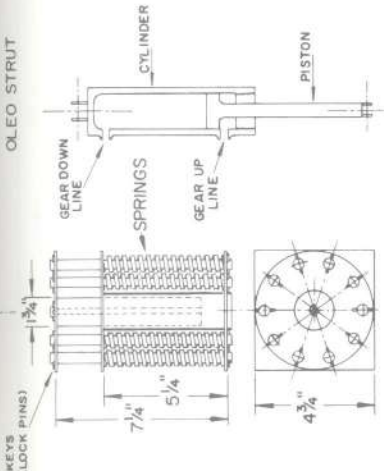
DRAWING NO. 14-100-100  
HYDRAULIC RETRACTING SYSTEM  
S-39 LANDING GEAR

OLEO STRUT

THE OLEO STRUT HAS TWO HYDRAULIC LINES, ONE AT THE TOP AND ONE AT THE BOTTOM. BOTH SHOCK ACCUMULATORS.

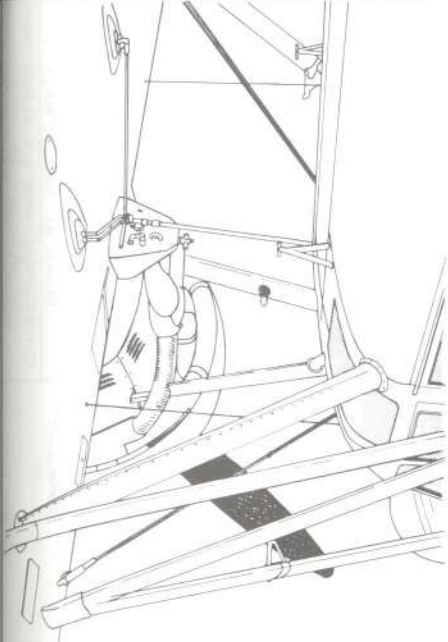
KEYS

HYDRAULIC RETRACTING SYSTEM  
S-39B LANDING GEAR

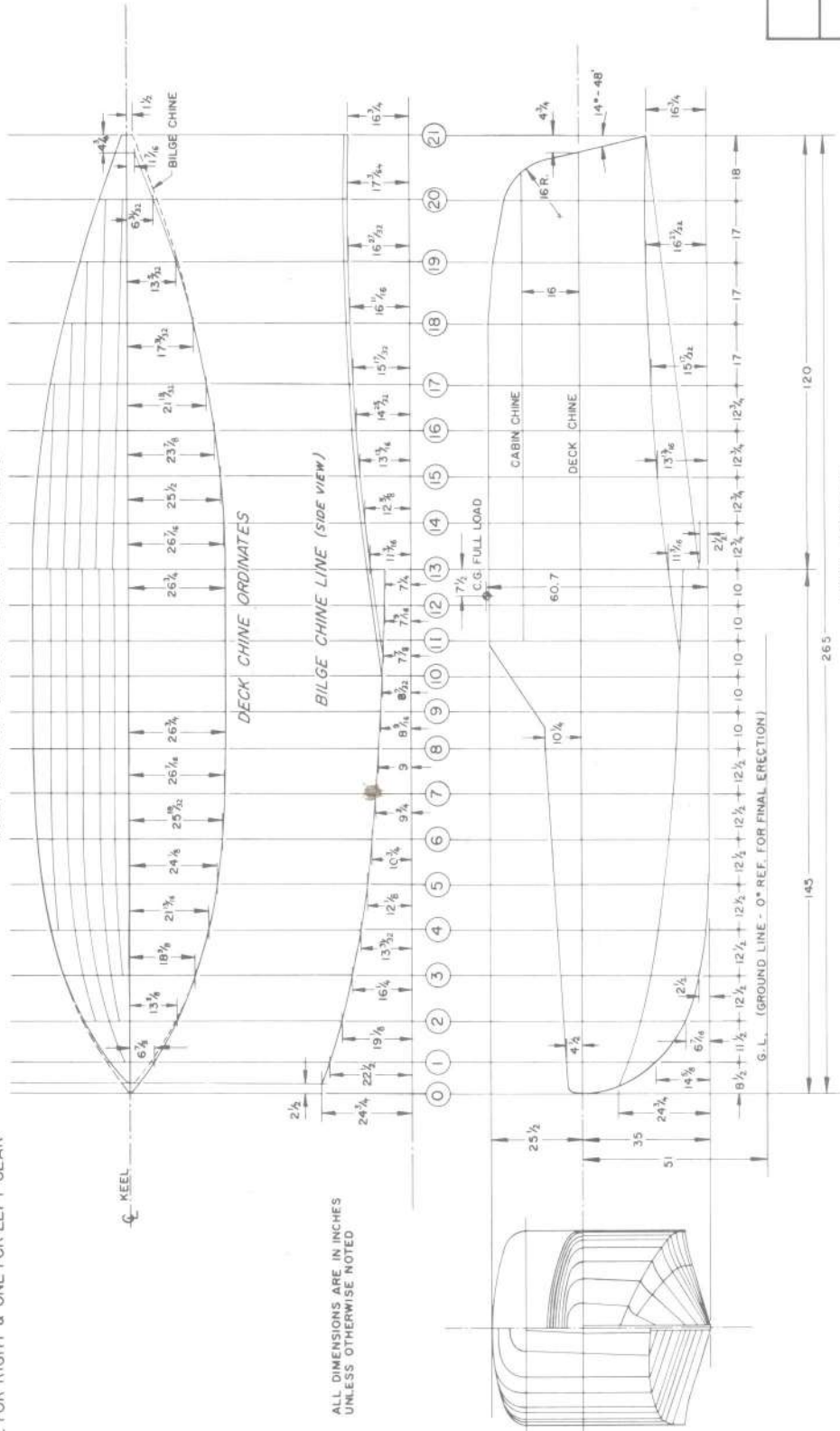


HYDRAULIC SHOCK ACCUMULATOR  
FOR RAISING AND LOWERING  
LANDING GEAR. TWO REQUIRED.  
ONE FOR RIGHT & ONE FOR LEFT GEAR

THE OLEO STRUT HAS TWO HYDRAULIC LINES, ONE AT THE TOP AND ONE AT THE BOTTOM OF THE CYLINDER. TWO SHOCK ACCUMULATORS, ONE FOR EACH LANDING GEAR, WHICH ARE MOUNTED IN THE FORWARD BAGGAGE COMPARTMENT AT STATION NO. 8 ON THE CENTER INSTRUMENT PANEL IS A GEAR-UP OR GEAR-DOWN SELECTOR HANDLE. A HAND PUMP BETWEEN THE PILOT'S SEATS IS USED TO PUMP FLUID FROM A RESERVOIR TANK, THROUGH THE PUMP AND OUT TO THE OLEO STRUT. IF THE SELECTOR HANDLE IS UP, THE FLUID WILL BE PUMPED TO THE BOTTOM OF THE CYLINDER; IF DOWN, THE FLUID GOES TO THE TOP OF THE CYLINDER, EFFECTIVELY EXTENDING OR PUSHING THE LANDING GEAR DOWN. UPON LANDING ON LAND, THE INITIAL SHOCK IS TAKEN BY THE TIRES, THEN TRANSFERRED TO THE HYDRAULIC SHOCK ACCUMULATOR. THE IMPACT FORCES THE FLUID OUT OF THE STRUT INTO THE ACCUMULATOR-COMPRESSING THE SPRINGS AND RESULTING ABSORPTION.



HULL BOTTOM & LONGITUDINAL STRINGERS



ALL DIMENSIONS ARE IN INCHES  
UNLESS OTHERWISE NOTED



SIKORSKY S-39B  
1930-32

SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY PAUL R. MATT

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**GENERAL SPECIFICATION**

WEIGHT EMPTY 1,874 lbs.  
 INCL. WATER, OIL BUT WITHOUT FUEL  
 USEFUL LOAD 426 lbs.  
 GROSS WEIGHT 2,300 lbs.  
 WING AREA (INCL. AILERONS) 429 sq. ft.  
 AILERON AREA, EACH 21 sq. ft.  
 HIGH SPEED 85 mph  
 NORMAL CRUISE 68 mph  
 LANDING SPEED 37 mph  
 FUEL CAPACITY 30 gals.  
 OIL CAPACITY 5 gals.

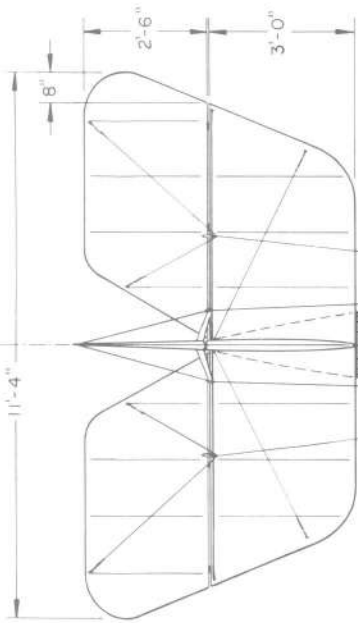
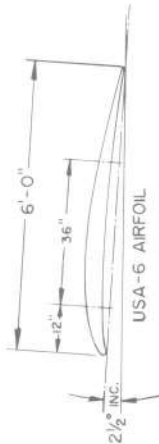
POWER: VIRTUALLY ANY IN-LINE ENGINE OF THE ERA 90hp TO 180hp

**COMMON ENGINES USED:**

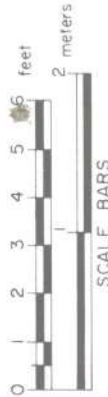
CURTISS OX-5 90 hp  
 HALL-SCOTT A-7 90 hp  
 A-7A 100 hp  
 A-5 125 hp  
 HISPANO-SUIZA-A 150 hp  
 -B 180 hp  
 ROBERTS 100 hp

**COLORING NOTES**

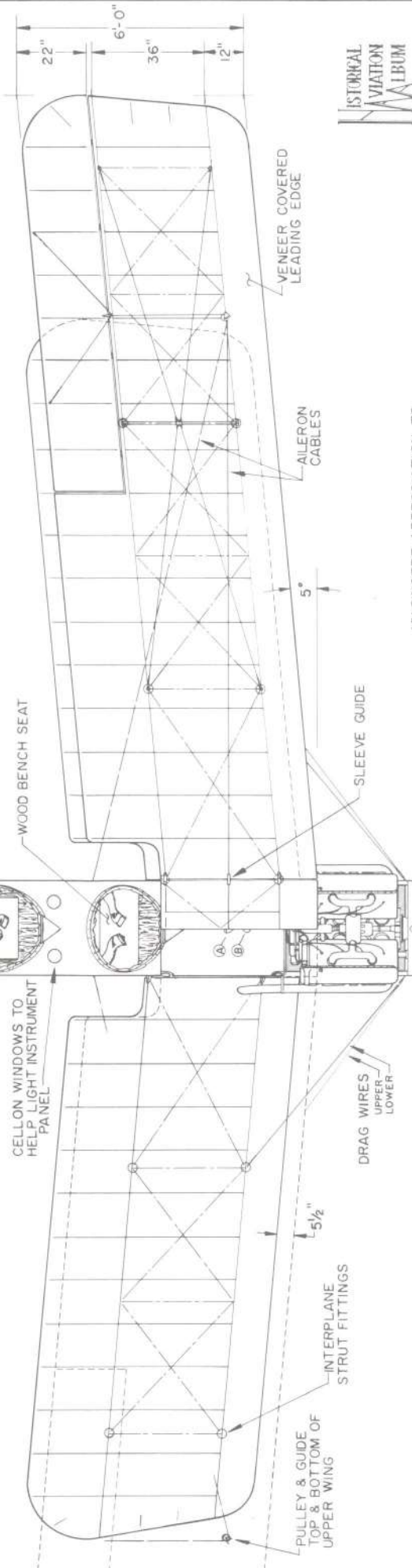
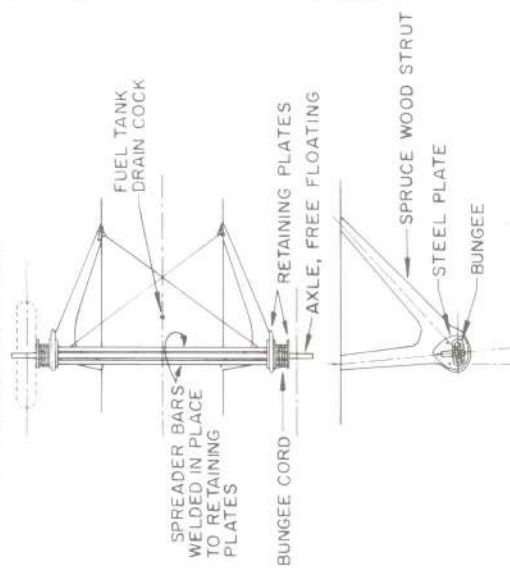
ENTIRE AIRCRAFT CLEAR DOPED OR SILVER PIGMENTED, METAL DECKING AND COWLING - COLOR OF OWNERS CHOICE



NOTE  
 ALL TRAILING EDGES OF WINGS AND TAIL SURFACES ARE FORMED WITH SPRUCE WOOD



**TYPICAL LANDING GEAR**



MY SINCERE APPRECIATION TO COL. JOHN DEVRIES USAF Ret., PETE SUTHERO, NATIONAL AIR & SPACE MUSEUM, KATHERINE CASSITY, U.S. AIR FORCE MUSEUM AND LEO. E. OPDYCKE, WW I AERO PUBLICATION FOR THEIR HELP WITH THESE DRAWINGS

*Paul R. Matt*



**STANDARD J-1**  
 TYPICAL, POST WAR, CIVIL, MODIFIED 1917-1926

SCALE ORIGINAL 1:24  
 REPRO. 1:48

DRAWN BY: PAUL R. MATT

© HISTORICAL AVIATION ALBUM 1984

43'-10" O.A. SPAN

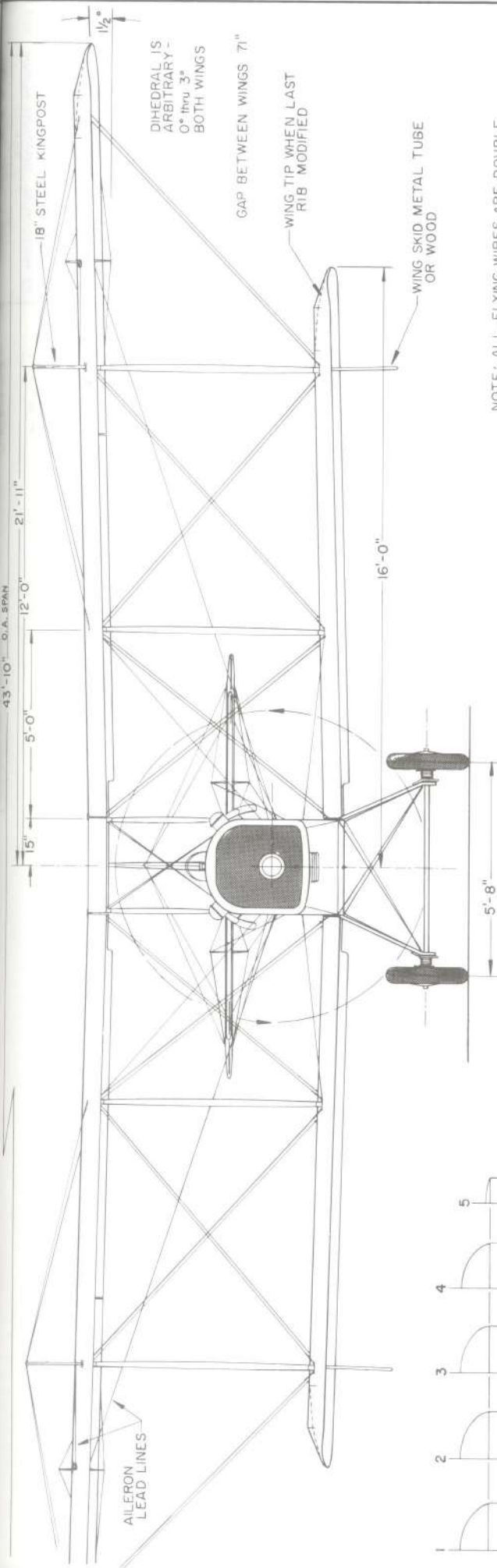
12'-0"

5'-0"

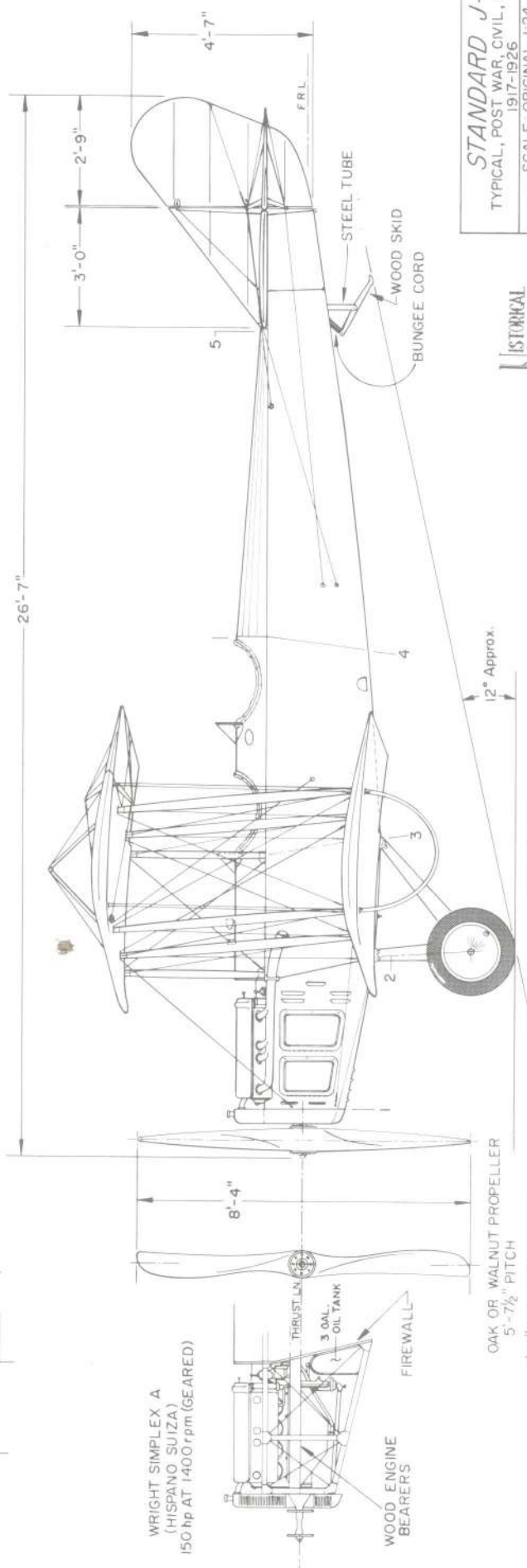
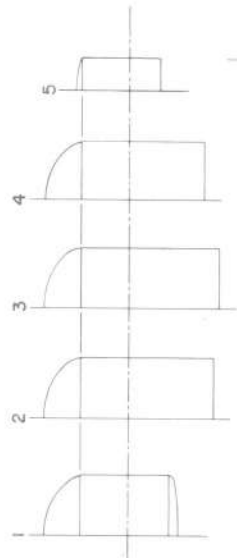
15"

21'-11"

18" FEEL KINGPOST



NOTE: ALL FLYING WIRES ARE DOUBLE, IN CLOSE PARALLEL. THIS IS NOT SHOWN ON DRAWINGS TO SAVE CONFUSION



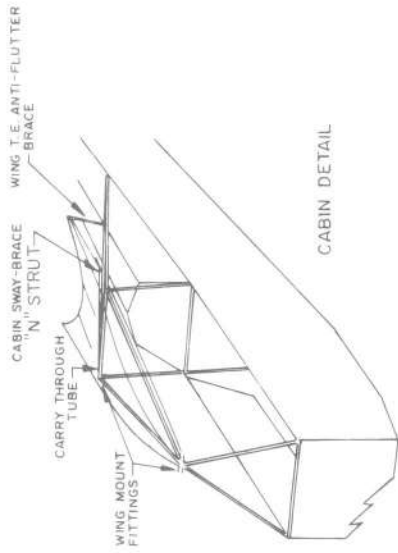
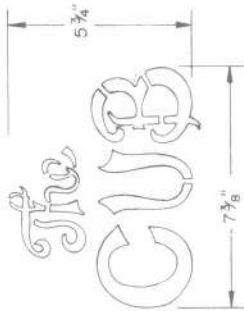
**STANDARD J-1**  
 TYPICAL, POST WAR, CIVIL, MODIFIED  
 1917-1926  
 SCALE ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY: PAUL R. MATT  
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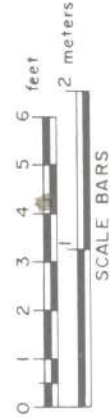
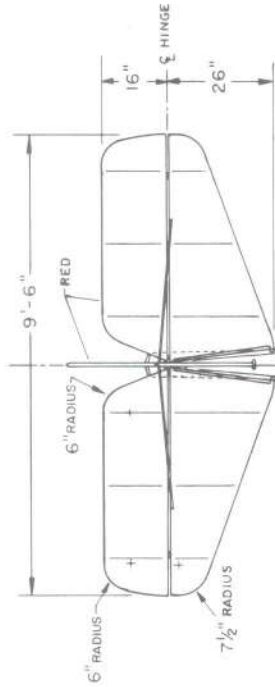
**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 525 lbs.  
 USEFUL LOAD 400 lbs.  
 GROSS WEIGHT 925 lbs.  
 WING AREA 184 sq. ft.  
 POWER LOADING 22 lbs./HP  
 MAXIMUM SPEED 80 mph at 3000 feet  
 CRUISING SPEED 68 mph  
 LANDING SPEED 28 mph  
 RANGE AT CRUISE 204 miles  
 SERVICE CEILING 12,000 feet  
 FUEL CAPACITY 9 gals.  
 OIL CAPACITY 4 quarts  
 FUEL CONSUMPTION 3 gal./hr.

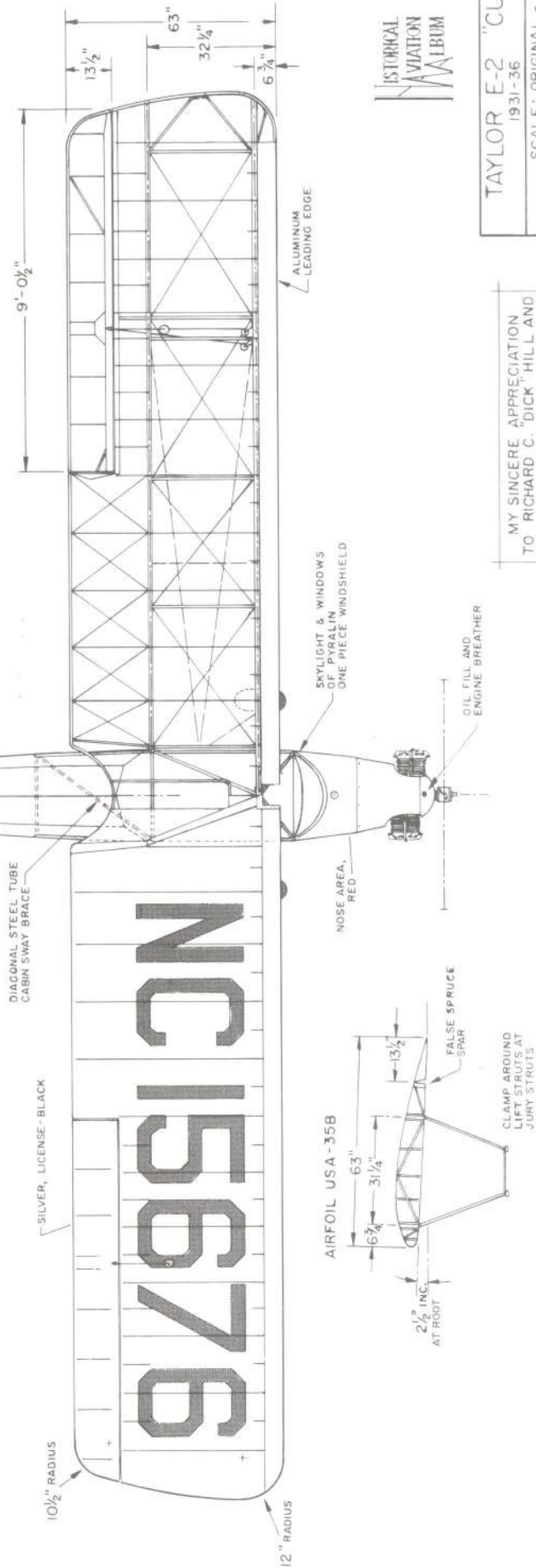
POWER: CONTINENTAL A-40-2,  
 35-37 HP at 2,550 rpm



CABIN DETAIL



SCALE BARS

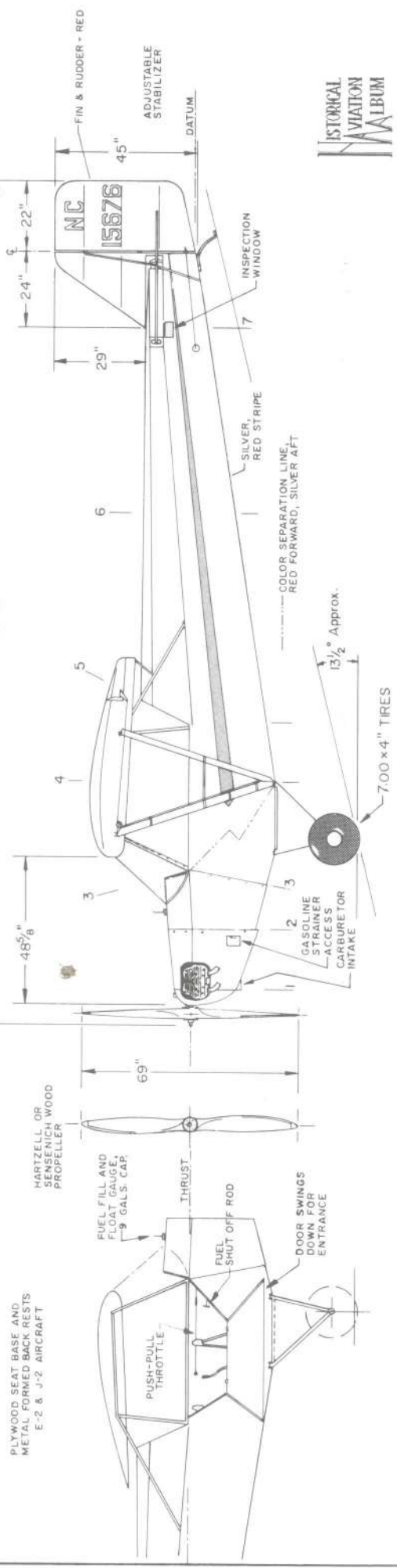
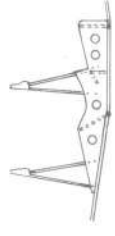
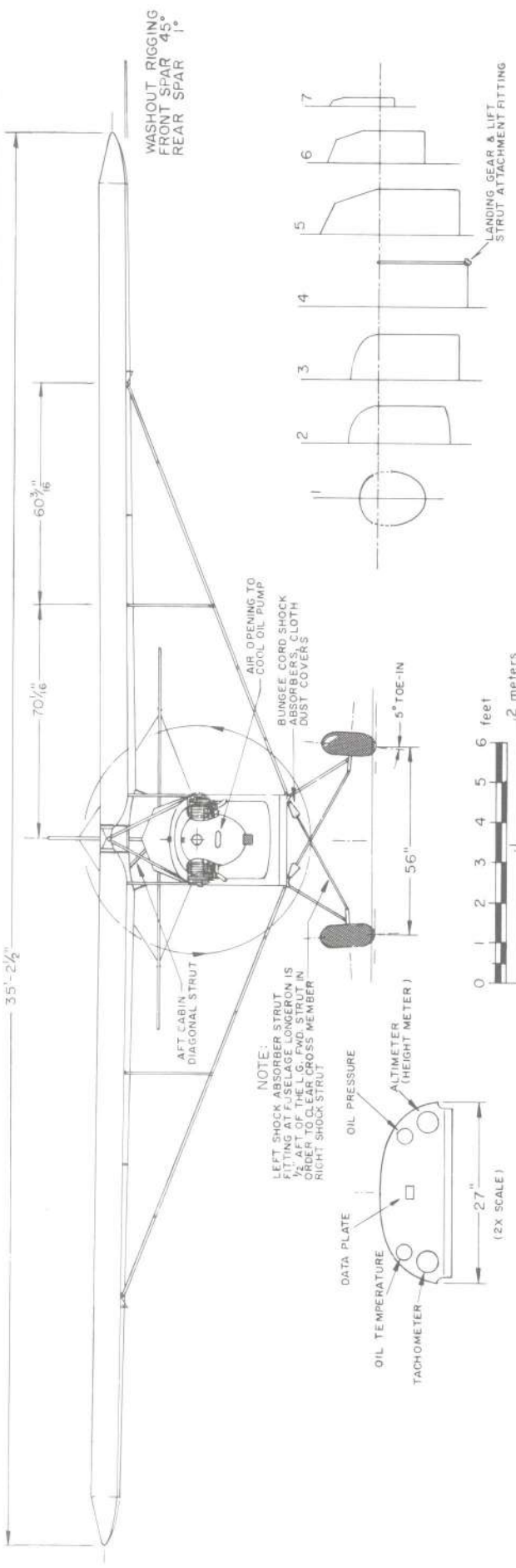


TAYLOR E-2 "CUB"  
 1931-36  
 SCALE: ORIGINAL - 1:24  
 REPRO. - 1:48  
 DRAWN BY: PAUL R. MATT

© HISTORICAL AVIATION ALBUM 1986  
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MY SINCERE APPRECIATION  
 TO RICHARD C. "DICK" HILL AND  
 BILL KNEPP FOR THEIR HELP IN  
 THE PREPARATION OF THESE  
 DRAWINGS.

FIG. 5-14



TAYLOR E-2 "CUB"  
 1931-36  
 SCALE: ORIGINAL - 1:24  
 REPRO. - 1:48  
 DRAWN BY: PAUL R. MATT  
 © HISTORICAL AVIATION ALBUM 1986  
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 TEMPLE CITY, CALIF. 91780

**GENERAL SPECIFICATIONS**

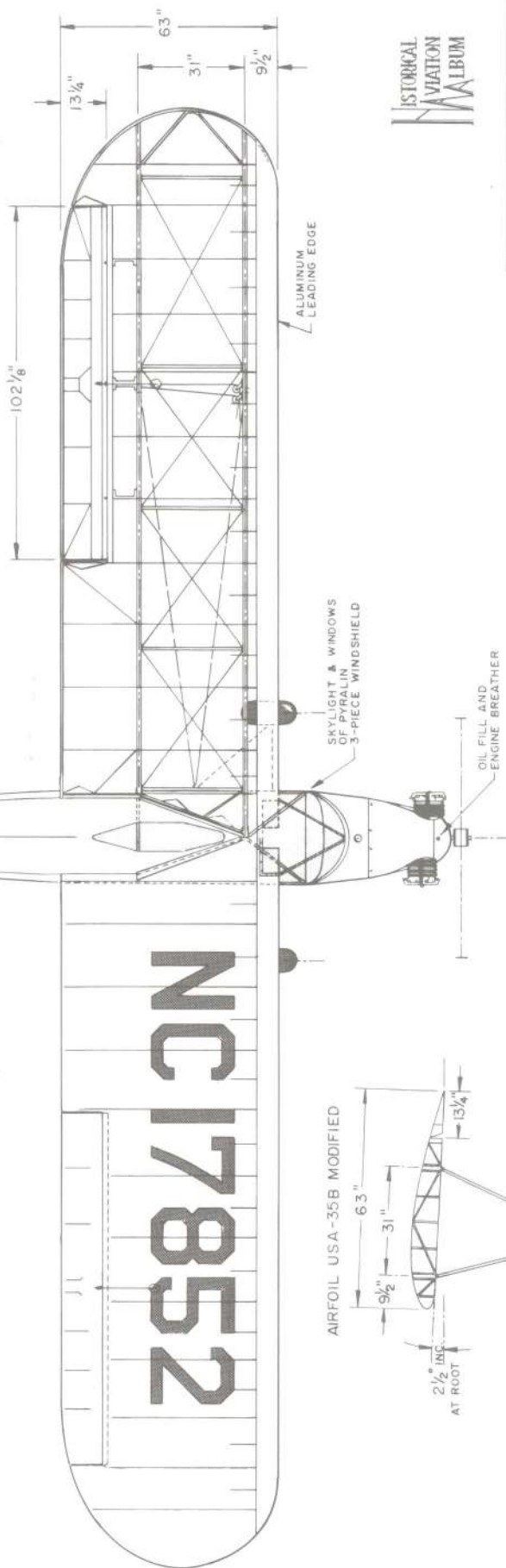
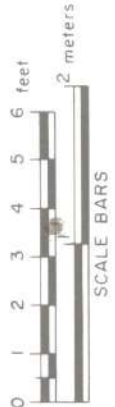
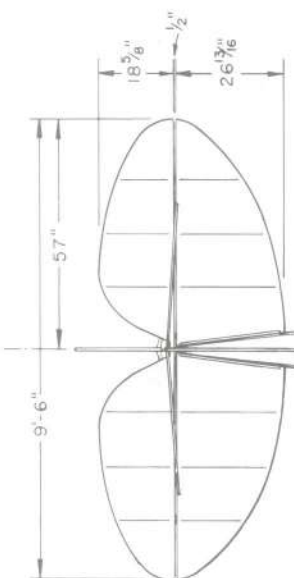
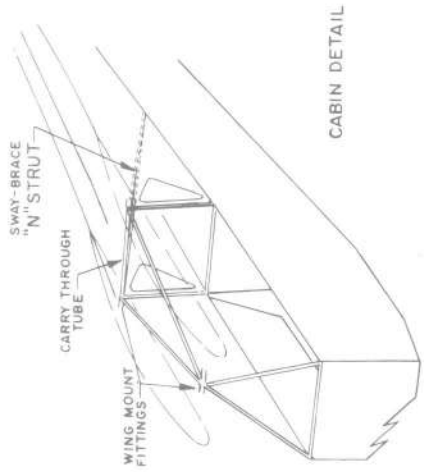
WEIGHT EMPTY 563 lbs.  
 USEFUL LOAD 407 lbs.  
 GROSS WEIGHT 970 lbs.  
 WING AREA 178 sq ft.  
 WING LOADING 5.44 lbs/sq ft.  
 MAXIMUM SPEED 85 mph  
 CRUISING SPEED 70 mph  
 LANDING SPEED 29 mph  
 RANGE AT CRUISE 200 miles  
 SERVICE CEILING 12,000 feet  
 FUEL CAPACITY 9 galls  
 OIL CAPACITY 4 quarts  
 FUEL CONSUMPTION 3 gal/hr.

POWER: CONTINENTAL A-40-4,  
 37 HP at 2550rpm  
 40 HP at 2575rpm LIMITED

**COLORING NOTES**

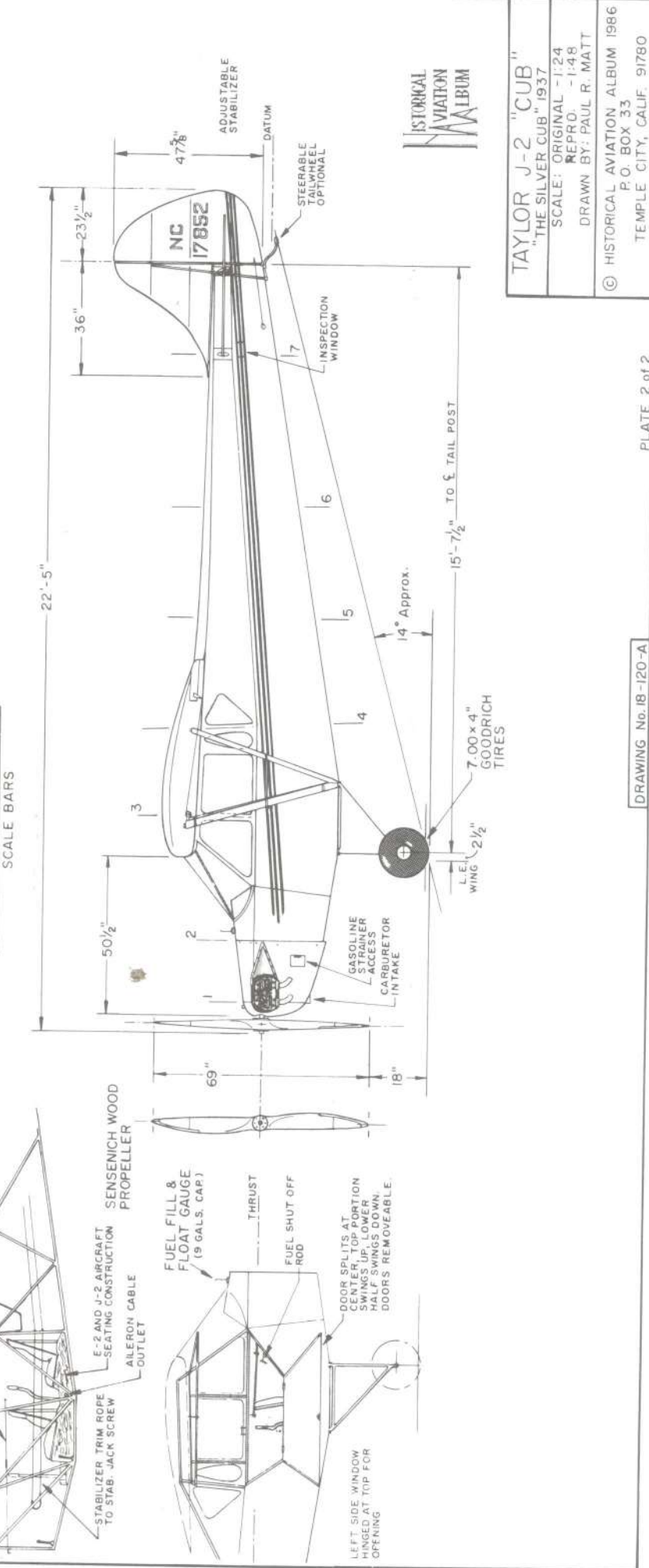
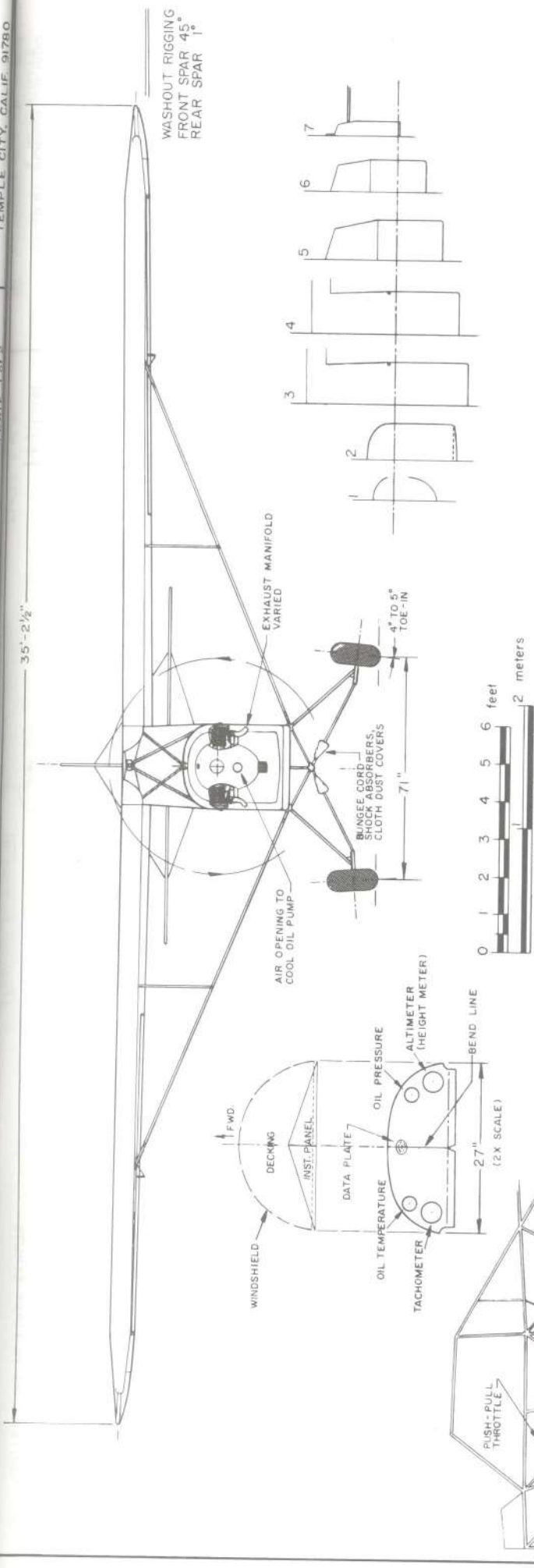
OVERALL SILVER WITH THREE DARK BLUE  
 OR RED FUSELAGE STRIPES  
 OPTIONAL-RED, BLUE OR GREEN FUSELAGE,  
 VERTICAL STRUTS & LANDING GEAR WITH  
 SILVER OR YELLOW WINGS & HORIZONTAL  
 TAIL SURFACES

CUSTOM COLORS AVAILABLE INCLUDING  
 OVERALL METALLIC BRONZE-GOLD  
 WITH RED TRIM



TAYLOR J-2 "CUB"  
 "THE SILVER CUB" 1937  
 SCALE: ORIGINAL - 1:24  
 REPRO. - 1:48  
 DRAWN BY: PAUL R. MATT  
 © HISTORICAL AVIATION ALBUM 1986  
 P. O. BOX 33

MY SINCERE APPRECIATION  
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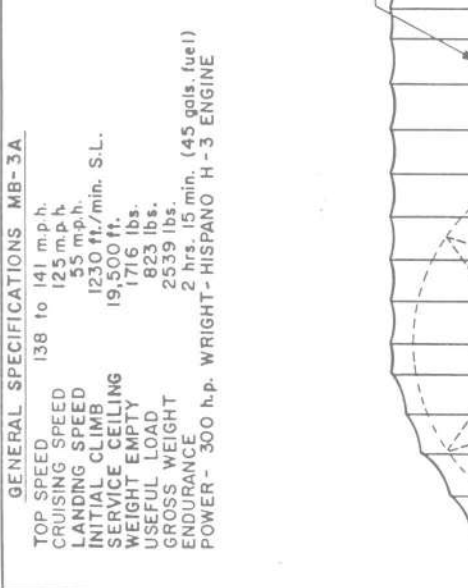
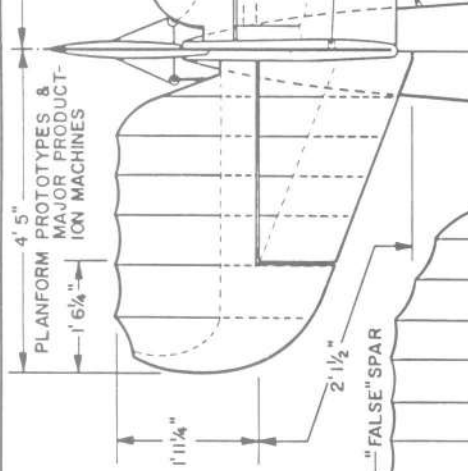
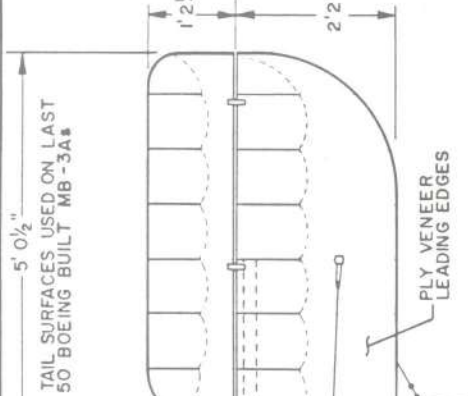
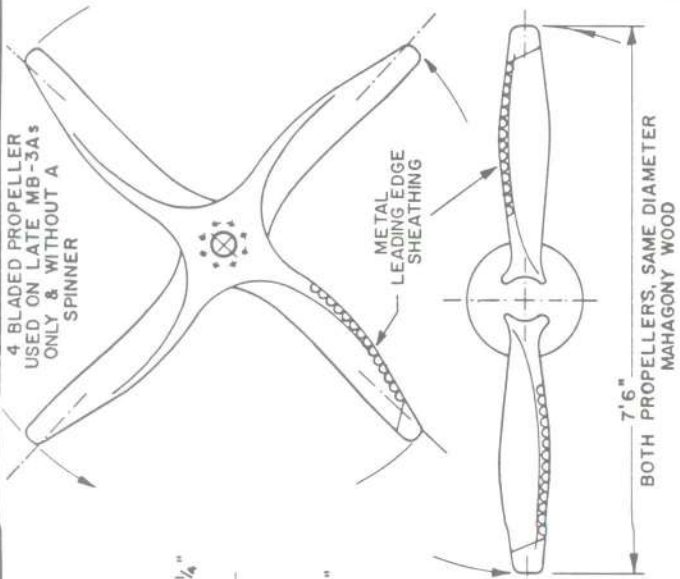


TAYLOR J-2 "CUB"  
"THE SILVER CUB" 1937  
SCALE: ORIGINAL - 1:24  
REPRO. - 1:48  
DRAWN BY: PAUL R. MATT

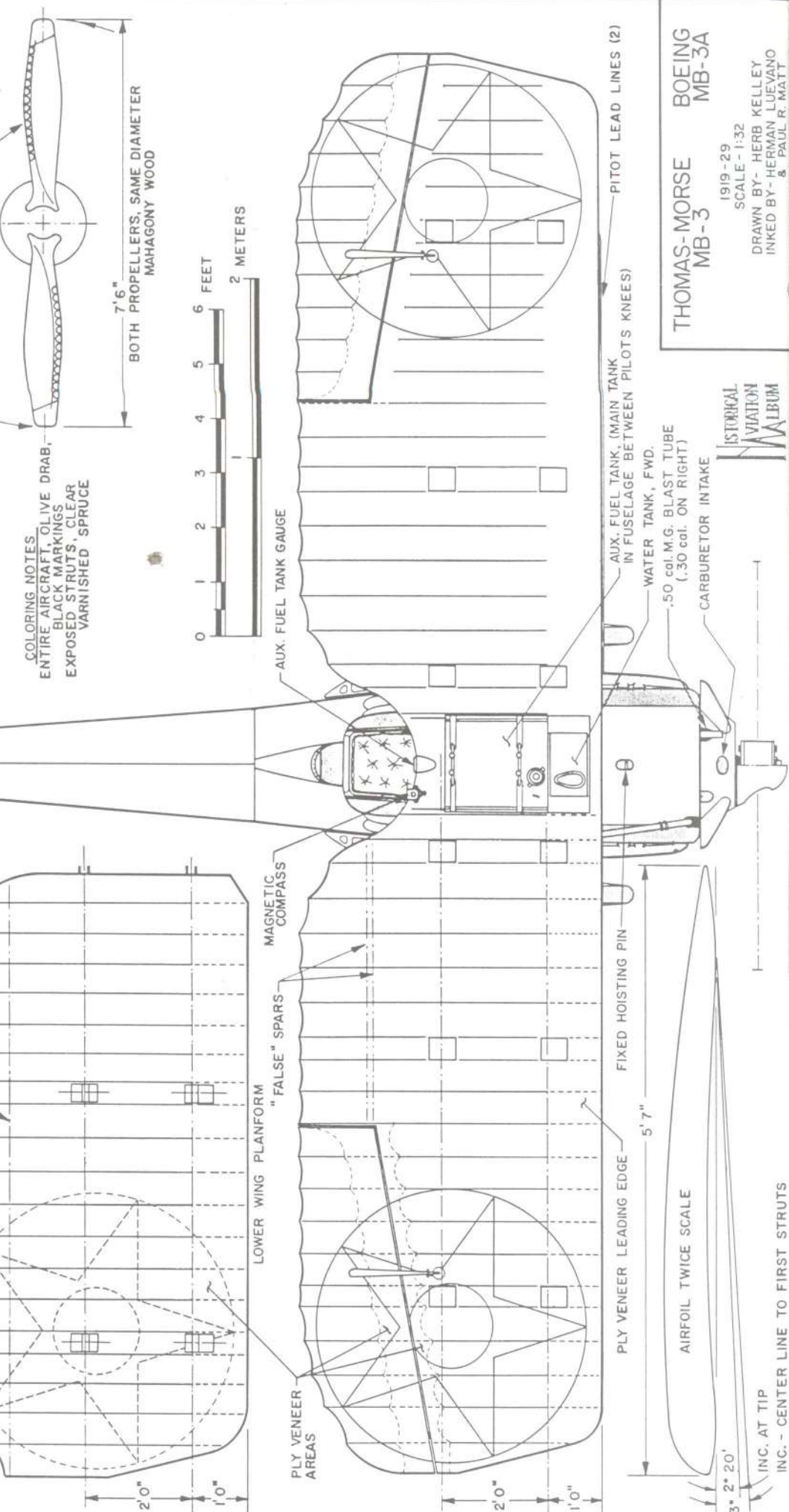
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TEMPLE CITY, CALIF. 91780

**GENERAL SPECIFICATIONS MB-3A**

- TOP SPEED 138 to 141 m.p.h.
- CRUISING SPEED 125 m.p.h.
- LANDING SPEED 55 m.p.h.
- INITIAL CLIMB 1230 ft./min. S.L.
- SERVICE CEILING 19,500 ft.
- WEIGHT EMPTY 1716 lbs.
- USEFUL LOAD 823 lbs.
- GROSS WEIGHT 2539 lbs.
- ENDURANCE 2 hrs. 15 min. (45 gals. fuel)
- POWER - 300 h.p. WRIGHT-HISPANO H-3 ENGINE



COLORING NOTES:  
ENTIRE AIRCRAFT, OLIVE DRAB,  
BLACK MARKINGS  
EXPOSED STRUTS, CLEAR  
VARNISHED SPRUCE



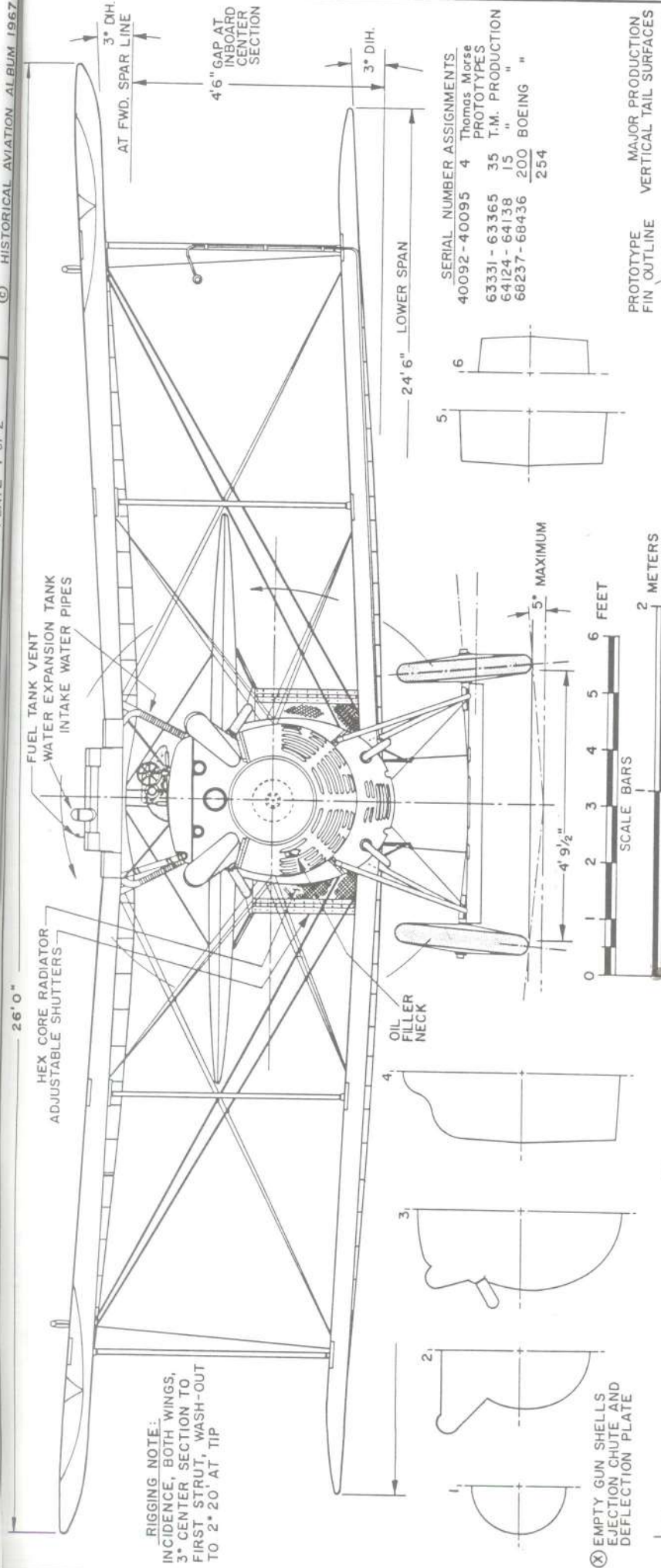
THOMAS-MORSE  
MB-3

BOEING  
MB-3A

1919-29  
SCALE - 1:32

DRAWN BY - HERB KELLEY  
INKED BY - HERMAN LUEVANO  
& PAUL R. MATT

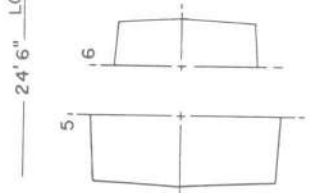




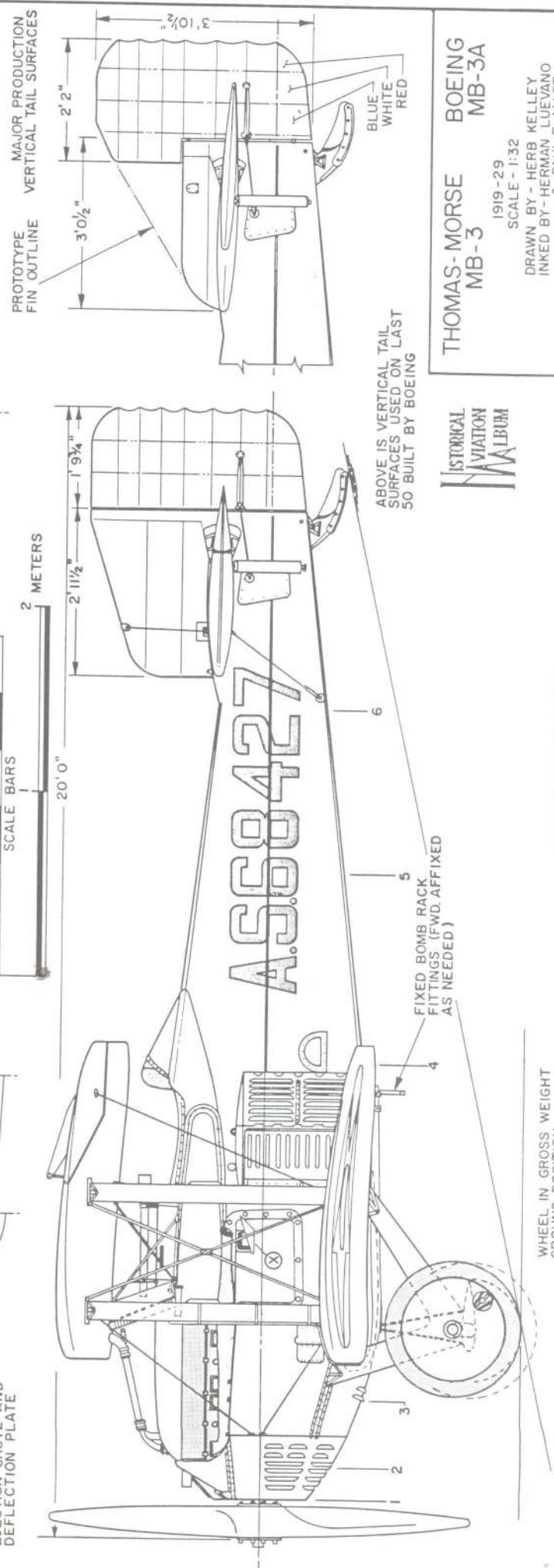
RIGGING NOTE:  
INCIDENCE, BOTH WINGS,  
3" CENTER SECTION TO  
FIRST STRUT, WASH-OUT  
TO 2" 20' AT TIP

SERIAL NUMBER ASSIGNMENTS

40092-40095	4	Thomas Morse PROTOTYPES
63331-63365	35	T.M. PRODUCTION
64124-64138	15	"
68237-68436	200	BOEING "
	254	



⊗ EMPTY GUN SHELLS  
EJECTION CHUTE AND  
DEFLECTION PLATE



ABOVE IS VERTICAL TAIL  
SURFACES USED ON LAST  
50 BUILT BY BOEING



**GENERAL SPECIFICATIONS**

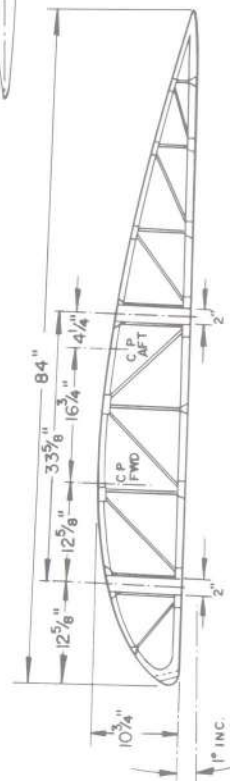
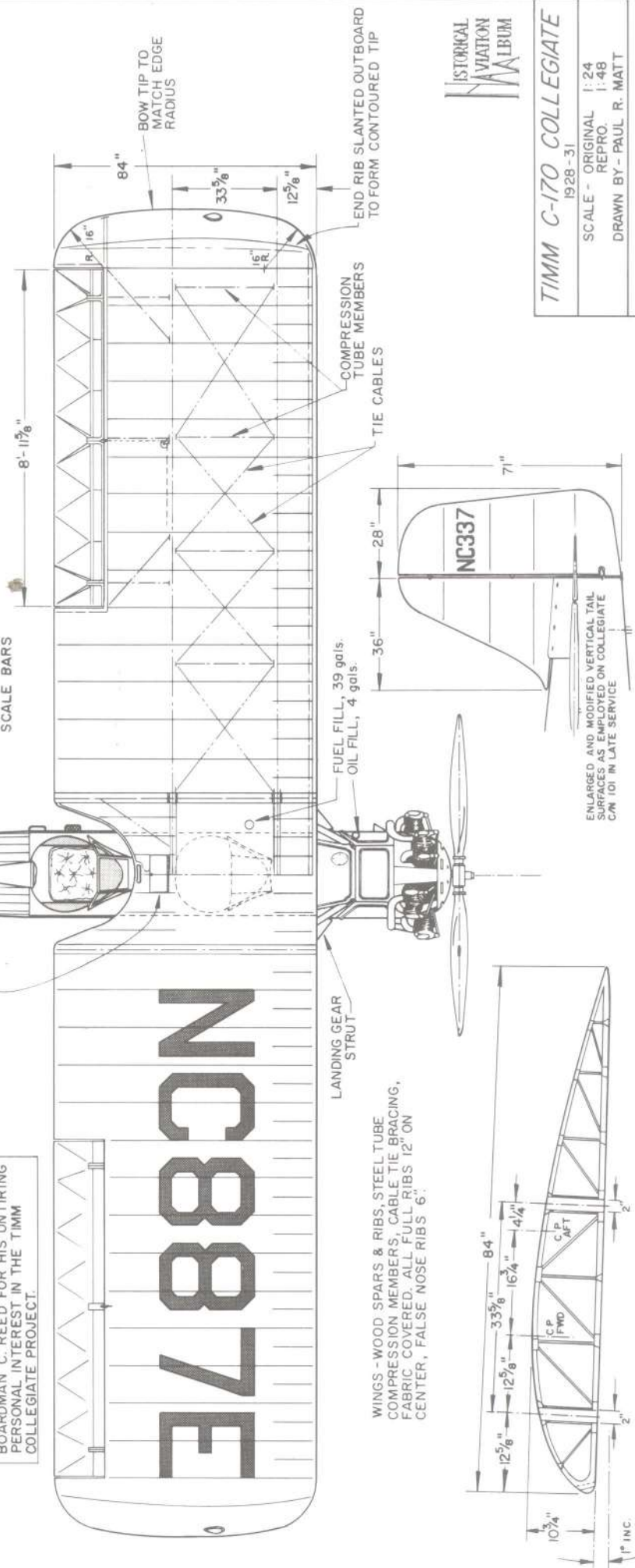
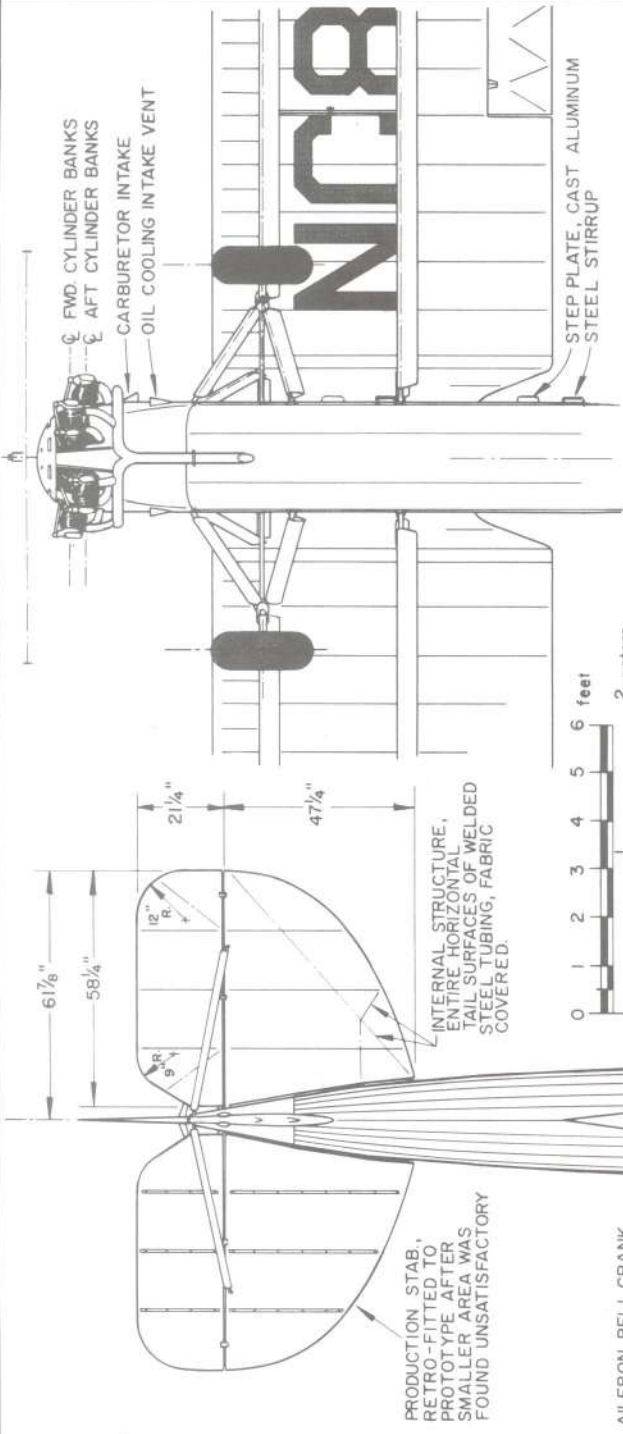
WEIGHT EMPTY 1663 lbs. (Model C-185)  
 USEFUL LOAD 702 lbs.  
 GROSS WEIGHT 2365 lbs.  
 TOP SPEED 118 mph (100 hp Kinner powered)  
 CRUISING SPEED 92 mph  
 LANDING SPEED 35 mph  
 RATE OF CLIMB, INITIAL 640 ft./min. at S.L.  
 SERVICE CEILING 18,000 feet  
 CRUISE RANGE 500 miles  
 WING AREA (incl. ailerons) 236 sq. ft.

COLLEGIATE NC 887E, PORTRAYED,  
 WAS COMPLETED MARCH 12, 1929  
 POWER - CURTISS R-600 CHALLENGER  
 6-CYL. RADIAL, 170 hp at 1800 rpm  
 185 hp at 2000 rpm

**COLORING NOTES**

EXACT COLORING OF NC 887E IS NO LONGER  
 REMEMBERED, BUT BELIEVED TO HAVE BEEN  
 SILVER WINGS & TAIL SURFACES, DARK BLUE  
 FUSELAGE AND BLACK DETAILS.

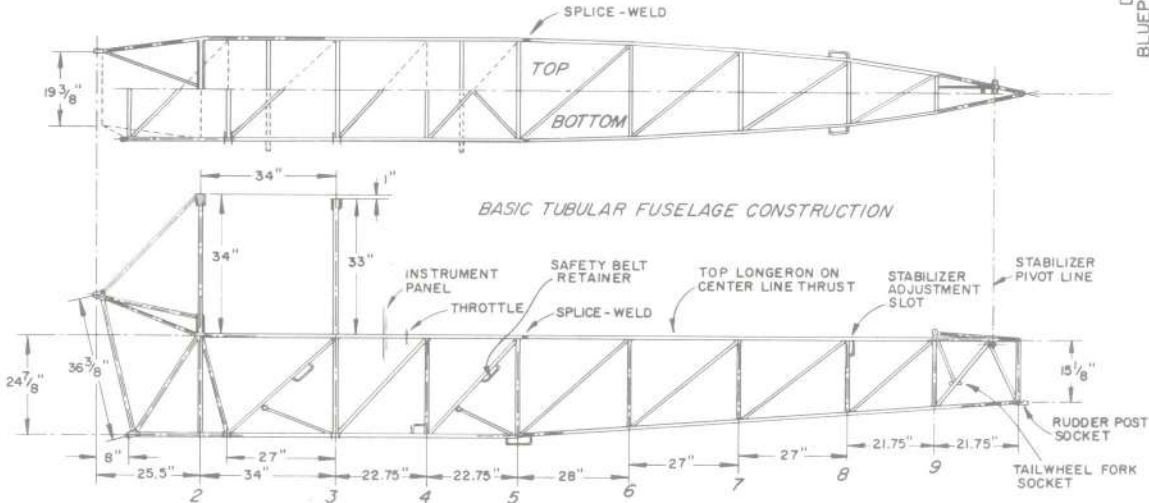
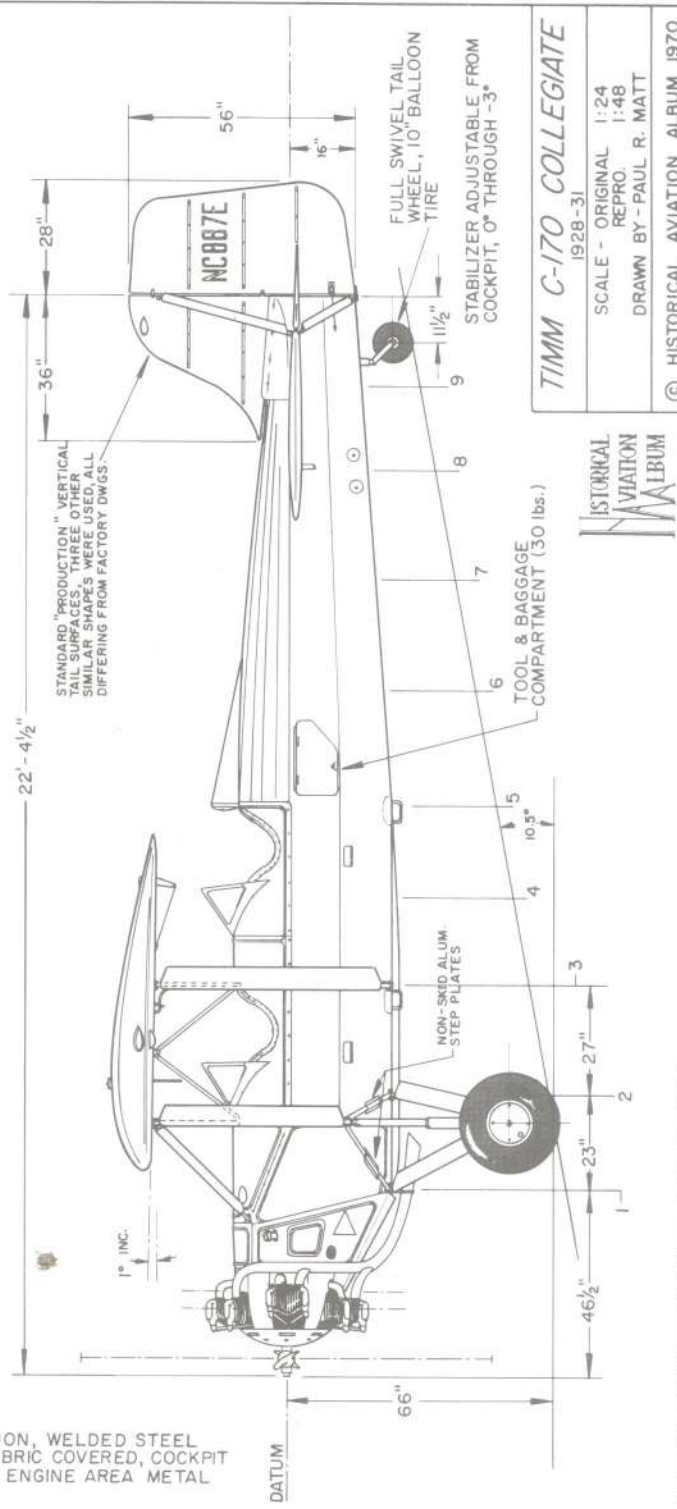
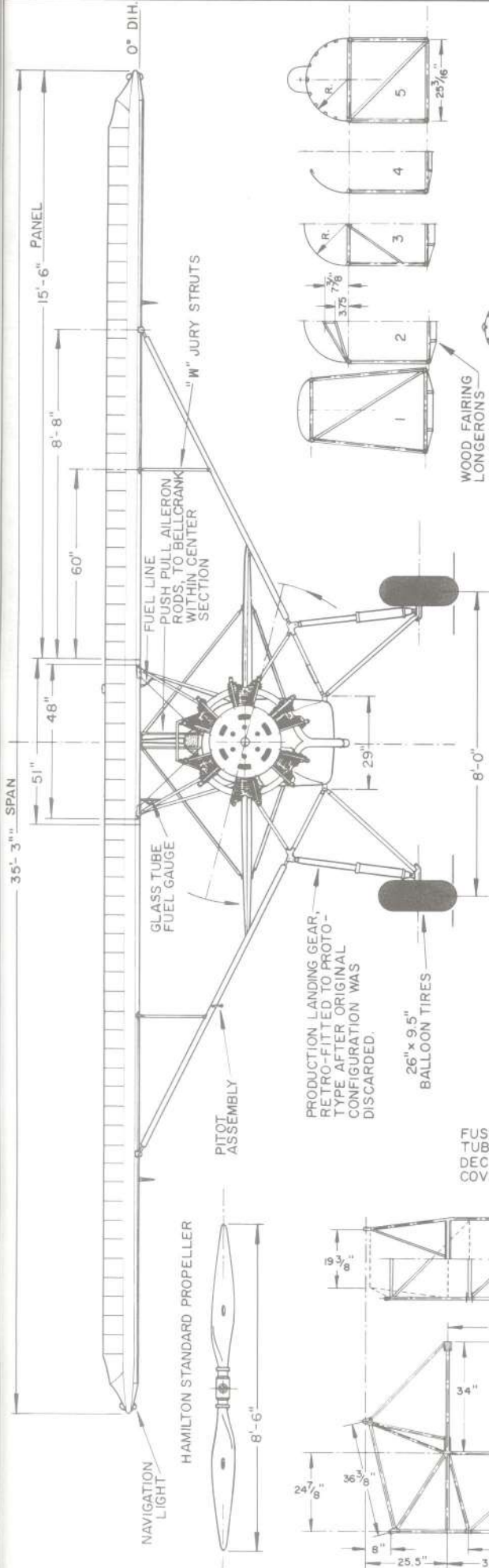
OUR SINCERE APPRECIATION IS  
 EXTENDED TO MR. OTTO TIMM FOR HIS  
 PERSONAL HELP AND INTEREST IN  
 MAKING THESE DRAWINGS POSSIBLE  
 A SPECIAL THANKS ALSO TO REVEREND  
 BOARDMAN C. REED FOR HIS UNTING  
 PERSONAL INTEREST IN THE TIMM  
 COLLEGIATE PROJECT.



ENLARGED AND MODIFIED VERTICAL TAIL SURFACES AS EMPLOYED ON COLLEGIATE CN 101 IN LATE SERVICE



**TIMM C-170 COLLEGIATE**  
 1928-31  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT  
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FUSELAGE CONSTRUCTION, WELDED STEEL TUBE, WOOD FAIRED, FABRIC COVERED, COCKPIT DECKING, HEADREST & ENGINE AREA METAL COVERED.

**TIMM C-170 COLLEGIATE**  
1928-31

SCALE - ORIGINAL 1:24  
REPRO 1:48

DRAWN BY - PAUL R. MATT

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TEMPLE CITY, CALIF. 91780



THREE R-3s WERE BUILT, A.S. 22-326, 22-327 AND 22-328 (1922). DESIGNED BY ALFRED V. VERVILLE, CHIEF OF PURSUIT AND RACING PLANE DESIGN PROJECTS, USA'S ENGINEERING DIVISION, MCCOOK FIELD, DAYTON, OHIO BY DIRECTION OF BRIG. GEN. WILLIAM MITCHELL, ASST. CHIEF U.S. ARMY AIR SERVICE. LAWRENCE SPERRY AIRCRAFT CO., FARMINGDALE, LONG ISLAND WAS AWARDED THE CONTRACT TO CONSTRUCT THE AIRCRAFT. FINAL MODIFICATION OF R-3 A.S. 22-328 WAS MADE IN 1923 AND IT'S ULTIMATE DESIGN FEATURES BECAME P-362 IN 1924 AND IS PORTRAYED ON THESE DRAWINGS.

**GENERAL SPECIFICATIONS**  
R-3 IN FINAL CONFIGURATION

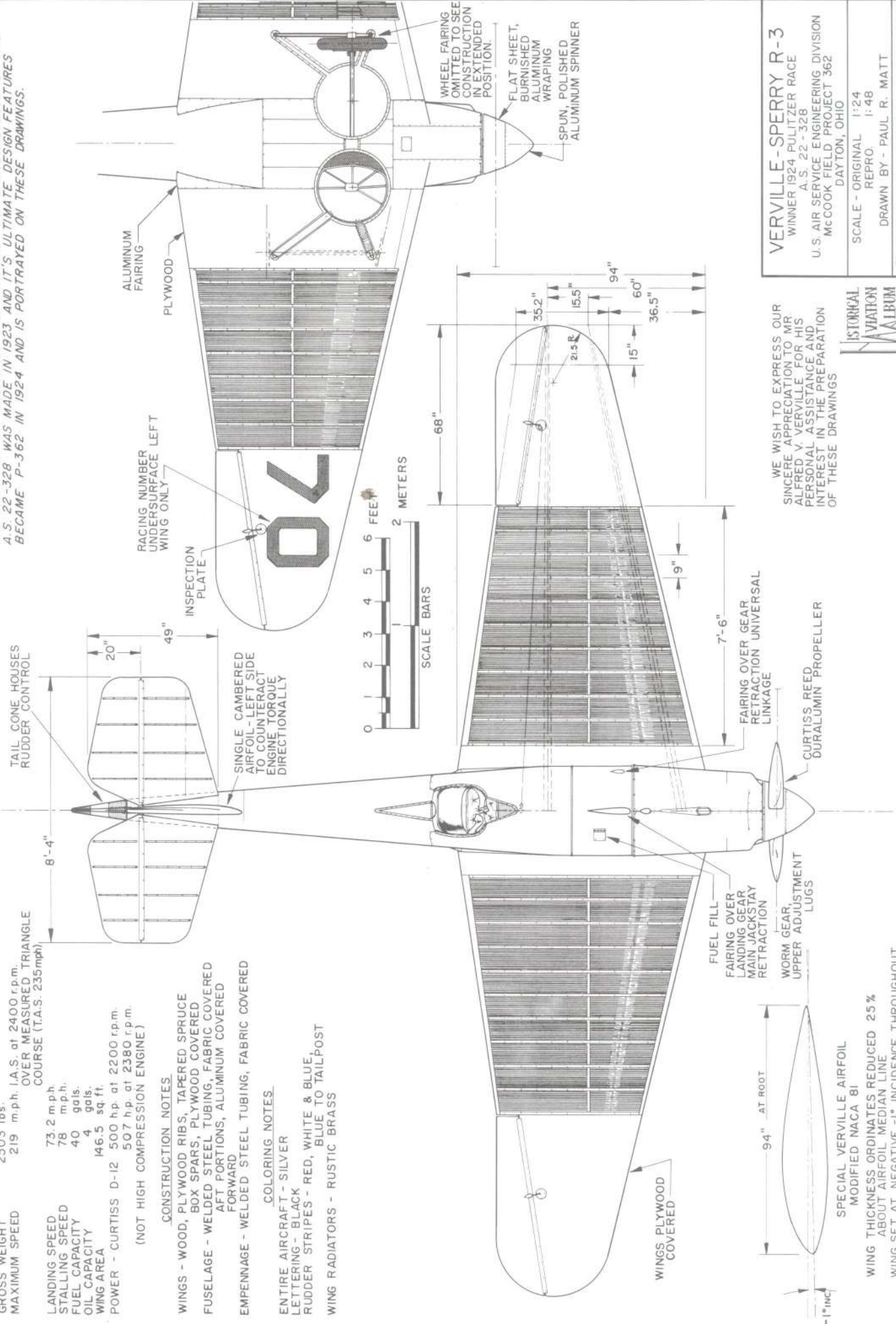
WEIGHT EMPTY 2032 lbs. WITH WATER 471 lbs. INCLUDING 271 lbs. OF DISPOSABLE WEIGHT  
 GROSS WEIGHT 2503 lbs.  
 MAXIMUM SPEED 219 m.p.h. I.A.S. at 2400 r.p.m. OVER MEASURED TRIANGLE COURSE (T.A.S. 235mph)  
 LANDING SPEED 73.2 m.p.h.  
 STALLING SPEED 78 m.p.h.  
 FUEL CAPACITY 40 gals.  
 OIL CAPACITY 4 gals.  
 WING AREA 146.5 sq. ft.  
 POWER - CURTISS D-12 500 hp. at 2200 r.p.m. 507 hp. at 2380 r.p.m. (NOT HIGH COMPRESSION ENGINE)

**CONSTRUCTION NOTES**

WINGS - WOOD, PLYWOOD RIBS, TAPERED SPRUCE BOX SPARS, PLYWOOD COVERED  
 FUSELAGE - WELDED STEEL TUBING, FABRIC COVERED AFT PORTIONS, ALUMINUM COVERED FORWARD  
 EMPENNAGE - WELDED STEEL TUBING, FABRIC COVERED

**COLORING NOTES**

ENTIRE AIRCRAFT - SILVER  
 LETTERING - BLACK  
 RUDDER STRIPES - RED, WHITE & BLUE, BLUE TO TAILPOST  
 WING RADIATORS - RUSTIC BRASS



WE WISH TO EXPRESS OUR SINCERE APPRECIATION TO MR ALFRED V. VERVILLE FOR HIS PERSONAL ASSISTANCE AND INTEREST IN THE PREPARATION OF THESE DRAWINGS



**VERVILLE-SPERRY R-3**  
 WINNER 1924 PULITZER RACE  
 A.S. 22-328  
 U.S. AIR SERVICE ENGINEERING DIVISION  
 MCCOOK FIELD, PROJECT 362  
 DAYTON, OHIO

SCALE - ORIGINAL 1:24  
 REPRO 1:48

DRAWN BY - PAUL R. MATT

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 P.O. BOX 33  
 TEMPLE CITY, CALIF. 91780

SPECIAL VERVILLE AIRFOIL  
 MODIFIED NACA 81  
 WING THICKNESS ORDINATES REDUCED 25%  
 ABOUT AIRFOIL MEDIAN LINE  
 WING SET AT NEGATIVE -1° INCIDENCE THROUGHOUT

THREE R-3s WERE BUILT, A.S. 22-326, 22-327 AND 22-328 (1922). DESIGNED BY ALFRED V. VERVILLE, CHIEF OF PURSUIT AND RACING PLANE DESIGN PROJECTS, USA'S ENGINEERING DIVISION, MCCOOK FIELD, DAYTON, OHIO BY DIRECTION OF BRIG. GEN. WILLIAM MITCHELL, ASST. CHIEF U.S. ARMY AIR SERVICE. LAWRENCE SPERRY AIRCRAFT CO., FARMINGDALE, LONG ISLAND WAS AWARDED THE CONTRACT TO CONSTRUCT THE AIRCRAFT. FINAL MODIFICATION OF R-3 A.S. 22-328 WAS MADE IN 1923 AND IT'S ULTIMATE DESIGN FEATURES BECAME P-362 IN 1924 AND IS PORTRAYED ON THESE DRAWINGS.

**GENERAL SPECIFICATIONS.**  
R-3 IN FINAL CONFIGURATION

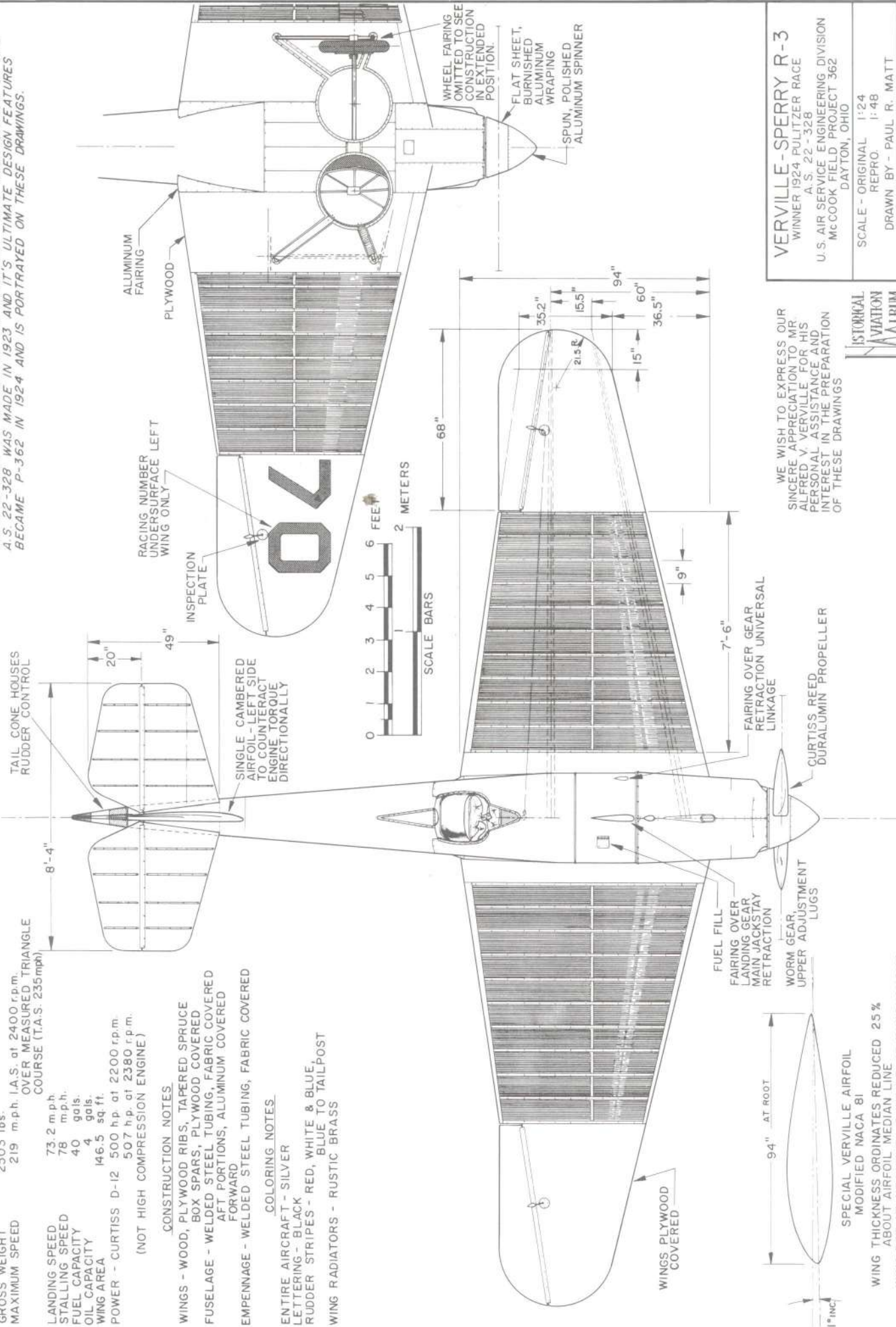
WEIGHT EMPTY 2032 lbs. WITH WATER 471 lbs. INCLUDING 271 lbs. OF DISPOSABLE WEIGHT  
 GROSS WEIGHT 2503 lbs.  
 MAXIMUM SPEED 219 m.p.h. I.A.S. at 2400 r.p.m. OVER MEASURED TRIANGLE COURSE (T.A.S. 235mph)  
 LANDING SPEED 73.2 m.p.h.  
 STALLING SPEED 78 m.p.h.  
 FUEL CAPACITY 40 gals.  
 OIL CAPACITY 4 gals.  
 WING AREA 146.5 sq. ft.  
 POWER - CURTISS D-12 500 hp. at 2200 r.p.m. 507 hp. at 2380 r.p.m. (NOT HIGH COMPRESSION ENGINE)

**CONSTRUCTION NOTES**

WINGS - WOOD, PLYWOOD RIBS, TAPERED SPRUCE BOX SPARS, PLYWOOD COVERED  
 FUSELAGE - WELDED STEEL TUBING, FABRIC COVERED AFT PORTIONS, ALUMINUM COVERED FORWARD  
 EMPENNAGE - WELDED STEEL TUBING, FABRIC COVERED  
 ENTIRE AIRCRAFT - SILVER  
 LETTERING - BLACK  
 RUDDER STRIPES - RED, WHITE & BLUE, BLUE TO TAILPOST  
 WING RADIATORS - RUSTIC BRASS

**COLORING NOTES**

ENTIRE AIRCRAFT - SILVER  
 LETTERING - BLACK  
 RUDDER STRIPES - RED, WHITE & BLUE, BLUE TO TAILPOST  
 WING RADIATORS - RUSTIC BRASS



WE WISH TO EXPRESS OUR SINCERE APPRECIATION TO MR ALFRED V. VERVILLE FOR HIS PERSONAL ASSISTANCE AND INTEREST IN THE PREPARATION OF THESE DRAWINGS

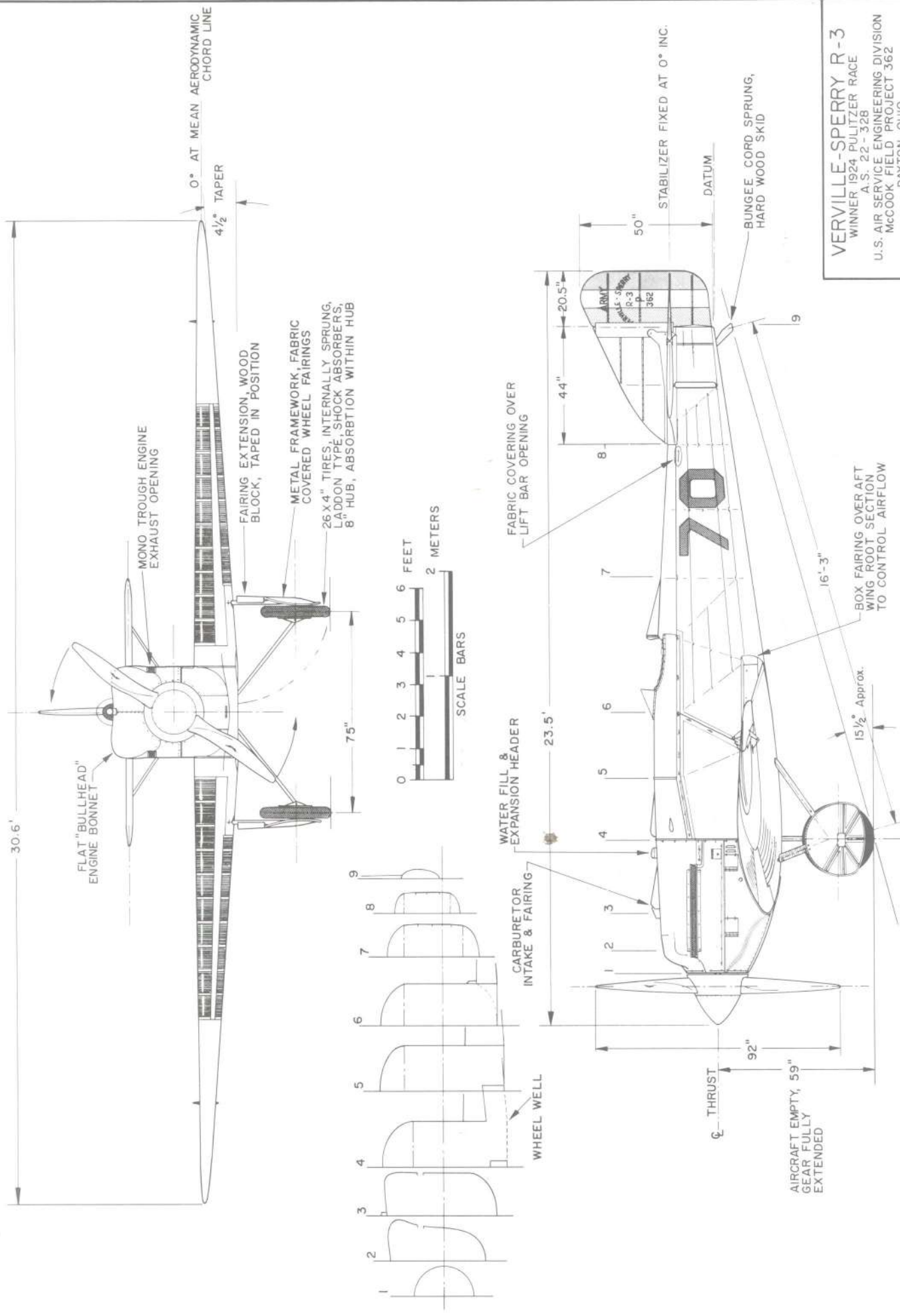


**VERVILLE-SPERRY R-3**  
 WINNER 1924 PULITZER RACE  
 A.S. 22-328  
 U.S. AIR SERVICE ENGINEERING DIVISION  
 MCCOOK FIELD, PROJECT 362  
 DAYTON, OHIO

SCALE - ORIGINAL 1:24  
 REPRO 1:48  
 DRAWN BY - PAUL R. MATT  
 P.O. BOX 33  
 TEMPLE CITY, CALIF. 91780

SPECIAL VERVILLE AIRFOIL  
 MODIFIED NACA 81  
 WING THICKNESS ORDINATES REDUCED 25%  
 ABOUT AIRFOIL MEDIUM LINE  
 WING SET AT NEGATIVE -1° INCIDENCE THROUGHOUT

TEMPLE CITY, CALIF. 91780



**VERVILLE-SPERRY R-3**  
 WINNER 1924 PULITZER RACE  
 A.S. 22-328  
 U.S. AIR SERVICE ENGINEERING DIVISION  
 MCCOOK FIELD PROJECT 362  
 DAYTON, OHIO

SCALE - ORIGINAL 1:24  
 REPRO. 1:48

DRAWN BY - PAUL R. MATT  
 P.O. BOX 33  
 TEMPLE CITY, CALIF. 91780



# Vought F4U-1 "Corsair"



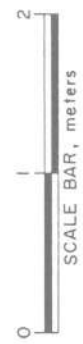
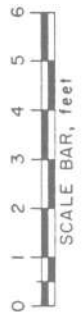
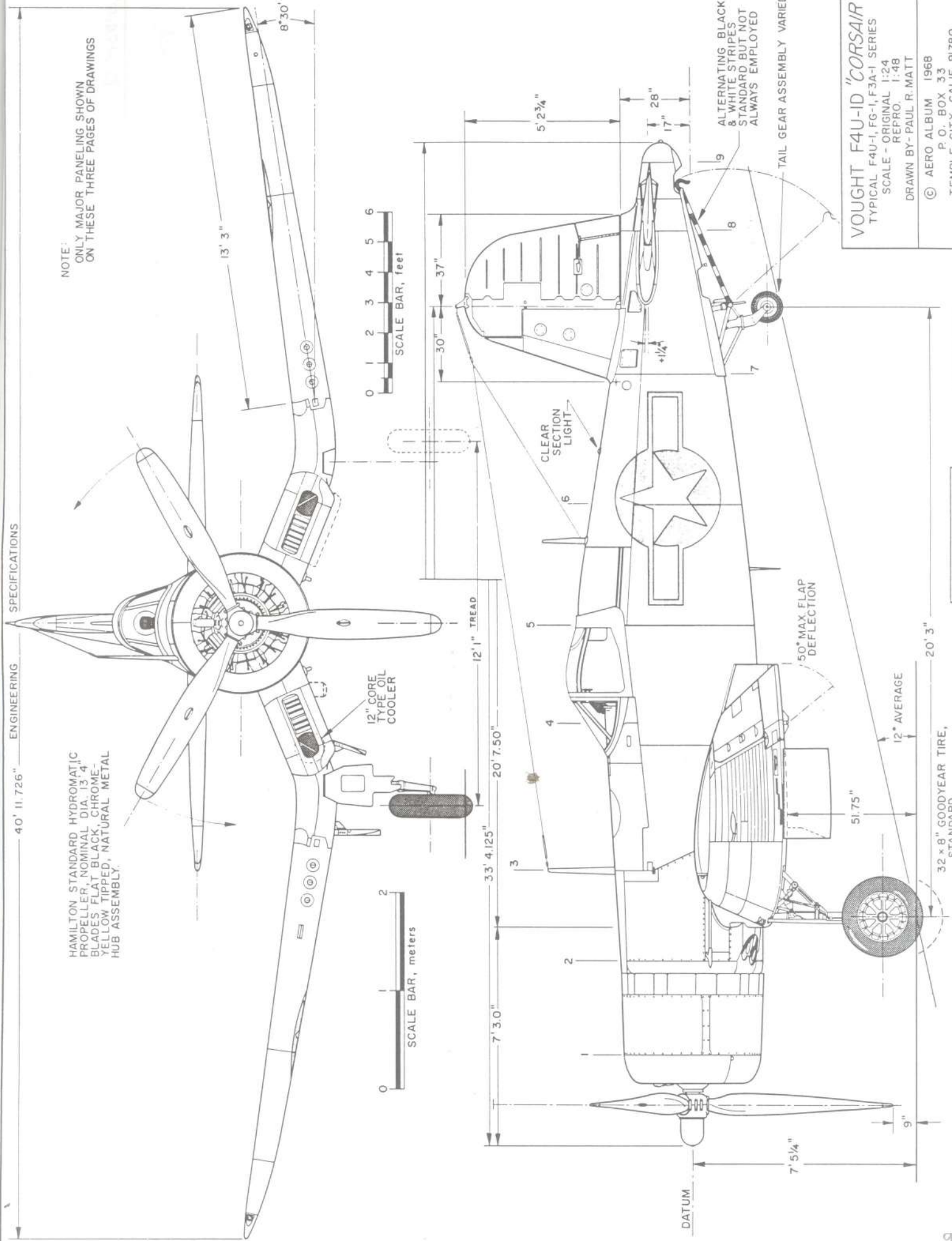
*F4U-1D "Corsair", June 6, 1944.*



*Goodyear FG-1D "Corsair".*

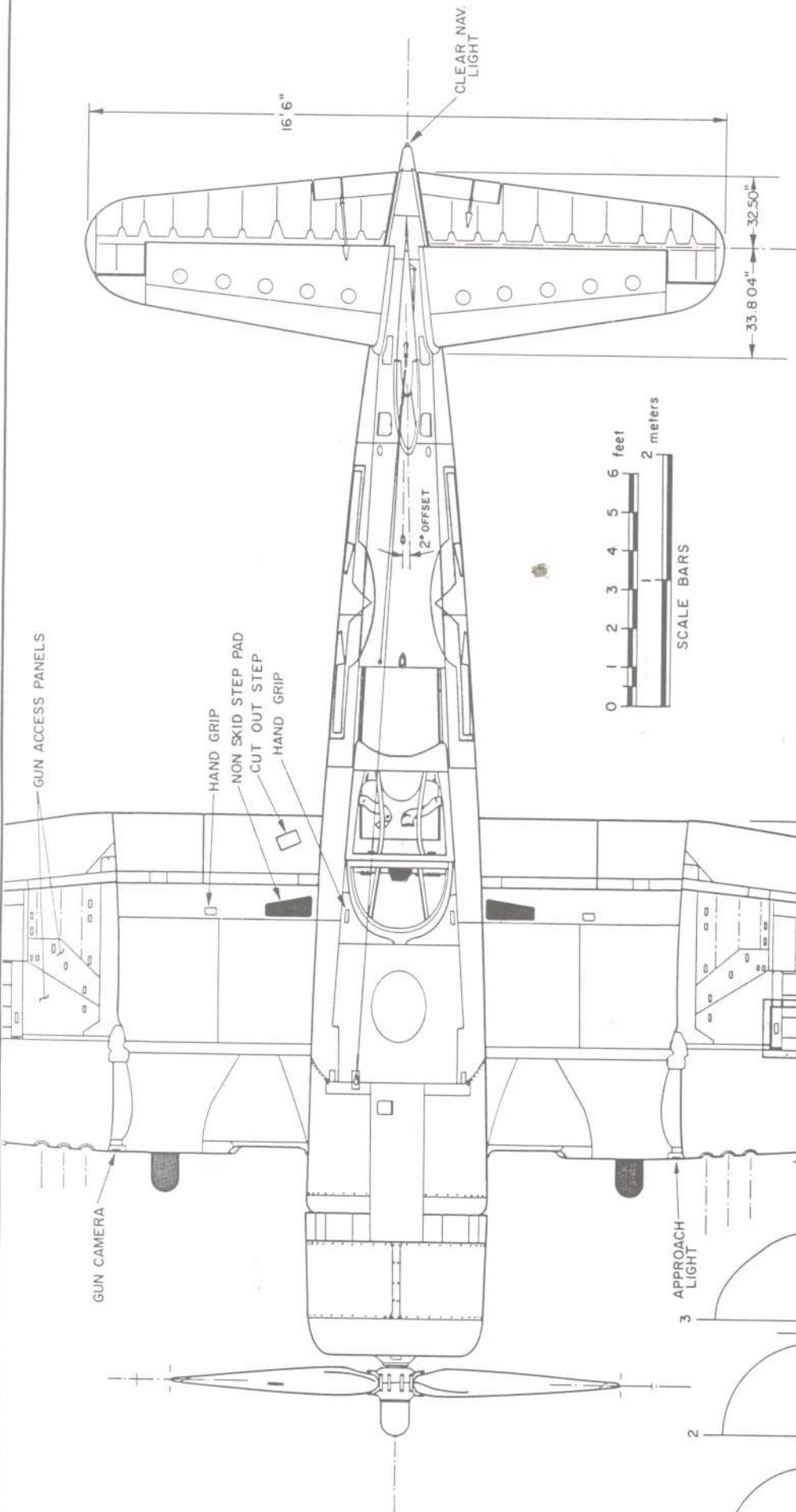
HAMILTON STANDARD HYDROMATIC PROPELLER, NOMINAL DIA. 13' 4" BLADES FLAT BLACK, CHROME-YELLOW TIPPED, NATURAL METAL HUB ASSEMBLY.

NOTE: ONLY MAJOR PANELING SHOWN ON THESE THREE PAGES OF DRAWINGS

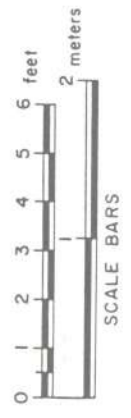


VOUGHT F4U-1D "CORSAIR"  
TYPICAL F4U-1, FG-1, F3A-1 SERIES  
SCALE - ORIGINAL 1:24  
REFRO 1:48  
DRAWN BY- PAUL R. MATT

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NOTE:  
 DUE TO PRONOUNCED ANHEDRAL  
 AND OUTBOARD DIHEDRAL WINGS DRAWN  
 IN PERSPECTIVE - TRUE MECHANICAL PLAN  
 VIEW LAYOUT OF OUTER PANEL SHOWN IN  
 DOTTED LINE.



AMMO. BELTS ACCESS PANELS

3/4" CLEARANCE,  
 NORMAL TOLERANCE

7' 6" ACTUAL

POSITION OF FORMATION  
 LIGHT, WHEN EMPLOYED

GUN CAMERA

HAND GRIP

NON SKID STEP PAD

CUT OUT STEP

HAND GRIP

2° OFFSET

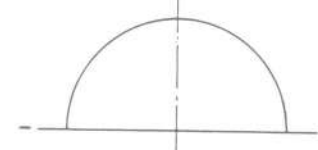
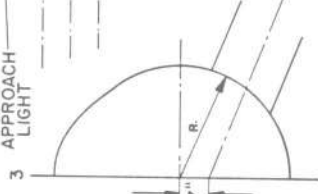
CLEAR NAV.  
 LIGHT

16' 6"

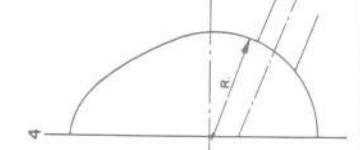
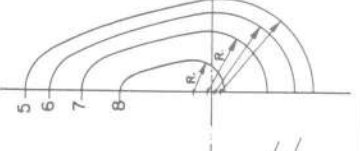
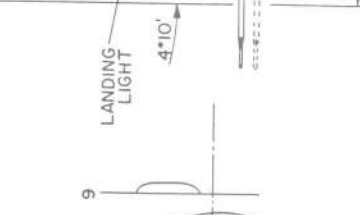
33.804"

32.50"

3 APPROACH  
 LIGHT



LANDING  
 LIGHT



DRAWING No. AA-51-A

PLATE 2-61-3

VOUGHT F4U-ID "CORSAIR"

TYPICAL F4U-1, FG-1, F3A-1 SERIES

SCALE - ORIGINAL 1:24

REPRO. 1:48

DRAWN BY-PAUL R. MATT

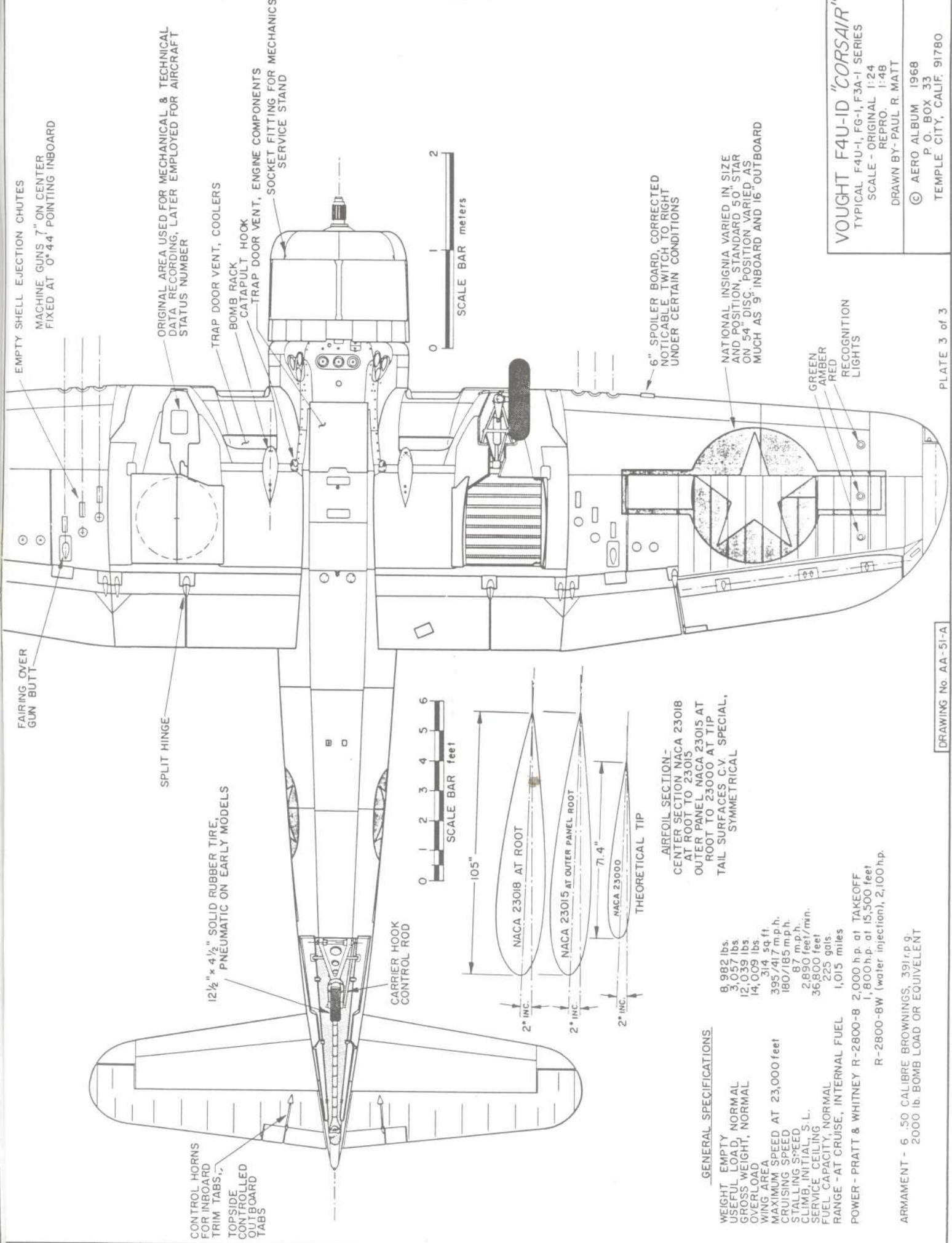
© AERO ALBUM 1968

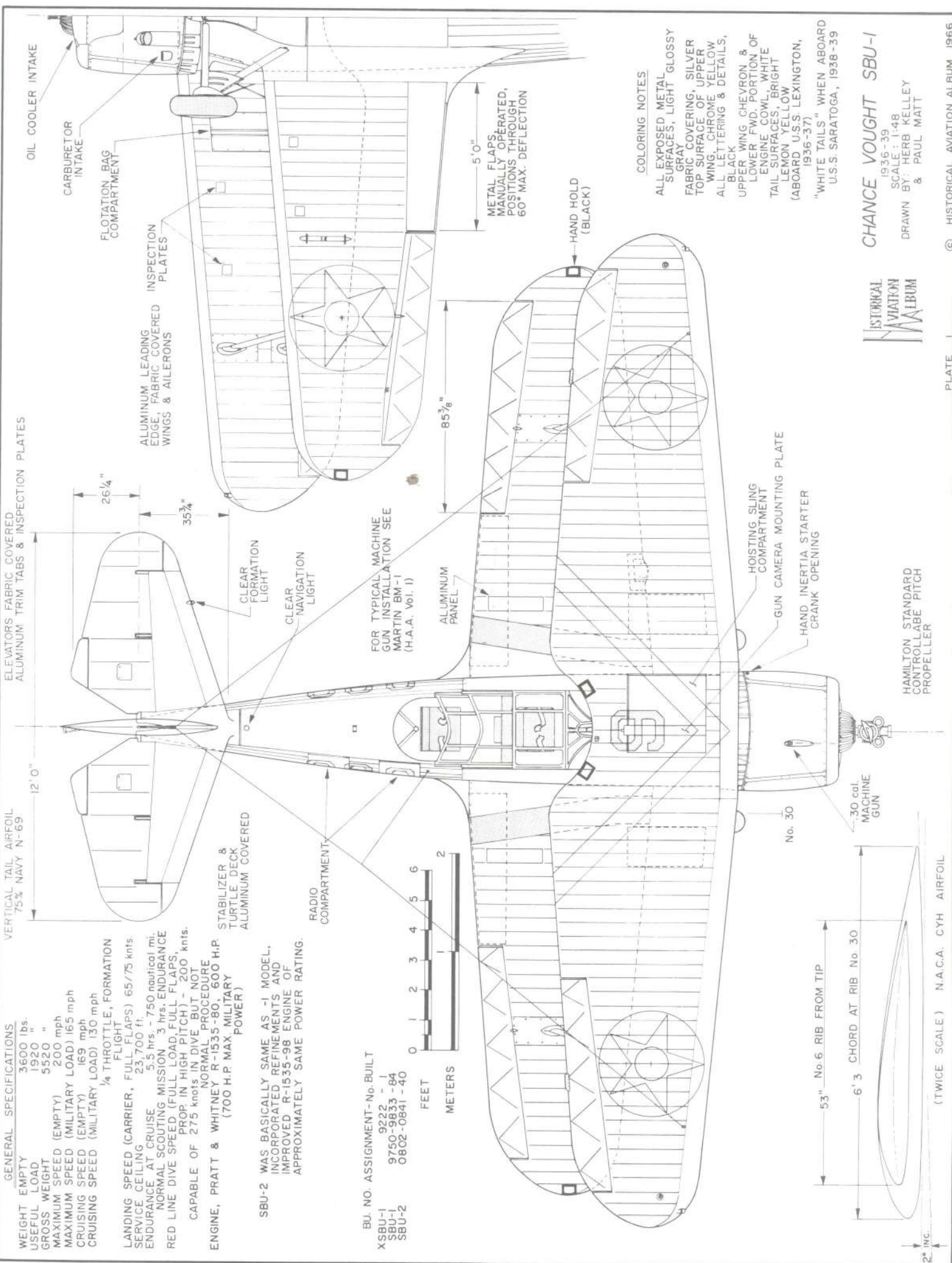
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EMPTY SHELL EJECTION CHUTES

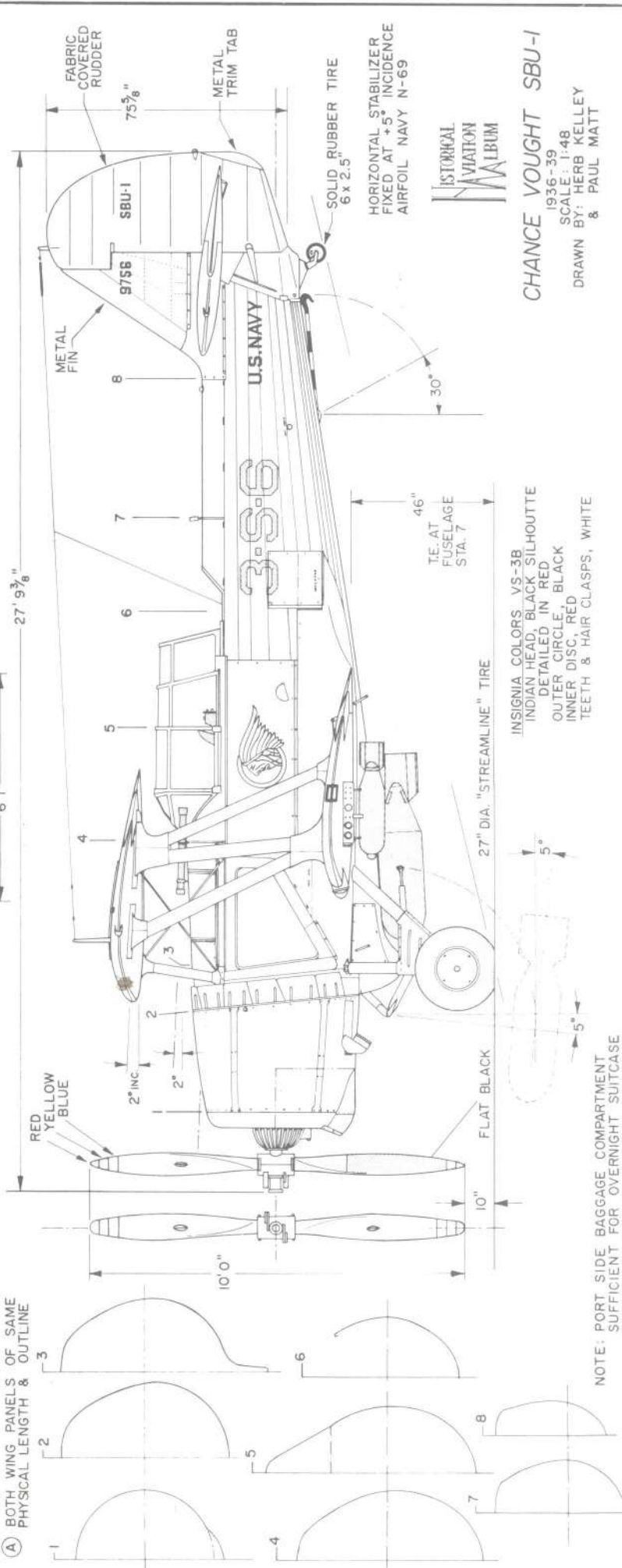
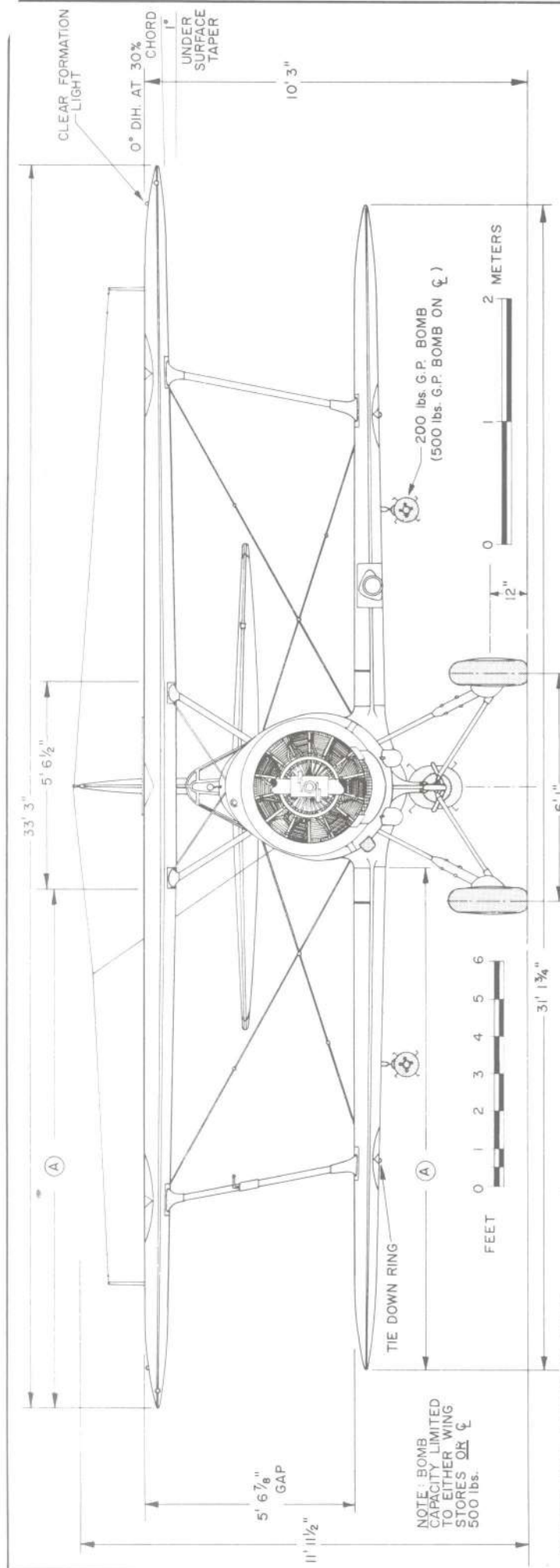






**CHANCE VOUGHT SBU-1**  
1936-39

SCALE: 1:48  
DRAWN BY: HERB KELLEY & PAUL MATT



CHANCE VOUGHT SBU-1  
1936-39  
SCALE: 1:48  
DRAWN BY: HERB KELLEY & PAUL MATT

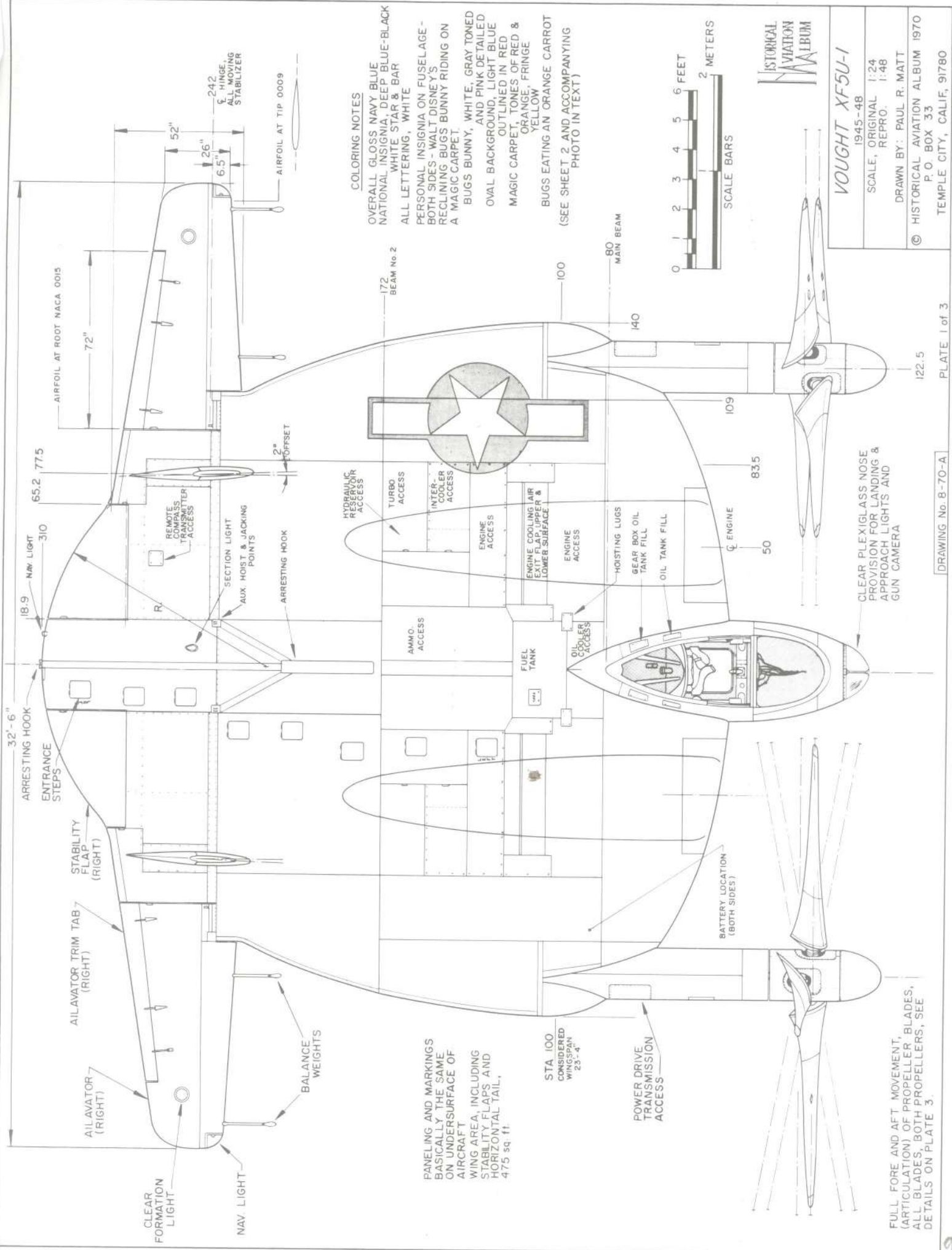
# Vought XF5U-1



*Vought XF5U-1, mock up completed.*



*Vought XF5U-1 airplane under ground run conditions, August 21, 1947.*



**COLORING NOTES**  
 OVERALL GLOSS NAVY BLUE  
 NATIONAL INSIGNIA, DEEP BLUE-BLACK  
 WHITE STAR & BAR  
 ALL LETTERING, WHITE  
 PERSONAL INSIGNIA ON FUSELAGE -  
 BOTH SIDES - WALT DISNEY'S  
 RECLINING BUGS BUNNY RIDING ON  
 A MAGIC CARPET.  
 BUGS BUNNY, WHITE, GRAY TONED  
 AND PINK DETAILED  
 OVAL BACKGROUND, LIGHT BLUE  
 OUTLINED IN RED  
 MAGIC CARPET, TONES OF RED &  
 ORANGE, FRINGE  
 YELLOW  
 BUGS EATING AN ORANGE CARROT  
 (SEE SHEET 2 AND ACCOMPANYING  
 PHOTO IN TEXT)

**PANELING AND MARKINGS**  
 BASICALLY THE SAME  
 ON UNDERSURFACE OF  
 AIRCRAFT  
 WING AREA, INCLUDING  
 STABILITY FLAPS AND  
 HORIZONTAL TAIL,  
 475 sq ft.

FULL FORE AND AFT MOVEMENT,  
 (ARTICULATION) OF PROPELLER BLADES,  
 ALL BLADES, BOTH PROPELLERS, SEE  
 DETAILS ON PLATE 3.

**HISTORICAL AVIATION ALBUM**  
 1945-48  
 SCALE, ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY: PAUL R. MATT  
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PLATE 1 of 3

DRAWING No. 8-70-A

GENERAL SPECIFICATIONS.  
 BASED ON ENGINEERING AND GROUND EVALUATION  
 ACTUAL FLIGHT TESTS CANCELLED BY U.S. NAVY

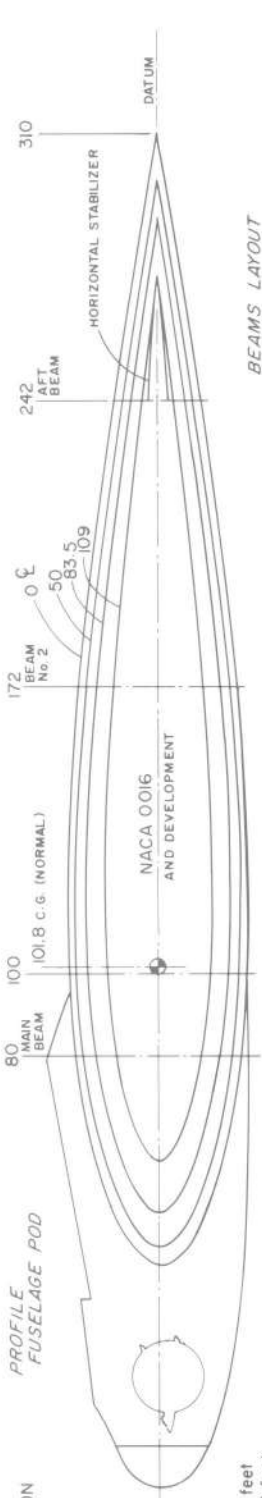
WEIGHT, BASIC (Approx.) 14,500 lbs  
 WEIGHT, NORMAL 16,500 lbs  
 WEIGHT, MAX. LOADED 18,635 lbs.  
 TAKEOFF DISTANCE, NO WIND 710 feet  
 17 KNOT HEADWIND 490 feet  
 CLIMB, AT 14,550 lbs 3,000 ft./min S.L.  
 TO 5,000 feet  
 GRADUATING DOWN TO 1,000 ft./min.  
 AT 12,000 feet

MAXIMUM SPEED, CONTIGOUS 368 mph at 15,000 feet  
 RANGE, MAX. (INTERNAL FUEL) 740 miles  
 AT CRUISE OF 280 mph at 10,000 feet

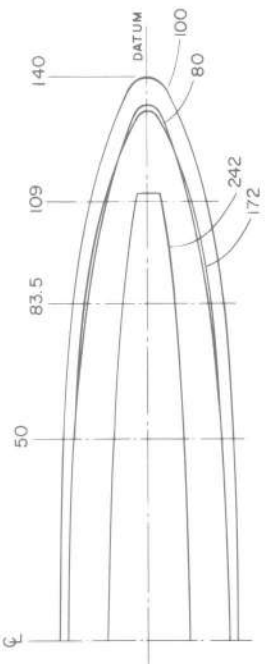
PERFORMANCE BASED ON USE OF TWO P & W R-2000-7  
 AIR COOLED RADIAL ENGINES OF  
 1,350 h.p. at 2,700 r.p.m.  
 1,100 h.p. at 2,550 r.p.m. (NORMAL)

PROPOSED ARMAMENT (NEVER FITTED)  
 SIX 50 CAL. COLT BROWNING M.G.s, 400 R.P.G. INTERCHANGABLE  
 WITH FOUR 20 mm CANNON AND/OR TWO 1,000 lb BOMBS OR  
 TWO 125 gal. LONG RANGE EXTERNAL FUEL TANKS.  
 EXTERIOR CONSTRUCTION - CHANGE VOUGHT DEVELOPED METALITE,  
 ALUMINUM SHEETS BONDED OVER A CORE (SANDWICH) OF BALSA  
 WOOD. CONSTRUCTION WAS EXCEPTIONALLY STRONG, FINISH  
 EXTREMELY SMOOTH.

PROFILE  
 FUSELAGE POD



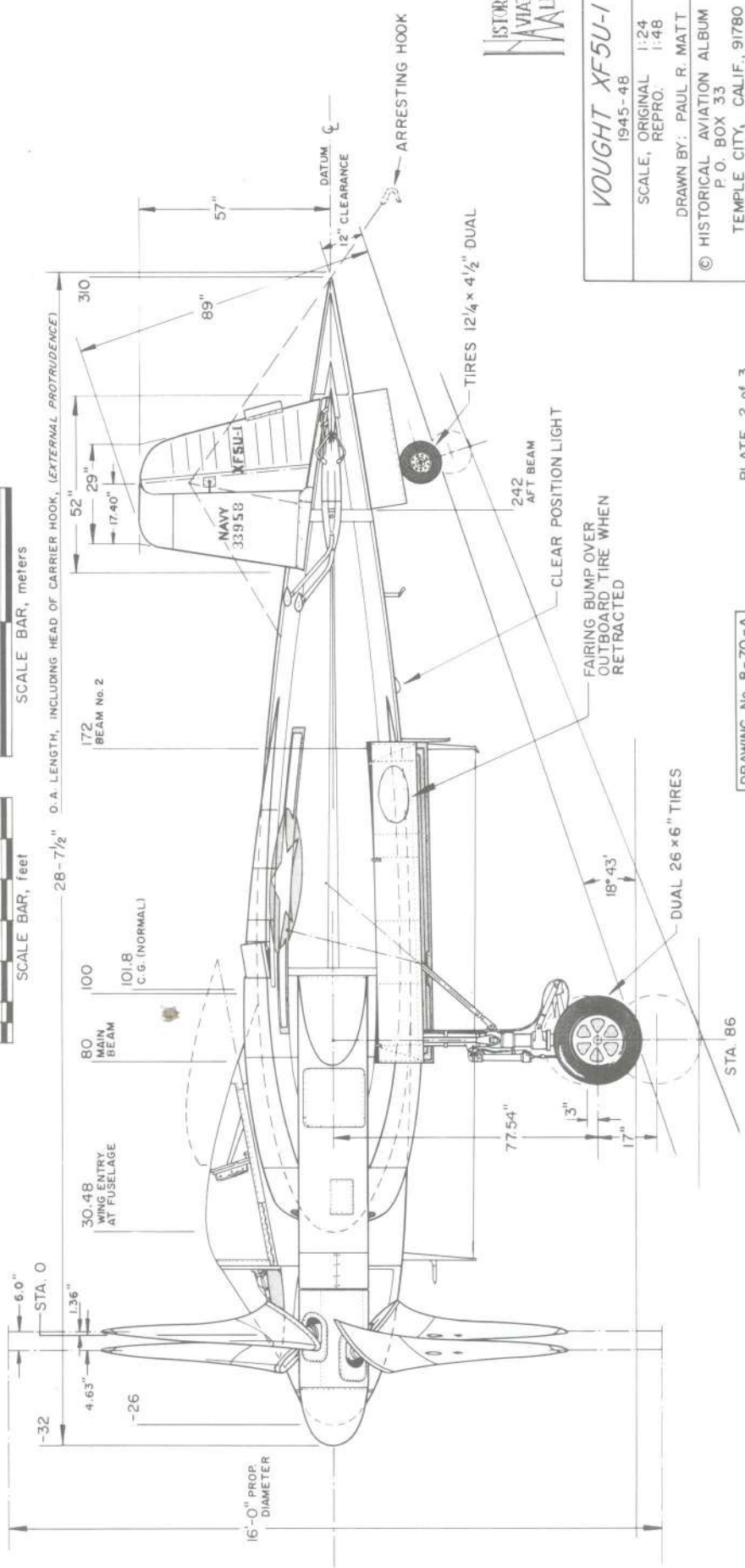
BEAMS LAYOUT



PERSONA INSIGNIA  
 DISC 18" DIA.  
 3 x SCALE APPROX.  
 FOR DETAILS SEE  
 SHEET-1.



28 - 7/2" O.A. LENGTH, INCLUDING HEAD OF CARRIER HOOK, (EXTERNAL PROTRUDENCE)



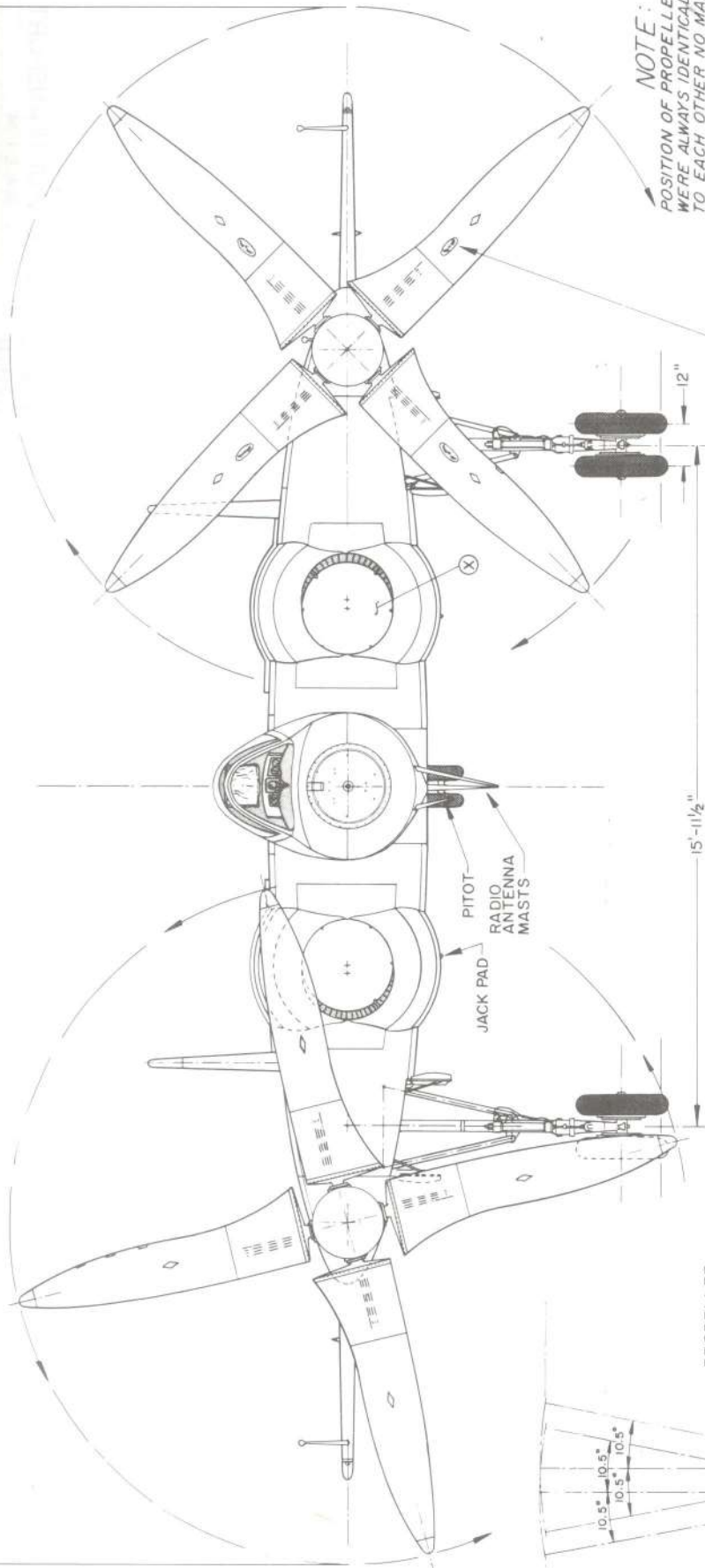
VOUGHT XF5U-1  
 1945-48

SCALE, ORIGINAL 1:24  
 REPRO. 1:48

DRAWN BY: PAUL R. MATT

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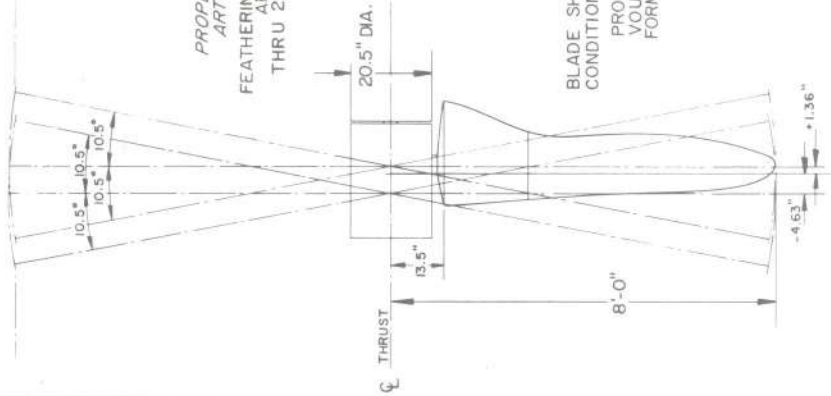
36'-5"



**PROPELLER ARTICULATION & FEATHERING**  
 FEATHERING ADJUSTABLE FROM COCKPIT  
 ARTICULATION WAS SELF-ADJUSTING  
 THRU 2° ARC POSITIONS. BLADES OPERATED  
 IN A MANNER SIMILAR TO THE  
 HELICOPTER ROTOR BLADES.  
 EACH PROPELLER SYSTEM GEARED  
 TO OPERATE IN HARMONY WITH EACH  
 OTHER AT ALL TIMES.

**NOTE:**  
 POSITION OF PROPELLER BLADES  
 WERE ALWAYS IDENTICAL OR RELATED  
 TO EACH OTHER NO MATTER WHAT  
 POSITION THEY WERE TURNING IN.  
 STOPPED OR STARTED THEY WERE  
 GEARED TO HARMONIZE AIR FLOW  
 AND TORQUE EVENLY AND THE  
 SAME ON BOTH SIDES OF THE  
 AIRCRAFT AT ALL TIMES. WE HAVE  
 MOVED THEM INTO UNRELATED  
 POSITIONS SO THAT OTHER AFT  
 DETAILS SHOW MORE CLEARLY.

HAMILTON-STANDARD  
 PROPELLER TRADEMARK  
 ON PORT SIDE BLADES  
 ONLY. WHITE TRACKING  
 DIAMONDS ON ALL BLADES,  
 YELLOW TIPPED.



BLADE SHOWN IN FULL FEATHERED  
 CONDITION AND FLAT LAYOUT PROFILE  
 PROPELLERS SPECIALLY DEVELOPED BY  
 VOUGHT AND HAMILTON STANDARD ENGINEERS.  
 FORMICA IMPREGNATED WOOD CONSTRUCTION.

OUR SINCERE APPRECIATION IS EXTENDED TO  
 MR. CHARLES ZIMMERMAN, INVENTOR - BOON GUYTON,  
 CHIEF TEST PILOT - WILLIAM Z. MILLER, CHIEF  
 DRAFTSMAN - WILLIAM SCHOOLFIELD, CHIEF AERO-  
 DYNAMICIST ON THE XF5U-1 PROJECT FOR THEIR  
 TIME, EFFORT AND INTEREST IN REVIEWING, CORRECTING  
 AND COMMENTING ON THESE DRAWINGS AND THE  
 ACCOMPANYING ARTICLE BY ARTHUR L. SCHOENI.  
 A SPECIAL THANKS TO MR. SCHOENI FOR MAKING  
 IT COME ABOUT THE ASSISTANCE OF THESE MEN  
 IS HIGHLY VALUED, MAKING THIS A JOINT EFFORT  
 AND THE VIEWS HEREWITH AS ACCURATE AS  
 POSSIBLE.

DRAWINGS PREPARED FROM CV 401000 PRINTS  
 AND RELATED AND PERSONAL CHECKING BY  
 WILLIAM Z. MILLER - XF5U-1 CHIEF DRAFTSMAN

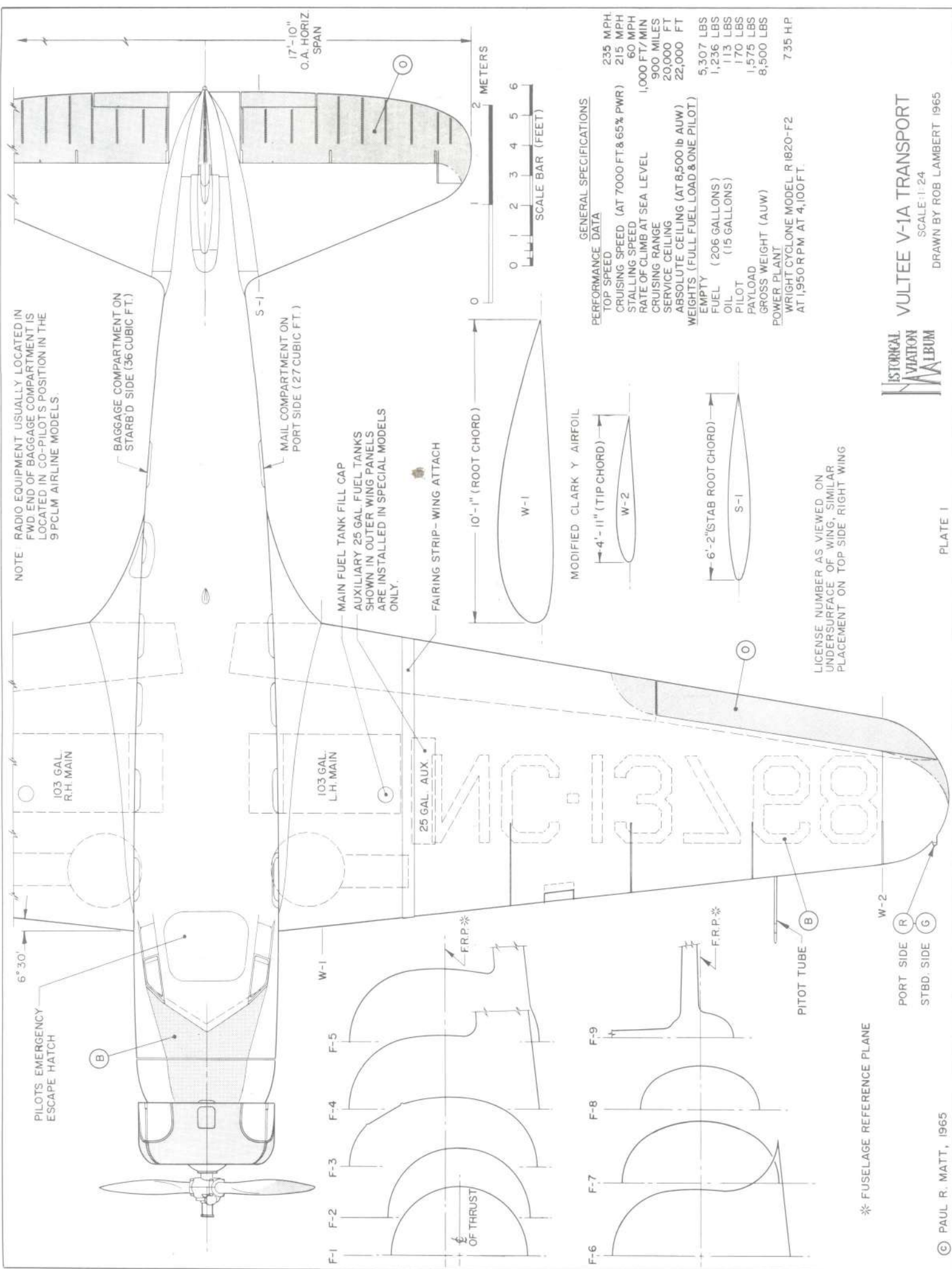
HISTORICAL  
 AVIATION  
 ALBUM

VOUGHT XF5U-1

1945-48  
 SCALE, ORIGINAL 1:24  
 REPRO. 1:48

DRAWN BY: PAUL R. MATT

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NOTE: RADIO EQUIPMENT USUALLY LOCATED IN FWD END OF BAGGAGE COMPARTMENT IS LOCATED IN CO-PILOT'S POSITION IN THE 9PCLM AIRLINE MODELS.

BAGGAGE COMPARTMENT ON STARB'D SIDE (36 CUBIC FT.)

MAIL COMPARTMENT ON PORT SIDE (27 CUBIC FT.)

MAIN FUEL TANK FILL CAP  
AUXILIARY 25 GAL. FUEL TANKS SHOWN IN OUTER WING PANELS ARE INSTALLED IN SPECIAL MODELS ONLY.

FAIRING STRIP - WING ATTACH

103 GAL. R.H. MAIN

103 GAL. L.H. MAIN

25 GAL. AUX.

PILOTS EMERGENCY ESCAPE HATCH

B

W-1

F-5

F-4

F-3

F-2

F-1

θ OF THRUST

FR.P.\*

F-9

F-8

F-7

F-6

B

PITOT TUBE

W-2

R

G

PORT SIDE

STBD. SIDE

\* FUSELAGE REFERENCE PLANE

17'-10" O.A. HORIZ SPAN

2 METERS



10'-1" (ROOT CHORD)

W-1

MODIFIED CLARK Y AIRFOIL

4'-11" (TIP CHORD)

W-2

6'-2" (STAB ROOT CHORD)

S-1

LICENSE NUMBER AS VIEWED ON UNDERSURFACE OF WING, SIMILAR PLACEMENT ON TOP SIDE RIGHT WING

GENERAL SPECIFICATIONS

PERFORMANCE DATA

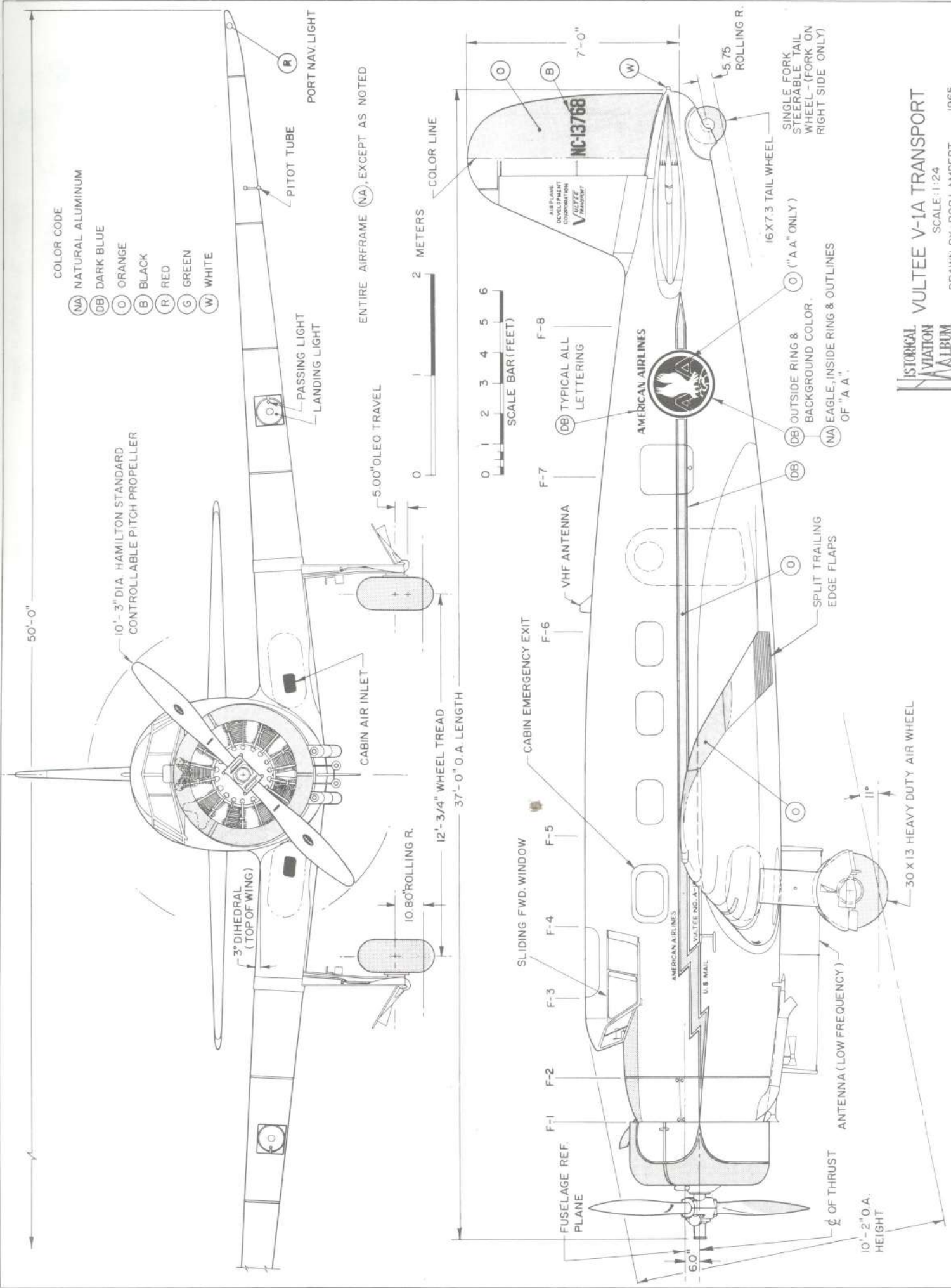
TOP SPEED	235 MPH
CRUISING SPEED (AT 7000 FT & 65% PWR)	215 MPH
STALLING SPEED	60 MPH
RATE OF CLIMB AT SEA LEVEL	1,000 FT/MIN
CRUISING RANGE	900 MILES
SERVICE CEILING	20,000 FT
ABSOLUTE CEILING (AT 8,500 lb AUW)	22,000 FT
WEIGHTS (FULL FUEL LOAD & ONE PILOT)	
EMPTY	5,307 LBS
FUEL (206 GALLONS)	1,236 LBS
OIL (15 GALLONS)	113 LBS
PILOT	170 LBS
PAYLOAD	1,575 LBS
GROSS WEIGHT (AUW)	8,500 LBS
POWER PLANT	
WRIGHT CYCLONE MODEL R 1820-F2	735 HP
AT 1,950 R.P.M. AT 4,100 FT.	

ISTORICAL AVIATION MUSEUM  
VULTEE V-1A TRANSPORT  
SCALE 1:24  
DRAWN BY ROB LAMBERT 1965

PLATE 1

© PAUL R. MATT, 1965





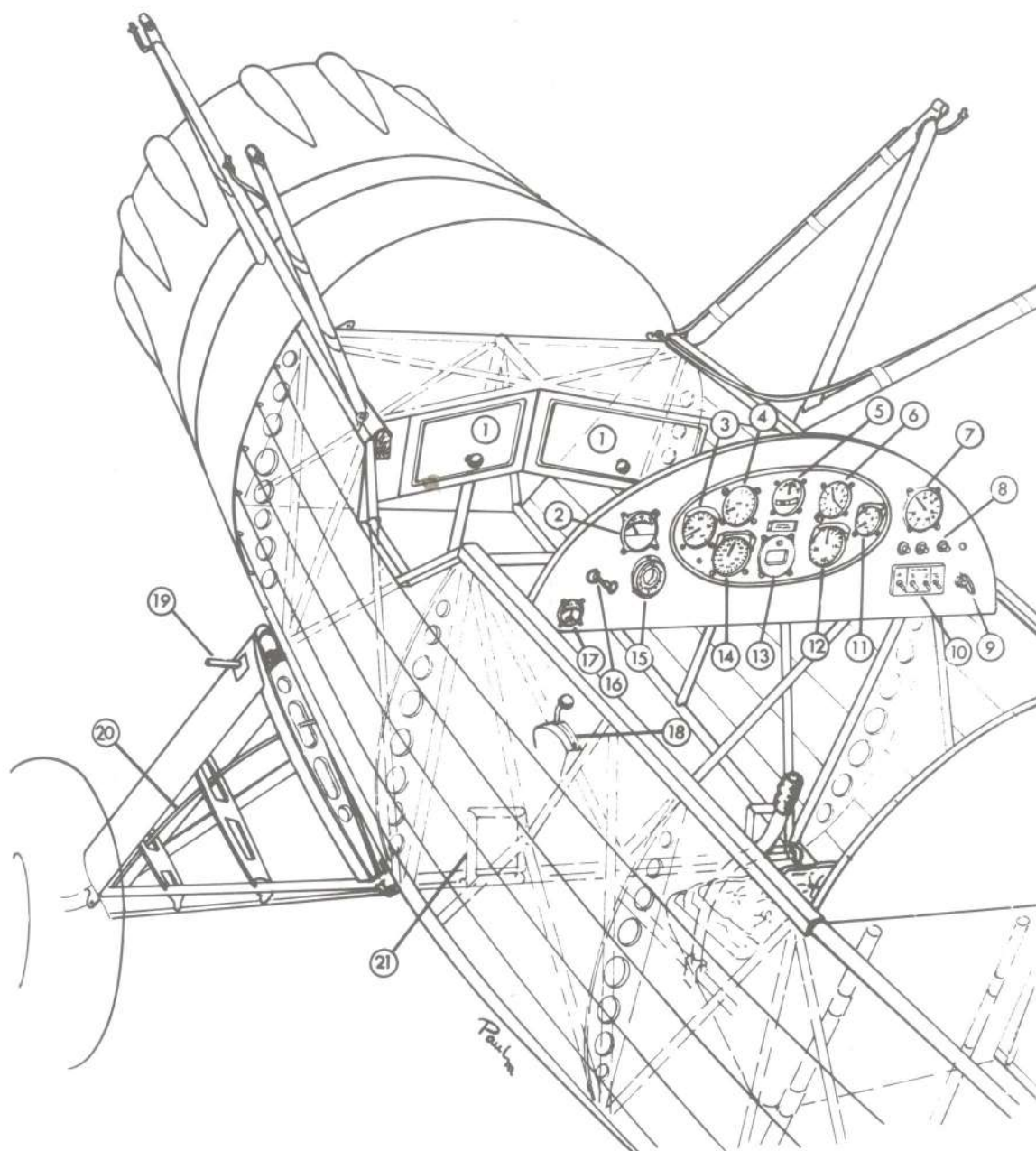
**HISTORICAL AVIATION MUSEUM**

**VULTEE V-1A TRANSPORT**

SCALE: 1:24

DRAWN BY: ROB LAMBERT 1965

# Waco YMF-5



- |    |                     |    |                                 |
|----|---------------------|----|---------------------------------|
| 1  | Glove Compartment   | 12 | Tachometer                      |
| 2  | Cylinder Head Temp. | 13 | Compass                         |
| 3  | Oil Temp.           | 14 | Airspeed                        |
| 4  | Climb Indicator     | 15 | Clock                           |
| 5  | Turn & Bank         | 16 | Engine Primer                   |
| 6  | Altimeter           | 17 | Throttle and<br>Mixture Control |
| 7  | Manifold Pressure   | 18 | Service Step                    |
| 8  | Electrical Fuses    | 19 | Brake Line                      |
| 9  | Parking Brake Lock  | 20 | Rudder Pedal                    |
| 10 | Ignition Switches   |    |                                 |
| 11 | Oil Pressure        |    |                                 |

GENERAL SPECIFICATIONS

MODEL	MODEL	MODEL
UMF	YMF	YMF
WEIGHT EMPTY	1485 lbs.	1540 lbs.
USEFUL LOAD	1015 lbs.	960 lbs.
GROSS WEIGHT	2500 lbs.	2500 lbs.
TOP SPEED	143 mph	147 mph
CRUISING SPEED	128 mph	129 mph
LANDING SPEED	47 mph	47 mph
RATE OF CLIMB, INITIAL	1100 ft/min	1250 ft/min
FUEL CAPACITY	50 gals.	50 gals.
OIL CAPACITY	5 gals.	5 gals.
CRUISING RANGE	450 miles	430 miles
SERVICE CEILING	14,500 ft.	16,000 ft.
WING AREA	233.5 sq ft	233.5 sq ft
WING LOADING	10.7 lbs./sq ft	10.7 lbs./sq ft
POWER LOADING	11.9 lbs/h.p.	11.1 lbs/h.p.

POWER: UMF-3/5 7 Cylinder 210 HP CONTINENTAL W-670  
 YMF-3/5 7 Cylinder 225 HP JACOBS L-4

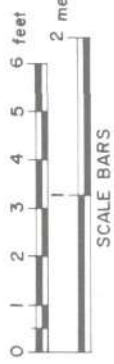
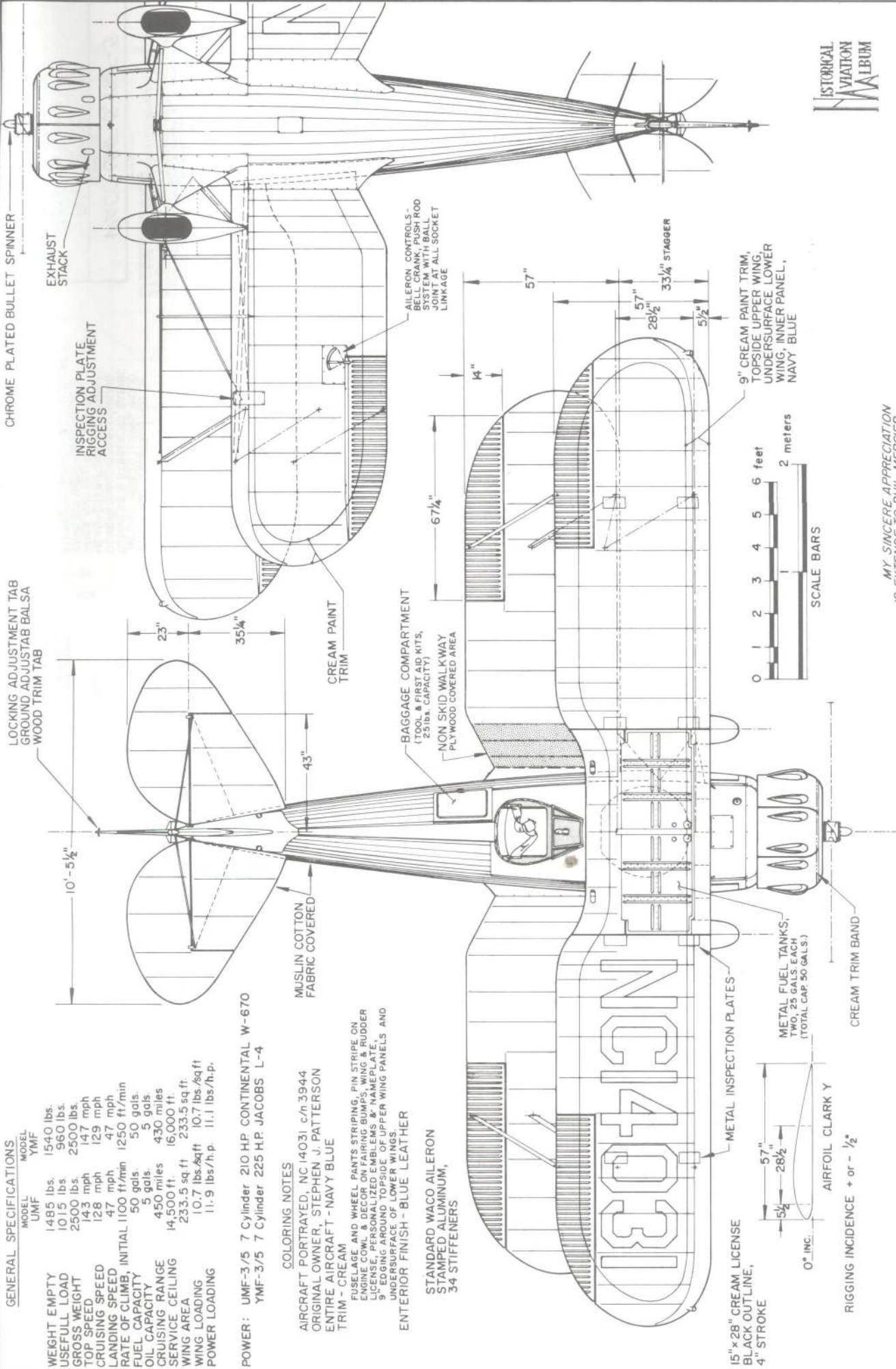
COLORING NOTES

AIRCRAFT PORTRAYED, NC14031, c/n 3944  
 ORIGINAL OWNER, STEPHEN J. PATTERSON  
 ENTIRE AIRCRAFT - NAVY BLUE  
 TRIM - CREAM

FUSelage AND WHEEL PAINTS STRIPING, PIN STRIPE ON  
 ENGINE COVER & DECOR ON FARING BUMPS, WING & RUDDER  
 LICENSE, PERSONALIZED EMBLEMS & NAMEPLATE,  
 9" EDGING AROUND TOPSIDE OF UPPER WING PANELS AND  
 UNDERSURFACE OF LOWER WINGS.

EXTERIOR FINISH - BLUE LEATHER

STANDARD WACO AILERON  
 STAMPED ALUMINUM,  
 34 STIFFENERS



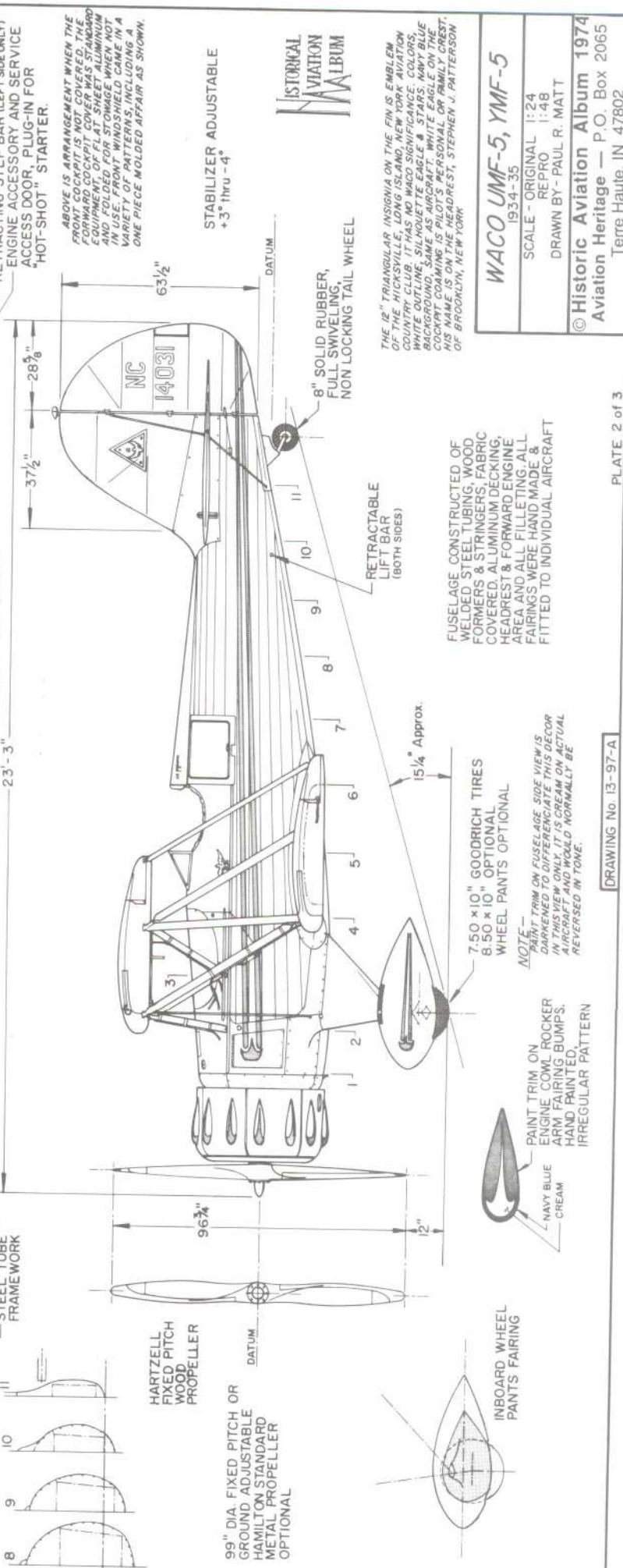
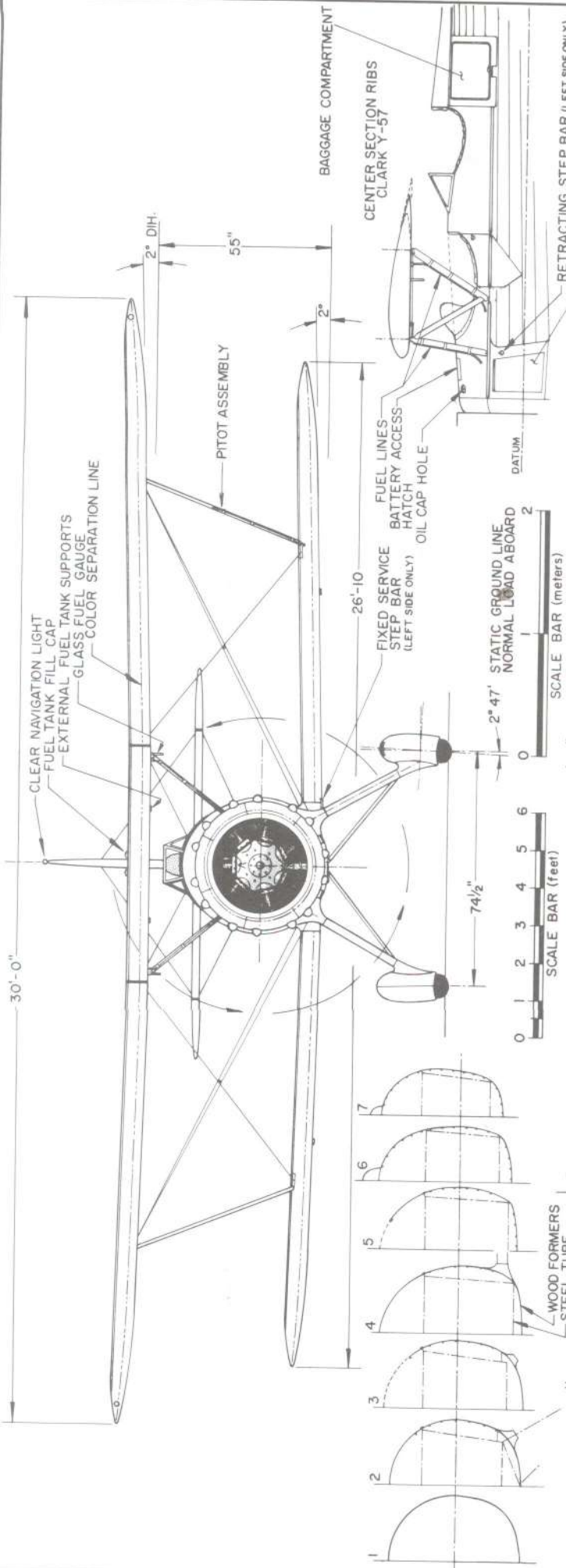
MY SINCERE APPRECIATION  
 IS EXTENDED TO PHIL MERCIER  
 FOR HIS ENTHUSIASTIC AND  
 UNTIRING INTEREST AND HELP  
 IN THE PREPARATION OF THESE  
 DRAWINGS.

WING CONSTRUCTION, SPRUCE SPARS WITH  
 SPRUCE & MAHOGANY RIBS, ALUMINUM SHEET  
 LEADING EDGES, LINEN COVERED.

**WACO UMF-5, YMF-5**  
 1934 - 35

SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT

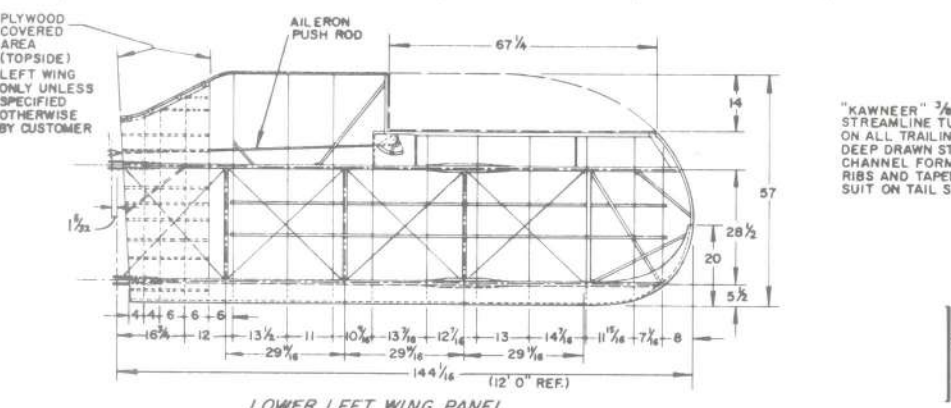
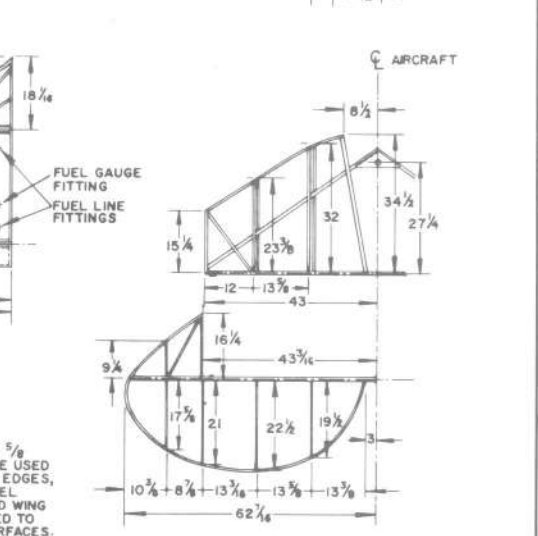
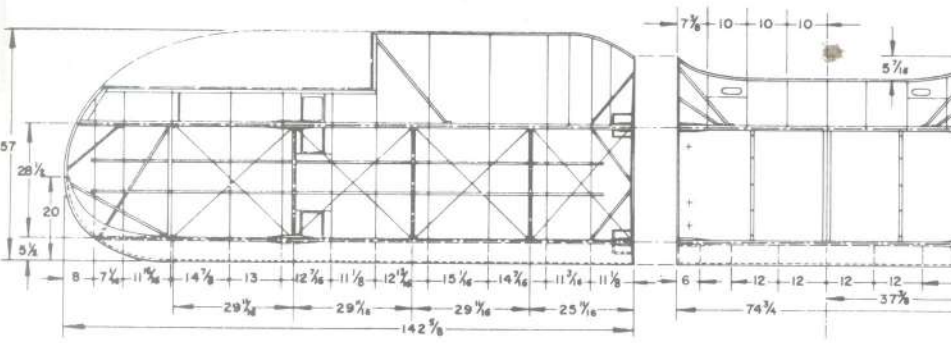
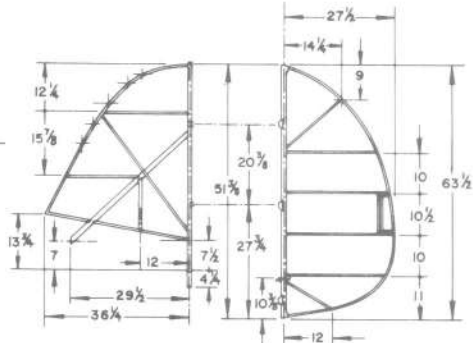
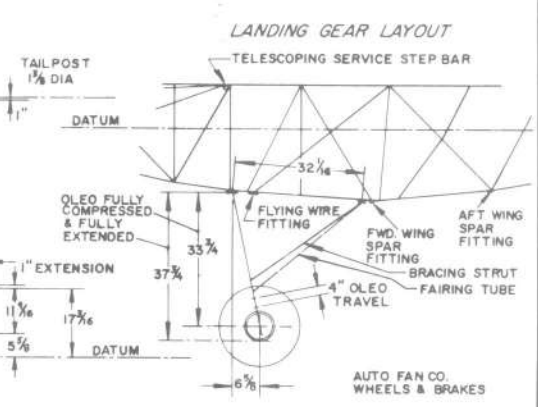
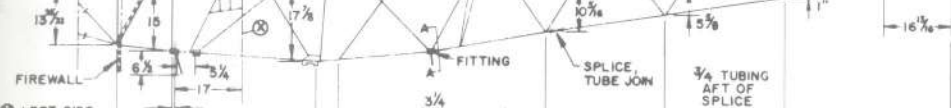
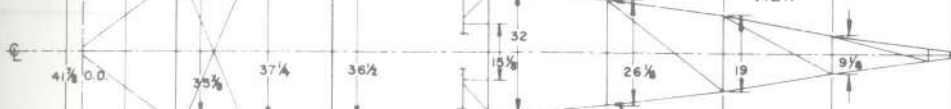
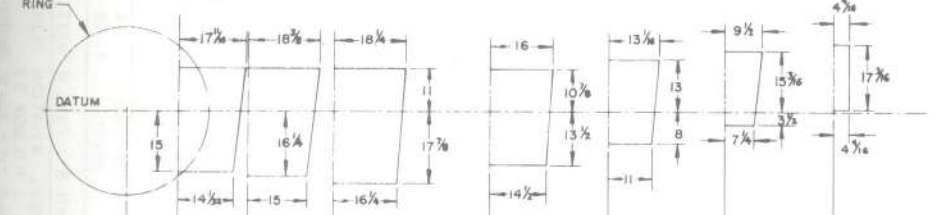
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4 1/8 O.D. COWLING VENTURI RING

CENTER LINE LAYOUT OF MAJOR COMPONENTS

ALL DIMENSIONS ARE BETWEEN CENTER LINES UNLESS DRAWN OTHERWISE.  
ALL DIMENSIONS ARE IN INCHES.



"KAWNEER" 3/8 x 5/8 STREAMLINE TUBE USED ON ALL TRAILING EDGES, DEEP DRAW STEEL CHANNEL FORMED WING RIBS AND TAPERED TO SUIT ON TAIL SURFACES.

**WACO UMF-5, YMF-5**  
1934 - 35  
SCALE - ORIGINAL 1:24  
REPRO. 1:48  
DRAWN BY - PAUL R. MATT  
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GENERAL SPECIFICATIONS.

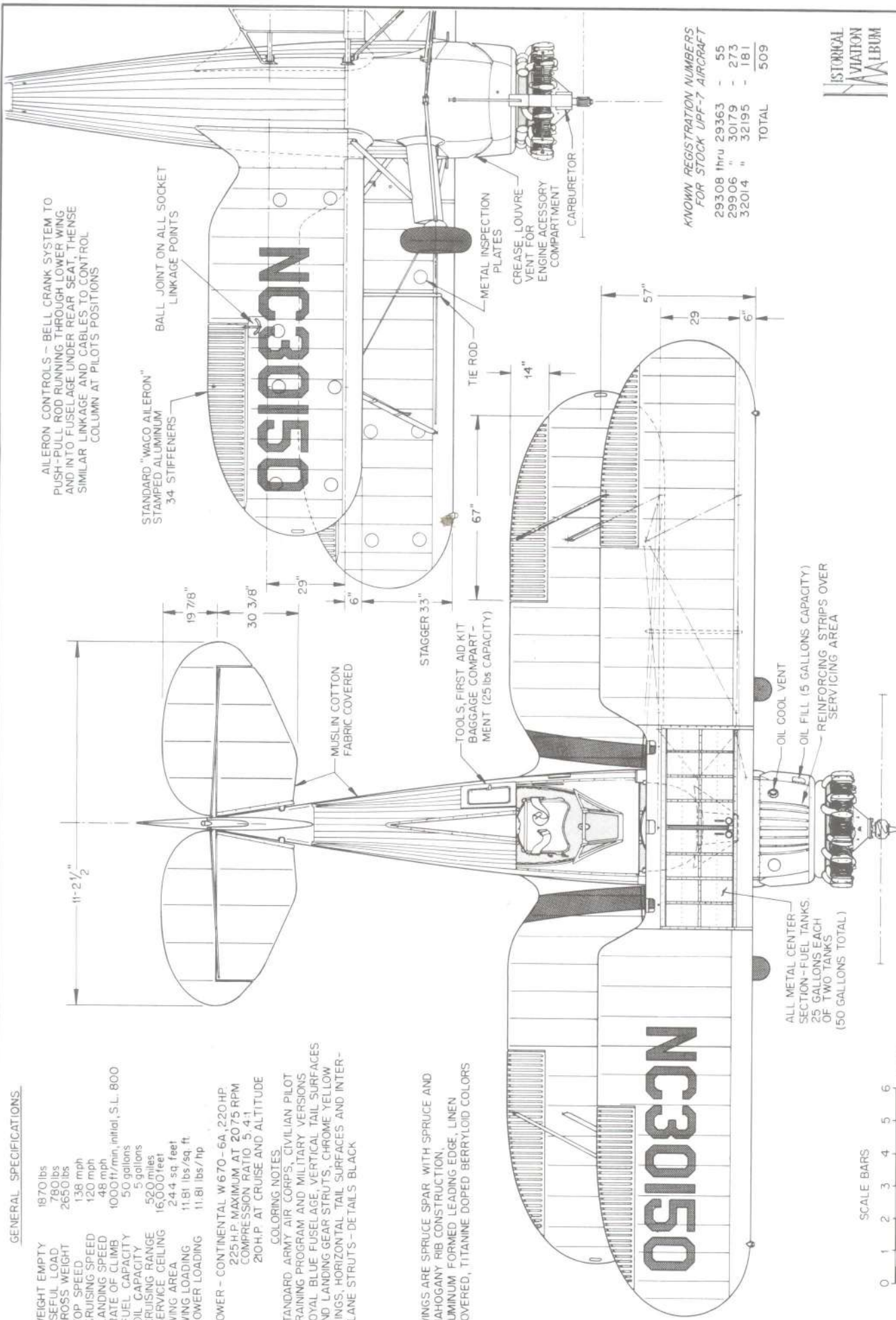
WEIGHT EMPTY 1870 lbs  
 USEFUL LOAD 780 lbs  
 GROSS WEIGHT 2650 lbs  
 TOP SPEED 138 mph  
 CRUISING SPEED 120 mph  
 LANDING SPEED 48 mph  
 RATE OF CLIMB 1000 ft/min, initial, S.L. 800  
 FUEL CAPACITY 50 gallons  
 OIL CAPACITY 5 gallons  
 CRUISING RANGE 520 miles  
 SERVICE CEILING 16,000 feet  
 WING AREA 24.4 sq feet  
 WING LOADING 11.81 lbs/sq. ft.  
 POWER LOADING 11.81 lbs/hp

POWER - CONTINENTAL W 670-6A, 220 HP  
 225 HP MAXIMUM AT 2075 RPM  
 COMPRESSION RATIO 5.4:1  
 210 HP AT CRUISE AND ALTITUDE

COLORING NOTES.

STANDARD ARMY AIR CORPS, CIVILIAN PILOT TRAINING PROGRAM AND MILITARY VERSIONS ROYAL BLUE FUSELAGE, VERTICAL TAIL SURFACES AND LANDING GEAR STRUTS, CHROME YELLOW WINGS, HORIZONTAL TAIL SURFACES AND INTER-PLANE STRUTS - DETAILS BLACK

WINGS ARE SPRUCE SPAR WITH SPRUCE AND MAHOGANY RIB CONSTRUCTION, ALUMINUM FORMED LEADING EDGE, LINEN COVERED, TITANNE DOPED BERRYLOID COLORS

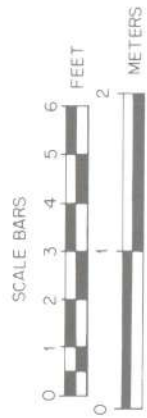


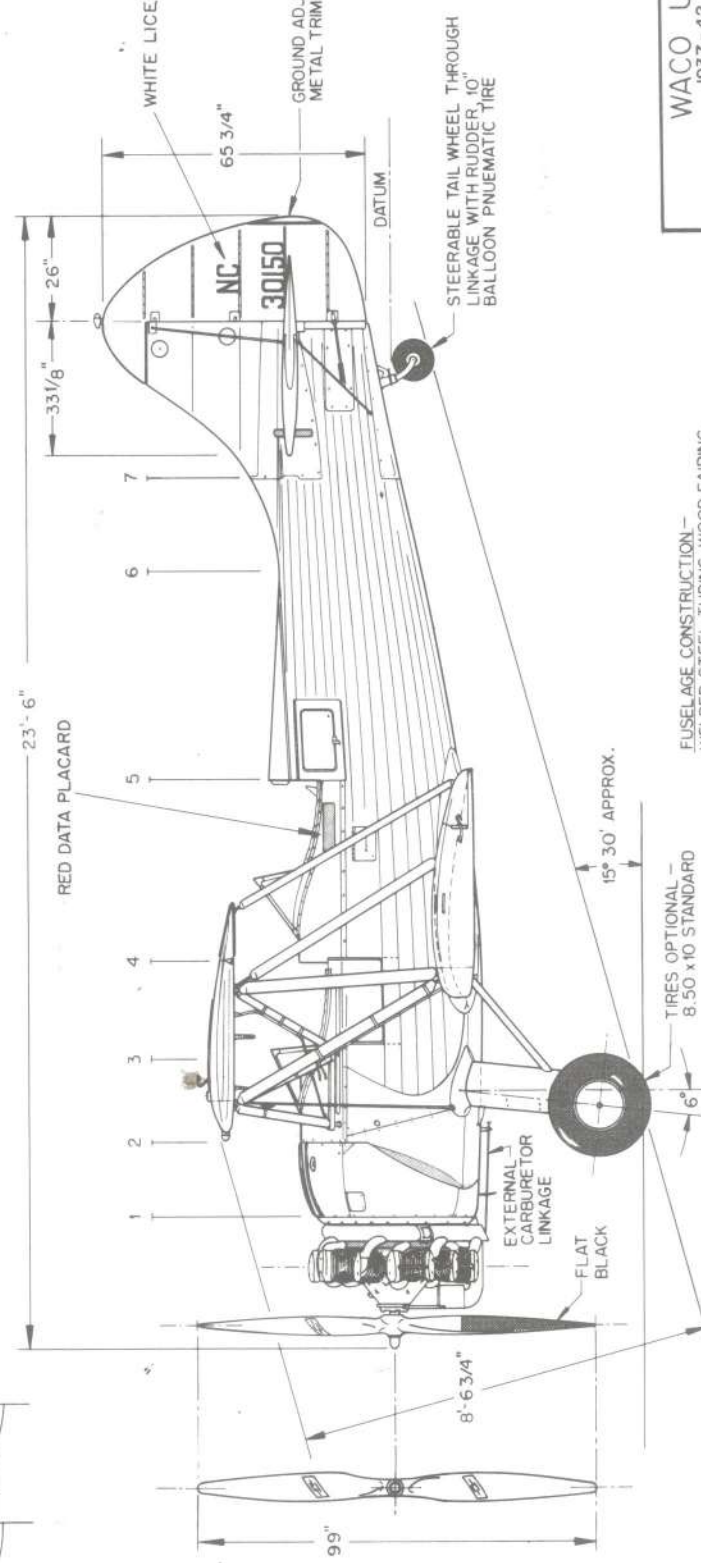
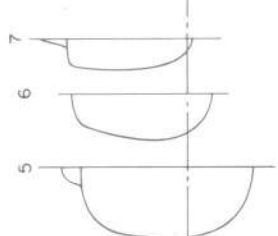
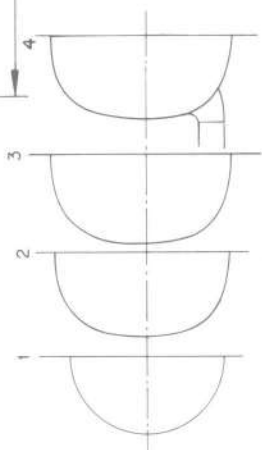
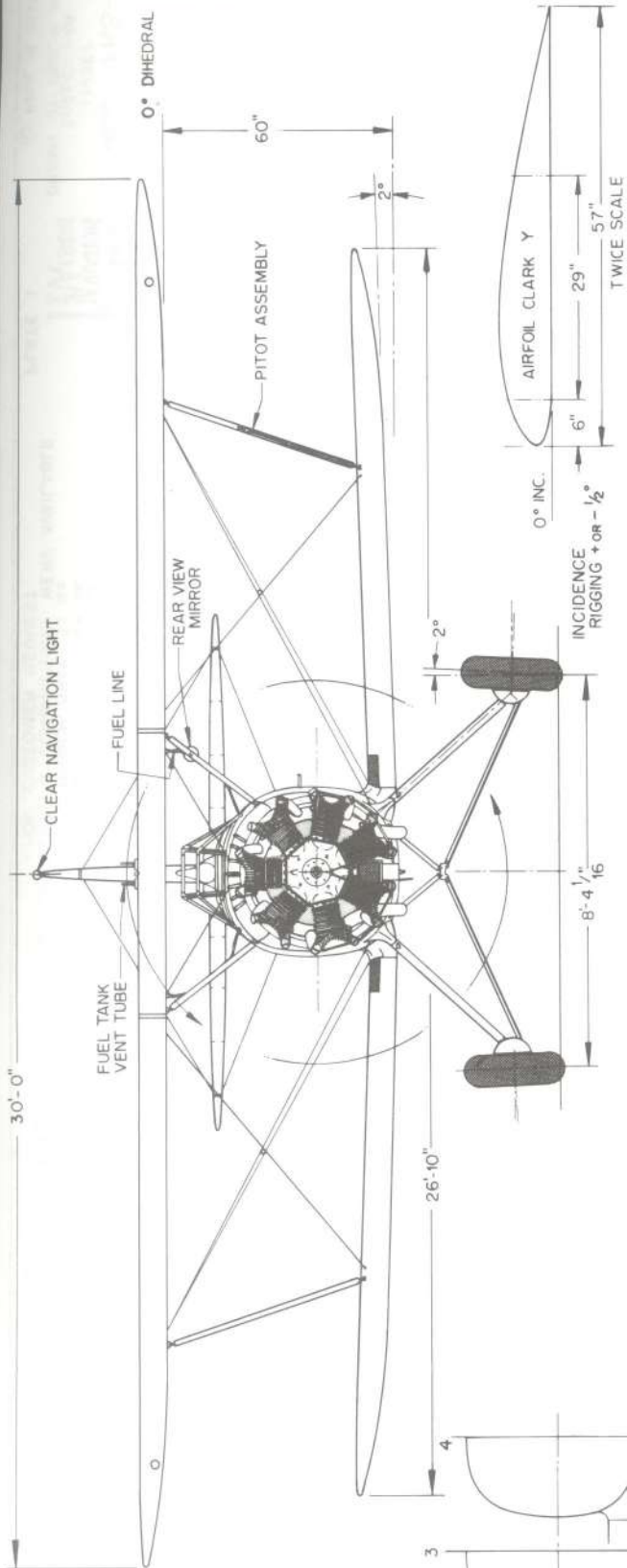
KNOWN REGISTRATION NUMBERS FOR STOCK UPF-7 AIRCRAFT

29308 thru 29363	- 55
29906 "	30179 - 273
32014 "	32195 - 181
TOTAL	509



<b>WACO UPF-7</b>	
1927-42	
SCALE - ORIGINAL	1:24
REPRO	1:48
DRAWN BY: PAUL R. MATT	
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FUSELAGE CONSTRUCTION -  
 WELDED STEEL TUBING, WOOD FAIRING,  
 FABRIC AFT COVERED, ALUMINUM DECKING,  
 HEADREST, FORWARD ENGINE AREA AND  
 ALL FILLETING



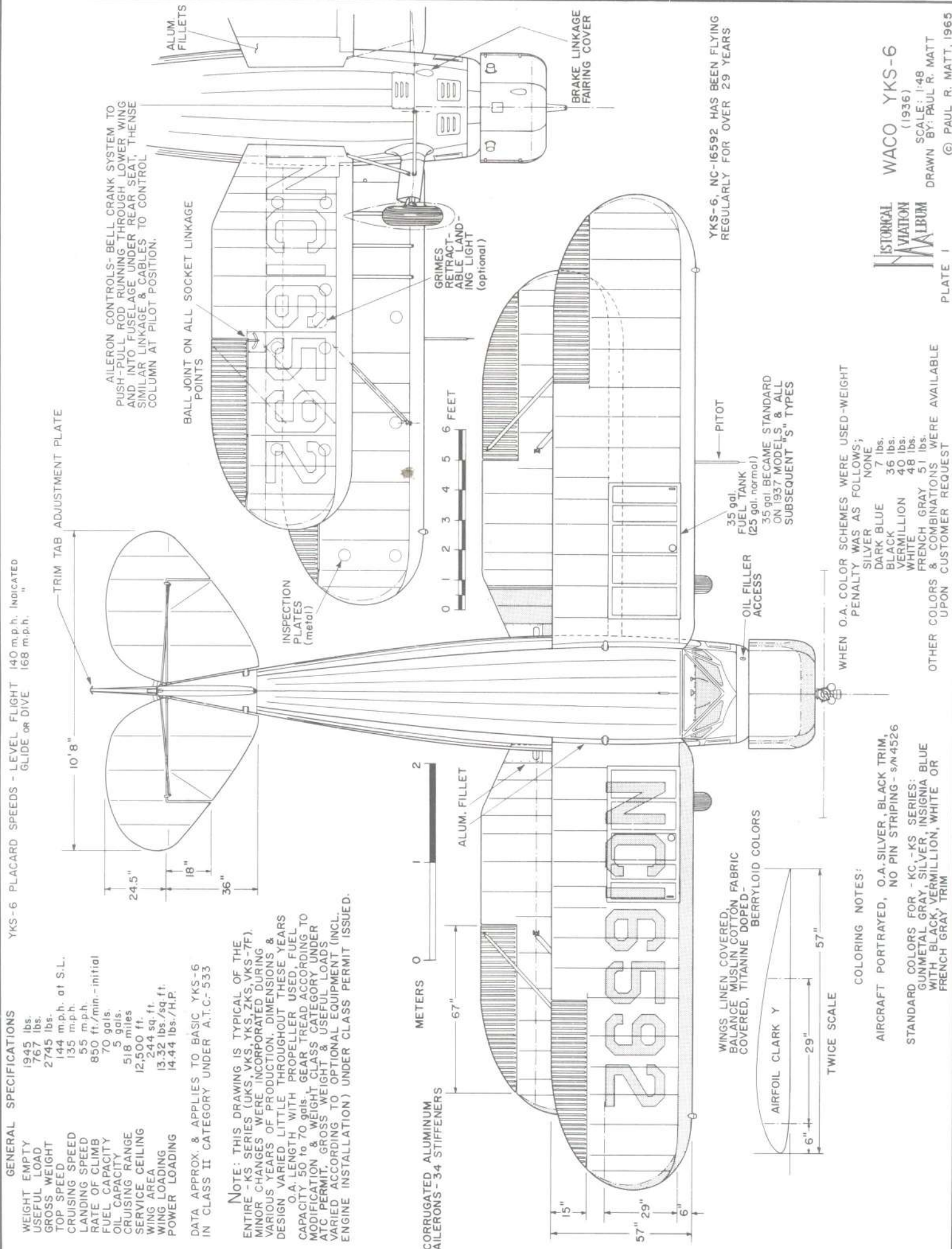
WACO UPF-7  
 1937-42  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY: PAUL R. MAT T  
 © HISTORICAL AVIATION ALBUM 1970  
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 TEMPLE CITY, CALIF. 91780

YKS-6 PLACARD SPEEDS - LEVEL FLIGHT 140 m.p.h. INDICATED  
GLIDE OR DIVE 168 m.p.h.

**GENERAL SPECIFICATIONS**  
 WEIGHT EMPTY 1945 lbs.  
 USEFUL LOAD 767 lbs.  
 GROSS WEIGHT 2745 lbs.  
 TOP SPEED 144 m.p.h. at S.L.  
 CRUISING SPEED 135 m.p.h.  
 LANDING SPEED 55 m.p.h.  
 RATE OF CLIMB 850 ft./min. - initial  
 FUEL CAPACITY 70 gals.  
 OIL CAPACITY 5 gals.  
 CRUISING RANGE 518 miles  
 SERVICE CEILING 12,500 ft.  
 WING AREA 244 sq. ft.  
 WING LOADING 13.32 lbs./sq. ft.  
 POWER LOADING 14.44 lbs./H.P.

DATA APPROX. & APPLIES TO BASIC YKS-6  
IN CLASS II CATEGORY UNDER A.T.C.-533

**NOTE: THIS DRAWING IS TYPICAL OF THE ENTIRE -KS SERIES (YKS, YKS, YKS, YKS, YKS-7F). MINOR CHANGES WERE INCORPORATED DURING DESIGN VARIOUS YEARS OF PRODUCTION. DIMENSIONS & CAPACITY 50 TO 70 gals. GEAR TREAD ACCORDING TO ATC PERMIT. GROSS WEIGHT & USEFUL LOADS VARY ACCORDING TO OPTIONAL EQUIPMENT (INCL. ENGINE INSTALLATION) UNDER CLASS PERMIT ISSUED.**



ALUM. FILLETS  
 BALL JOINT ON ALL SOCKET LINKAGE POINTS  
 GRIMES RETRACTABLE LANDING LIGHT (optional)  
 BRAKE LINKAGE FAIRING COVER

INSPECTION PLATES (metal)  
 TRIM TAB ADJUSTMENT PLATE  
 10'8"

WINGS LINEN COVERED, BALANCE MUSLIN COTTON FABRIC COVERED, TITANINE DOPED BERRYLOID COLORS  
 AIRFOIL CLARK Y  
 6" 29" 57"

WINGS LINEN COVERED, BALANCE MUSLIN COTTON FABRIC COVERED, TITANINE DOPED BERRYLOID COLORS  
 OIL FILLER ACCESS  
 35 gal. FUEL TANK (25 gal. normal)  
 PITOT  
 YKS-6, NC-16592 HAS BEEN FLYING REGULARLY FOR OVER 29 YEARS

ALUM. FILLETS  
 BALL JOINT ON ALL SOCKET LINKAGE POINTS  
 GRIMES RETRACTABLE LANDING LIGHT (optional)  
 BRAKE LINKAGE FAIRING COVER

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 OIL FILLER ACCESS  
 35 gal. FUEL TANK (25 gal. normal)  
 PITOT  
 YKS-6, NC-16592 HAS BEEN FLYING REGULARLY FOR OVER 29 YEARS

WHEN O.A. COLOR SCHEMES WERE USED-WEIGHT PENALTY WAS AS FOLLOWS:  
 SILVER NONE  
 DARK BLUE 7 lbs.  
 BLACK 36 lbs.  
 VERMILLION 40 lbs.  
 WHITE 48 lbs.  
 FRENCH GRAY 51 lbs.  
 OTHER COLORS & COMBINATIONS WERE AVAILABLE UPON CUSTOMER REQUEST

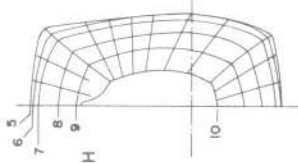
COLORING NOTES:  
 AIRCRAFT PORTRAYED, O.A.-SILVER, BLACK TRIM, NO PIN STRIPING - s/n 4526  
 STANDARD COLORS FOR -KC.-KS SERIES:  
 GUNMETAL GRAY, SILVER, INSIGNIA BLUE WITH BLACK, VERMILLION, WHITE OR FRENCH GRAY TRIM

WACO YKS-6  
 (1936)  
 SCALE: 1:48  
 DRAWN BY: PAUL R. MATT  
 © PAUL R. MATT, 1965

ISTORICAL AVIATION ALBUM  
 PLATE 1



PROGRESSIVE DEVELOPMENT OF AFT FUSELAGE



2' 30" DIH. BOTH WINGS

DIAGONAL STRUT FITTING BAR GOES THROUGH WING AT ROOT TO TOP WHERE BOLT FITTING SECURES IT TO FUSELAGE CROSS MEMBER.

FUEL TANK SUPPORT STRIPS (wood)  
FUEL GAUGE  
FUEL TANK VENT

CARBURETOR AIR SCOOP

OPTIONAL TIRES - SIZE & MFGR.  
6.50 x 10, 7.50 x 10 or  
(8.50 x 10) ← CERTIFIED WAR-SURPLUS,  
NOT FACTORY EQUIPMENT

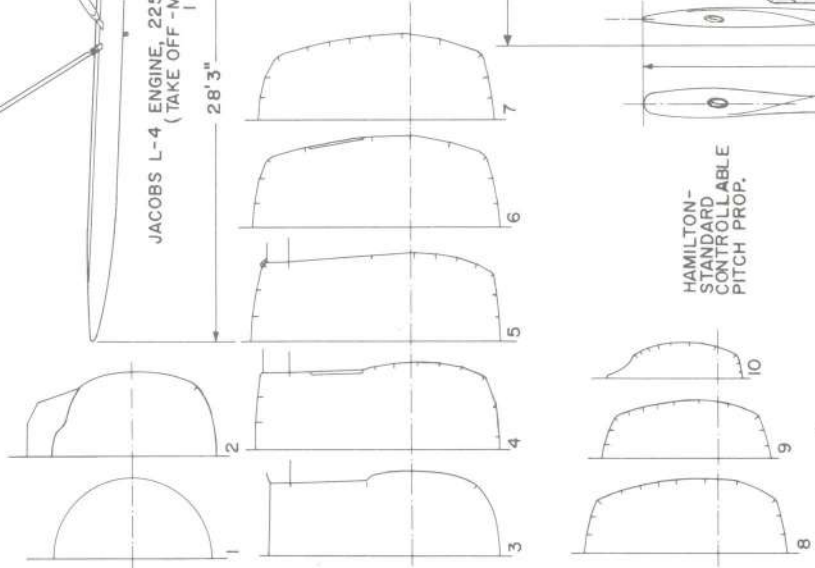


7' 3" Extended Gross wgt.  
SCALE BAR

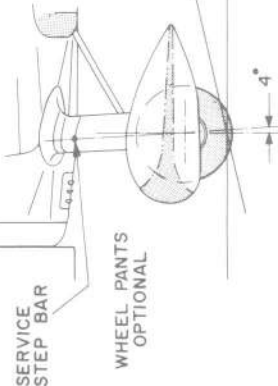


JACOBS L-4 ENGINE, 225 H.P. at 2000 r.p.m.  
(TAKE OFF - MAX. POWER, 1 Minute limit)

28' 3"

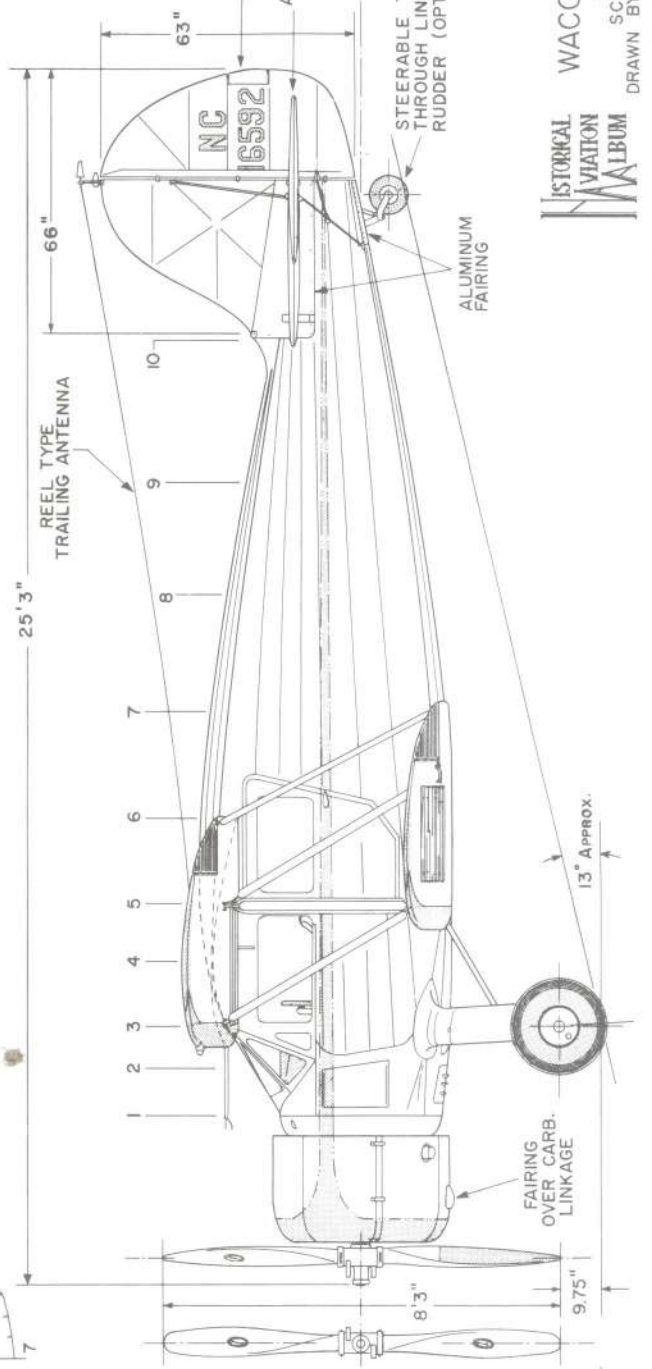


HAMILTON-STANDARD CONTROLLABLE PITCH PROP.



SERVICE STEP BAR

WHEEL PANTS OPTIONAL



REEL TYPE TRAILING ANTENNA

GROUND ADJUSTABLE TRIM TAB (SOLID BALSAMWOOD)

ADJUSTABLE STABILIZER

STEERABLE TAIL WHEEL THROUGH LINKAGE WITH RUDDER (OPTIONAL)

ALUMINUM FAIRING

FAIRING OVER CARB. LINKAGE

13" APPROX.

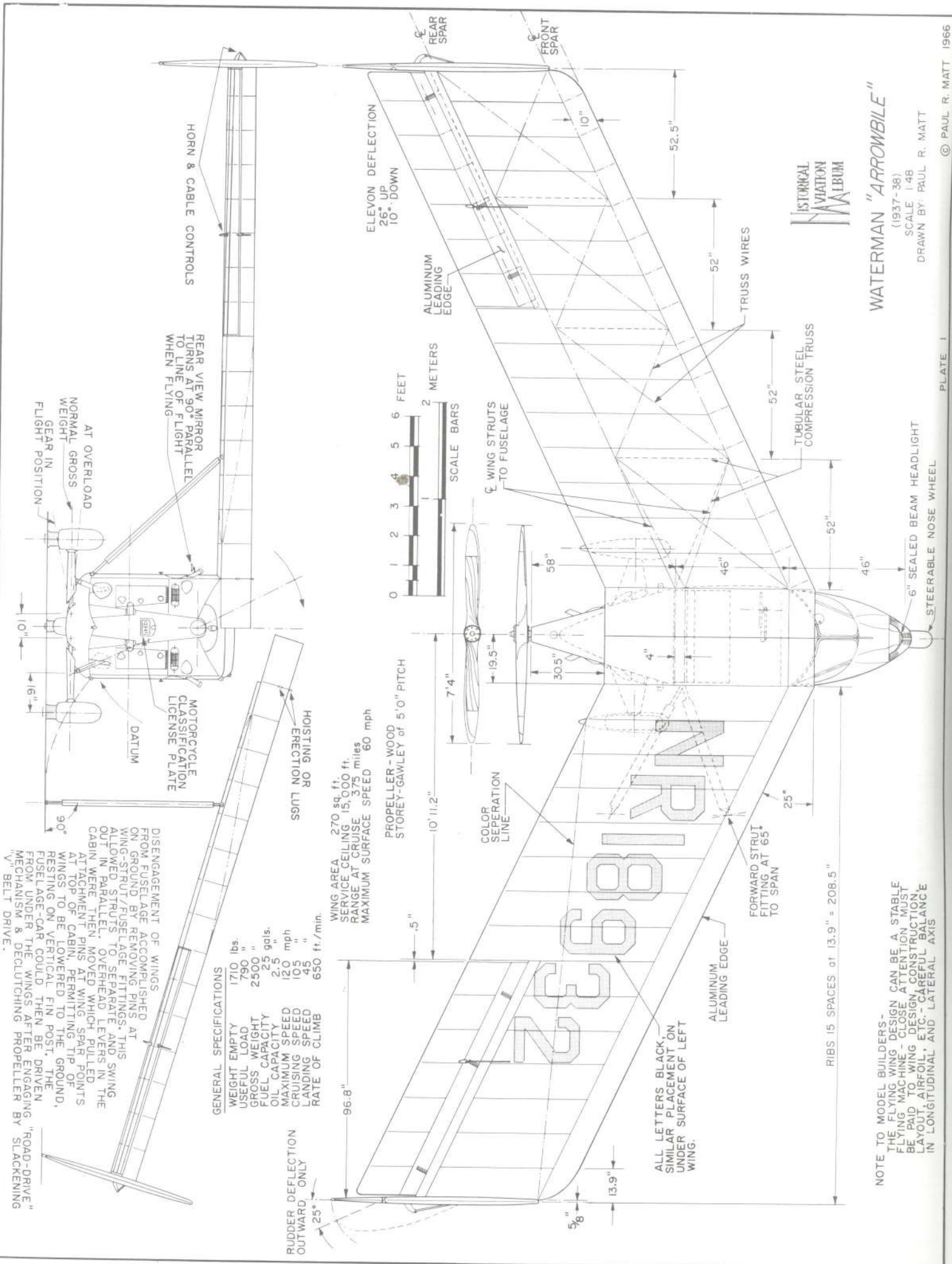


WACO YKS-6 (1936)

SCALE: 1:48  
DRAWN BY: PAUL R. MATT

PLATE 2

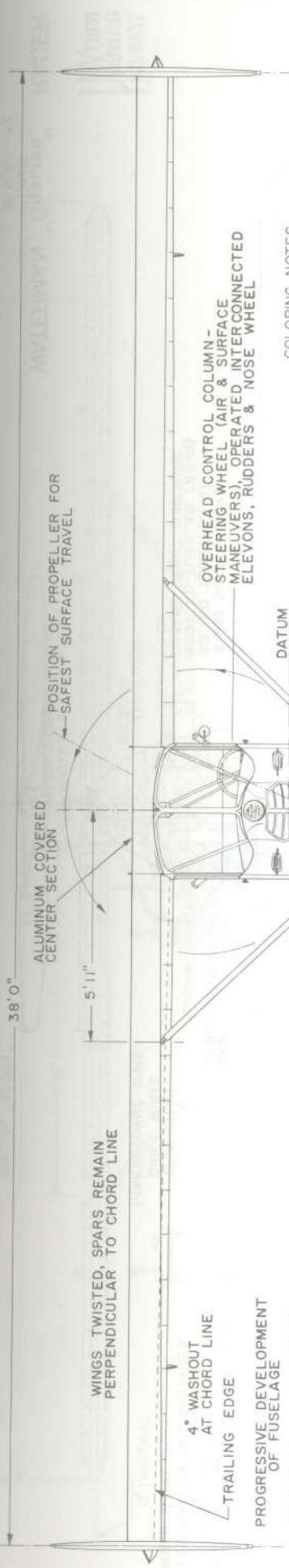
© PAUL R. MATT, 1965



# WATERMAN "ARROWBILE"

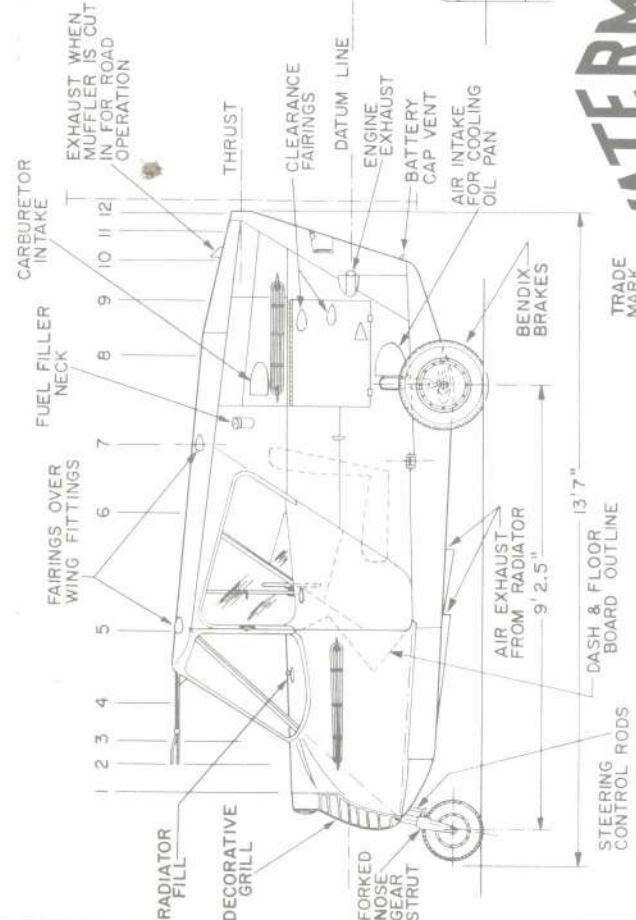
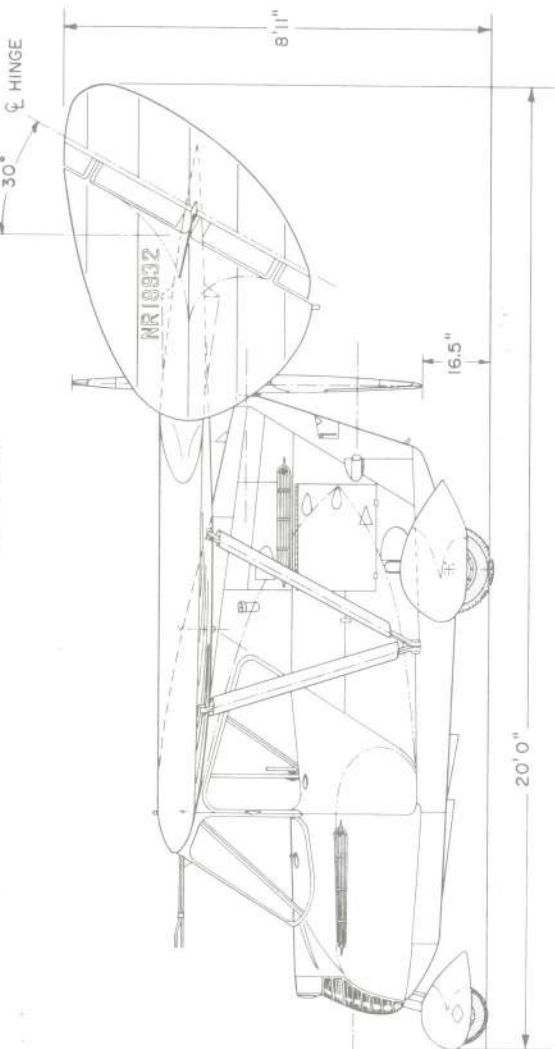
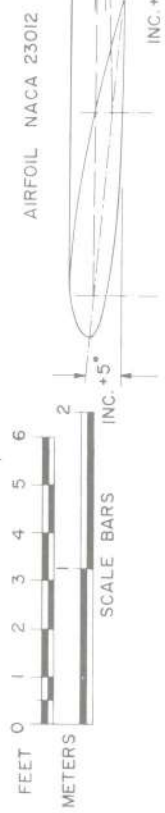
(1937-38)  
 SCALE 1/48  
 DRAWN BY: PAUL R. MATT

**NOTE TO MODEL BUILDERS -**  
 THE FLYING WING DESIGN CAN BE A STABLE FLYING MACHINE - CLOSE ATTENTION MUST BE PAID TO WING DESIGN, CONSTRUCTION, LAYOUT, AIRFOIL, ETC. - CAREFUL BALANCE IN LONGITUDINAL AND LATERAL AXIS



**"ARROWBILE"** No. 1 - X 262Y - ORIGINALLY ALL SILVER (PROTO).  
 AS NR 262Y - DARK GRAY & WHITE  
 No. 2 - NR 16332 - DARK BUICK BLUE & WHITE  
 No. 3 - NR 18932 - RED & WHITE  
 No. 4 - NR 18933 - } ASSIGNED, MACHINES NOT COMPLETED TO POINT WHERE APPLICATION WAS USED.  
 No. 5 - NR 18934 - }  
**"AEROBILE"** No. 6 - N54P - DARK BLUE & WHITE (LATE POST WAR II DEVELOPMENT)

**COLORING NOTES**



**WATERMAN**  
**ARROWBILE**

**HISTORICAL AVIATION MUSEUM**

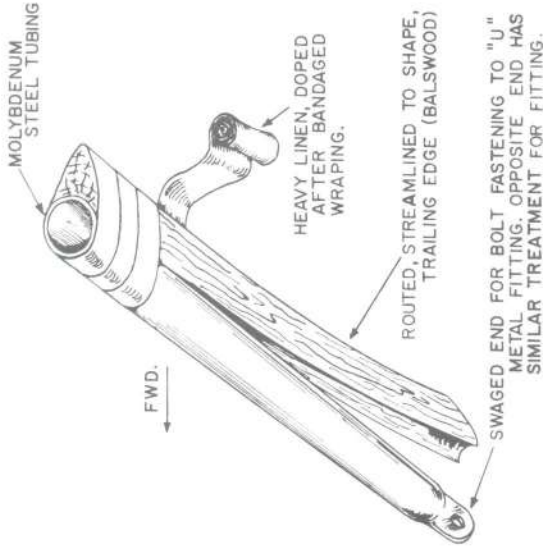
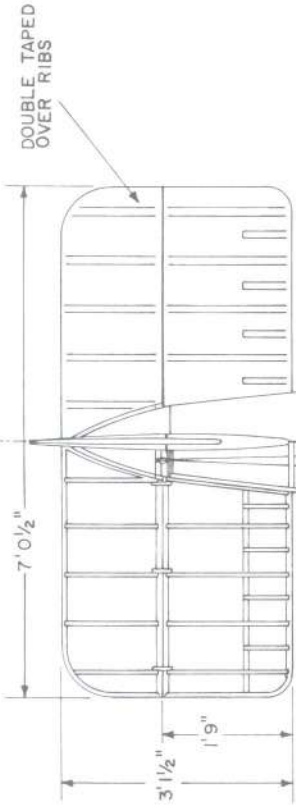
**WATERMAN "ARROWBILE"**  
 (1937-38)  
 SCALE 1:48  
 DRAWN BY: PAUL R. MATT

**GENERAL SPECIFICATIONS**

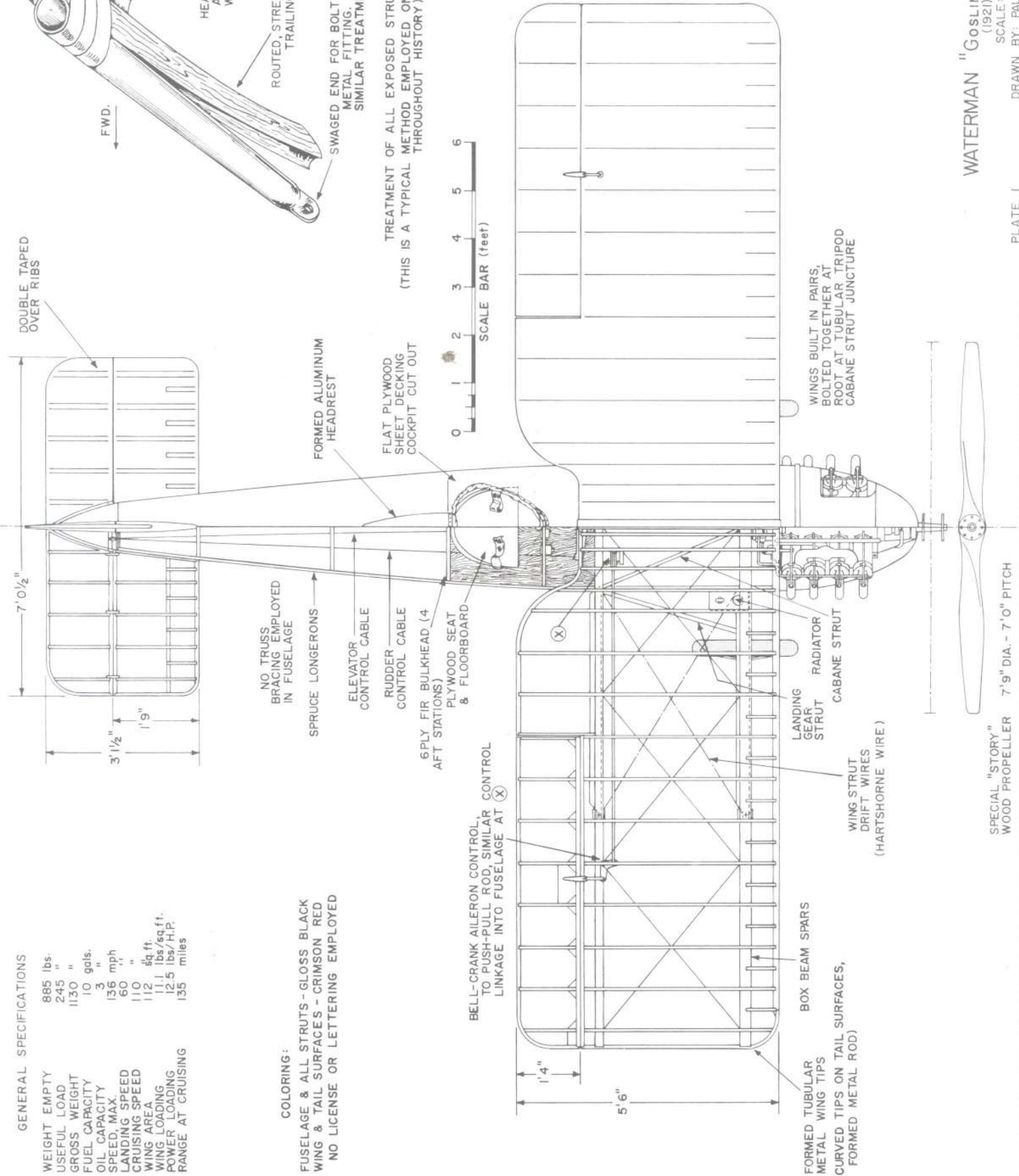
WEIGHT EMPTY	885 lbs.
USEFUL LOAD	245 "
GROSS WEIGHT	1130 "
FUEL CAPACITY	10 gals.
OIL CAPACITY	3 "
SPEED, MAX.	136 mph
LANDING SPEED	60 "
CRUISING SPEED	110 "
WING AREA	112 sq.ft.
WING LOADING	11.1 lbs./sq.ft.
POWER LOADING	12.5 lbs./H.P.
RANGE AT CRUISING	135 miles

**COLORING:**

FUSELAGE & ALL STRUTS - GLOSS BLACK  
 WING & TAIL SURFACES - CRIMSON RED  
 NO LICENSE OR LETTERING EMPLOYED

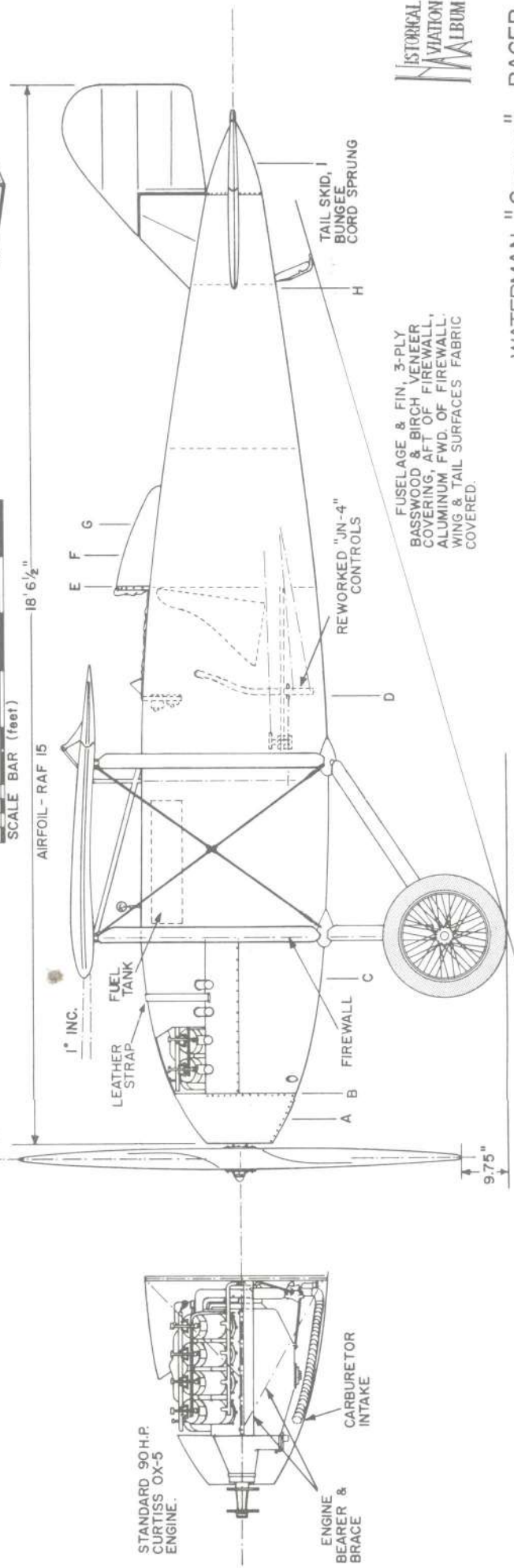
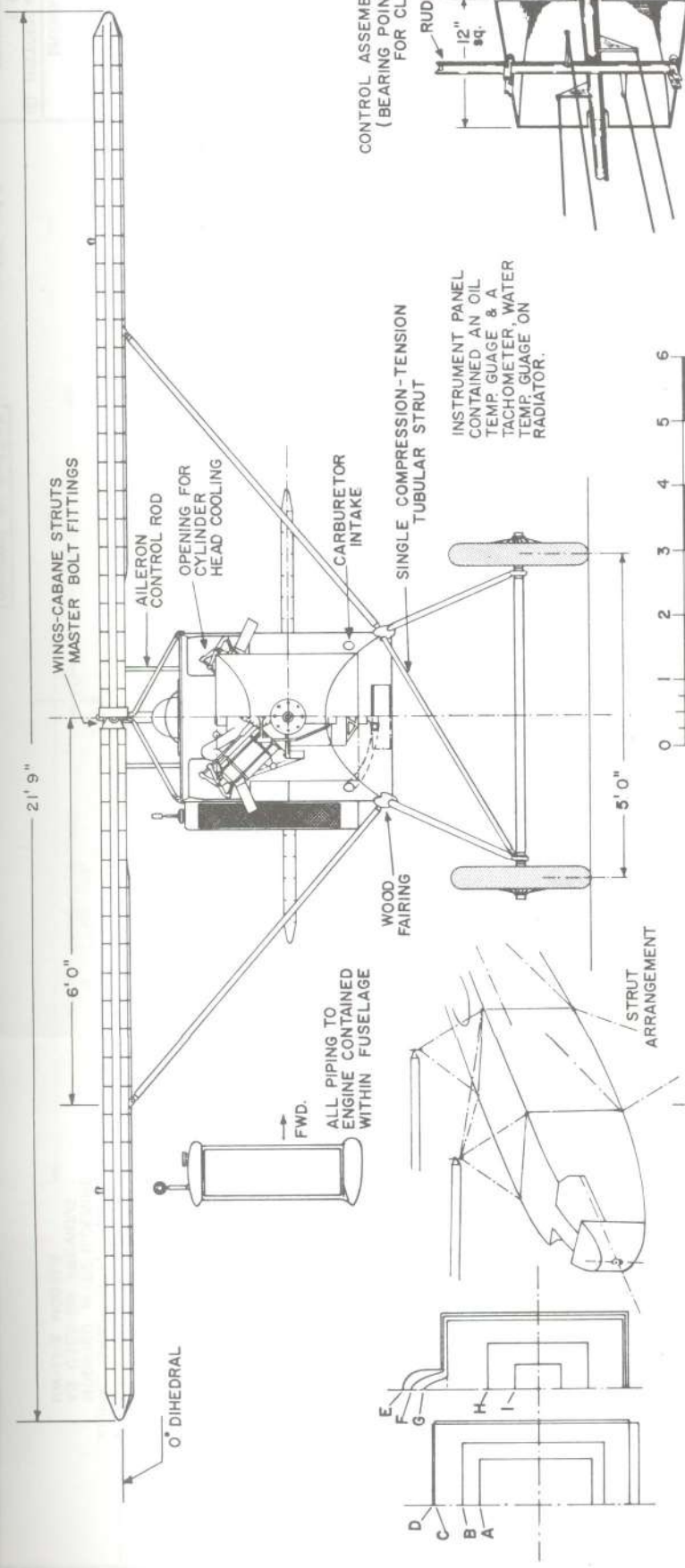


TREATMENT OF ALL EXPOSED STRUTS  
 (THIS IS A TYPICAL METHOD EMPLOYED ON MANY AIRCRAFT  
 THROUGHOUT HISTORY)



**WATERMAN "GOSLING" RACER**  
 (1921)

SCALE: 1:32  
 DRAWN BY: PAUL R. MATT © 1965



**WATERMAN "GOSLING" RACER**  
(1921)

SCALE: 1:32

DRAWN BY: PAUL R. MATT © 1965

PLATE 2

GENERAL SPECIFICATIONS, F2W-1 A-6744

WEIGHT EMPTY 2468 lbs.  
 USEFUL LOAD 618 lbs. (not incl. water)  
 GROSS WEIGHT 3086 lbs.  
 MAXIMUM SPEED 247.7 mph.  
 LANDING SPEED 75 mph. approx.  
 FUEL CAPACITY 60 gals.  
 OIL CAPACITY 31.7 gals. A-6743  
 WATER CAPACITY 6.4 gals.  
 WING AREA (TOTAL) 174 sq. ft. incl. ailerons  
 WING LOADING 16.4 lbs./sq. ft.  
 POWER LOADING 3.81 lbs./h.p. (ALL UP WEIGHT)

POWER - WRIGHT T-3, S/N 6372, 750 h.p. max. at 2200 r.p.m., SPECIAL 6.5 in. HIGH COMPRESSION ENGINE, 5.75" BORE, 6.25" STROKE, 1947 cu. in. DISPLACEMENT

COLORING NOTES

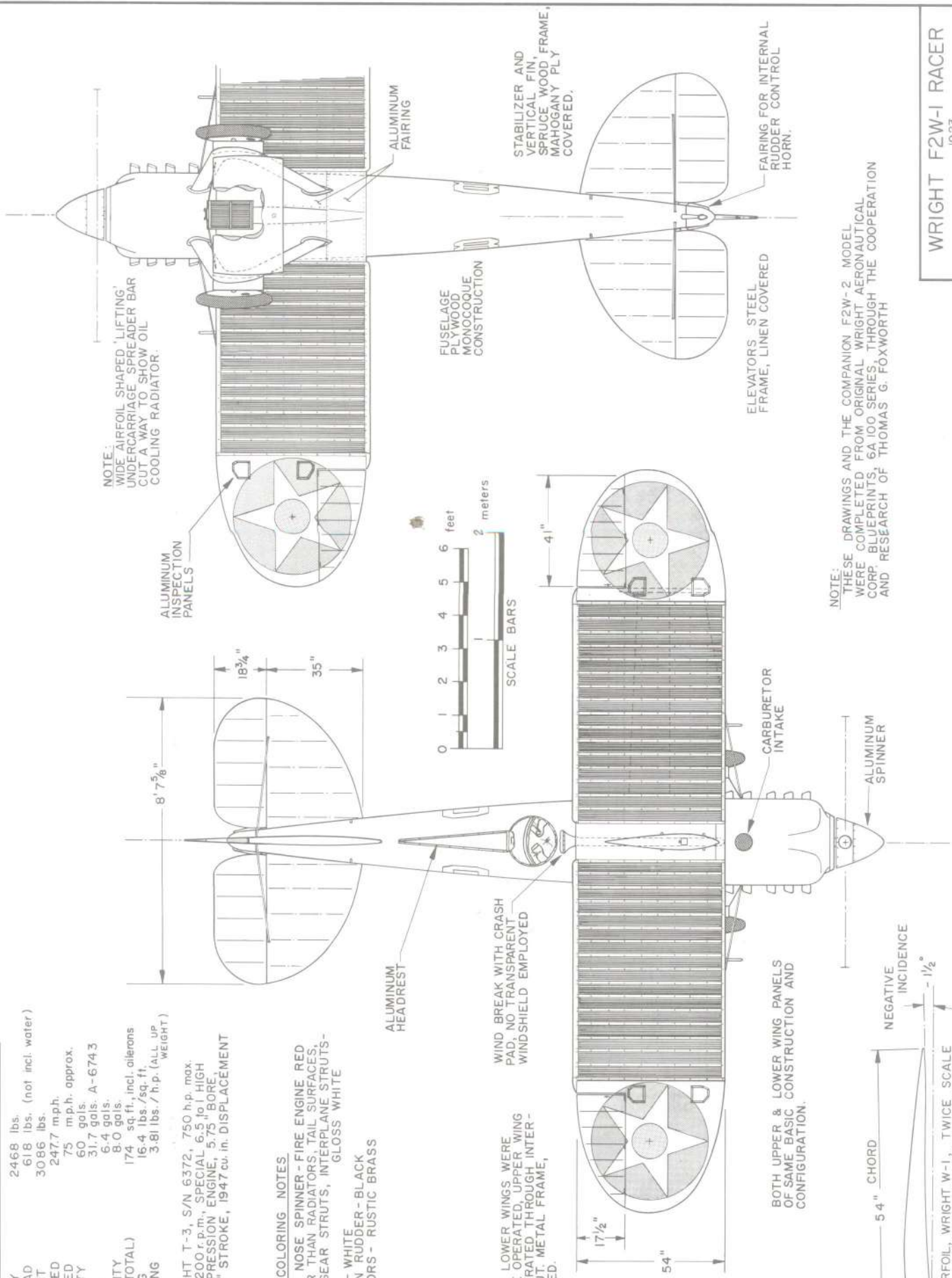
FUSELAGE & NOSE SPINNER - FIRE ENGINE RED  
 WINGS, OTHER THAN RADIATORS, TAIL SURFACES, LANDING GEAR STRUTS, INTERPLANE STRUTS - GLOSS WHITE

RACING No. 8 - WHITE  
 LETTERING ON RUDDER - BLACK  
 WING RADIATORS - RUSTIC BRASS

AILERONS ON LOWER WINGS WERE TORQUE TUBE OPERATED, UPPER WING AILERONS OPERATED THROUGH INTERAILERON STRUT. METAL FRAME, LINEN COVERED.

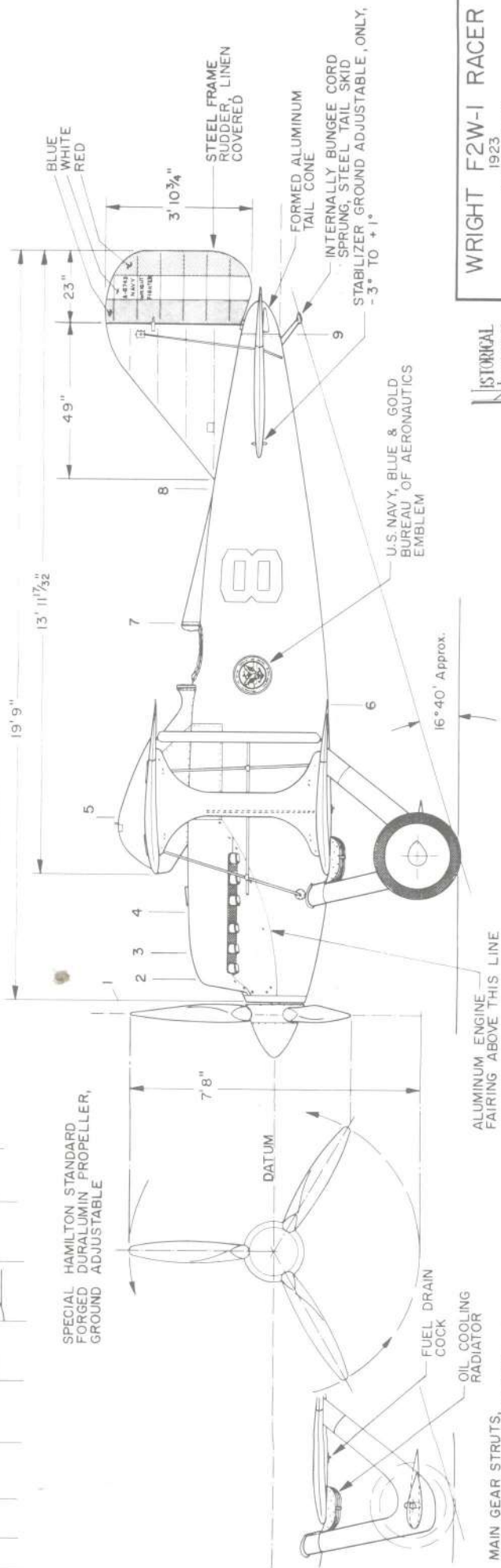
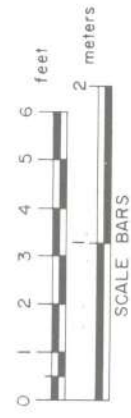
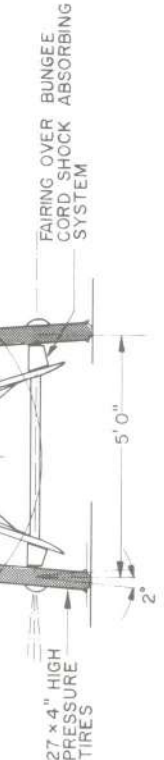
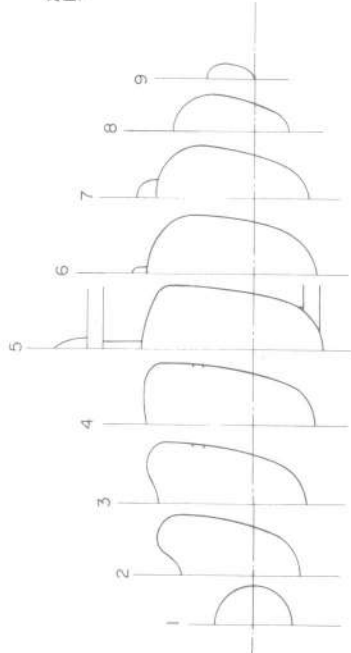
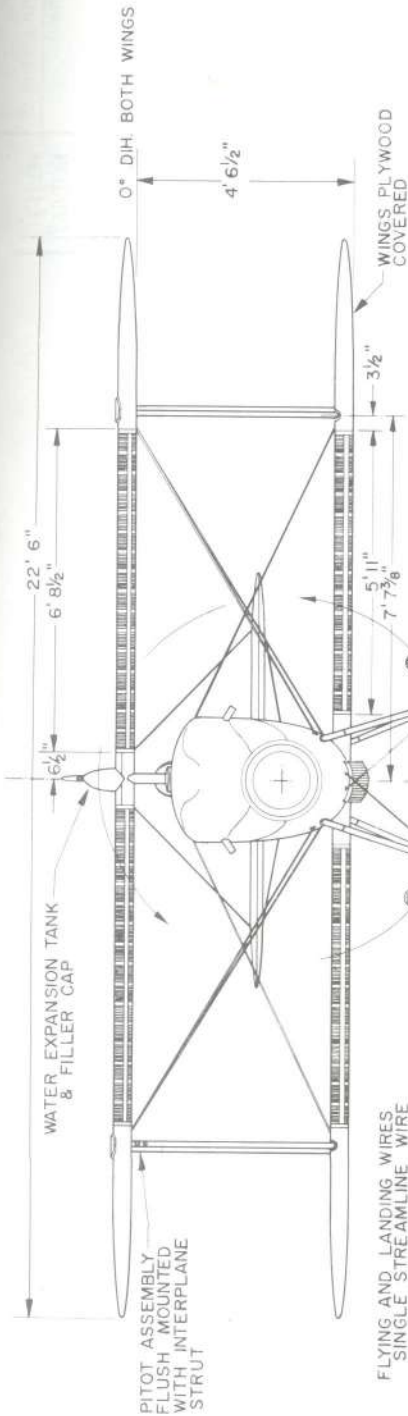
WIND BREAK WITH CRASH PAD, NO TRANSPARENT WINDSHIELD EMPLOYED

BOTH UPPER & LOWER WING PANELS OF SAME BASIC CONSTRUCTION AND CONFIGURATION.



NOTE: THESE DRAWINGS AND THE COMPANION F2W-2 MODEL WERE COMPLETED FROM ORIGINAL WRIGHT AERONAUTICAL CORP. BLUEPRINTS, 6A100 SERIES, THROUGH THE COOPERATION AND RESEARCH OF THOMAS G. FOXWORTH

WRIGHT F2W-1 RACER  
 1923  
 SCALE - 1:24  
 DRAWN BY - PAUL R. MATT  
 © HISTORICAL AVIATION ALBUM 1967  
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**WRIGHT F2W-1 RACER**  
 1923  
 SCALE - 1:48  
 DRAWN BY - PAUL R. MATT  
 © HISTORICAL AVIATION ALBUM 1967  
 P.O. BOX 33  
 TEMPLE CITY, CALIF. 91780

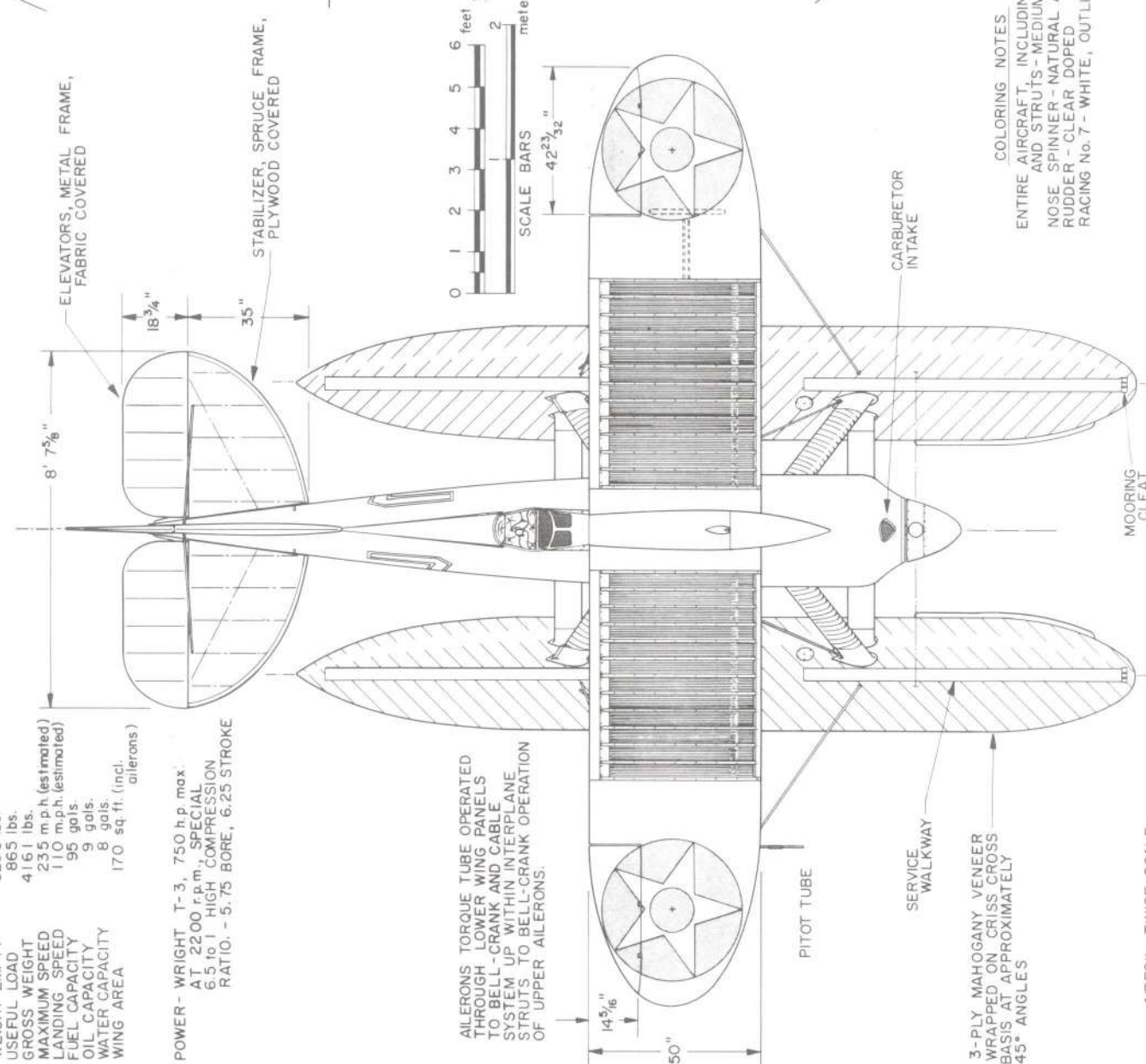
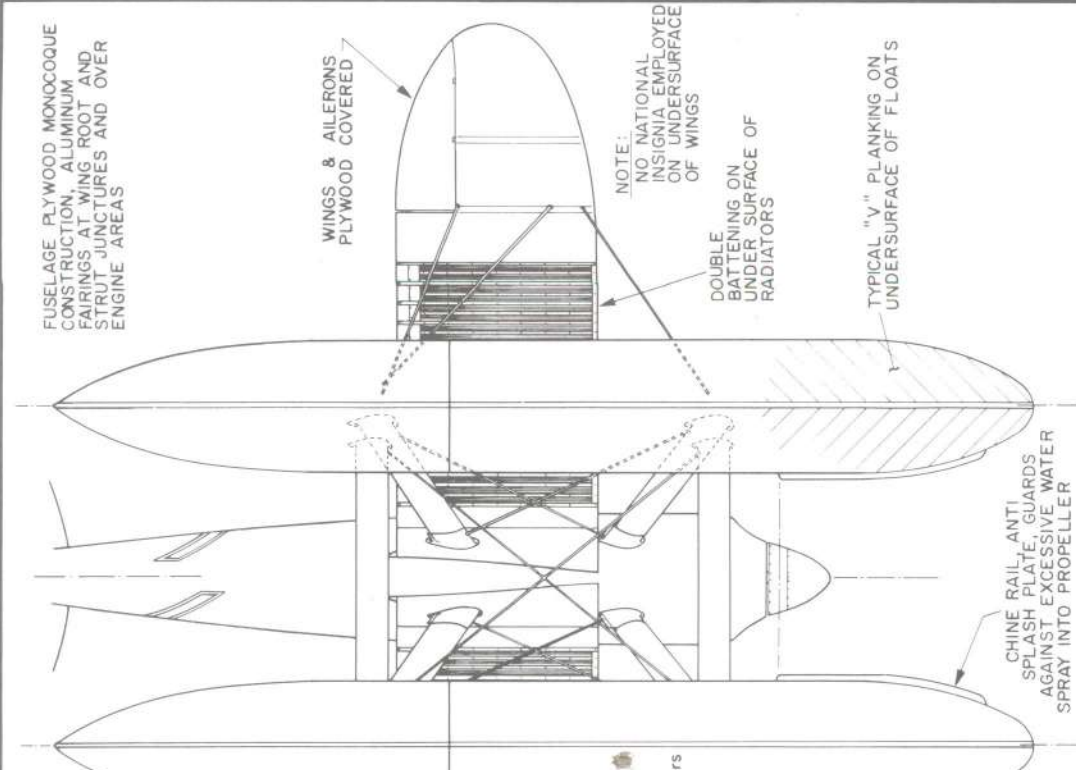


**GENERAL SPECIFICATIONS**  
WRIGHT F2W-2, A-6744

WEIGHT EMPTY 3296 lbs.  
USEFUL LOAD 865 lbs.  
GROSS WEIGHT 4161 lbs.  
MAXIMUM SPEED 235 m.p.h. (estimated)  
LANDING SPEED 110 m.p.h. (estimated)  
FUEL CAPACITY 95 gals.  
OIL CAPACITY 9 gals.  
WATER CAPACITY 8 gals.  
WING AREA 170 sq. ft. (incl. ailerons)

POWER - WRIGHT T-3, 750 h.p. max.  
AT 2200 r.p.m., SPECIAL  
6.5 to 1 HIGH COMPRESSION  
RATIO. - 5.75 BORE, 6.25 STROKE

AILERONS TORQUE TUBE OPERATED THROUGH LOWER WING PANELS TO BELL-CRANK AND CABLE SYSTEM UP WITHIN INTERPLANE STRUTS TO BELL-CRANK OPERATION OF UPPER AILERONS.

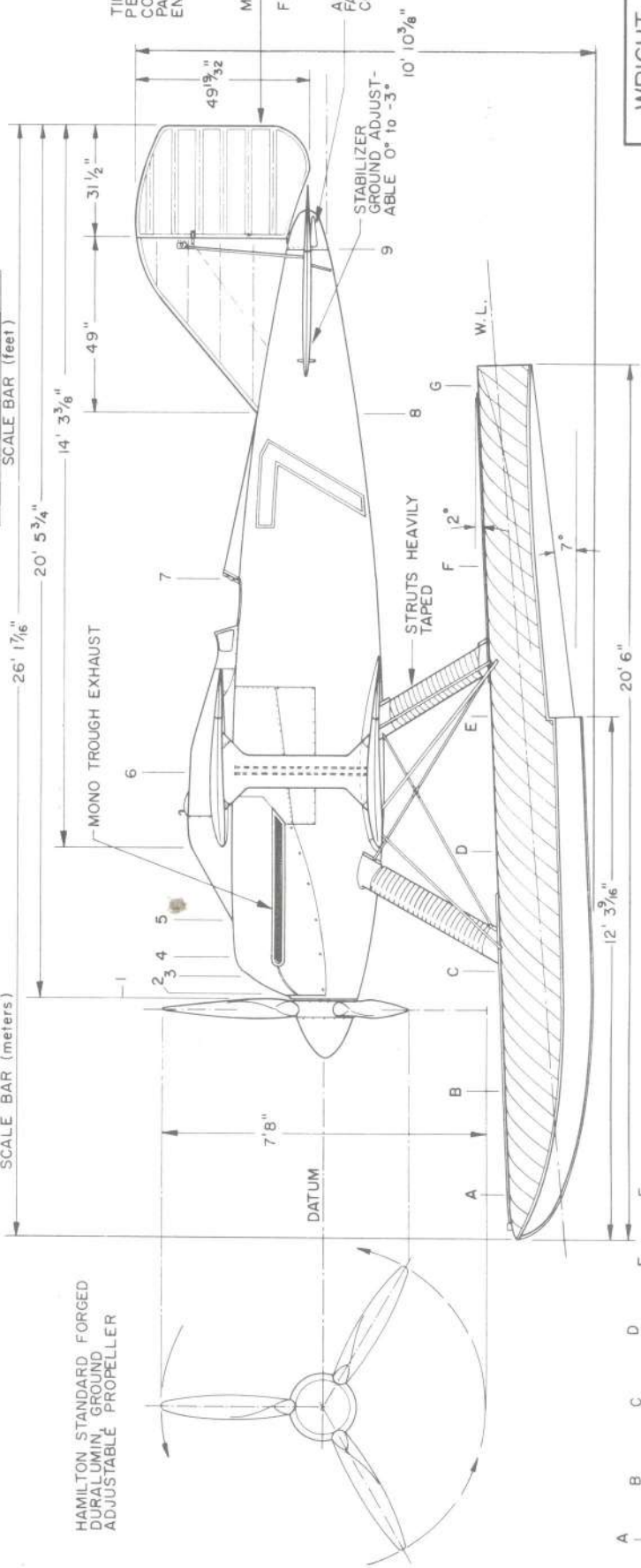
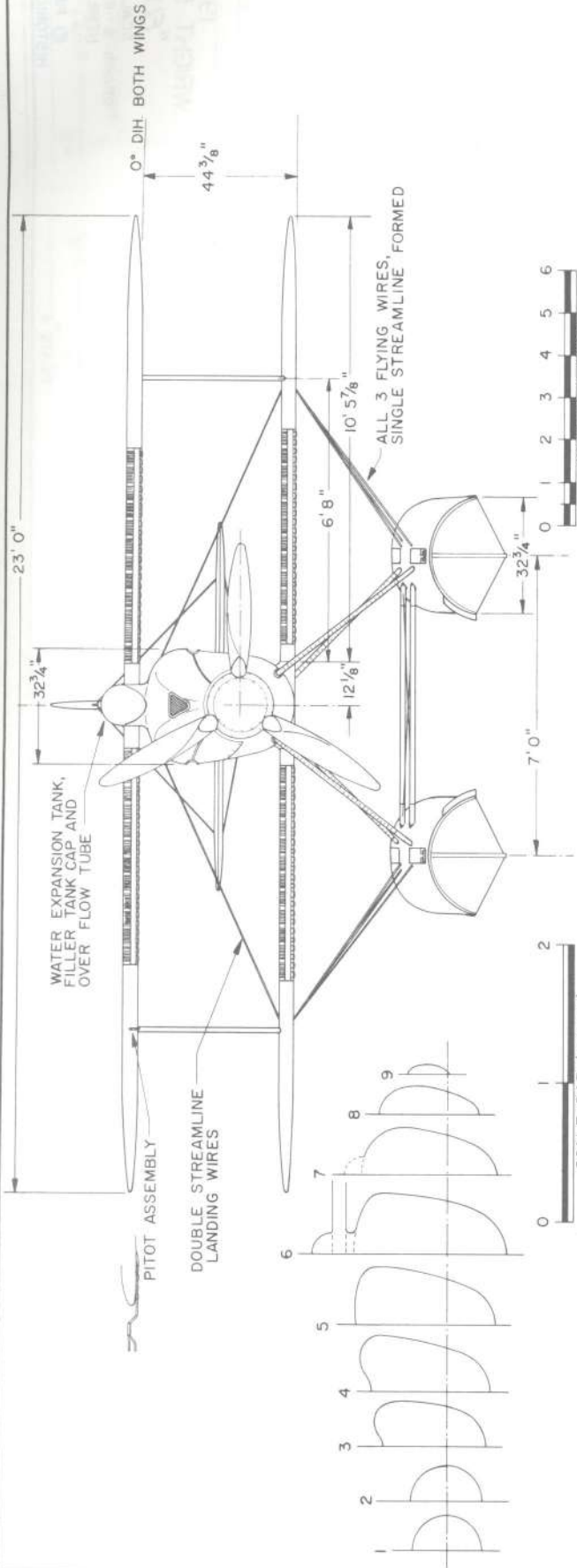


**COLORING NOTES**  
ENTIRE AIRCRAFT - INCLUDING FLOATS AND STRUTS - MEDIUM BLUE  
NOSE SPINNER - NATURAL ALUMINUM  
RUDDER - CLEAR DOPED  
RACING No. 7 - WHITE, OUTLINED IN BLACK

**WRIGHT F2W-2 RACER**  
1924  
SCALE - 1:48  
DRAWN BY - PAUL R. MATT  
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TIME LIMIT DID NOT PERMIT SERVICE TRI-COLOR STRIPES TO BE PAINTED ON SECOND ENLARGED RUDDER

METAL FRAME RUDDER, FABRIC COVERED, FIN SPRUCE FRAME, PLYWOOD COVERED

ALUMINUM TAIL CONE FAIRING EXTENDED TO COVER RUDDER CONTROL HORN

HAMILTON STANDARD FORGED DURALUMINUM GROUND ADJUSTABLE PROPELLER

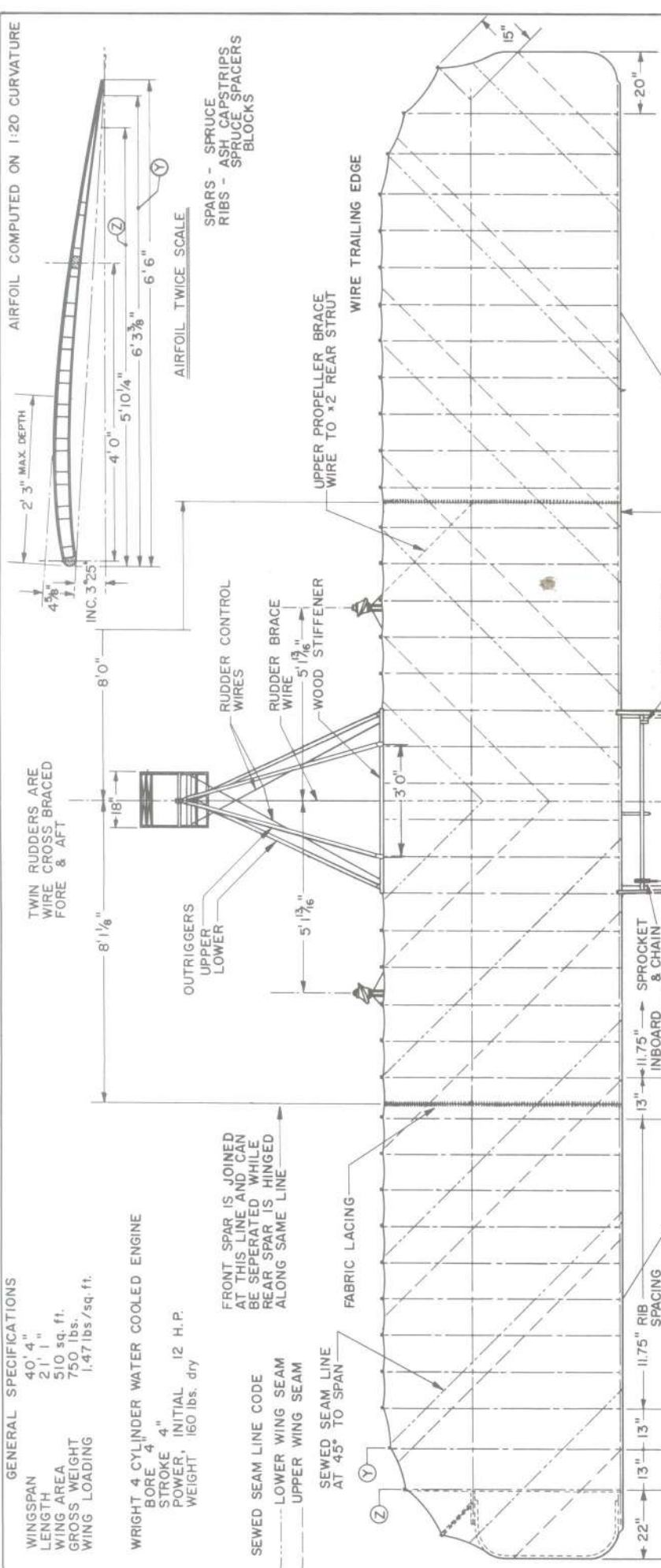


WRIGHT F2W-2 RACER

1924  
SCALE - 1:48  
DRAWN BY - PAUL R. MATT  
© HISTORICAL AVIATION ALBUM 1967  
P. O. BOX 33  
TEMPLE CITY, CALIF., 91780

SUBMERGED DISPLACEMENT, BOTH FLOATS - 7100 lbs.

AIRFOIL COMPUTED ON 1:20 CURVATURE



GENERAL SPECIFICATIONS  
 WINGSPAN 40' 4"  
 LENGTH 21' 1"  
 WING AREA 510 sq. ft.  
 GROSS WEIGHT 750 lbs.  
 WING LOADING 1.47 lbs./sq. ft.

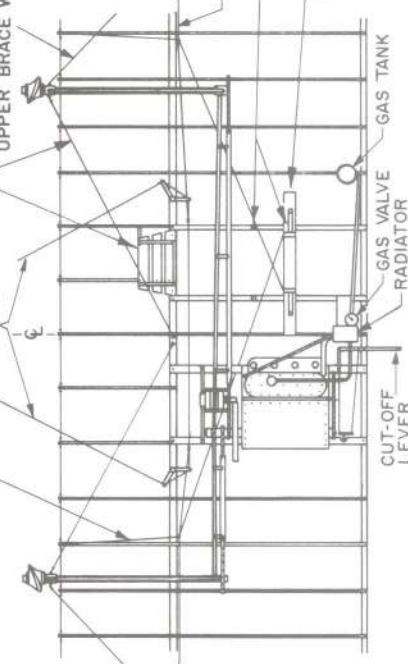
WRIGHT 4 CYLINDER WATER COOLED ENGINE  
 BORE 4"  
 STROKE 4"  
 POWER INITIAL 12 H.P.  
 WEIGHT 160 lbs. dry

SEWED SEAM LINE CODE  
 LOWER WING SEAM  
 UPPER WING SEAM

FRONT SPAR IS JOINED AT THIS LINE AND CAN BE SEPARATED WHILE REAR SPAR IS HINGED ALONG SAME LINE

RIB SPACING SAME ON LEFT WING EXCEPT AT TIP (AS NOTED) - UPPER & LOWER PANELS IDENTICAL EXCEPT AT CENTER SECTION AS SHOWN BELOW

THIS WIRE RUNS FROM WING WARP WIRES TO END OF RIB, TO ACT AS A KEEPER, - SAVES USE OF A PULLEY.



1903 WRIGHT BROTHERS "FLYER"

SCALE: 1:48  
 DRAWN & RESEARCHED BY:  
 HERB. KELLEY

© PAUL R. MATT 1966  
 HISTORICAL AVIATION ALBUM

PLATE 1

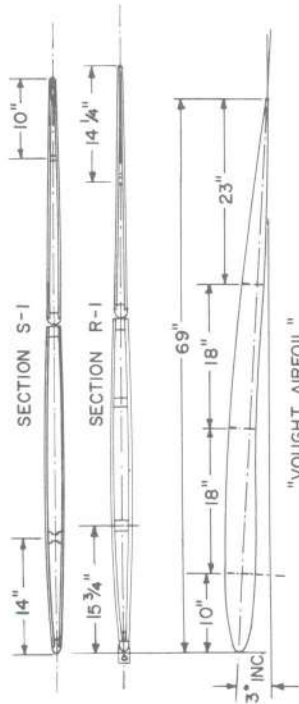


GENERAL SPECIFICATIONS.

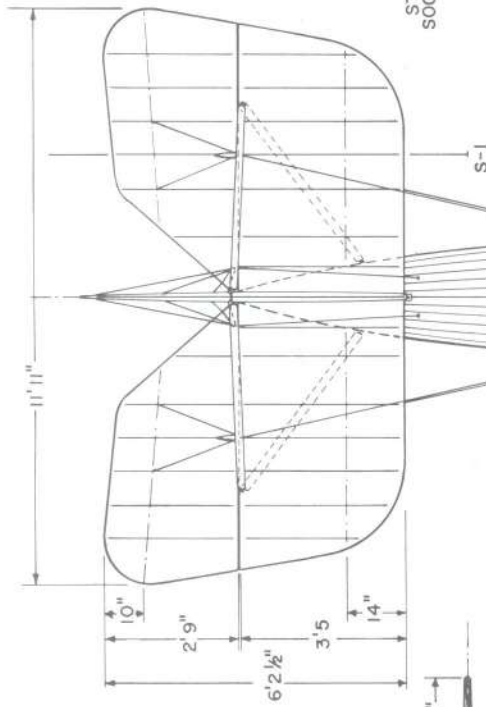
WEIGHT EMPTY 1725 lbs  
 USEFUL LOAD 595 " "  
 GROSS WEIGHT 2320 " "  
 ENDURANCE AT CRUISE-63mph 6 hrs  
 WING AREA (AILERONS EXCLUDED) 430 sq. ft.  
 AREA OF AILERONS (4) 64.6 sq. ft.  
 WING LOADING 5.86 lbs./sq. ft.  
 POWER LOADING 16.86 " " "  
 TOP SPEED 90 mph

MAIN CONSTRUCTION,  
 ASH, SPRUCE & POPLAR,  
 LINEN COVERED & DOPED

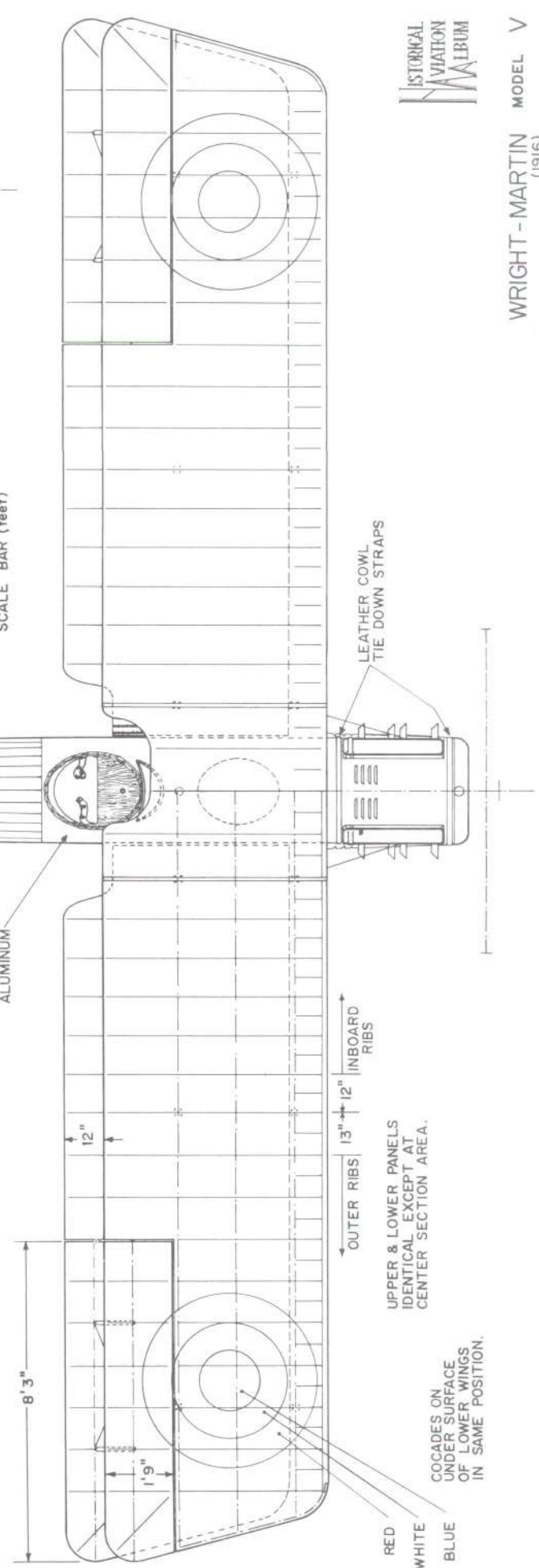
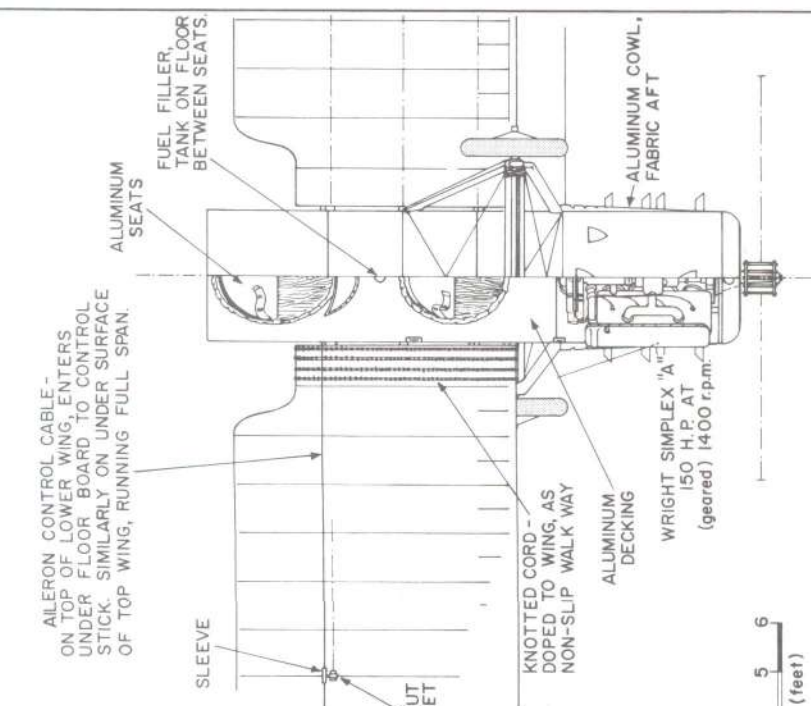
SECTIONS BELOW, TWICE SCALE



3-SPAR WING CELLULE, CENTER SPAR (FALSE) NON-BEARING



REMOVABLE  
 AFT DECKING  
 FOR ACCESS  
 TO FUSELAGE  
 INTERIOR.



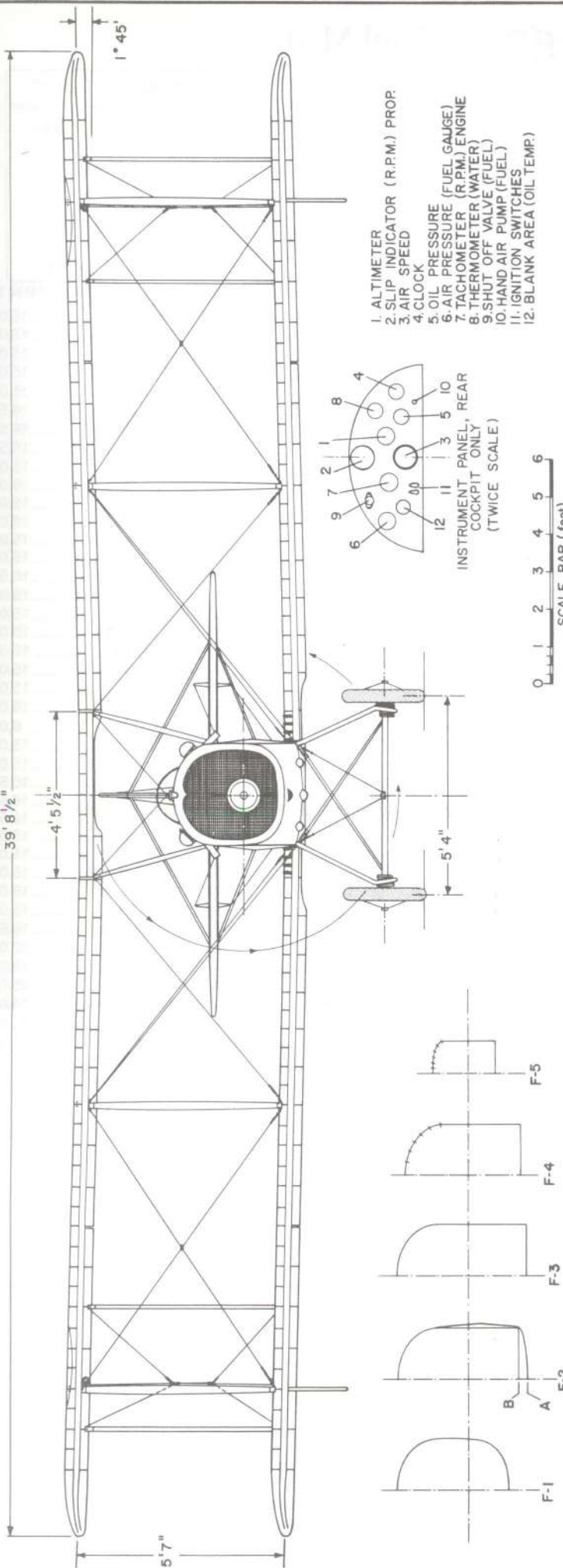
UPPER & LOWER PANELS  
 IDENTICAL EXCEPT AT  
 CENTER SECTION AREA.

CACADES ON  
 UNDER SURFACE  
 OF LOWER WINGS  
 IN SAME POSITION.

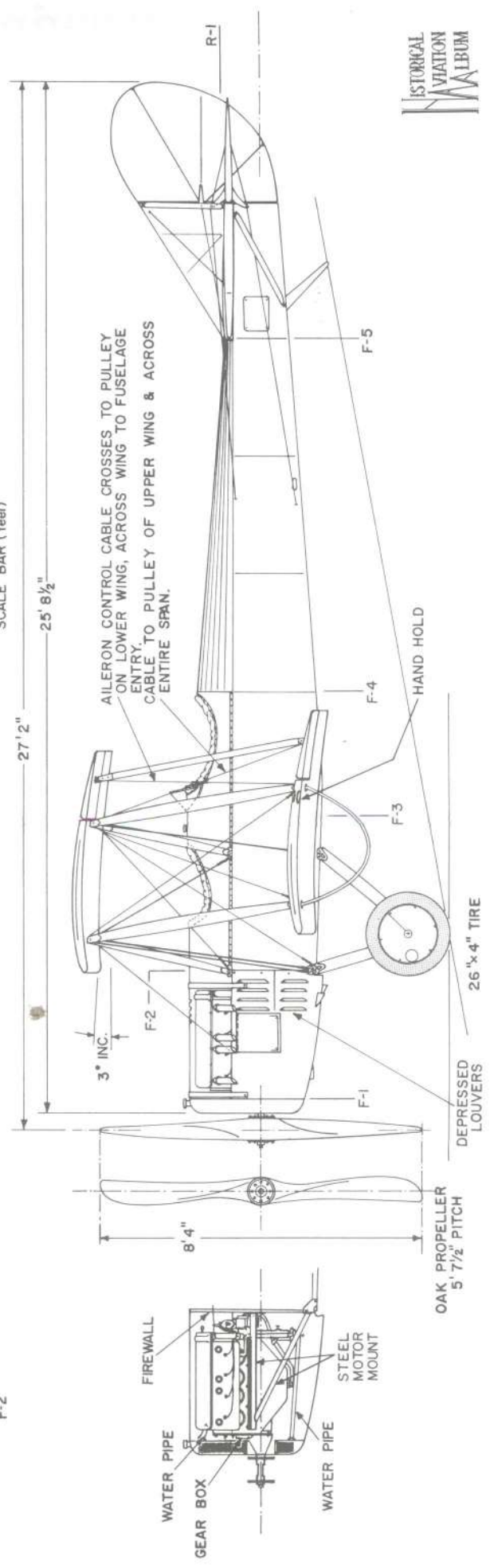
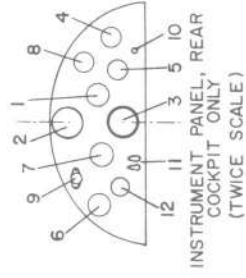
RED  
 WHITE  
 BLUE



WRIGHT - MARTIN MODEL V  
 (1916)



1. ALTITUDE
2. SLIP INDICATOR (R.P.M.) PROP.
3. AIR SPEED
4. CLOCK
5. OIL PRESSURE
6. AIR PRESSURE (FUEL GAUGE)
7. TACHOMETER (R.P.M.) ENGINE
8. THERMOMETER (WATER)
9. SHUT OFF VALVE (FUEL)
10. HAND AIR PUMP (FUEL)
11. IGNITION SWITCHES
12. BLANK AREA (OIL TEMP.)



WRIGHT-MARTIN MODEL V  
(1916)

SCALE: 1:48  
DRAWN BY: PAUL R. MATT © 1965

ENTIRE AIRCRAFT - CLEAR DOPED  
ALUMINUM AREAS - NATURAL

# 3-View Scale Drawings by Paul Matt

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A = 1:24 ... 1/2" = 1'  
B = 1:16 ..... 3/4" = 1'  
C = 1:48 .... 1/4" = 1'  
D = 1:32 .... 3/8" = 1'  
E = 1:8 ..... 1 1/2" = 1'  
F = 1:6 ..... 2" = 1'  
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