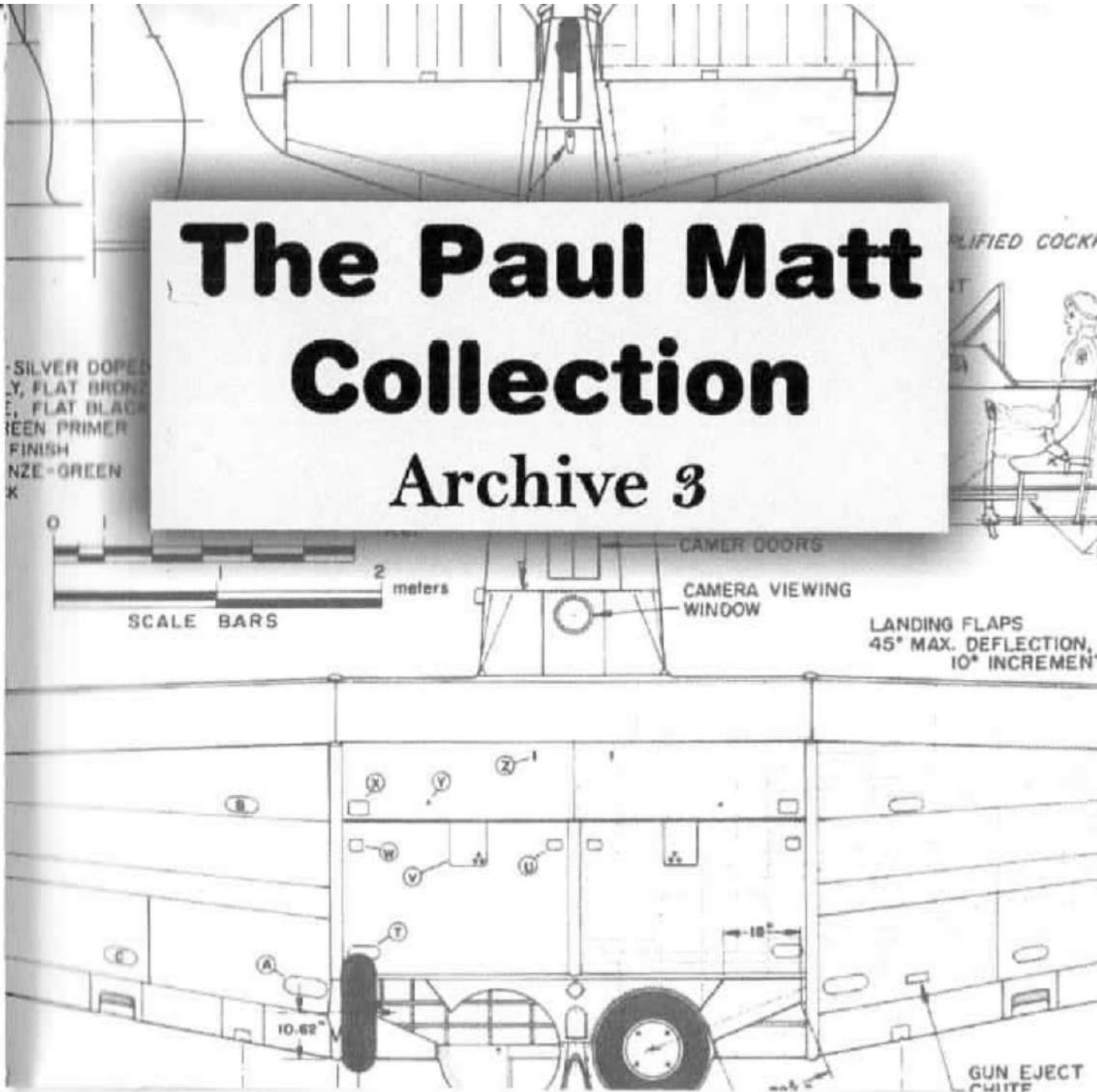


# The Paul Matt Collection

## Archive 3

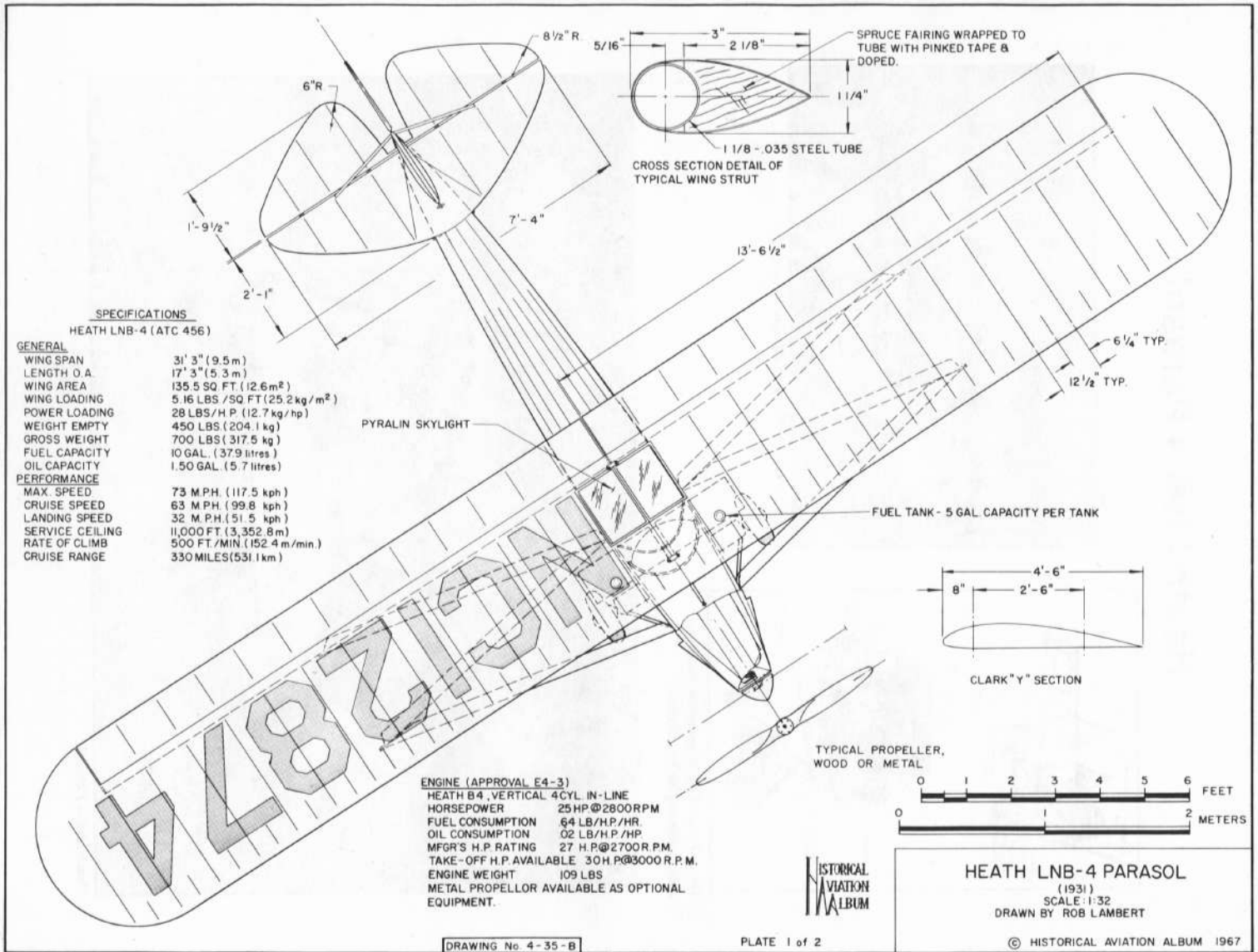


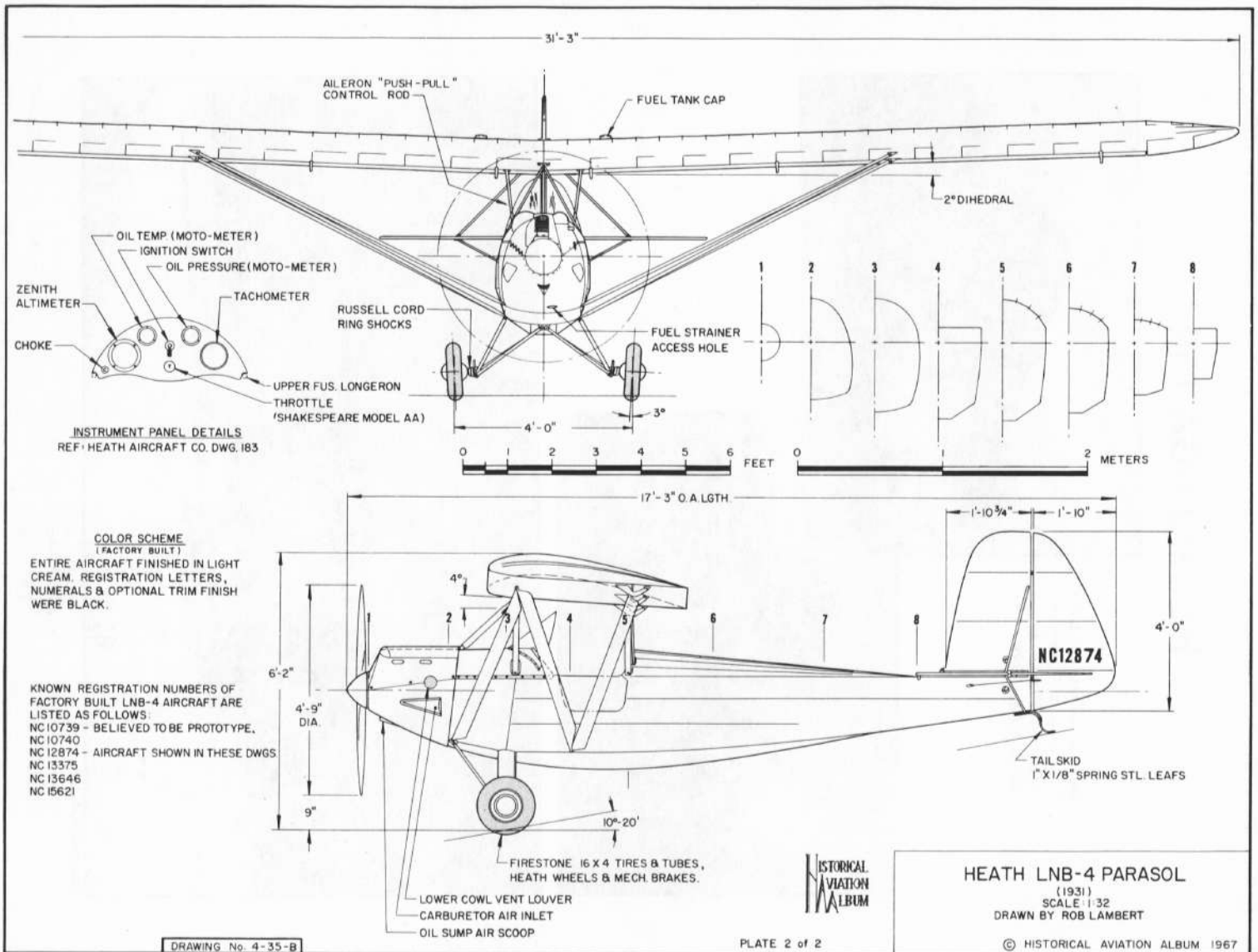
3

## This CD-ROM contains the following Paul Matt 3-view drawings and photos:

( CD-ROM also contains contents files in the following formats: TXT, DOC )

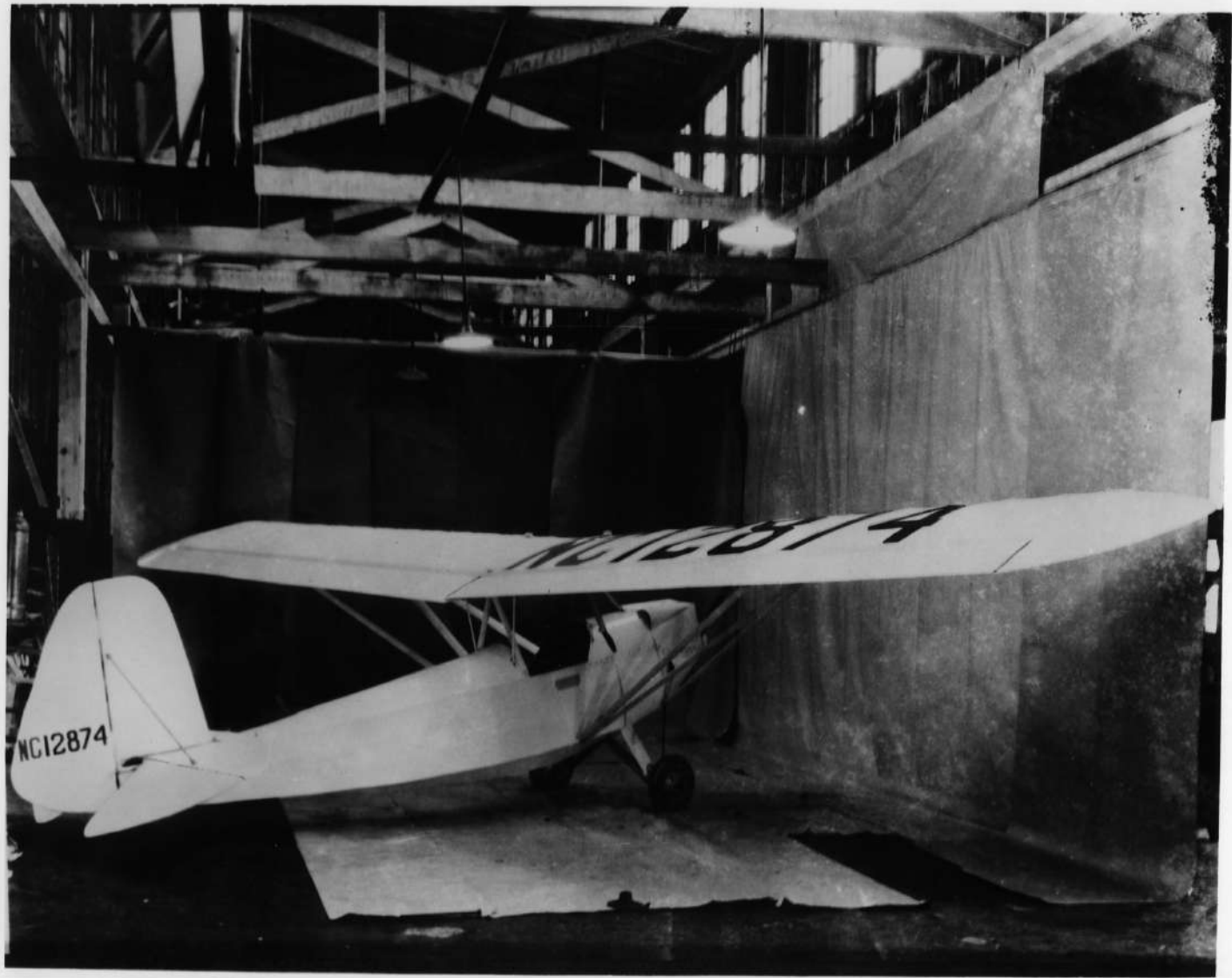
HEATH LNB-4	LAVOCHKIN LA-7	MOREHOUSE (ENGINE)
HOWARD DGA-15P	LOCKHEED P-80	NAVY-WRIGHT NW-1
HOWARD DGA-3	LOCKHEED 9	NAVY-WRIGHT NW-2
HOWARD DGA-4	LOCKHEED PV-1	NORTH AMERICAN O-47A
HOWARD DGA-5	LWF CATO MODEL L	NORTH AMERICAN AT-6/SNJ
HOWARD DGA-6	L.W.F. "MODEL G"	NORTH AMERICAN XB-70
HUGHES 1B "SHORT WING"	LWF H-1	PACKARD-LEPERE LUSAC-11
HUGHES 1B "LONG WING"	MARTIN BM-1/BM-2	PFITZNER 1910 "MONOPLANE"
LAIRD LC-DW-300	MARTIN T4M-1	
LAIRD LC-DW-500	MARTIN TT	
LAIRD-TURNER LTR-14	MESSERSCHMITT Me 109E	

























# HEATH WORLD'S

# HOLDS RECORD for light planes

**T**HE acid test of airplane dependability and performance is to be found at the great national air races.

Here you will find in keen competition the products of the best brains and experience of the great aircraft industry. Words, claims, count for nothing here. The ships must prove their mettle under conditions much more severe than you will encounter in country flying.

Roaring 'round the pylons, with thrilling banks and turns, with throttle wide open and every ounce of power released, only a true champion can stand the gaff.

## 24 Years of Experience Guarantees Heath Dependability

The record of Heath aircraft in competition is a remarkable tribute to the superb construction of these light planes. It is a safe guide for you in determining Heath stamina and Heath reliability.

For Heath has won all events in its class year after year. First place has gone to Heath for seven consecutive years. A Heath also holds the world's altitude record for light planes — demonstrating beyond all challenge that the 24 years experience behind every Heath ship has enabled this organization not only to keep abreast with the latest improvements in this fast developing field but actually to keep in front and maintain a continued supremacy. No other light plane can begin to match this amazing record.

## Approved by U. S. Department of Commerce

The correct design, thorough workmanship and complete reliability of Heath planes is further assured by the full approval of the U. S. Department of Commerce. Heath factory-built airplanes have been issued Approved Type Certificates with the extraordinary provision that the airplane which you may build yourself at home with Heath parts in accordance with Government Approved Heath blue prints

and instructions will also be eligible for a Federal license. This is an important point to remember. Heath planes are the only ones that can be built at home and qualify for a Federal license.

The fact that you can secure a "C" or "NC" license even on your home assembled Heath is significant of the high standard of excellence for which Heath stands. Many states require a license for private aircraft. With a Heath you need experience no difficulty on this score.

## Built by Craftsmen Who Are Experienced Pilots

Not only the designers of Heath planes but the men who are employed in the production and assembly of parts are experienced pilots. They put into their work the skill and painstaking care that may be expected only from air-minded and air-experienced craftsmen. They are enthusiastic creators, not plodding workmen who dully follow an established routine. Every Heath is built as though it were for the personal use of the men who build it. In that fact lies the real reason for the uniform excellence of every Heath part and every Heath assembly.

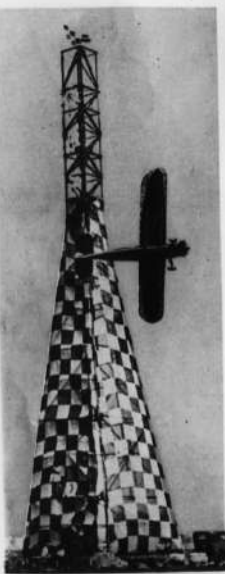
## Equal to Costly Planes in Material and Workmanship

Heath planes are low in cost because of standardization and quantity production on basic designs, because of efficient workmen and unexcelled factory facilities, not because of any sacrifice to higher quality standards. There are no shoddy or cheap materials used by Heath. No skimping at any point. Engineering and research work are as scientific and exacting as anything known to the industry. Heath quality throughout compares favorably point by point with that of larger airplanes costing many times as much.

When you buy a Heath you are simply buying a small edition of a fine, costly plane.

## A FEW of Heath's envied trophies as winner in NATIONAL AIR RACES

Betty Ross Trophy	1924 Efficiency contest
Aero Digest Trophy	1924 Sport plane race
Aero Digest Trophy	1927 Sport plane race
Dayton Daily News Trophy	1927 Light plane race
California Assoc. Cup	1928 Speed and Efficiency contest
Cleveland Cup	1929 Event No. 5
Cleveland Trophy	1929 Event No. 2
Chicago Daily Times Cup	1910 Event No. 3
Shell Trophy	1910 Event No. 2
B. F. Goodrich Trophy	1911 Light plane race
Goodyear Tire Trophy	1911 Light plane race
Cash Prizes — No Cups	1912 Light plane dash
Aeronautical News Trophy	1912 Light plane dash
World's Altitude record, 17,797 feet official N. A. A. for light planes.	1911 Altitude contest



## FIRST PLACE for seven consecutive years NATIONAL AIR RACES

- 6 Philadelphia—Heath "Towhee" defeated a field of seven ships and won \$2250.00 prize money.
- 7 Spokane, Wash.—Heath "Parasol" first in 110 cu. in. class; prize money totaled \$1500.00.
- 8 Los Angeles—Heath "Baby Baller" defeated a field of seven planes with a 75 cu. in. motor.
- 9 Cleveland—Heath "Parasol" first in 80 cu. in. class; "Baby Baller" won over higher powered ships.
- 0 Chicago—Heath "Parasol" first and second in 110 cu. in. class.
- 1 Cleveland—Heath "Parasol" first in 10 mile race at 91.1 m. p. h.; first in 4 mile dash, 97.4 m. p. h.
- 2 Cleveland—Heath "Baby Baller" first, defeating ships with 200 cu. in. motors; stock model Center Wing third.

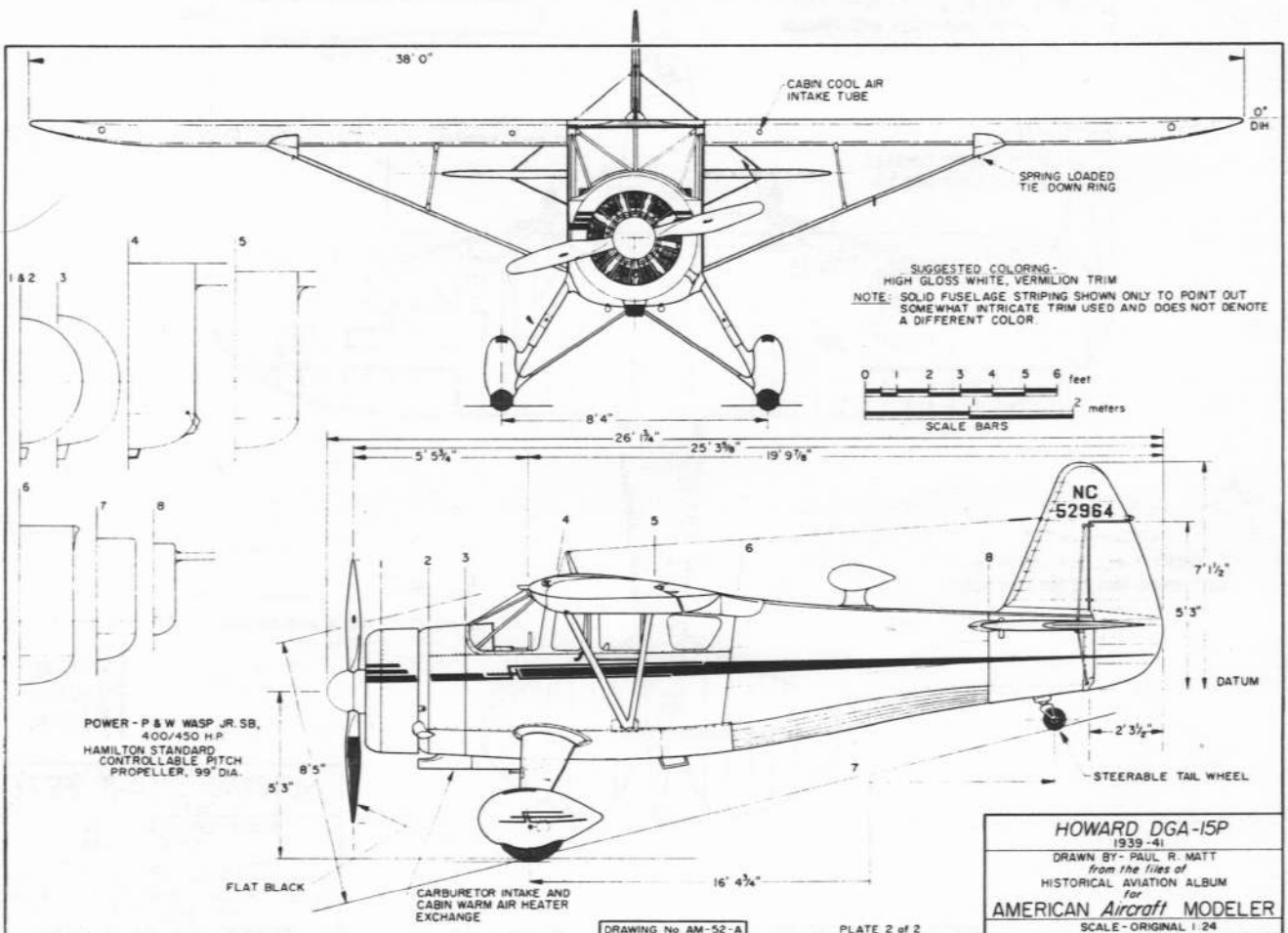
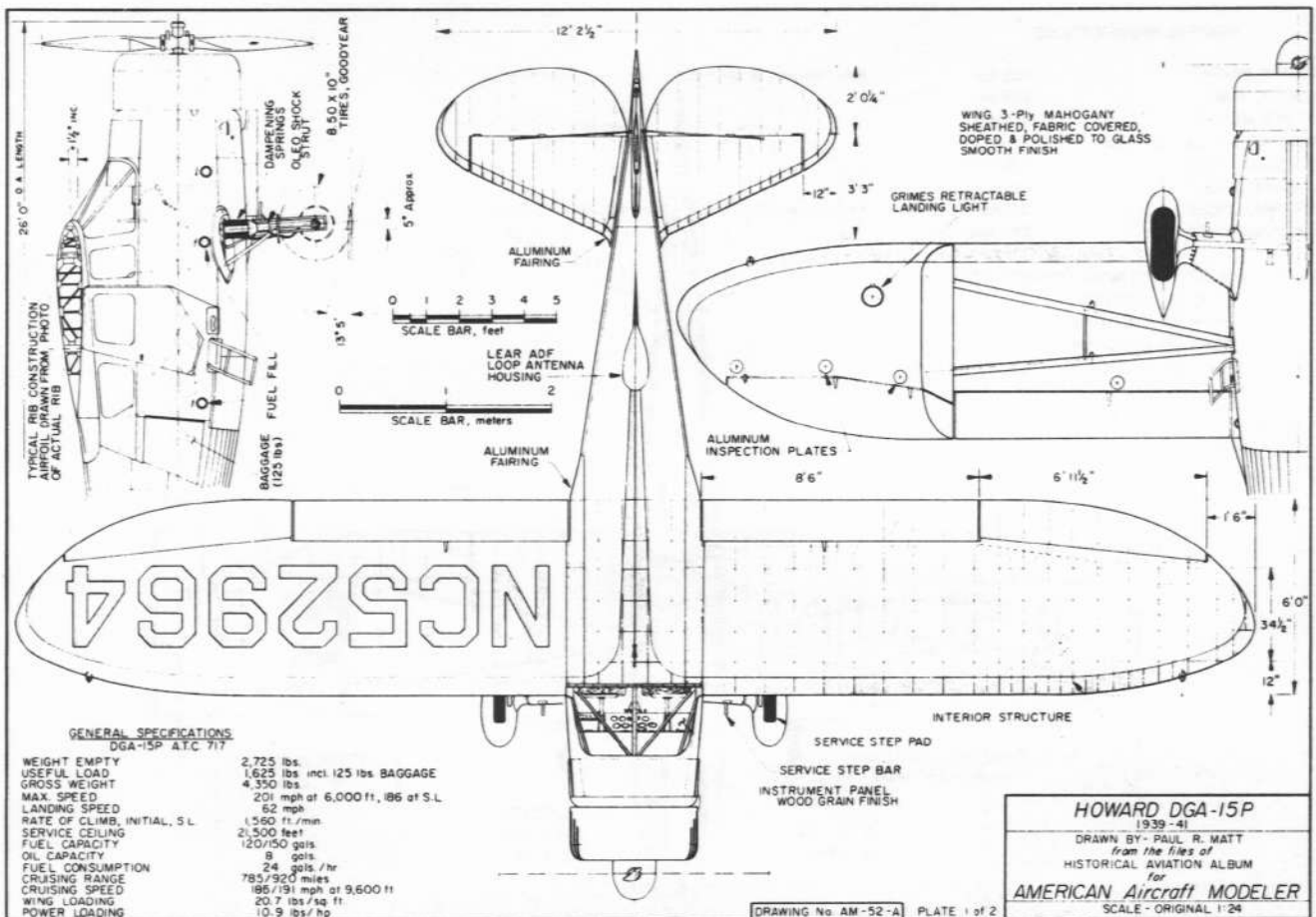
### Model "CNA-40"

Engine — Continental A-40.  
Wing Span — 27 feet.  
Wing Area — 107 sq. ft.  
Length Overall — 17¼ ft.  
Weight Empty — 454 lbs.  
Useful Load — 221 lbs.  
Weight, Full Load — 675 lbs.  
Gas Capacity — 7 gal.  
Rate of Climb — 1st min. 420 ft.  
Absolute Ceiling — 15,000 ft.  
High Speed — 87 m. p. h.  
Cruising Speed — 70 to 75 m. p. h.  
Landing Speed — 41 m. p. h.  
Cruising Range — 175 miles.  
A. T. C. No. 495

### "LNB-4" Model "LNA-40"

Heath B-4 Engine	Continental A-40
31	Wing Span, feet 31
135	Wing Area, square feet 135
17¼	Length Overall, feet 17¼
449	Weight Empty, pounds 464
700	Gross Weight, pounds 700
9	Gas Capacity, gallons 9
300	Rate of Climb, 1st. min., ft. 450
13,000	Absolute Ceiling, feet 18,000
72	High Speed, m. p. h. 81
35	Landing Speed, m. p. h. 35
240	Cruising Range, miles 250
456	A. T. C. No. 487

**"LNA-40" Flyaway, Niles,  
Mich., \$1085.00**









*Howard*  
AIRCRAFT CORPORATION  
1221 WEST 40TH STREET, CHICAGO, ILL., U.S.A.





1406





1407















LUCE BEERY, PROMINENT M-G-M STAR, TAKING DELIVERY OF  
NEW 1940 MODEL, WASP POWERED, HOWARD PLANE FROM  
O. HOWARD, PRESIDENT OF HOWARD AIRCRAFT CORPORATION

*Howard*  
AIRCRAFT CORPORATION  
107 W. 42ND ST. NEW YORK, N. Y.







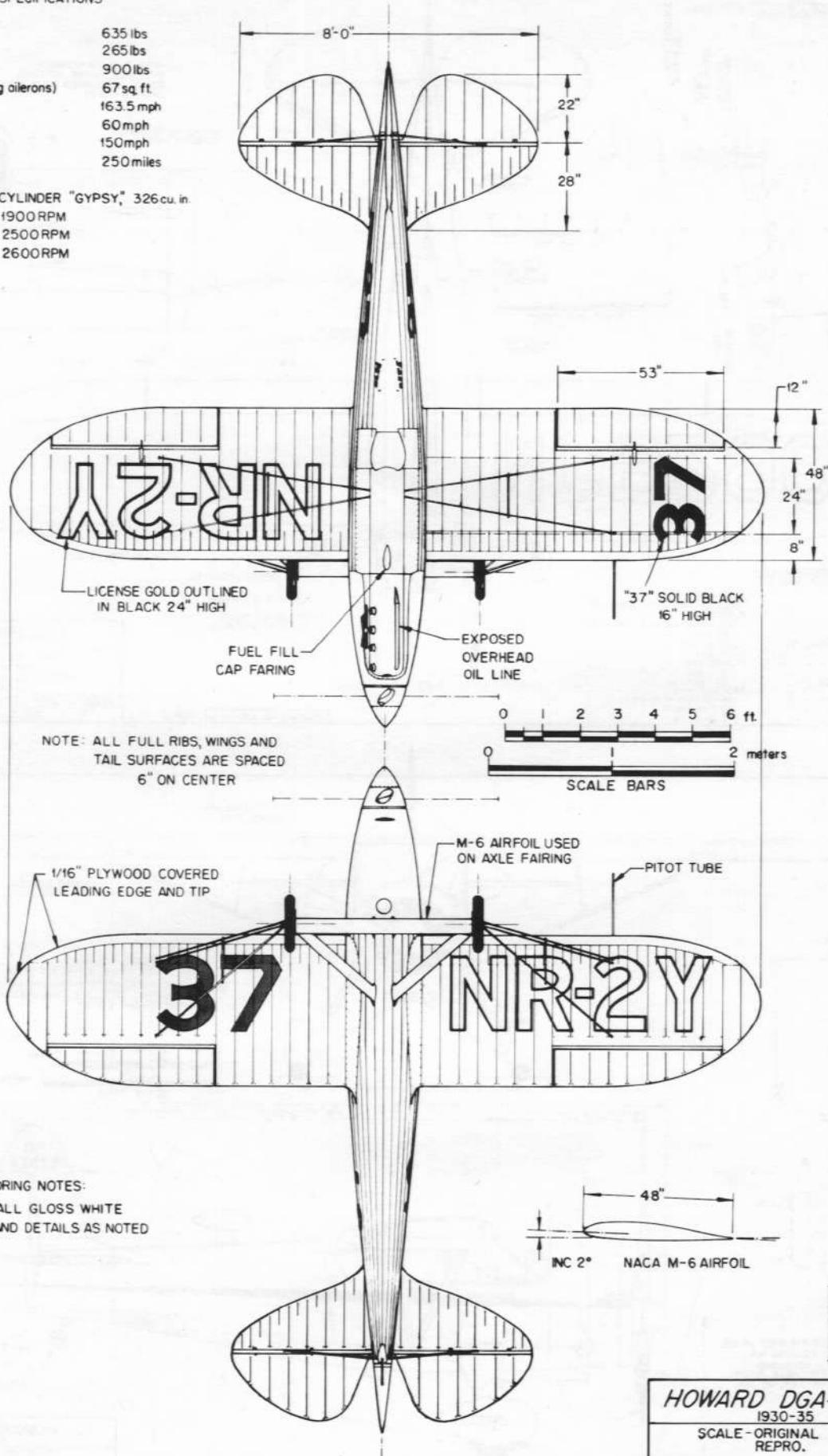




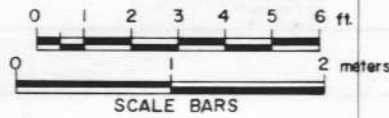
GENERAL SPECIFICATIONS

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

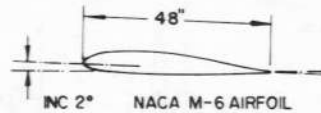
POWER: WRIGHT 4 CYLINDER "GYPSY," 326 cu. in.  
 85HP @ 1900RPM  
 90HP @ 2500RPM  
 95HP @ 2600RPM



NOTE: ALL FULL RIBS, WINGS AND TAIL SURFACES ARE SPACED 6" ON CENTER



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



HISTORICAL AVIATION ALBUM

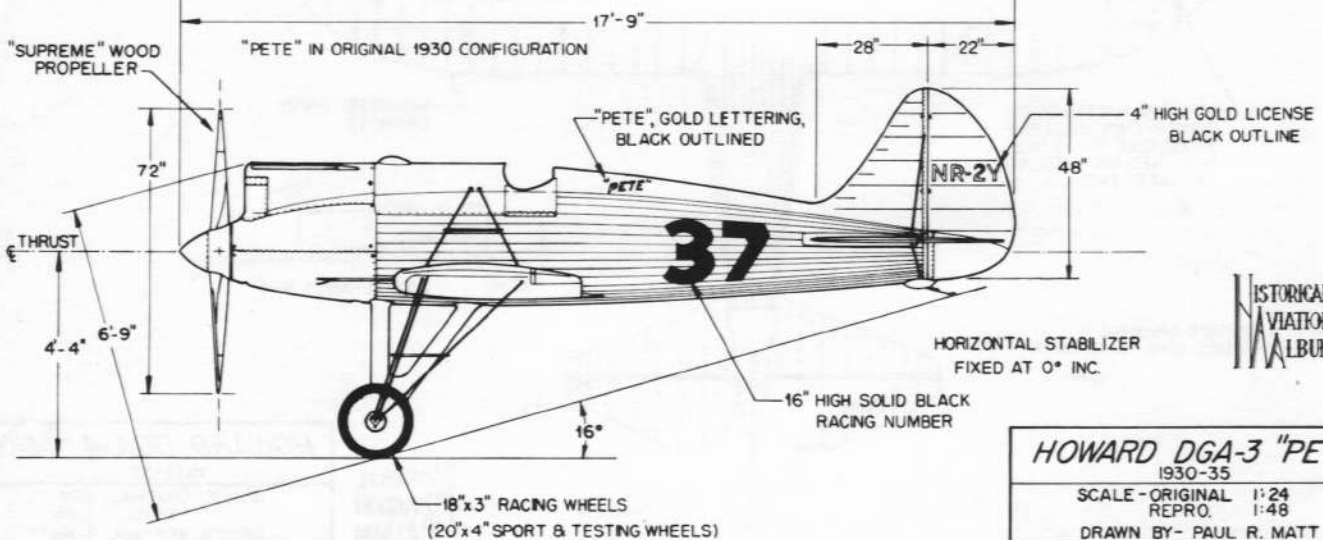
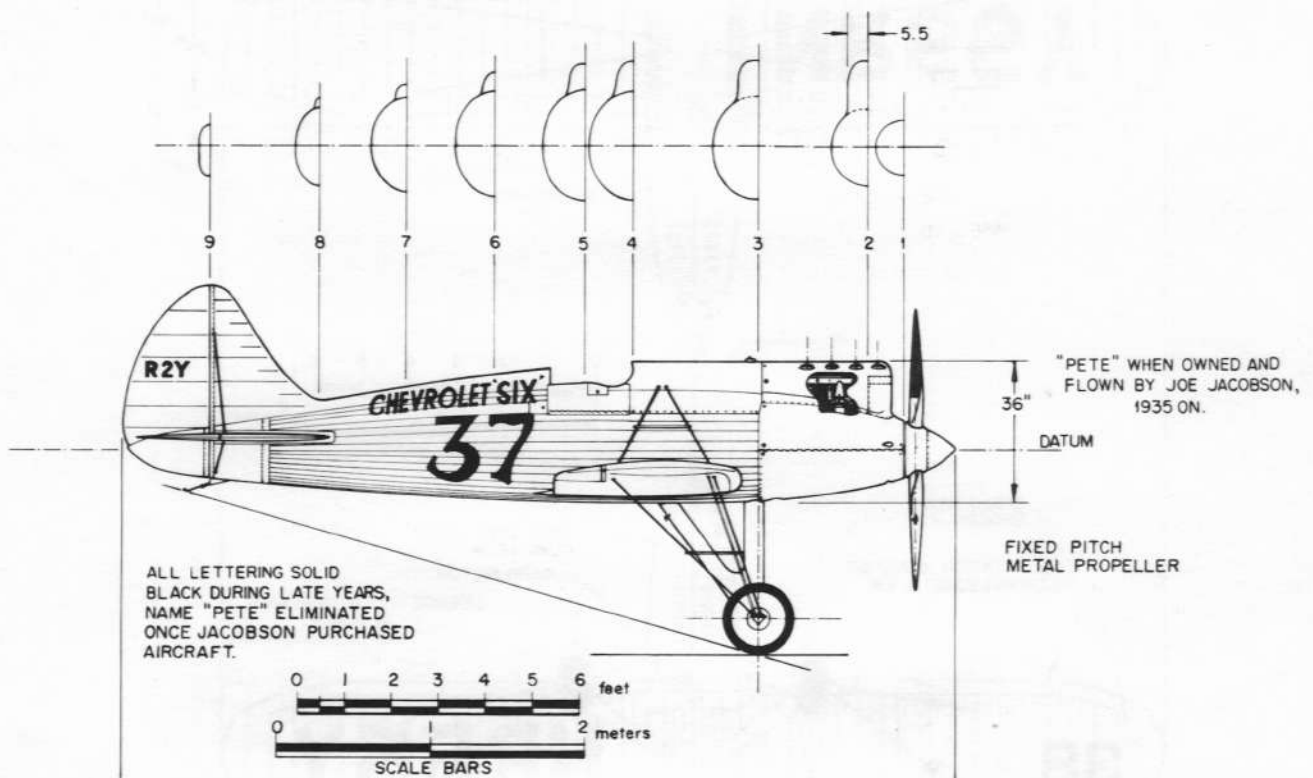
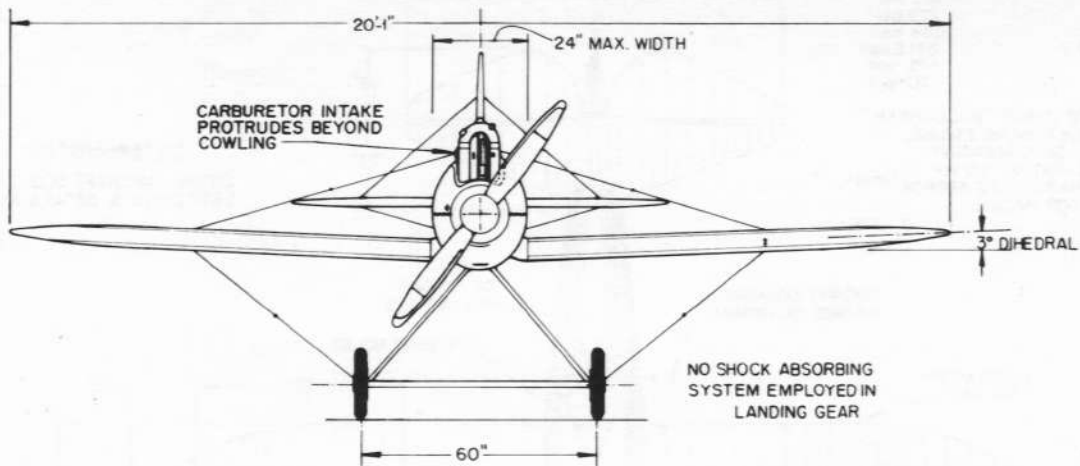
HOWARD DGA-3 "PETE"

1930-35

SCALE - ORIGINAL 1:24  
 REPRO. 1:48

DRAWN BY - PAUL R. MATT

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HISTORICAL AVIATION ALBUM

HOWARD DGA-3 "PETE"  
1930-35

SCALE - ORIGINAL 1:24  
REPRO. 1:48

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1937



1936



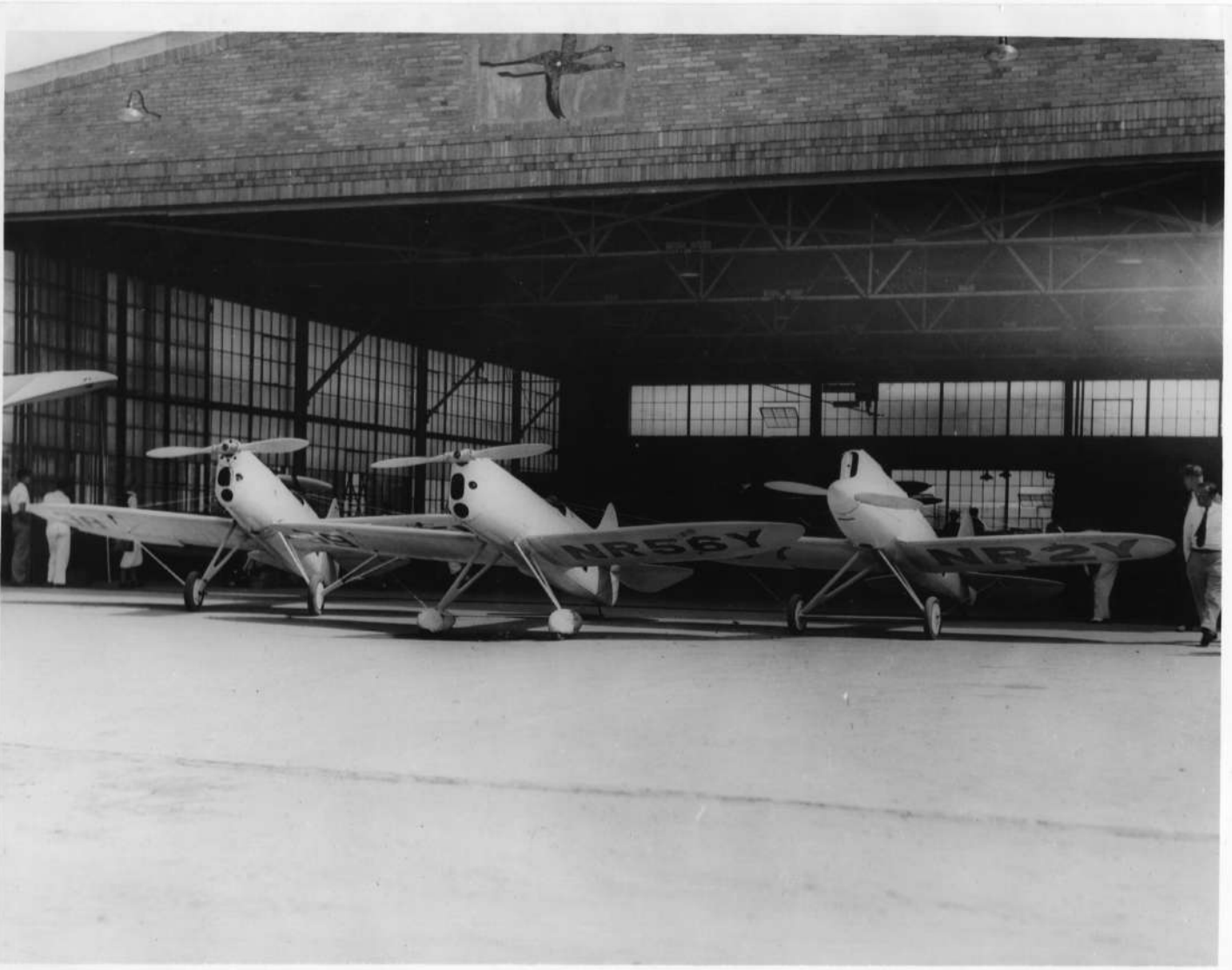










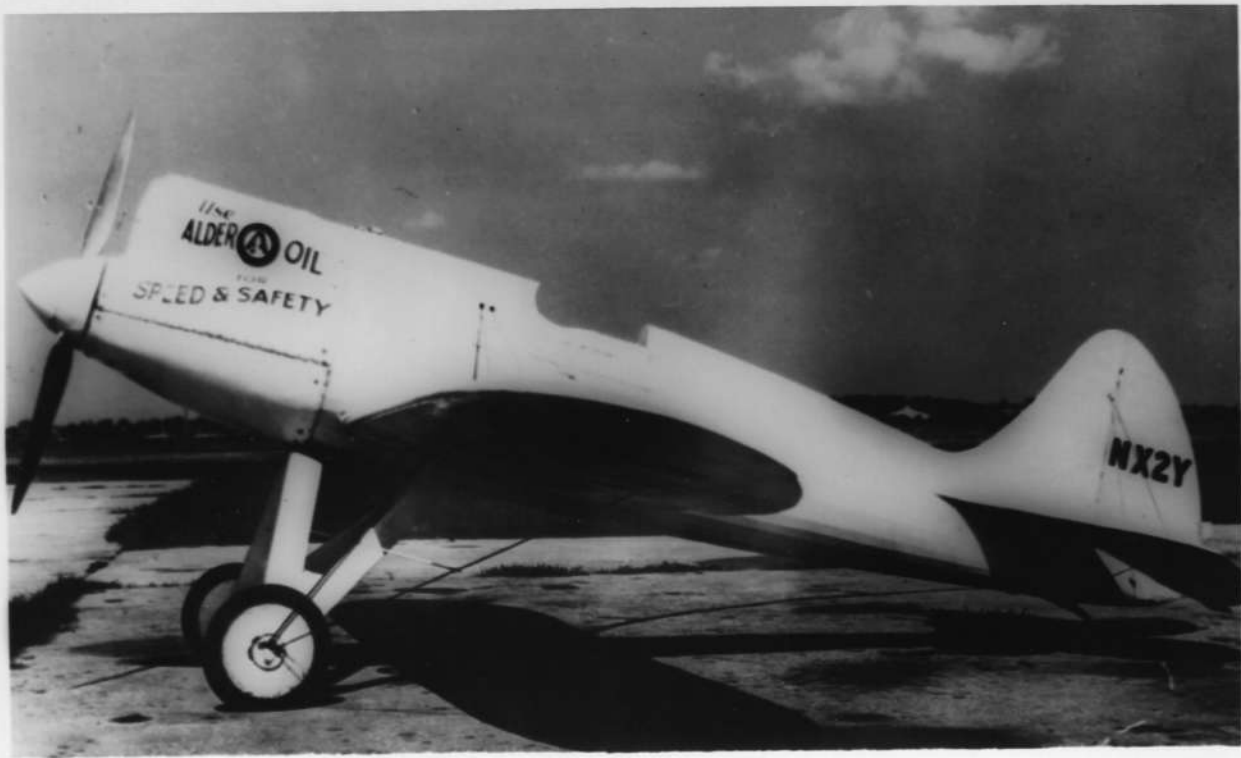






JOE JACOBSEN'S SPEED PLANE.  
BLACK HILLS AIRFAIR JULY 24-25-26 1936

H. Studios  
105



1937/32











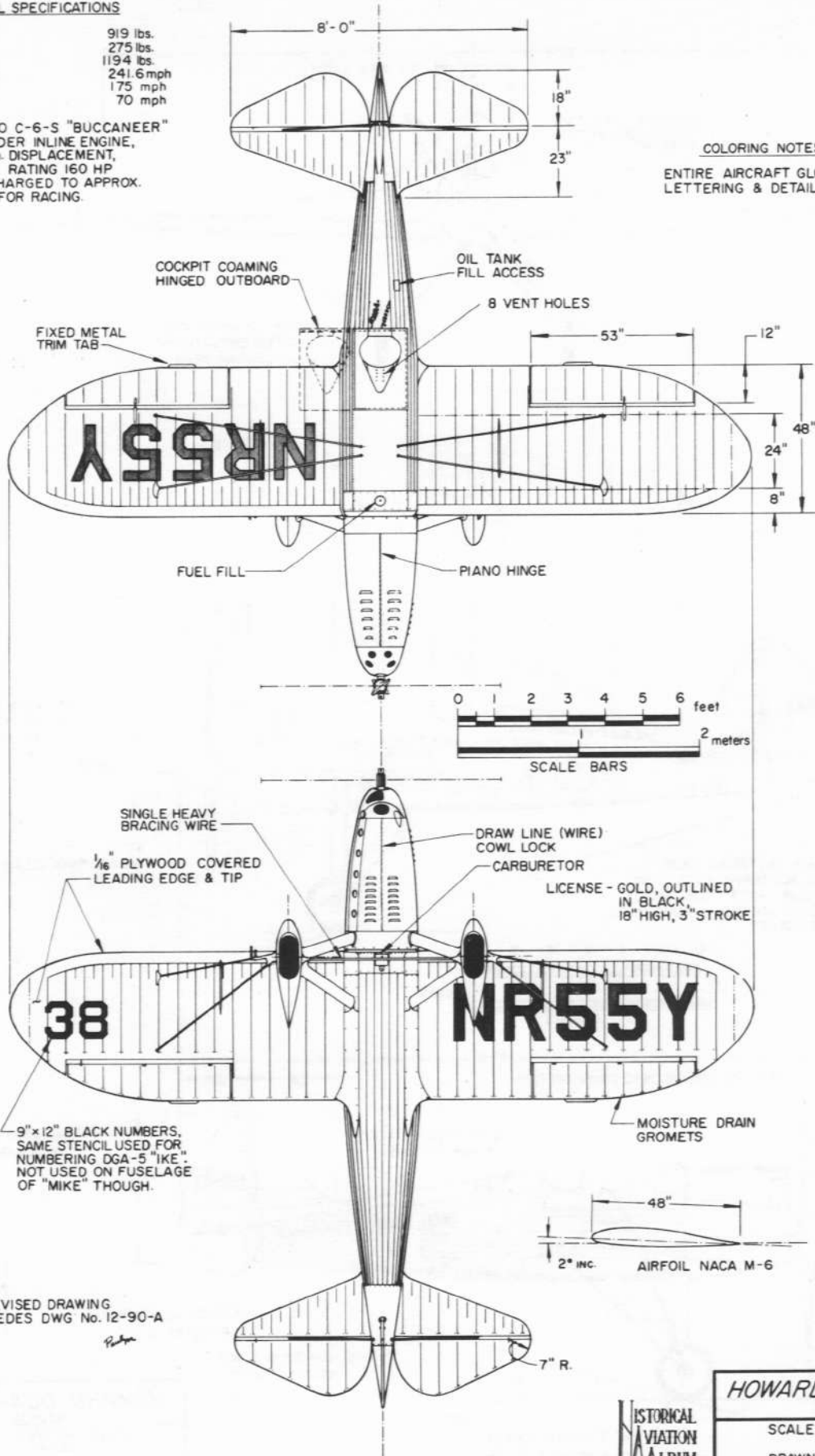
**GENERAL SPECIFICATIONS**

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



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

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

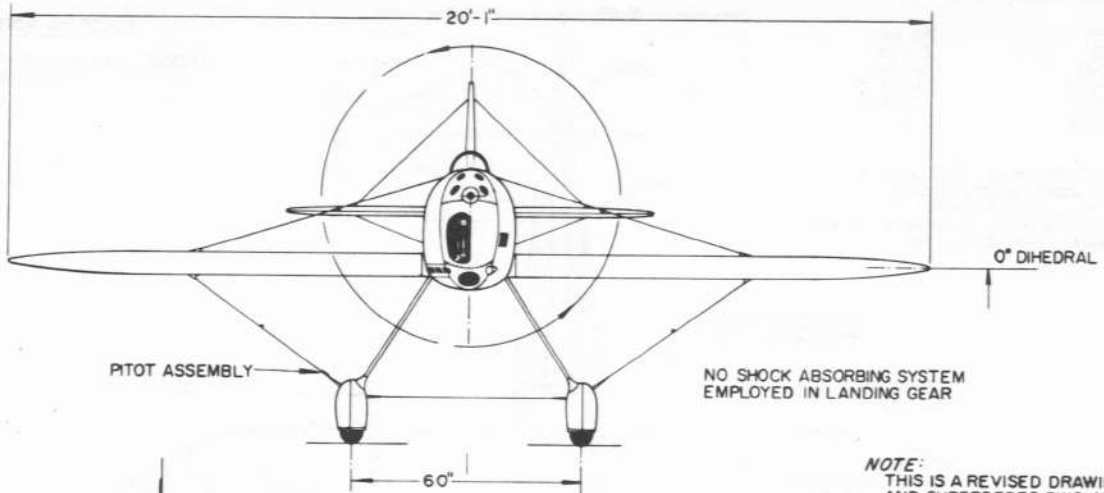
*Paul R. Matt*

HISTORICAL  
 AVIATION  
 ALBUM

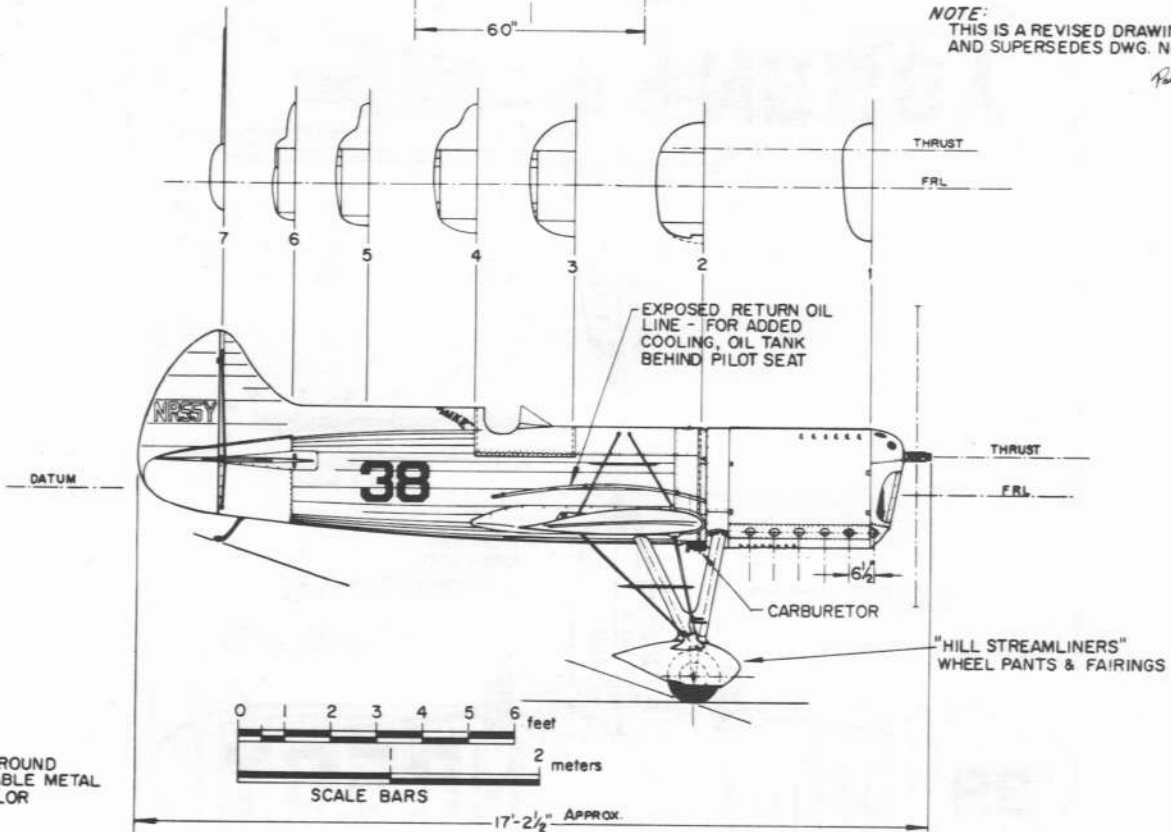
**HOWARD DGA-4 "MIKE"**  
 1932-37

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

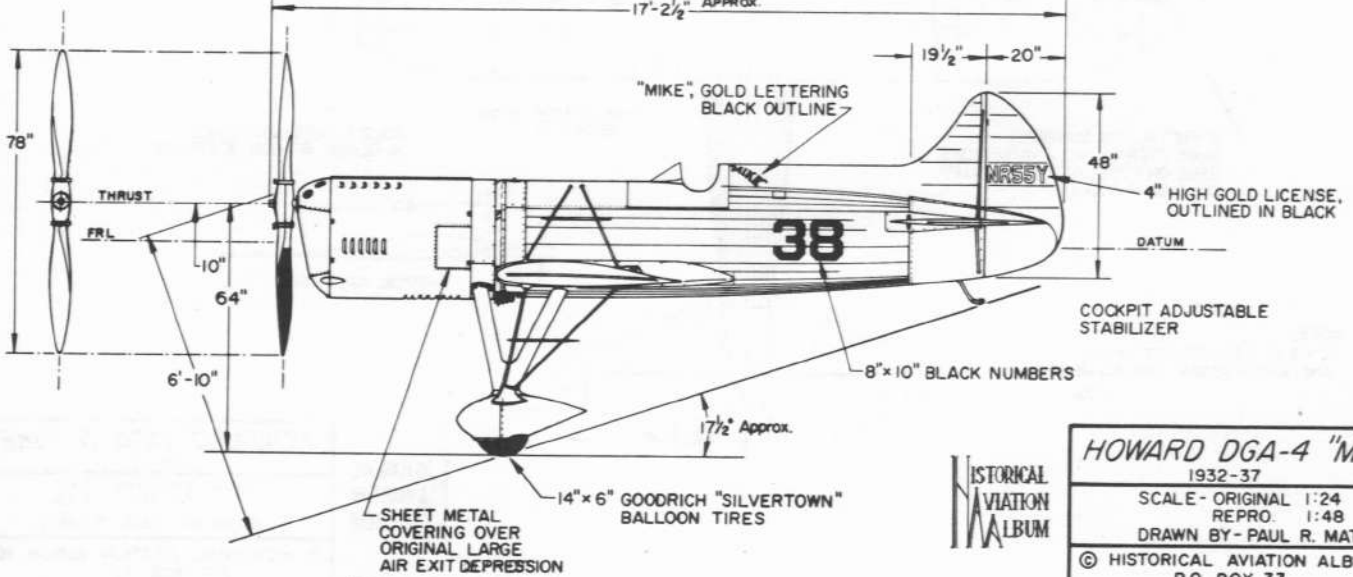
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SMITH GROUND ADJUSTABLE METAL PROPELLOR



DRAWING No. 13-90-A

PLATE 2 of 2

HISTORICAL AVIATION ALBUM

HOWARD DGA-4 "MIKE"  
1932-37

SCALE - ORIGINAL 1:24

REPRO. 1:48

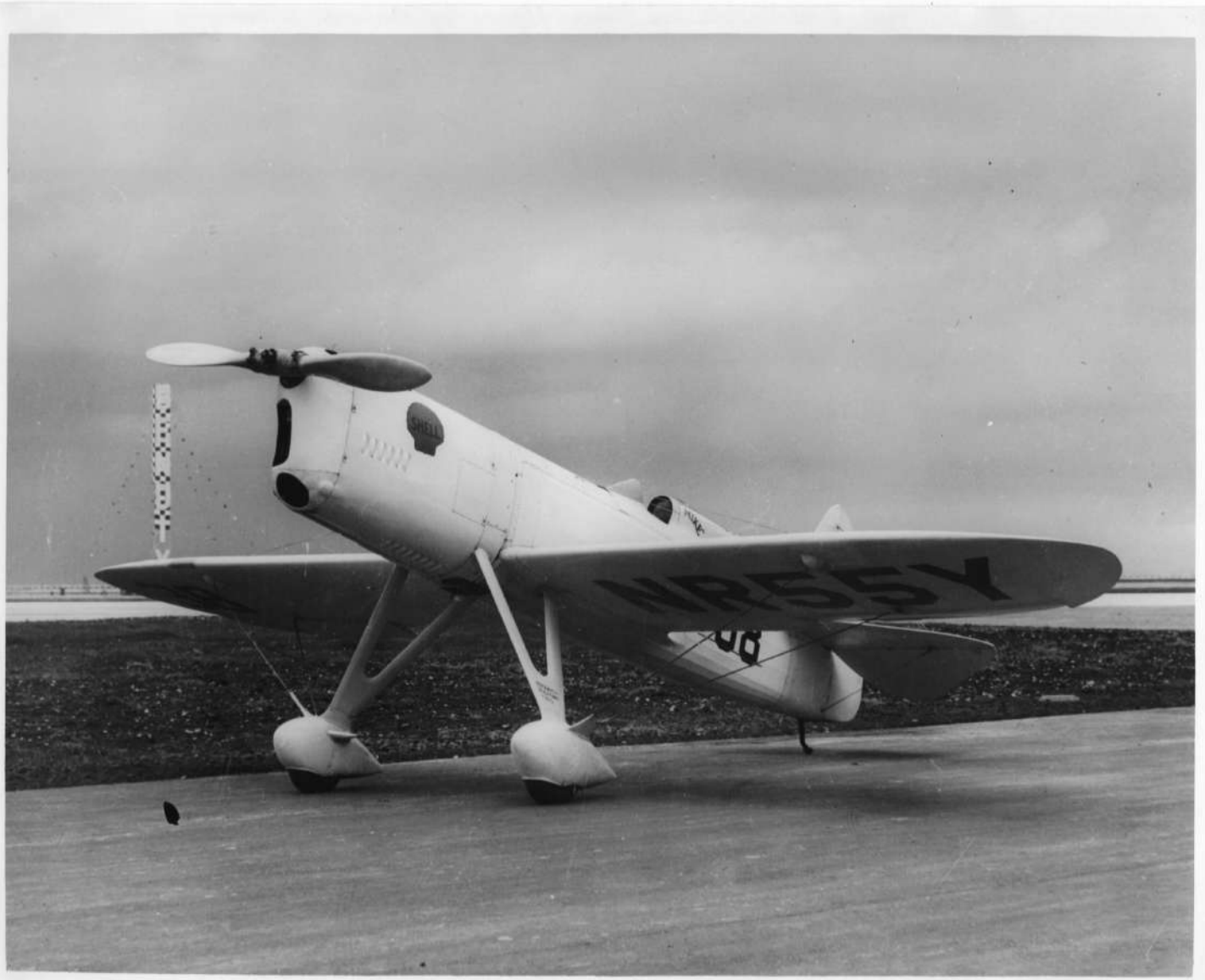
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HAROLD NEUMANN  
HOWARD "MIKE" RACER

ROY O. HUNT  
HOWARD "IKE" RACER

FLOYD BENNETT FIELD  
BROOKLYN, N.Y. 6-23-34







HOWARD "MIKE"  
MARCH 20, 1934 FAIRFAX AIRPORT, KANSAS CITY, KANSAS

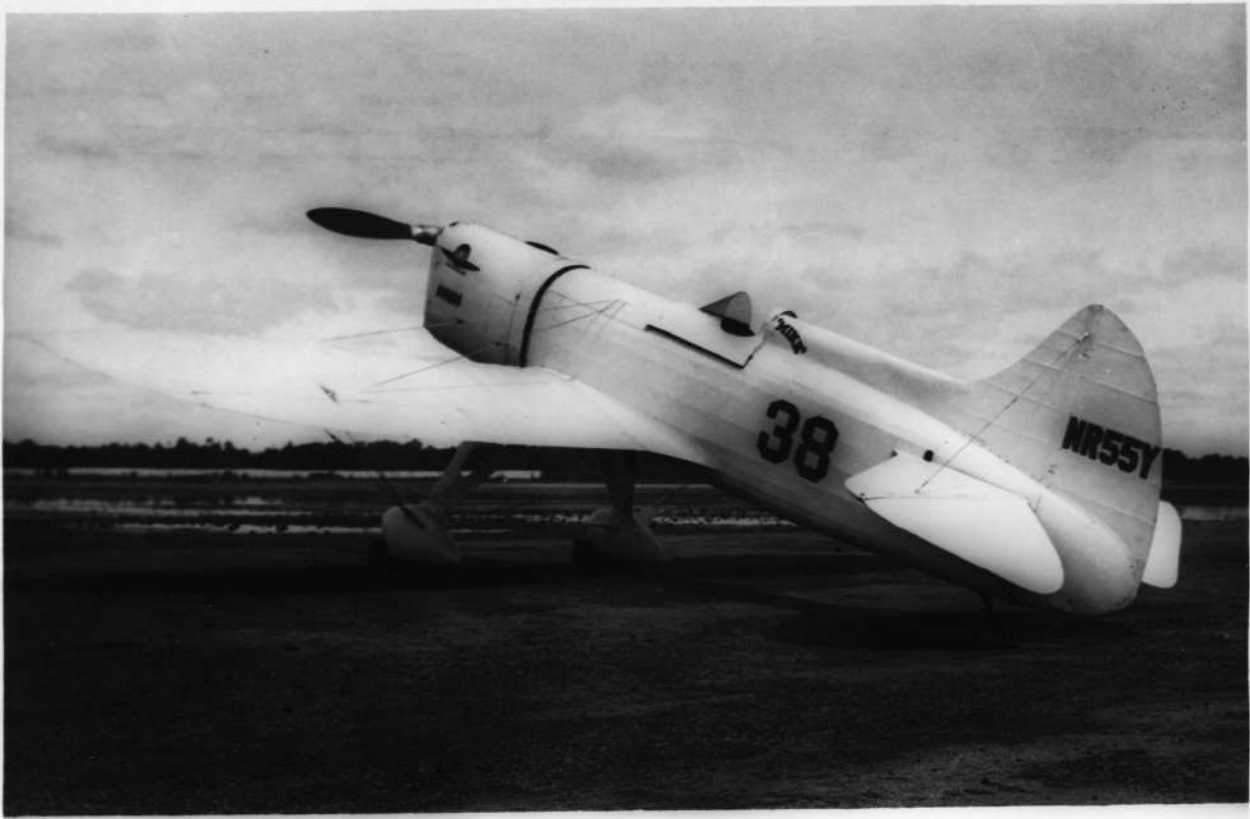




















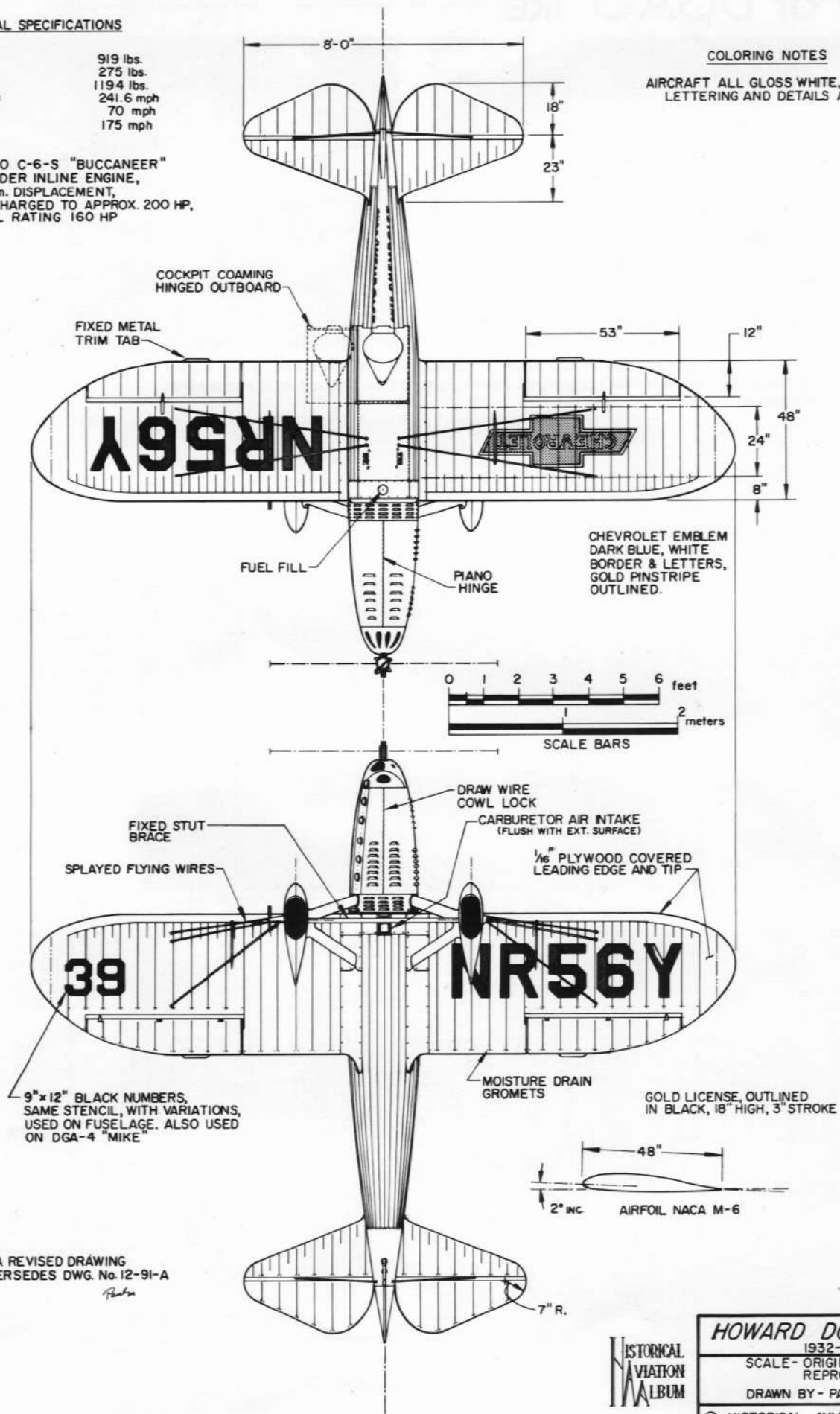
**GENERAL SPECIFICATIONS**

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

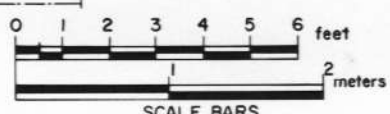
POWER: MENASCO C-6-S "BUCCANEER"  
 6 CYLINDER INLINE ENGINE,  
 489 cu. in. DISPLACEMENT,  
 SUPERCHARGED TO APPROX. 200 HP,  
 NORMAL RATING 160 HP

**COLORING NOTES**

AIRCRAFT ALL GLOSS WHITE,  
 LETTERING AND DETAILS AS NOTED

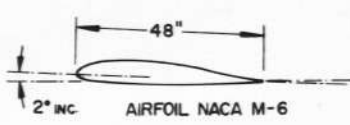


CHEVROLET EMBLEM  
 DARK BLUE, WHITE  
 BORDER & LETTERS,  
 GOLD PINSTRIPE  
 OUTLINED.



9" x 12" BLACK NUMBERS,  
 SAME STENCIL, WITH VARIATIONS,  
 USED ON FUSELAGE. ALSO USED  
 ON DGA-4 "MIKE"

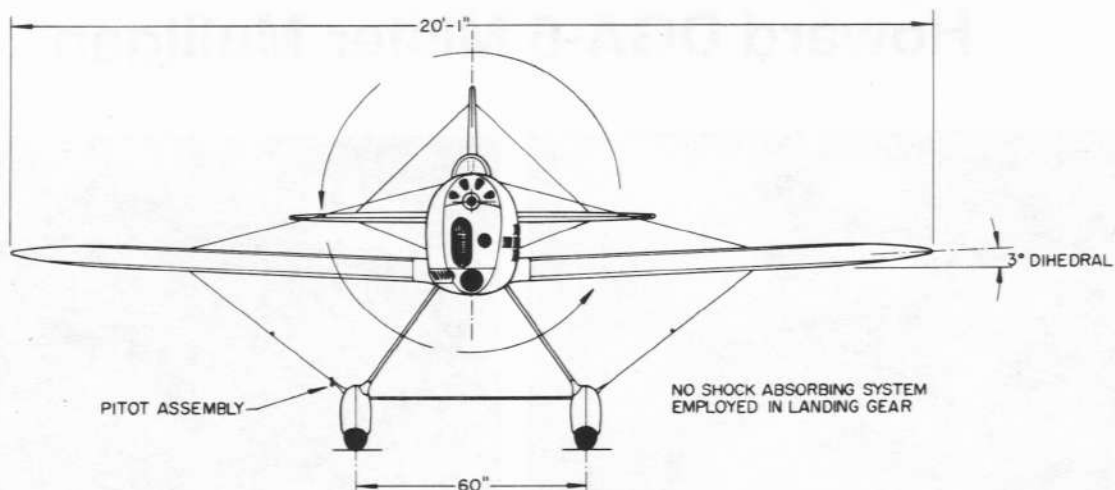
GOLD LICENSE, OUTLINED  
 IN BLACK, 18" HIGH, 3" STROKE



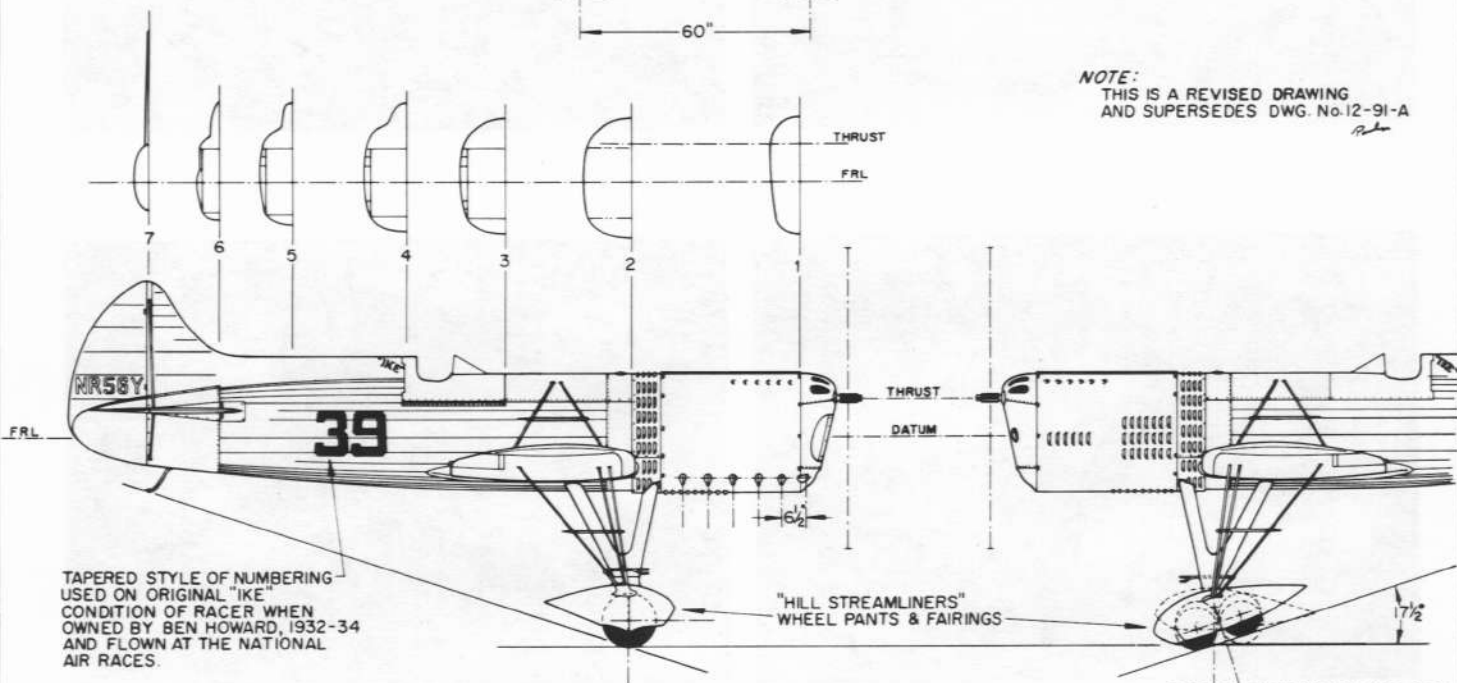
NOTE:  
 THIS IS A REVISED DRAWING  
 AND SUPERSEDES DWG. No. 12-91-A

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 AVIATION  
 ALBUM

<b>HOWARD DGA-5 "IKE"</b>	
1932-37	
SCALE - ORIGINAL	1:24
REPRO.	1:48
DRAWN BY - PAUL R. MATT	
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AND SUPERSEDES DWG. No. 12-91-A

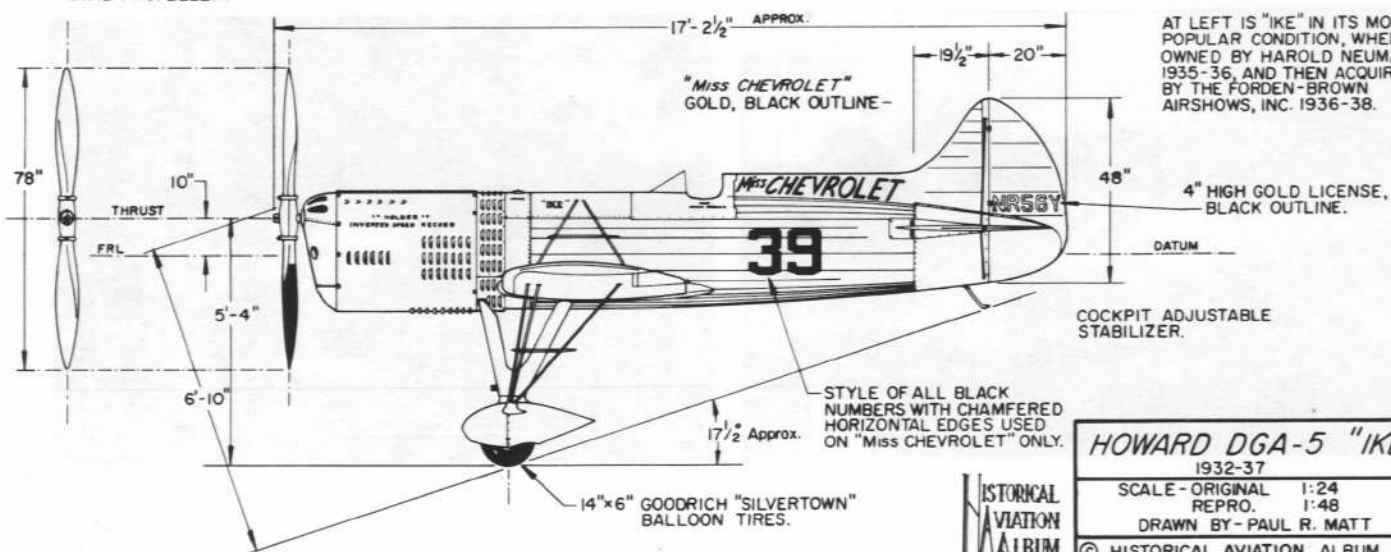


TAPERED STYLE OF NUMBERING  
USED ON ORIGINAL "IKE"  
CONDITION OF RACER WHEN  
OWNED BY BEN HOWARD, 1932-34  
AND FLOWN AT THE NATIONAL  
AIR RACES.

ORIGINAL TANDEM LANDING GEAR  
EMPLOYED DURING FIRST, 1932,  
RACING SEASON ONLY. 11 x 5"  
TREADED HIGH PRESSURE TIRES.



SMITH GROUND ADJUSTABLE  
METAL PROPELLER.



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

COCKPIT ADJUSTABLE  
STABILIZER.

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

HISTORICAL  
NAVIGATION  
ALBUM

HOWARD DGA-5 "IKE"

1932-37

SCALE - ORIGINAL 1:24  
REPRO. 1:48

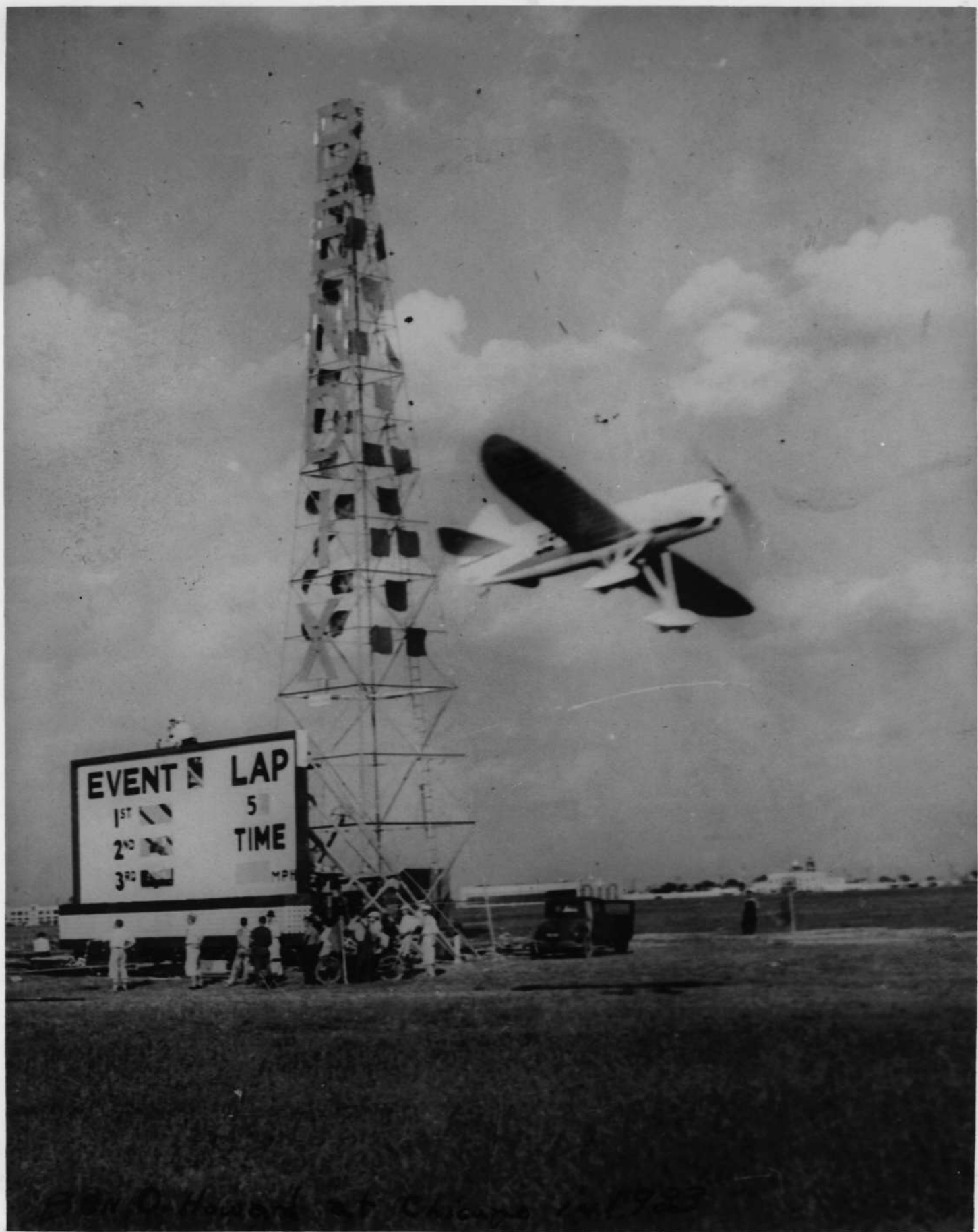
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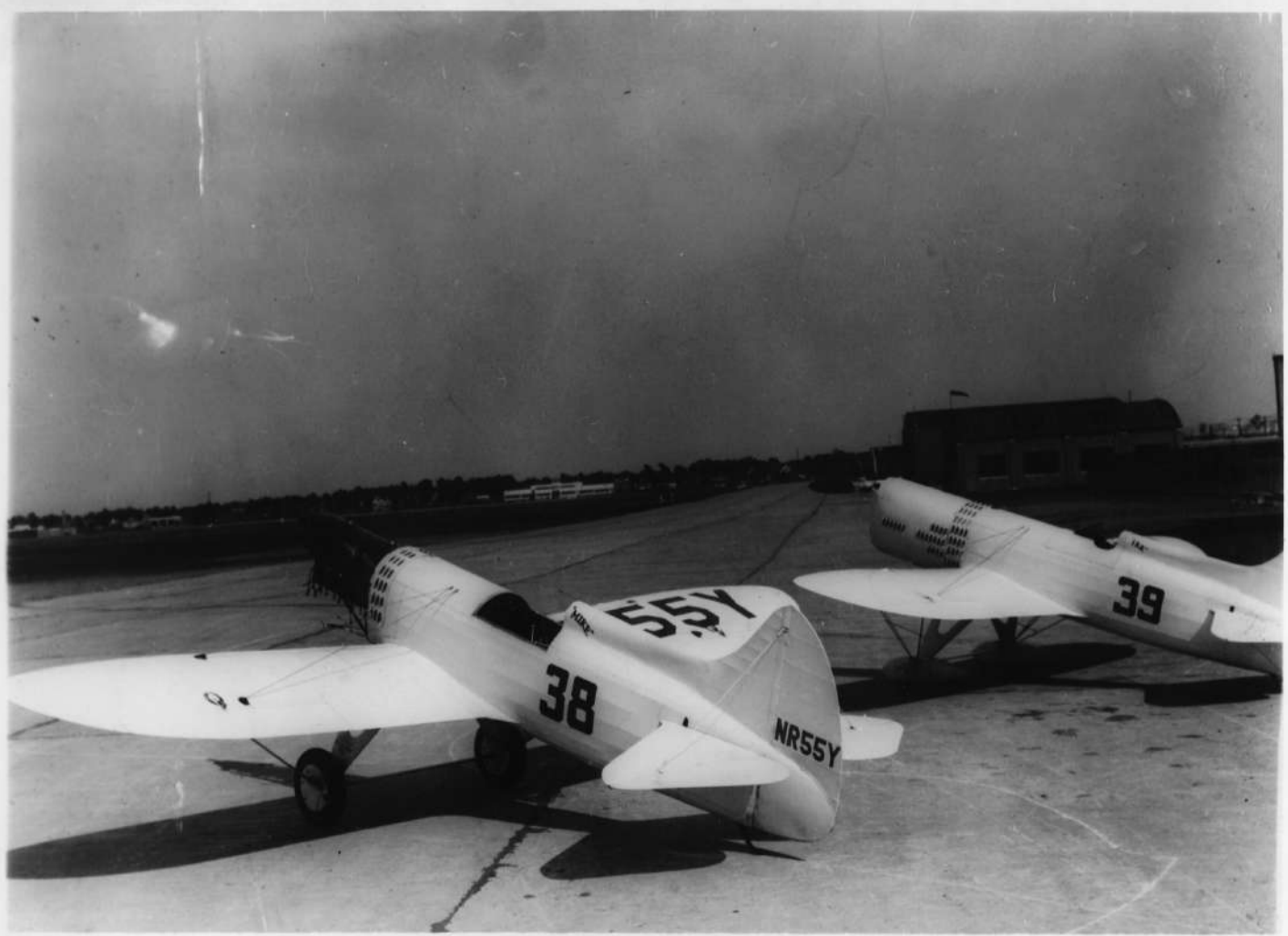
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DRAWING No. 13-91-A

PLATE 2 of 2









Full scale bird with pilot Harold Newman—relative size of the racer is amply shown with the pilot. Plane was the holder of the inverted speed record.



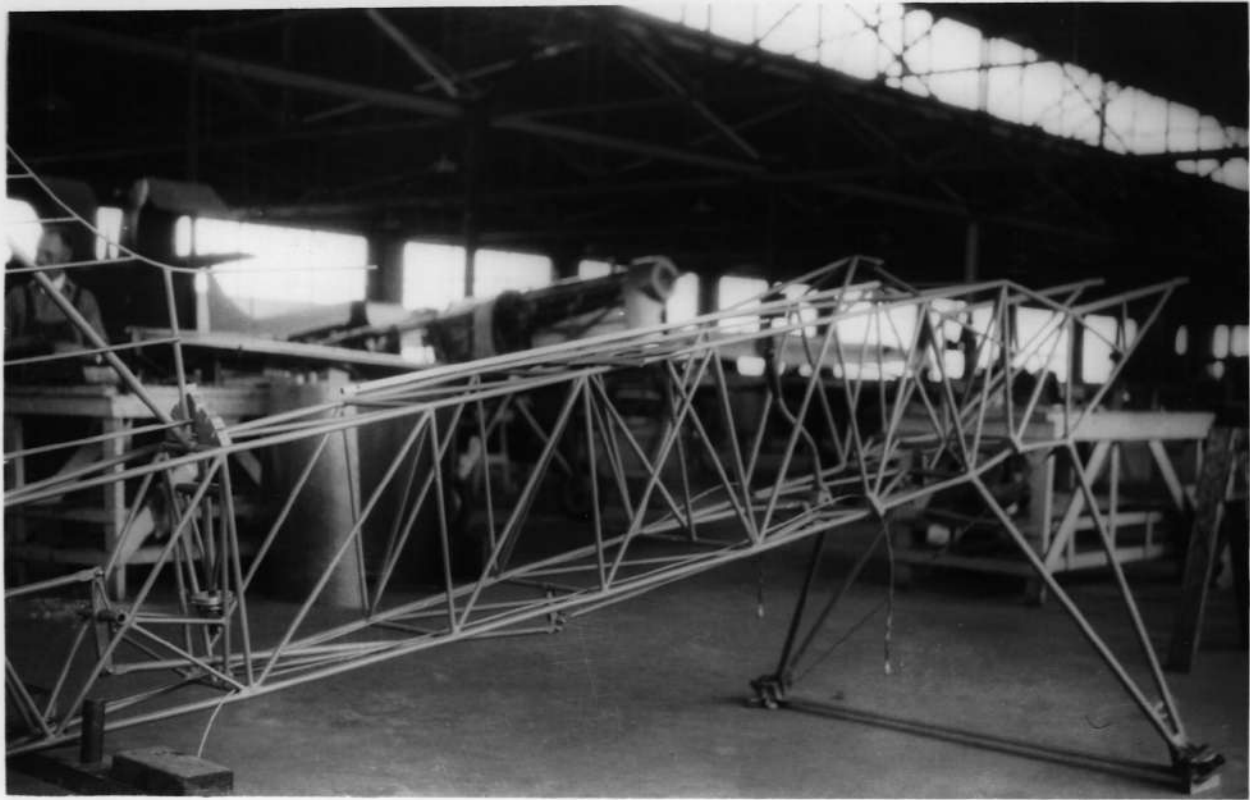














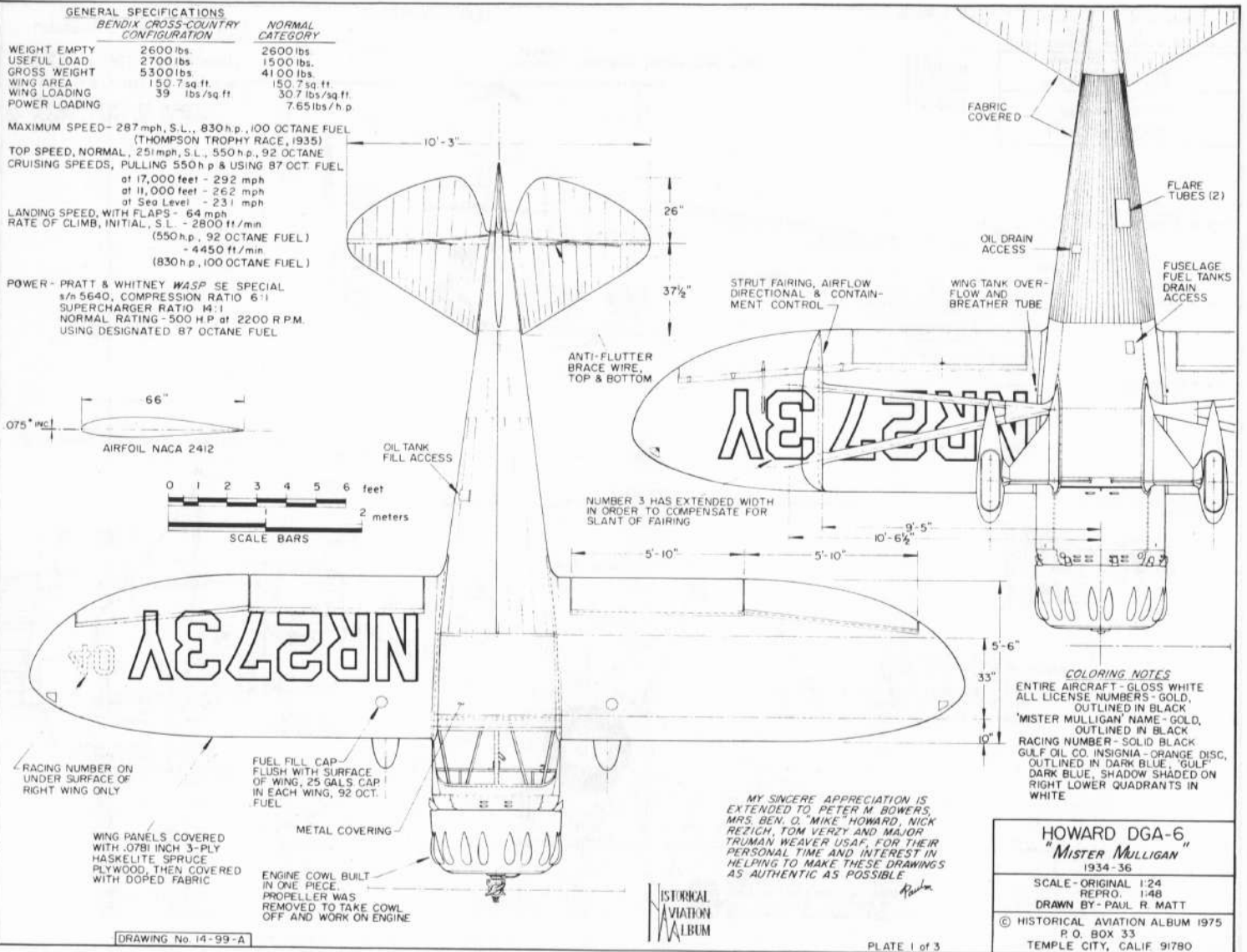
**GENERAL SPECIFICATIONS**

	BENDIX CROSS-COUNTRY CONFIGURATION	NORMAL CATEGORY
WEIGHT EMPTY	2600 lbs.	2600 lbs.
USEFUL LOAD	2700 lbs.	1500 lbs.
GROSS WEIGHT	5300 lbs.	4100 lbs.
WING AREA	150.7 sq. ft.	150.7 sq. ft.
WING LOADING	39 lbs./sq. ft.	30.7 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)

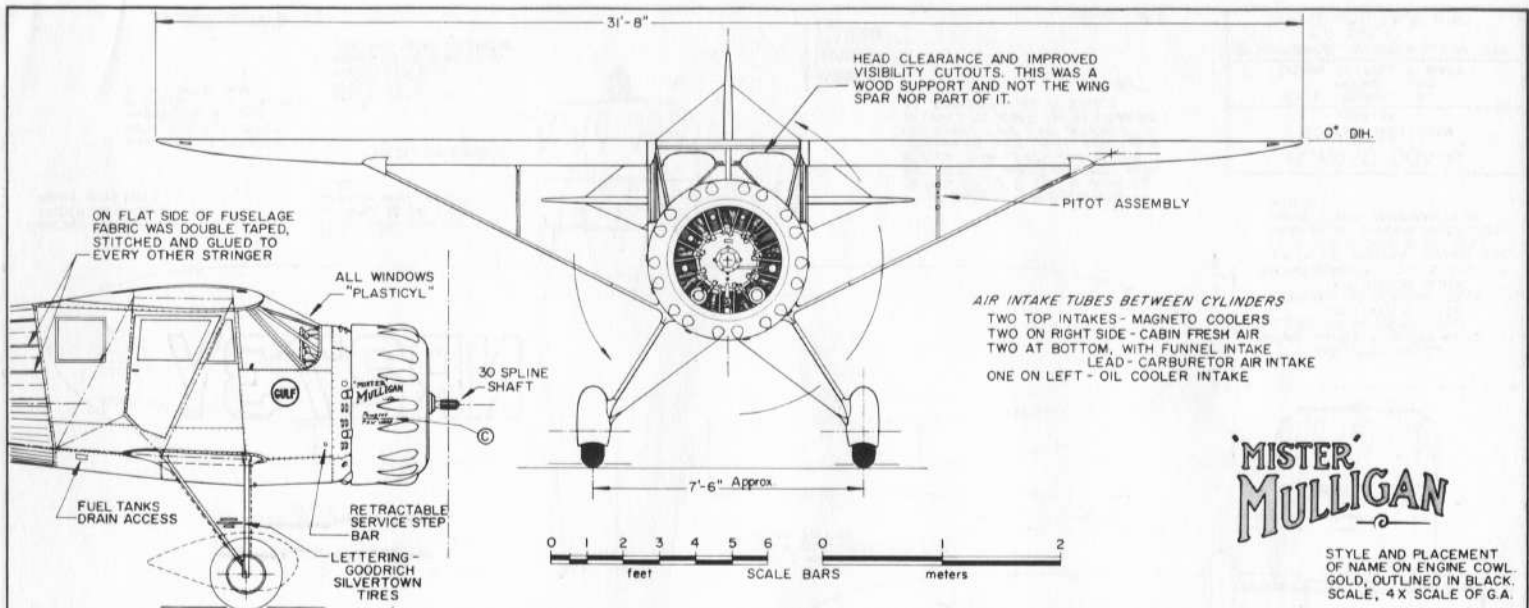
POWER - PRATT & WHITNEY W45P SE SPECIAL  
 s/n 5640, COMPRESSION RATIO 6:1  
 SUPERCHARGER RATIO 14:1  
 NORMAL RATING - 500 H.P. at 2200 R.P.M.  
 USING DESIGNATED 87 OCTANE FUEL



**COLORING NOTES**  
 ENTIRE AIRCRAFT - GLOSS WHITE  
 ALL LICENSE NUMBERS - GOLD,  
 OUTLINED IN BLACK  
 'MISTER MULLIGAN' NAME - GOLD,  
 OUTLINED IN BLACK  
 RACING NUMBER - SOLID BLACK  
 GULF OIL CO. INSIGNIA - ORANGE DISC,  
 OUTLINED IN DARK BLUE, 'GULF'  
 DARK BLUE, SHADOW SHADED ON  
 RIGHT LOWER QUADRANTS IN  
 WHITE

<b>HOWARD DGA-6</b> <b>"MISTER MULLIGAN"</b> 1934-36	
SCALE - ORIGINAL	1:24
REPRO.	1:48
DRAWN BY - PAUL R. MATT	
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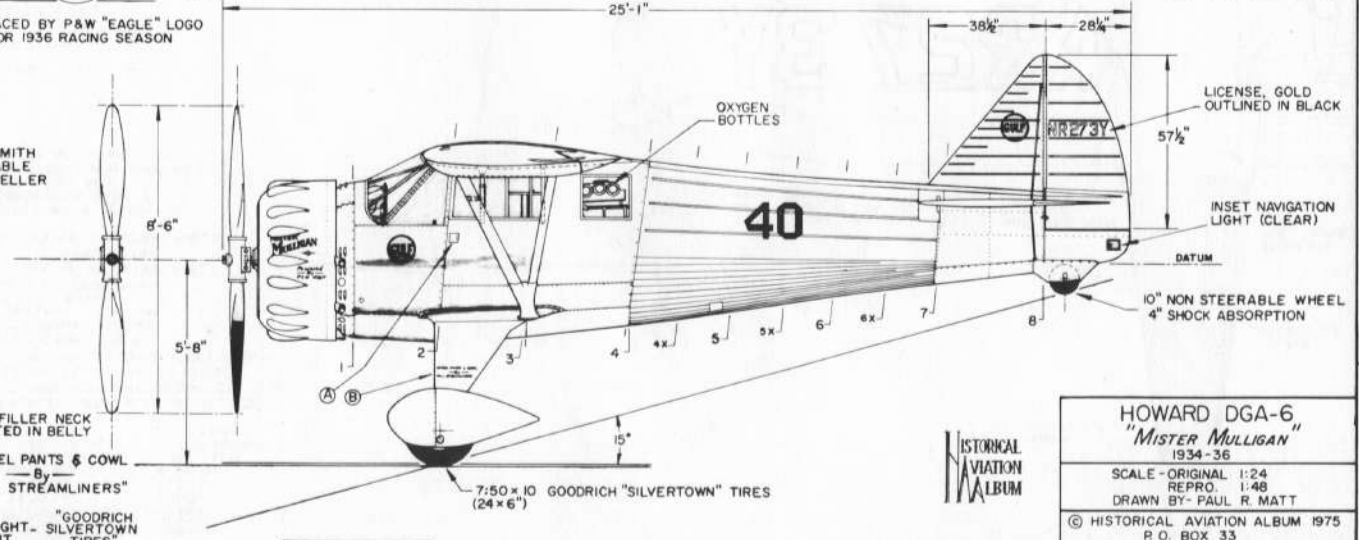
DRAWING No. 14-99-A



**"MISTER MULLIGAN"**

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

©- WORDING REPLACED BY P&W "EAGLE" LOGO DECAL FOR 1936 RACING SEASON



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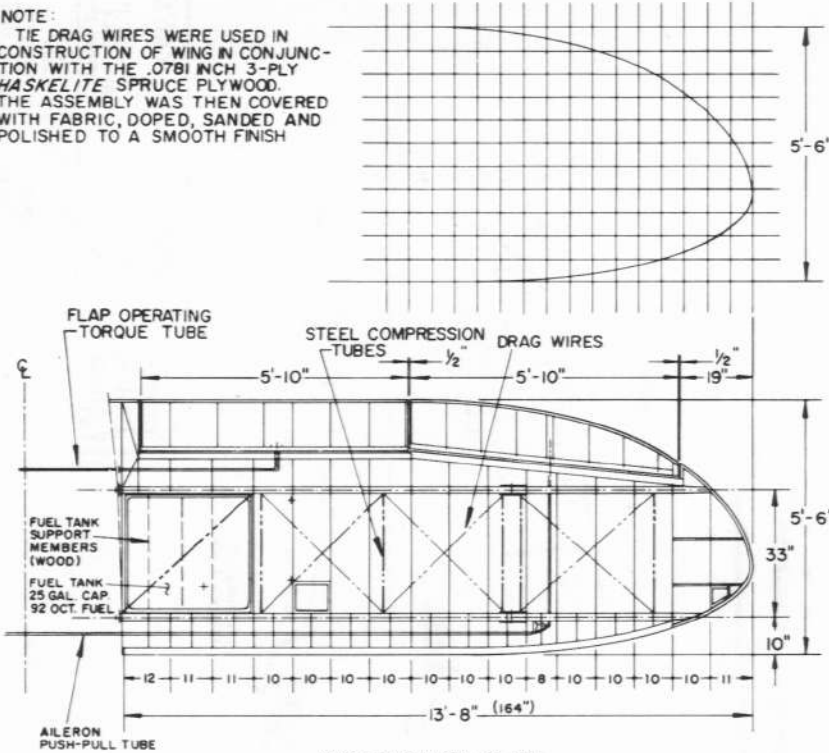
HOWARD DGA-6  
 "MISTER MULLIGAN"  
 1934-36  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY - PAUL R. MATT  
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DRAWING No 14-99-A

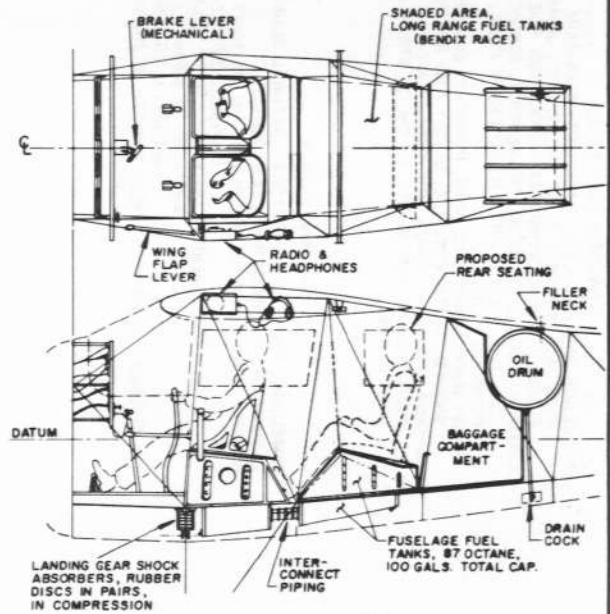
PLATE 2 of 3

"MISTER MULLIGAN" WING TIP LAYOUT  
ON 6 INCH INCREMENTS

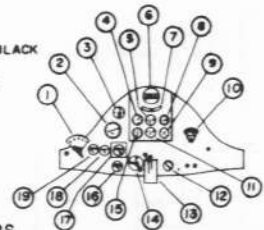
NOTE:  
THE DRAG WIRES WERE USED IN CONSTRUCTION OF WING IN CONJUNCTION WITH THE .0781 INCH 3-PLY HASKELITE SPRUCE PLYWOOD. THE ASSEMBLY WAS THEN COVERED WITH FABRIC, DOPED, SANDED AND POLISHED TO A SMOOTH FINISH



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

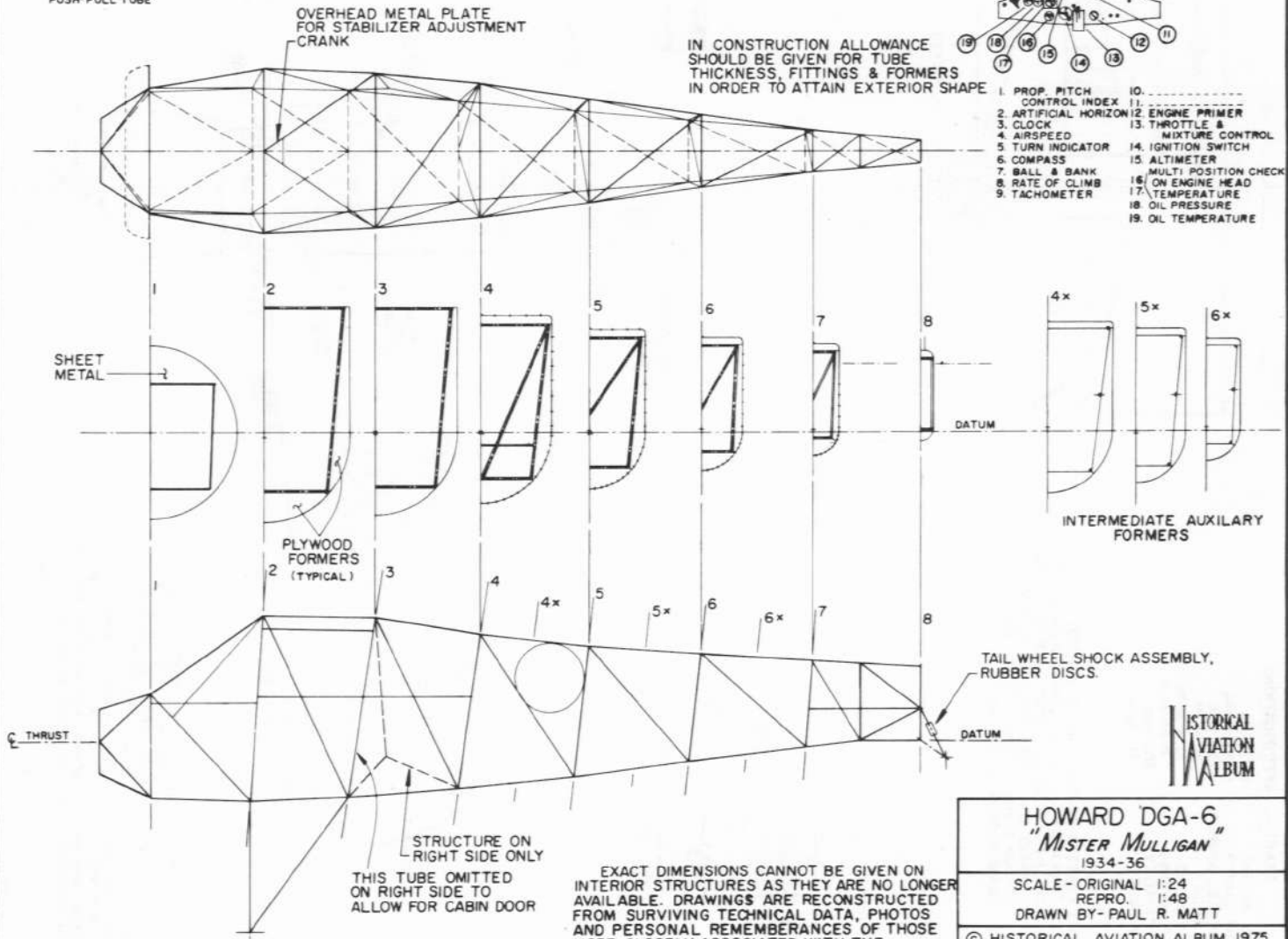


INSTRUMENT PANEL, BLACK  
CENTER FLIGHT  
INSTRUMENT SQUARE,  
CRINKLE FINISH



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 PRIMER
11. THROTTLE & MIXTURE CONTROL
12. IGNITION SWITCH
13. ALTIMETER
14. MULTI POSITION CHECK
15. ON ENGINE HEAD
16. TEMPERATURE
17. OIL PRESSURE
18. OIL TEMPERATURE
19. OIL TEMPERATURE



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

DRAWING No. 14-99-A

PLATE 3 of 3

HISTORICAL  
NAVIGATION  
ALBUM

HOWARD DGA-6  
"MISTER MULLIGAN"  
1934-36

SCALE - ORIGINAL 1:24

REPRO. 1:48

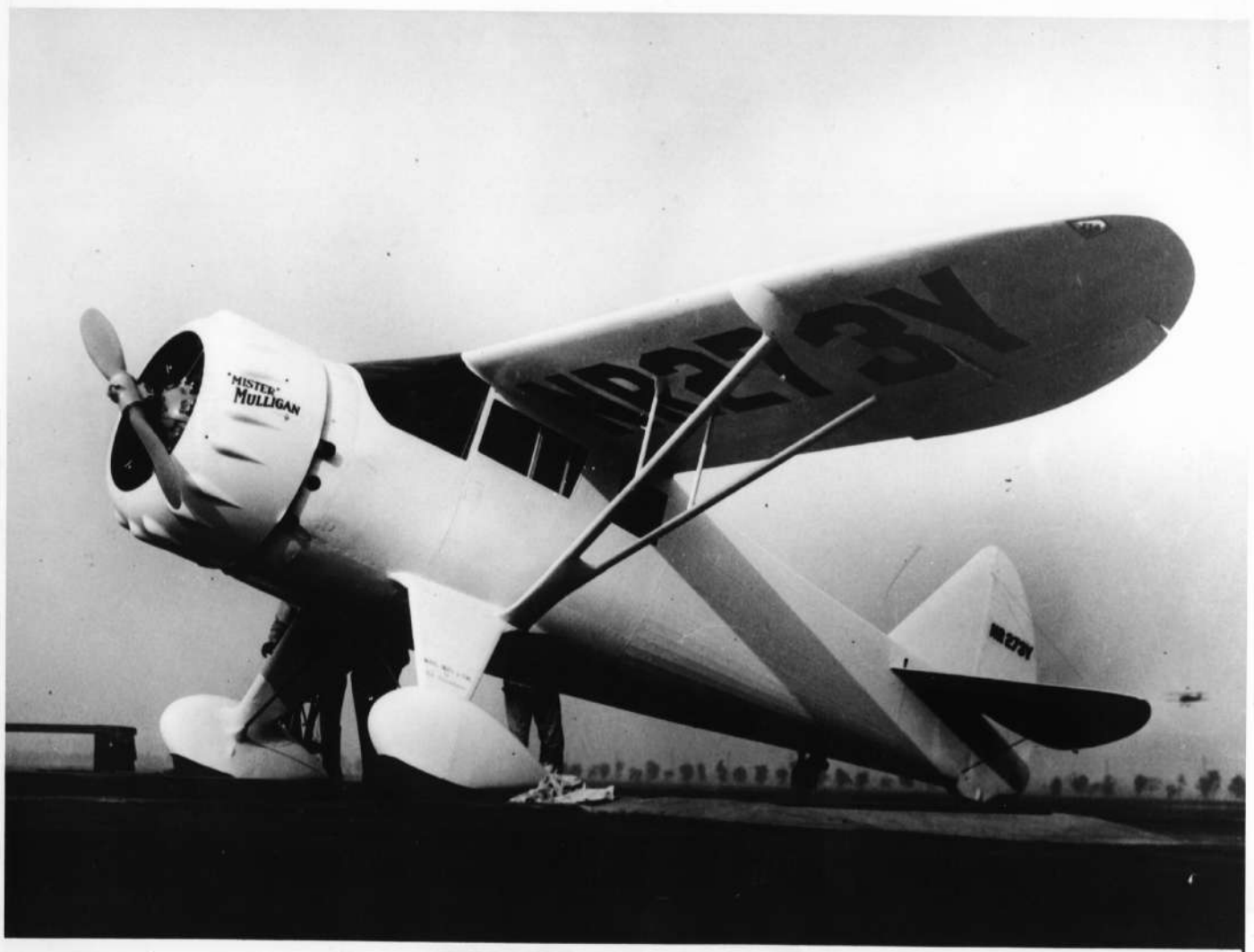
DRAWN BY - PAUL R. MATT

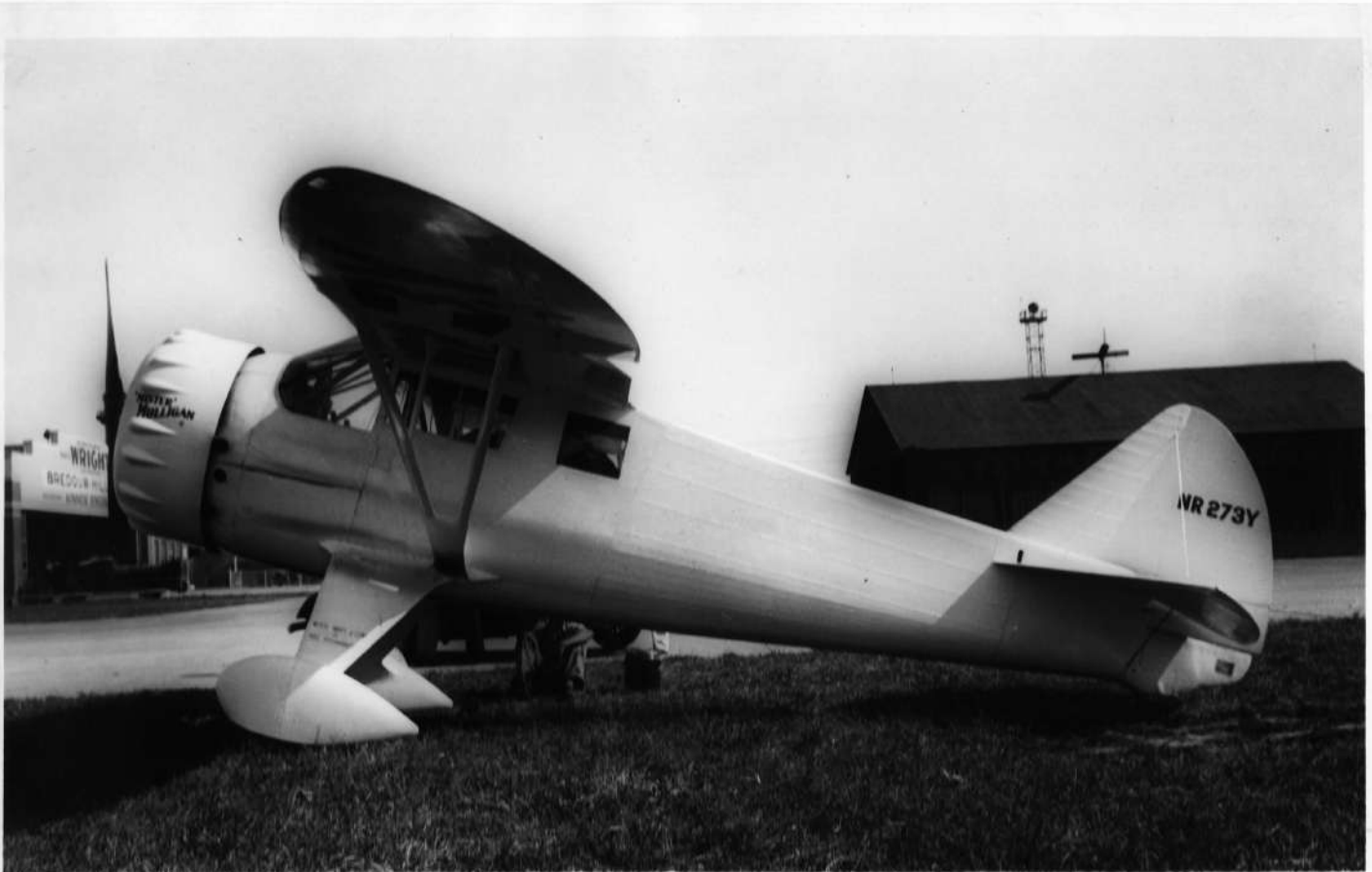
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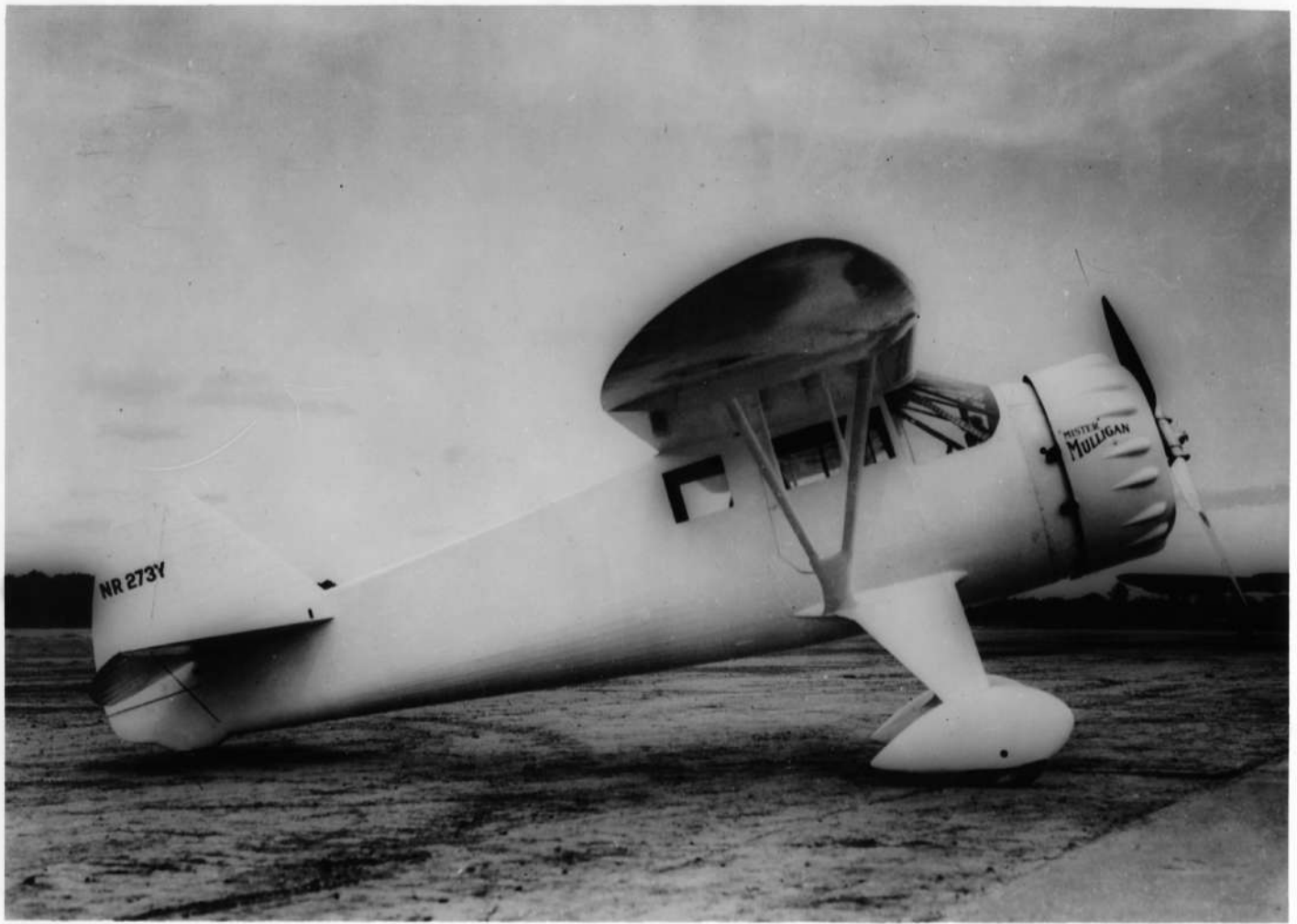




1934



1935



1934









1934

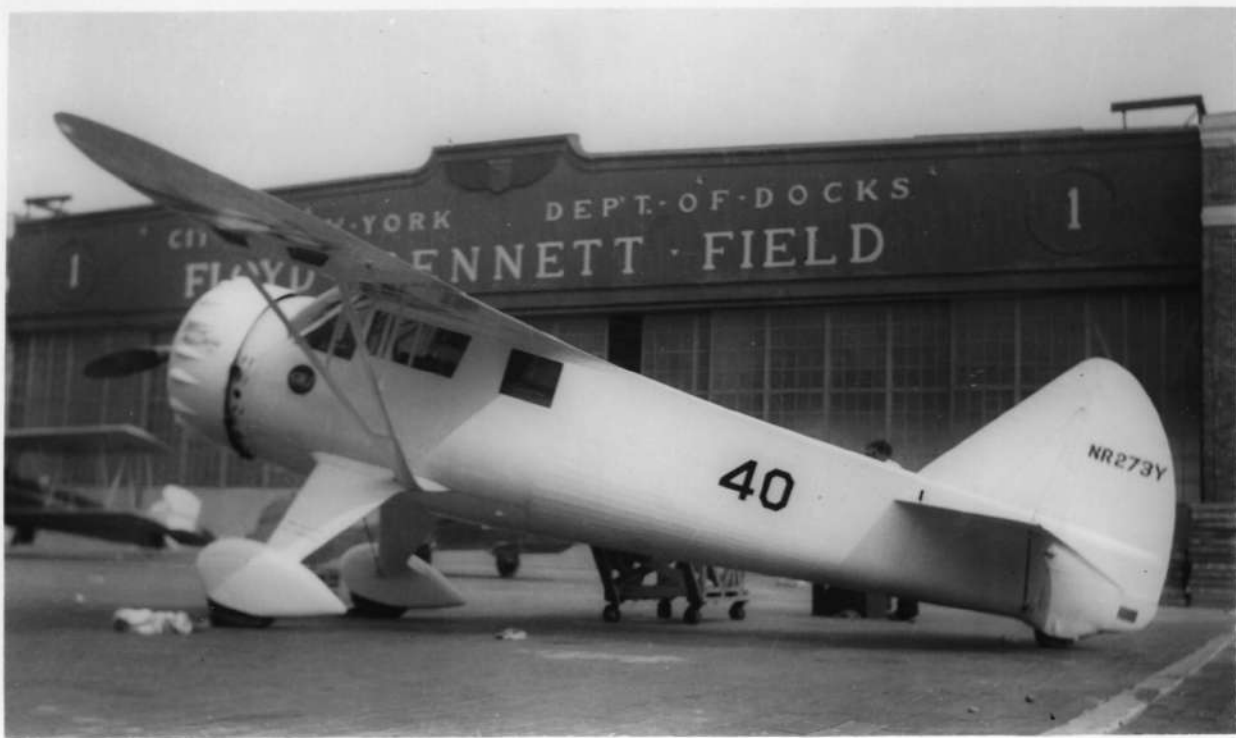




JUNE 8, 1934



JUNE 8, 1934



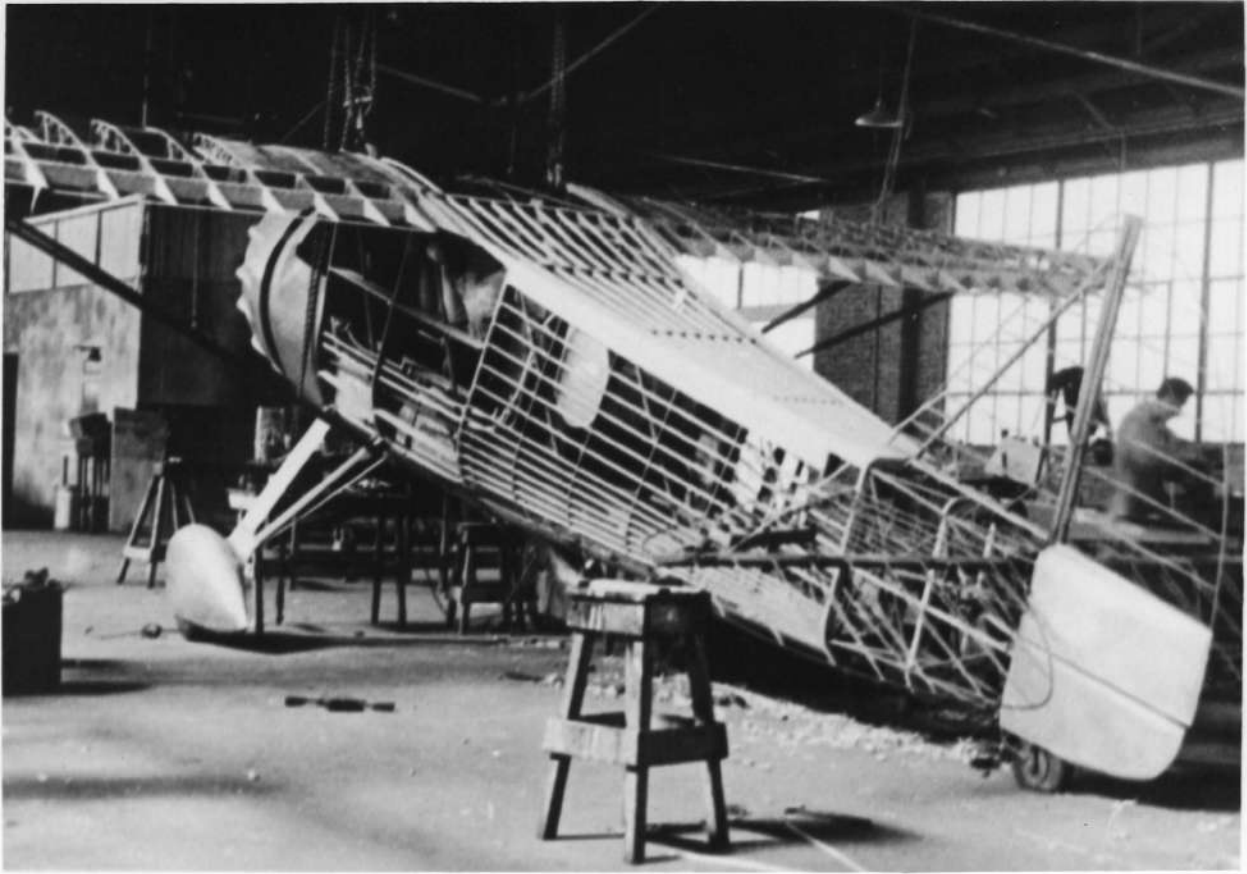
1935



1936



MAY 23, 1934



**GENERAL SPECIFICATIONS**

GROSS WEIGHT 6200 lbs.  
 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.

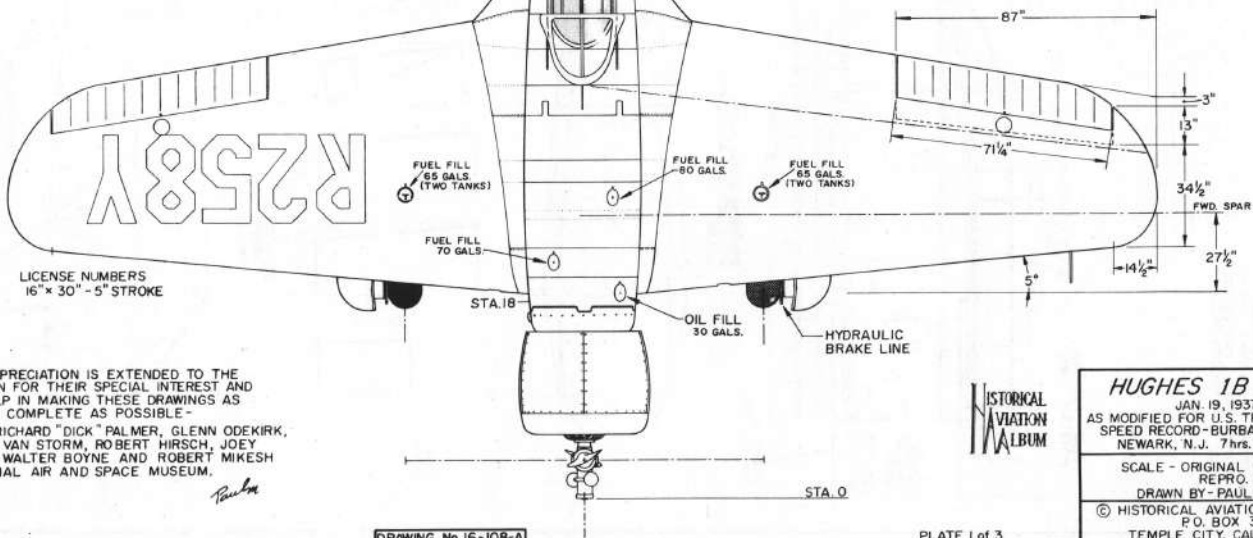
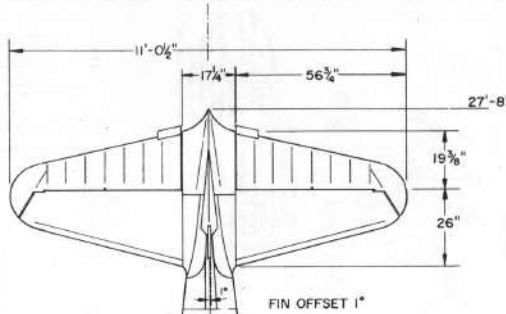
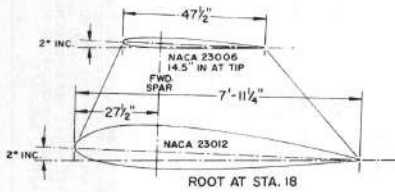
POWER: PRATT & WHITNEY SA5-G (R-1535),  
 TWIN WASP Jr., s/n 27, (Redesignated s/n 281)  
 700 HP at 2500rpm. PROPELLER REDUCTION  
 GEARING 4:3. POWER BOOSTED TO APPROX.  
 900 HP THROUGH "DOPED" FUEL AND  
 CARBURETION ADJUSTMENTS.

**CONSTRUCTION NOTES**

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.



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,  
 EARL MARTYN, VAN STORM, ROBERT HIRSCH, JOEY  
 REINLEIB, AND WALTER BOYNE AND ROBERT MIKESH  
 OF THE NATIONAL AIR AND SPACE MUSEUM.

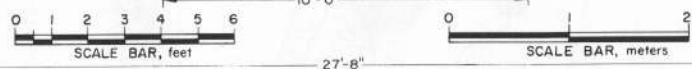
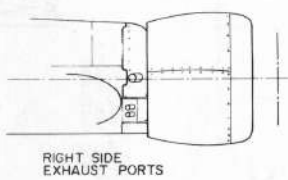
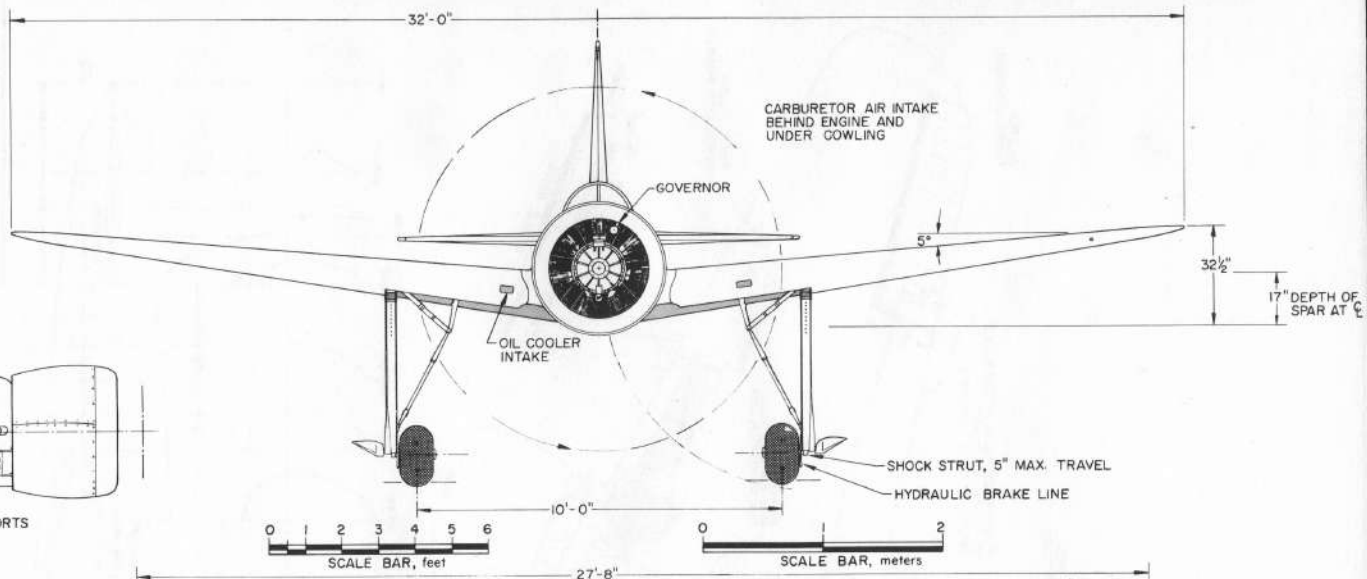
*Paul R. Matt*

HISTORICAL  
 AVIATION  
 ALBUM

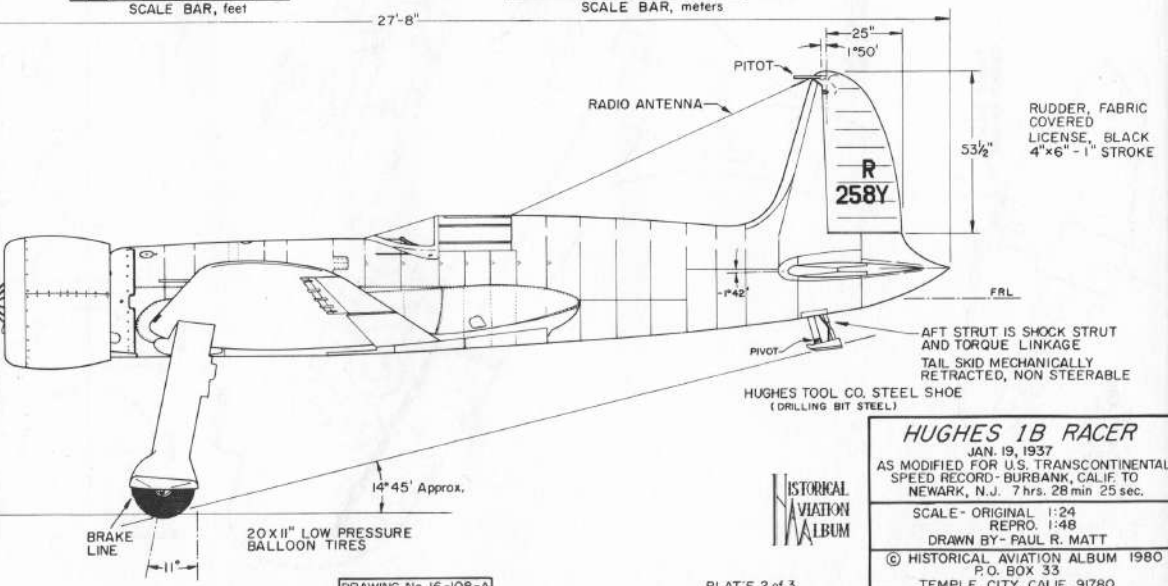
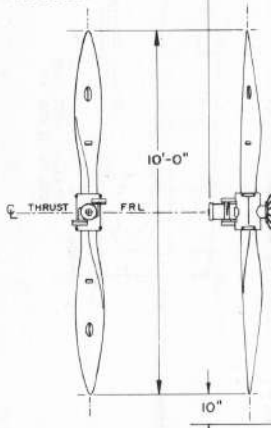
**HUGHES 1B RACER**

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  
 DRAWN BY - PAUL R. MATT  
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 TEMPLE CITY, CALIF. 91780



HAMILTON-STANDARD HYDROMATIC CONTROLLABLE PITCH PROPELLER



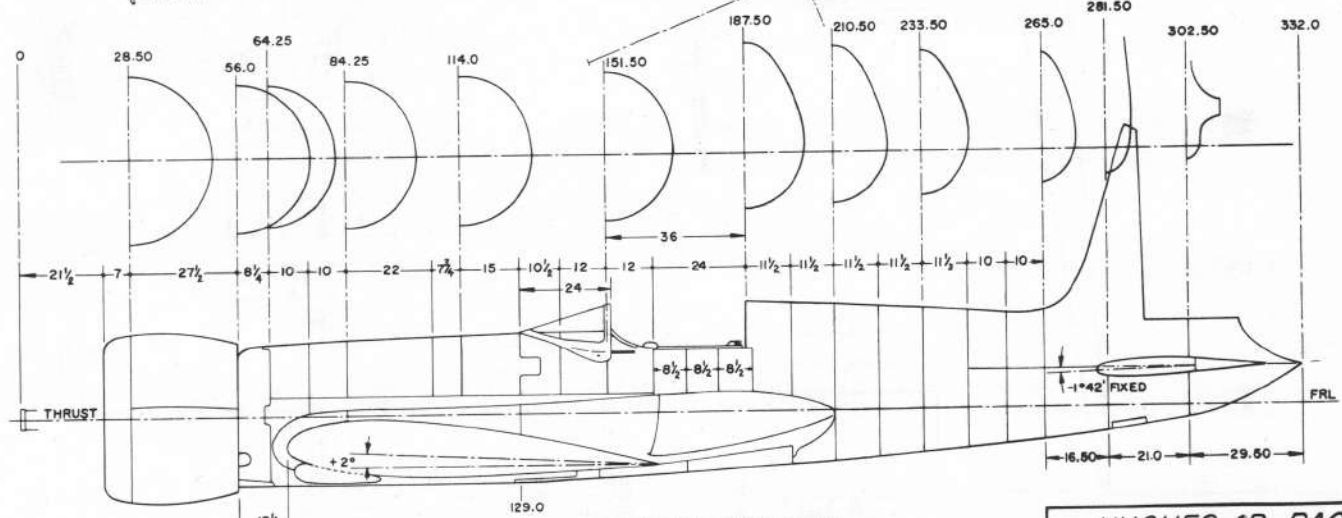
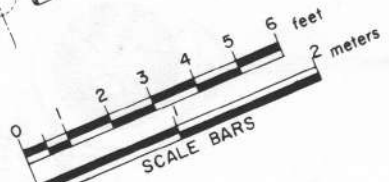
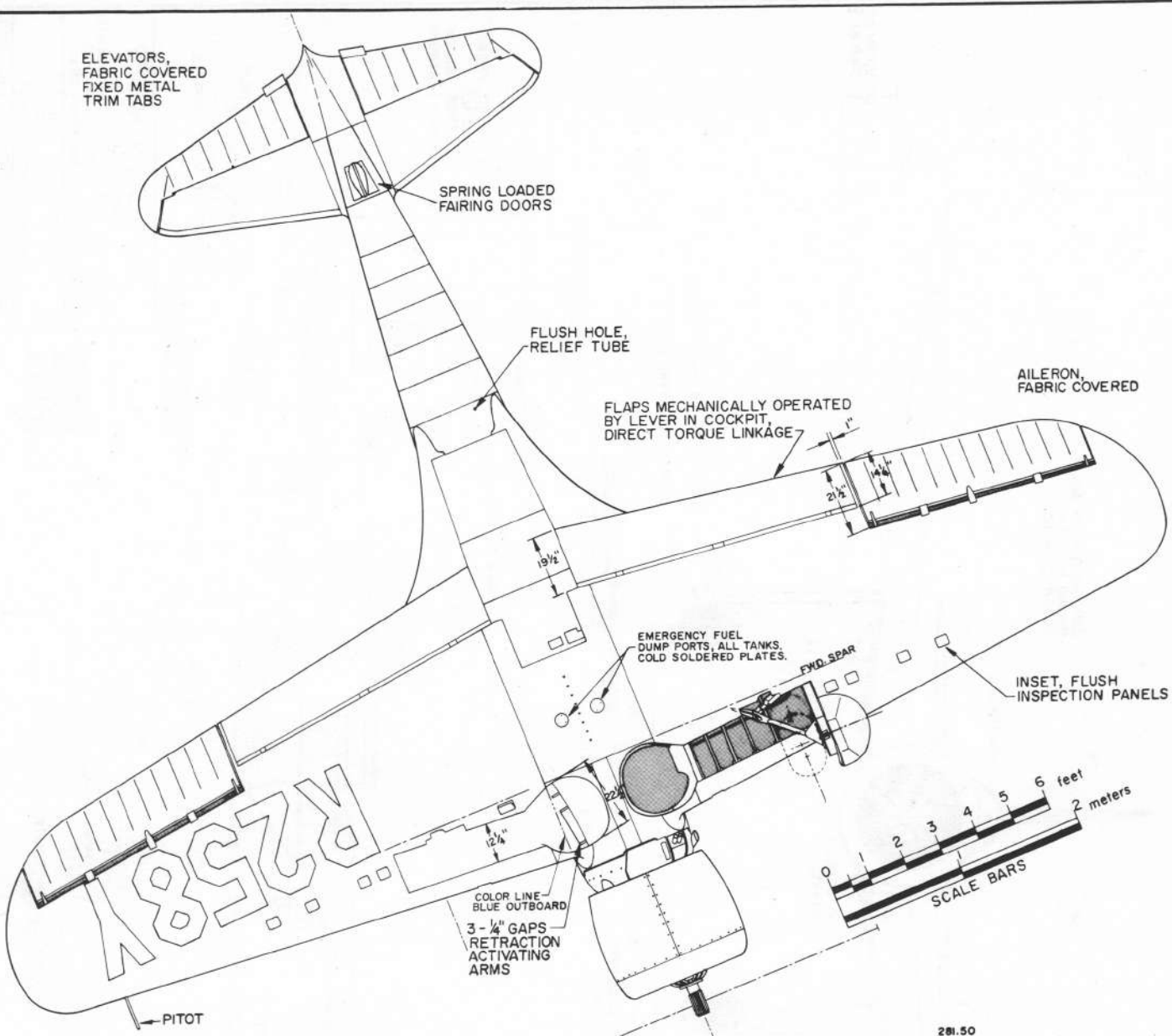
DRAWING No. 16-108-A

PLATE 2 of 3



**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  
 DRAWN BY - PAUL R. MATT  
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 TEMPLE CITY, CALIF. 91780





STRAIGHT KEEL LINE  
STA. 56 TO STA. 129

COCKPIT CANOPY SHOWN  
IN OPEN POSITION, WINDSHIELD  
SLIDES FORWARD, SIDE PANELS  
SLIDE DOWN INTO FUSELAGE

ALL DIMENSIONS IN PROFILE VIEW ARE INCHES

<b>HUGHES 1B RACER</b>	
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
DRAWN BY - PAUL R. MATT	
© HISTORICAL AVIATION ALBUM 1980	
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TEMPLE CITY, CALIF. 91780	

HISTORICAL  
AVIATION  
ALBUM



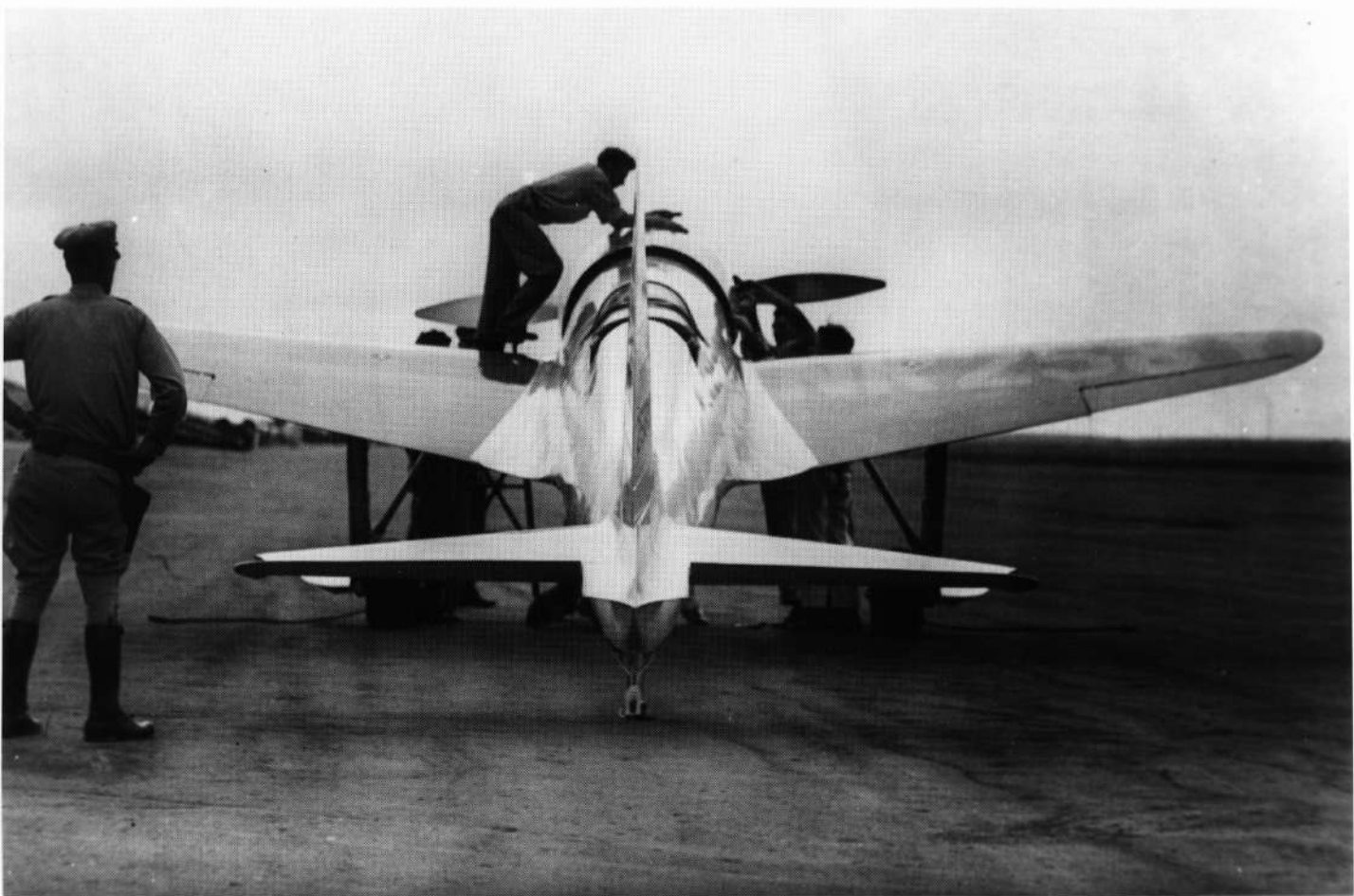
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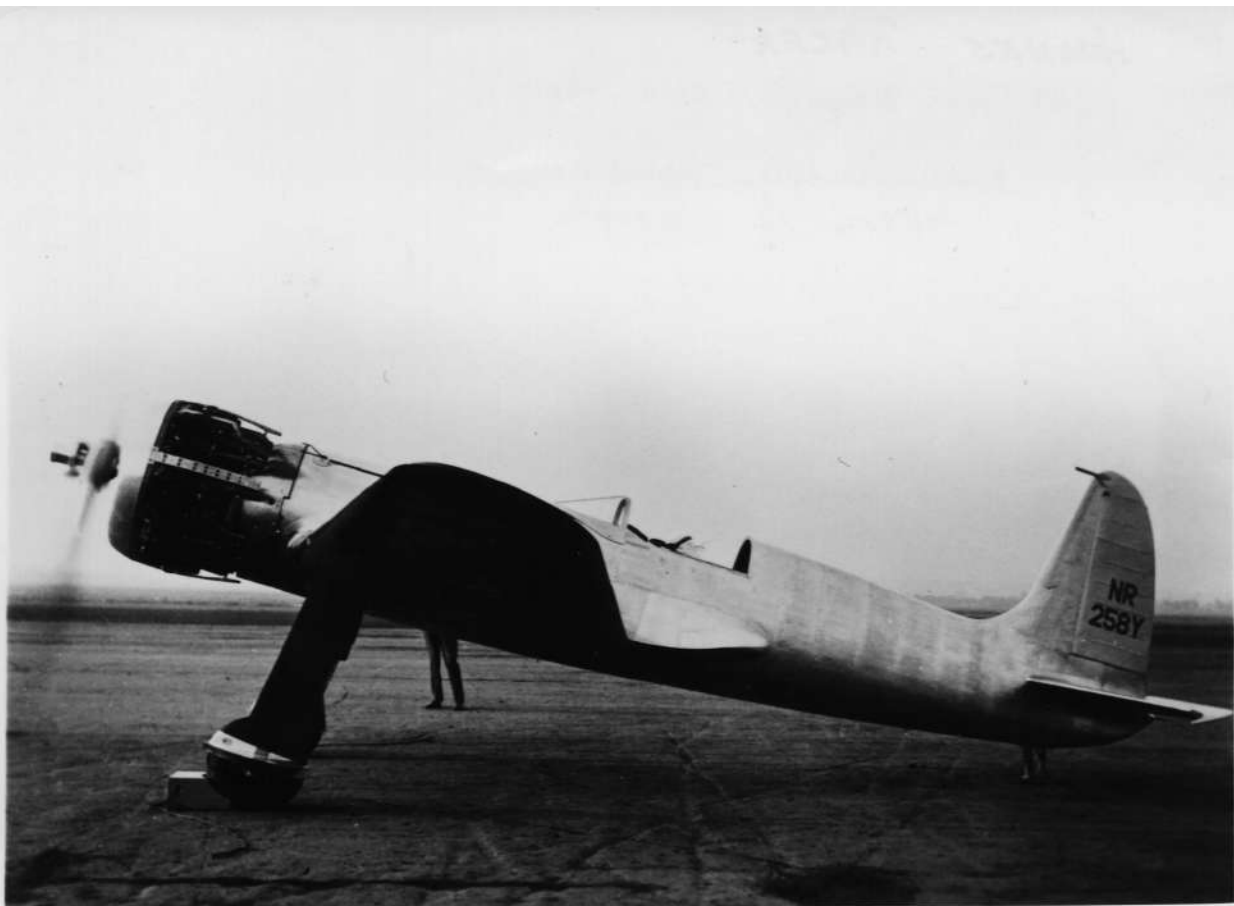


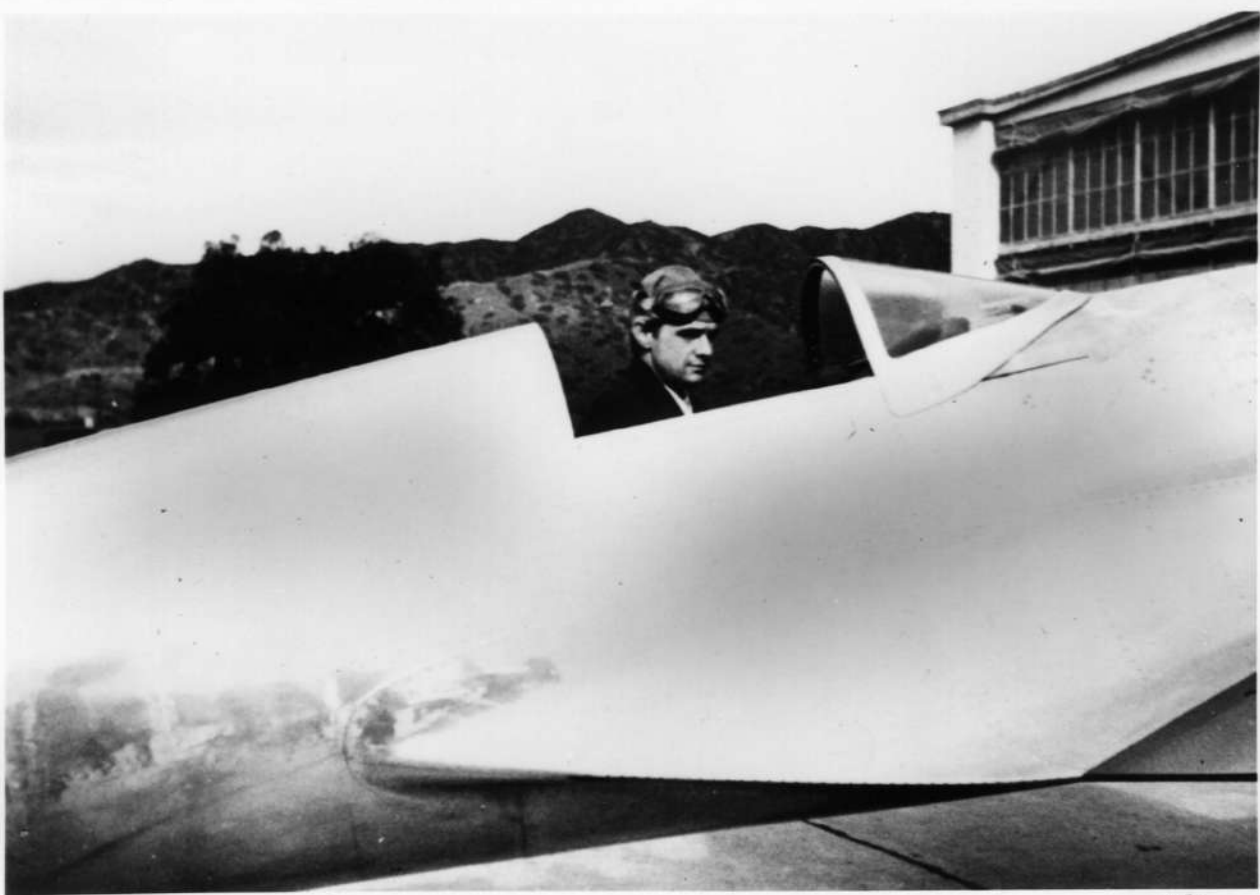
VTC







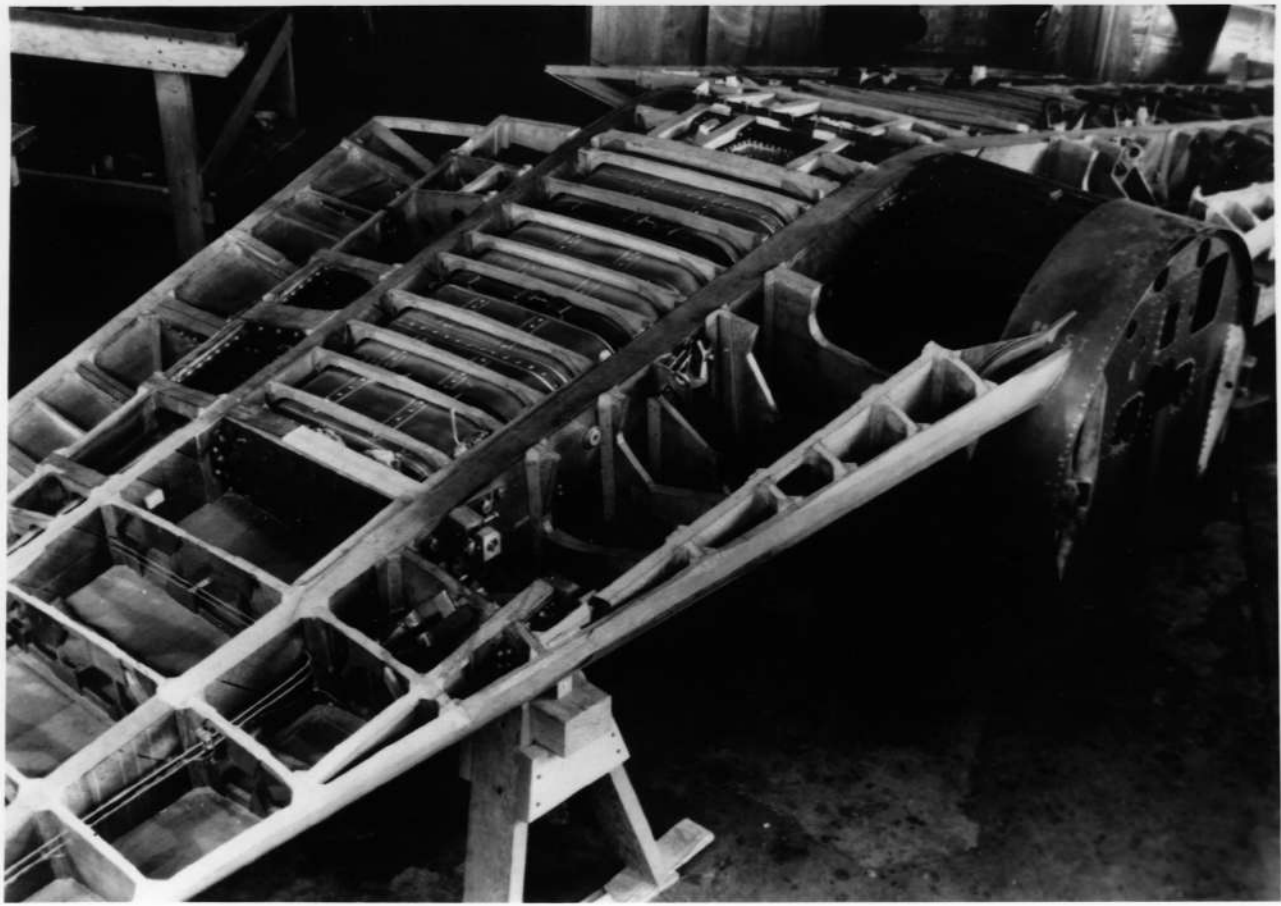




VTC







**GENERAL SPECIFICATIONS**

GROSS WEIGHT 5492 lbs.  
 WEIGHT EMPTY 3564.5 lbs.  
 TOP SPEED, AVERAGE,  
 OVER MEASURED COURSE 352.4 mph  
 WING AREA 138 sq. ft.  
 WING LOADING 39.8 lbs./sq. ft.  
 POWER LOADING 7.85 lbs./HP  
 FUEL CAPACITY 250 gals.  
 OIL CAPACITY 30 gals.

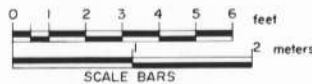
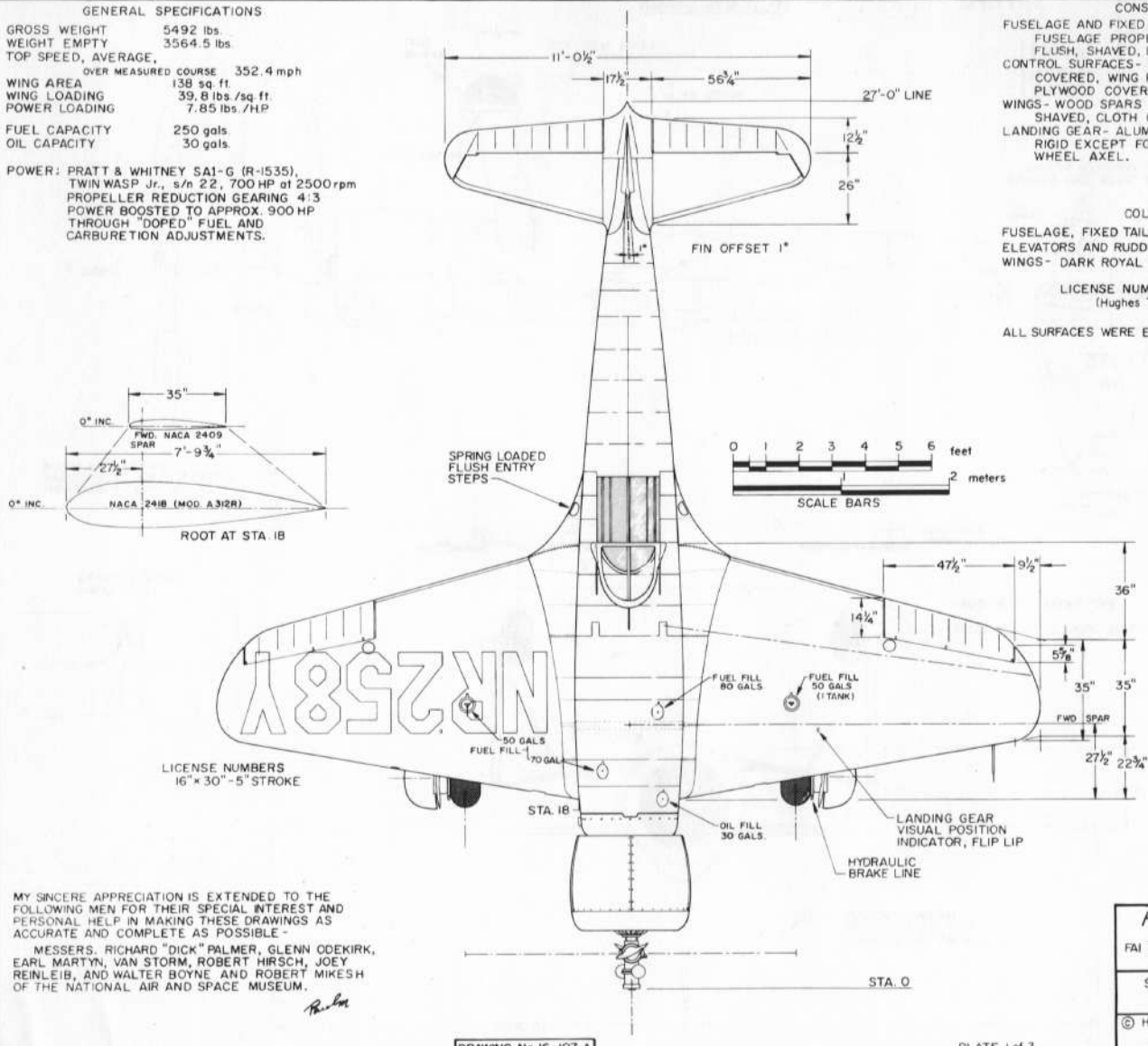
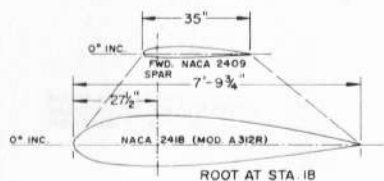
POWER: PRATT & WHITNEY SA1-G (R-1535),  
 TWIN WASP Jr., s/n 22, 700 HP at 2500rpm  
 PROPELLER REDUCTION GEARING 4:3  
 POWER BOOSTED TO APPROX. 900HP  
 THROUGH "DOPED" FUEL AND  
 CARBURETION ADJUSTMENTS.

**CONSTRUCTION NOTES**

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



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*R. Matt*



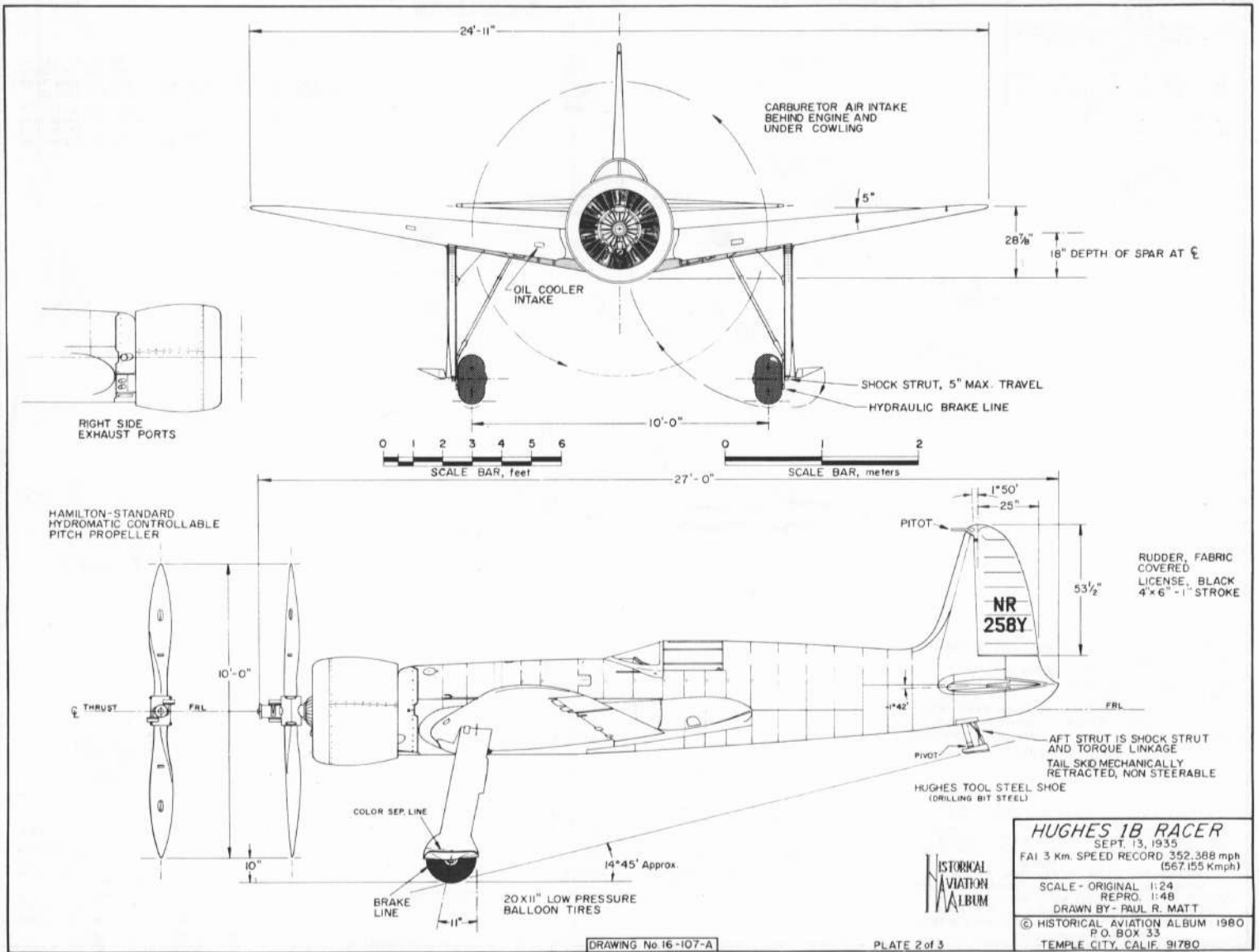
**HUGHES 1B RACER**  
 SEPT. 13, 1935  
 FAI 3 Km. SPEED RECORD 352.388 mph  
 (567.155 Km/h)

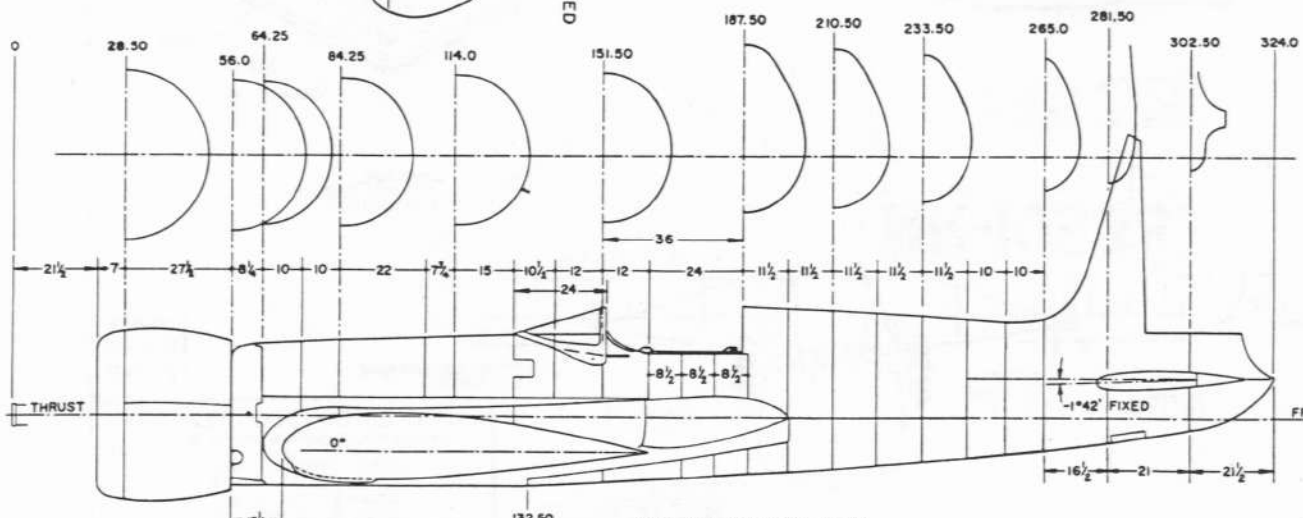
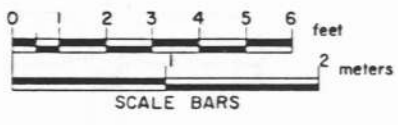
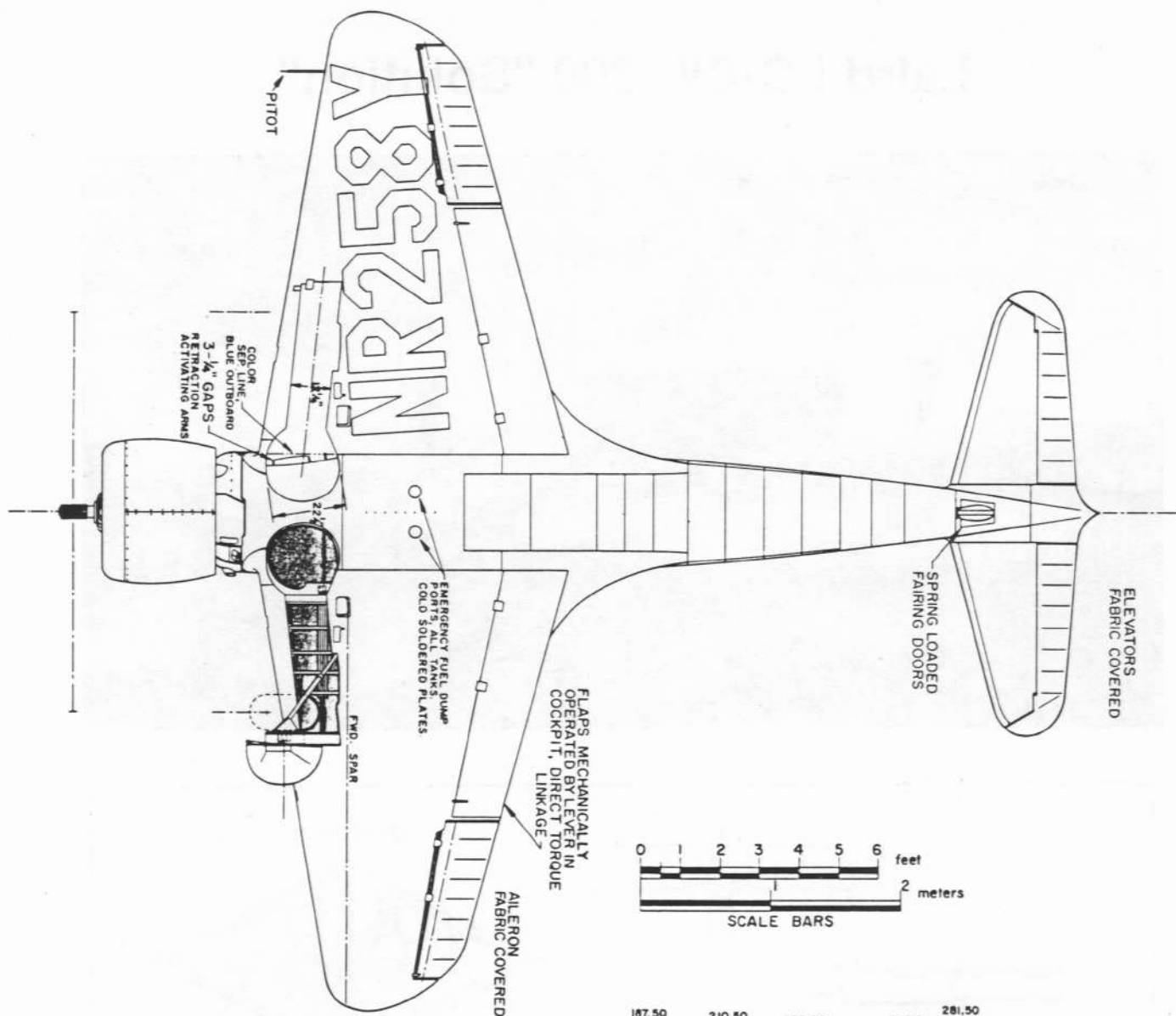
SCALE - ORIGINAL 1:24  
 REPRD. 1:48  
 DRAWN BY - PAUL R. MATT

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DRAWING No. 16-107-A

PLATE 1 of 3





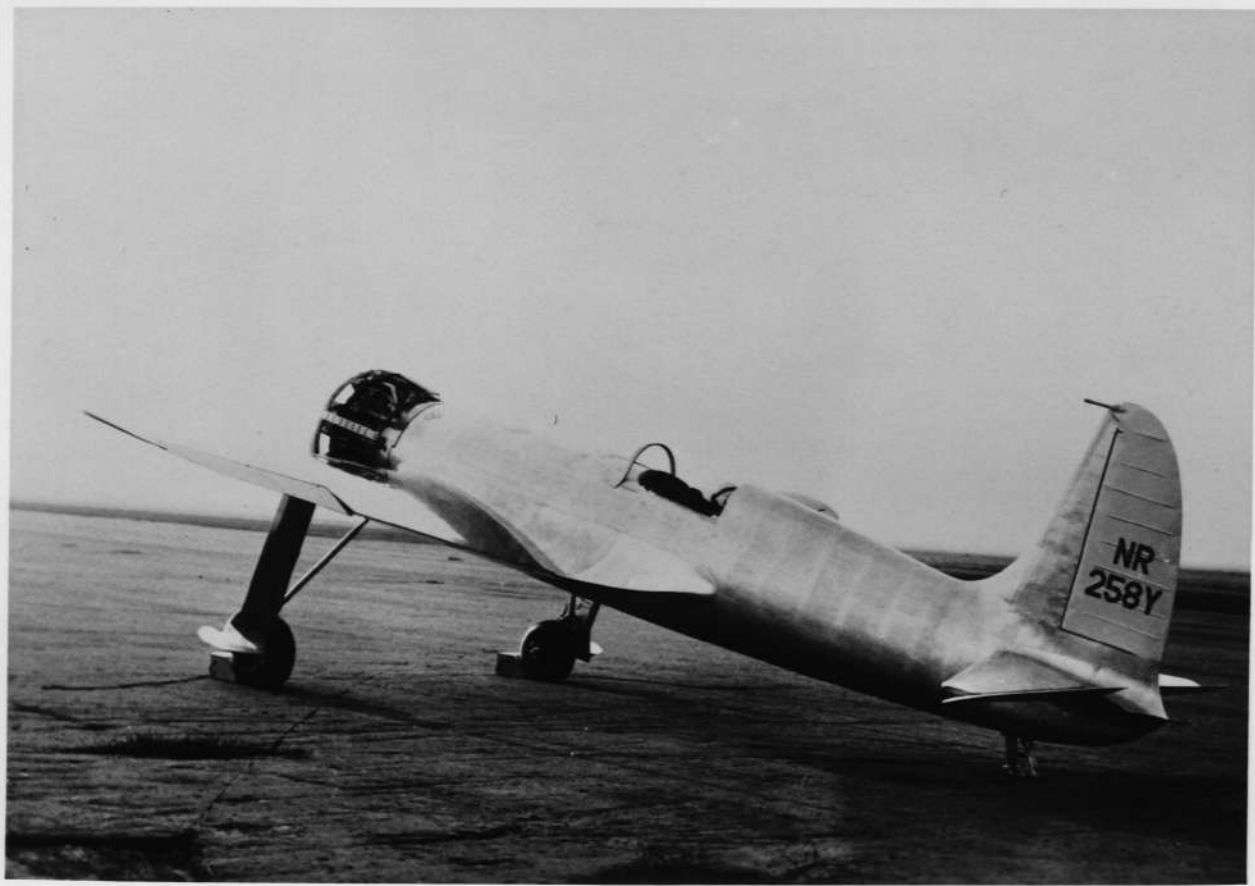
STRAIGHT KEEL LINE  
STA. 56 TO STA. 132.5

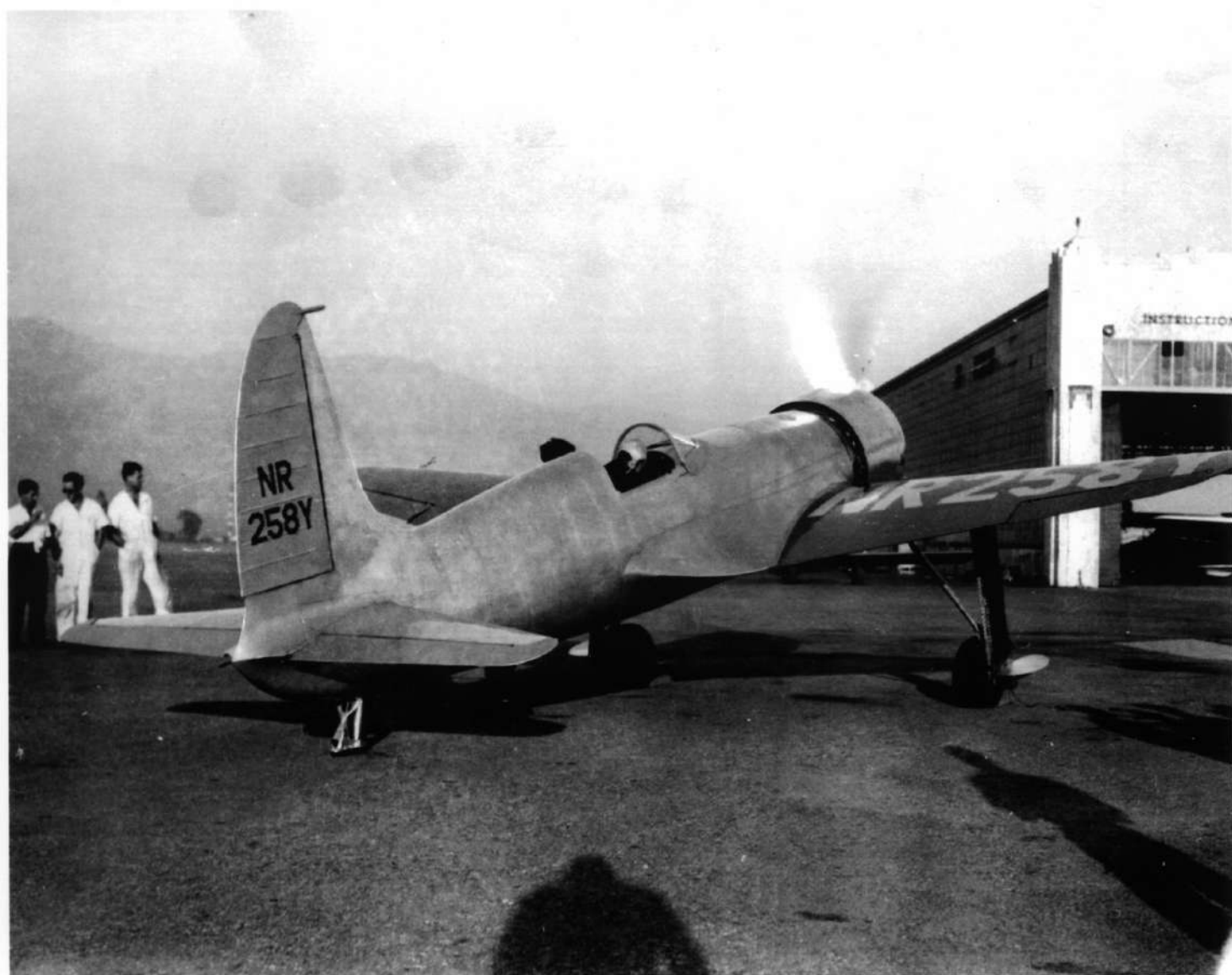
COCKPIT CANOPY SHOWN  
IN OPEN POSITION, WINDSHIELD  
SLIDES FORWARD, SIDE PANELS  
SLIDE DOWN INTO FUSELAGE

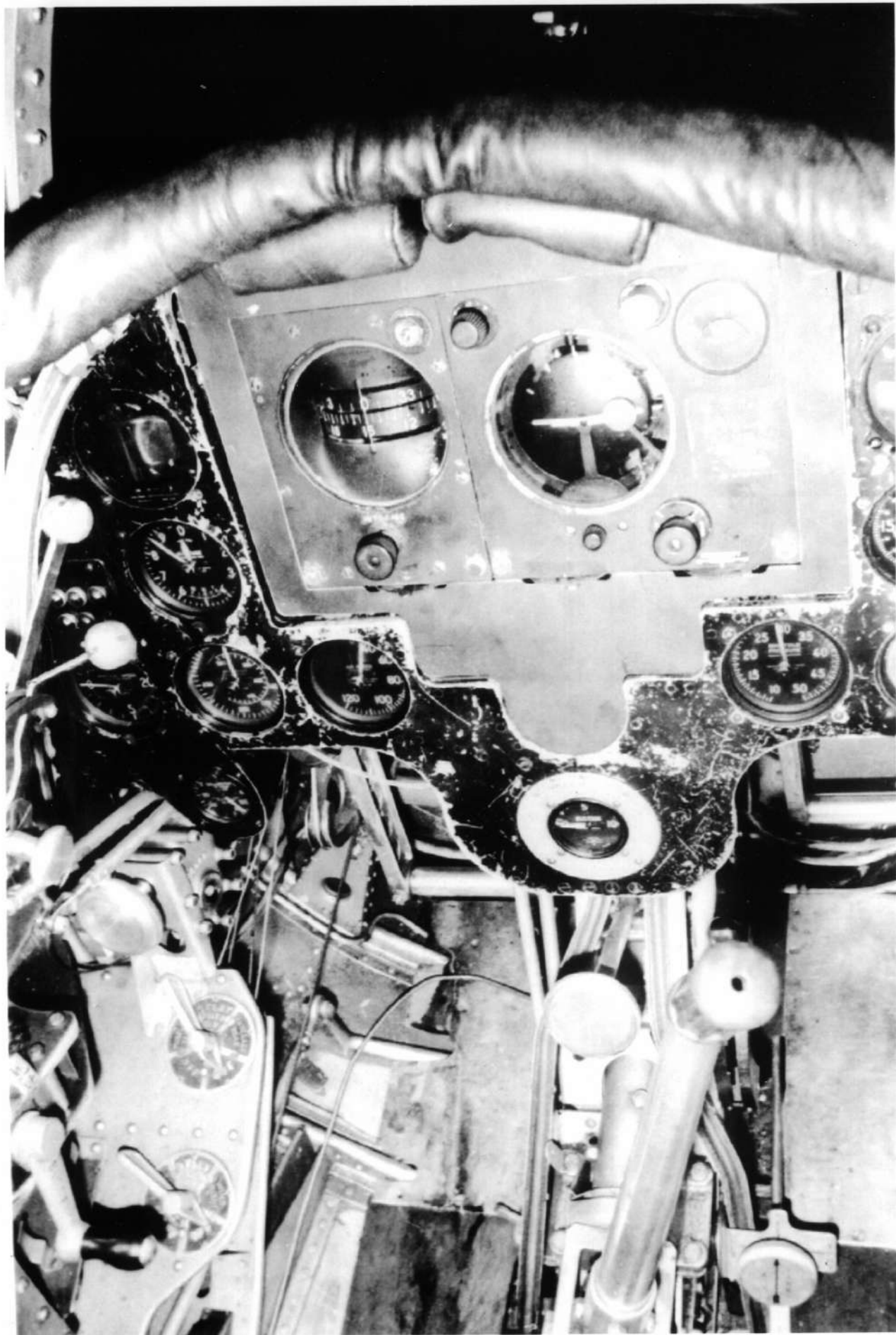
ALL DIMENSIONS IN PROFILE VIEW ARE INCHES

HISTORICAL  
AVIATION  
ALBUM

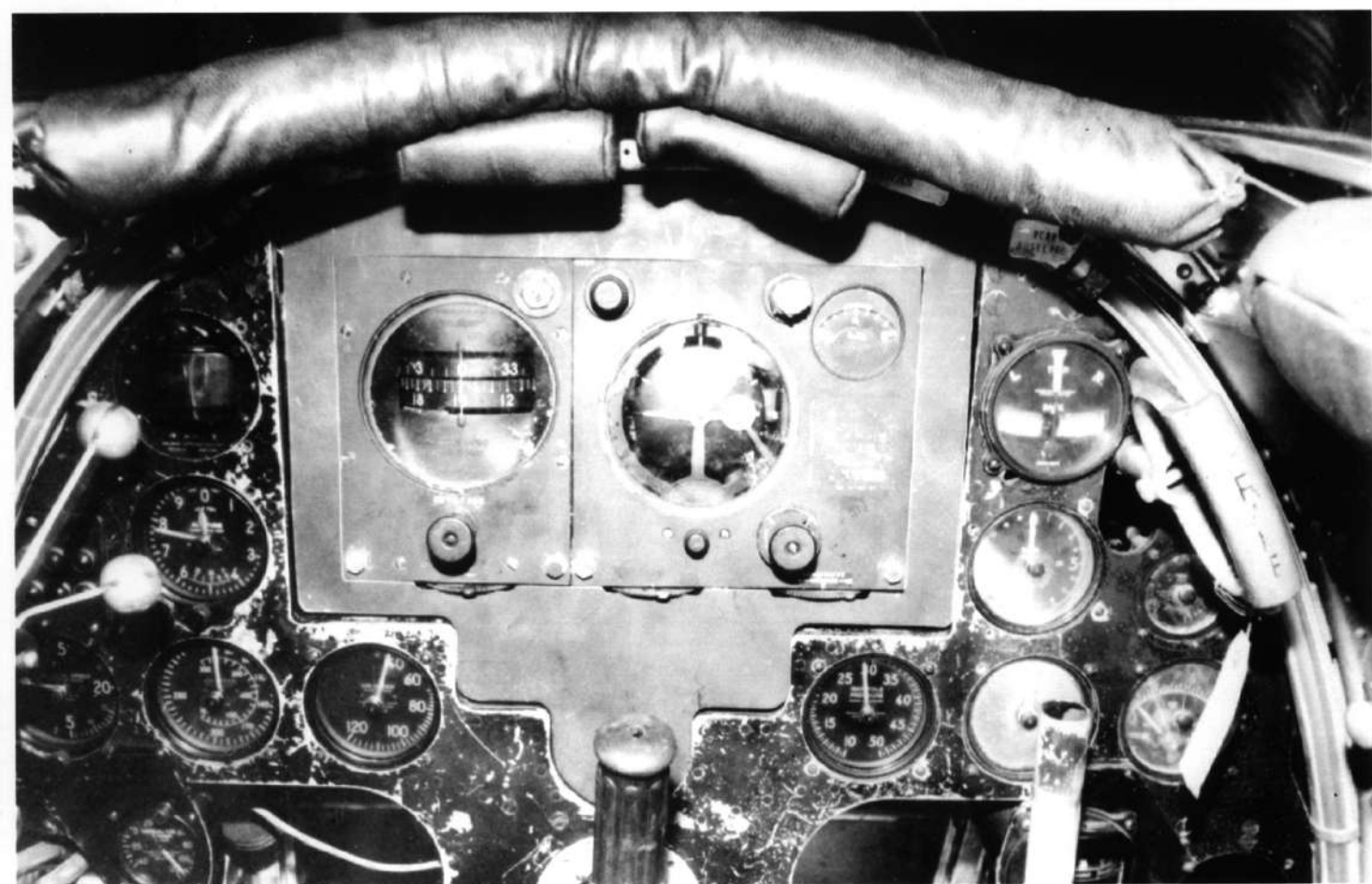
<b>HUGHES 1B RACER</b>	
SEPT. 13, 1935	
FAI 3 Km. SPEED RECORD 352.388 mph (567.155 Km/h)	
SCALE - ORIGINAL	1:24
REPRO.	1:48
DRAWN BY - PAUL R. MATT	
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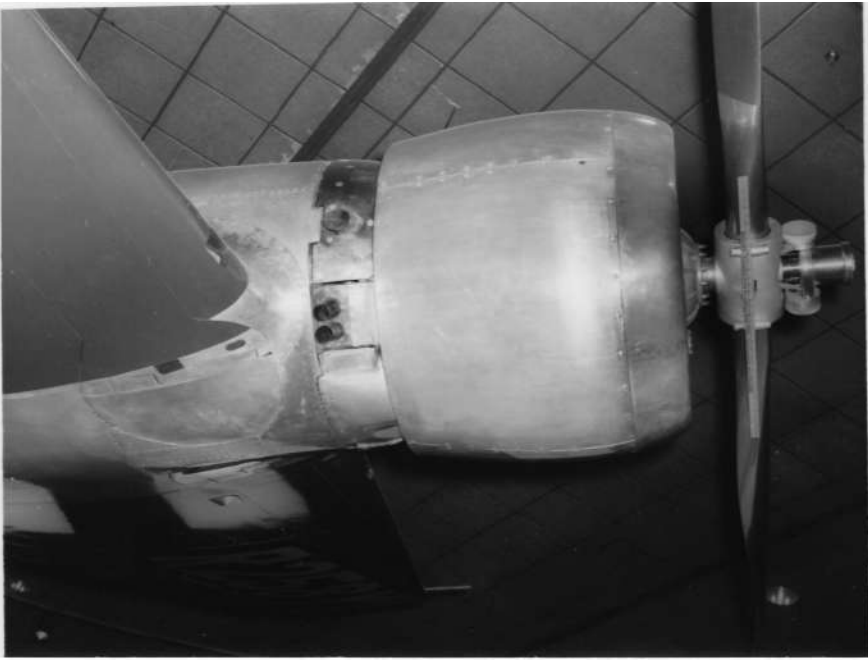












258Y



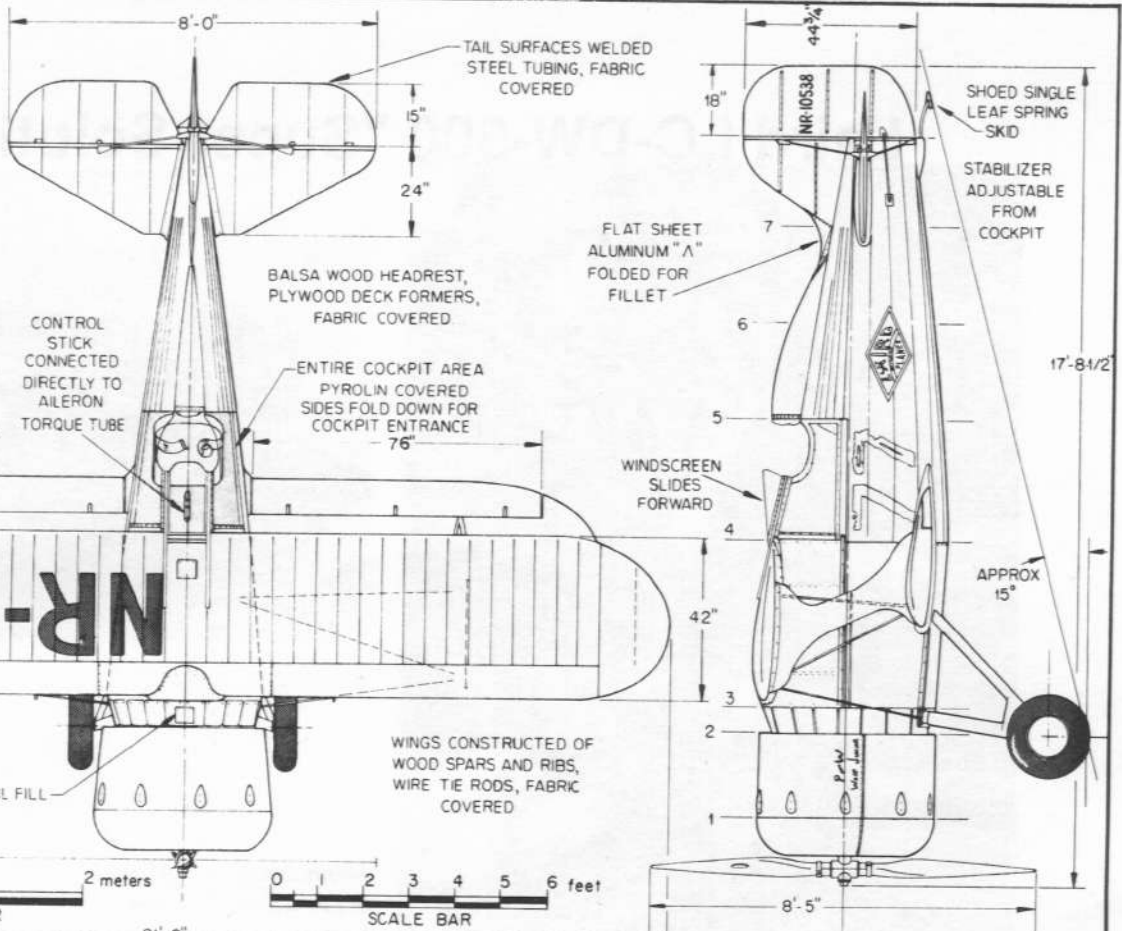


**COLORING NOTES**

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

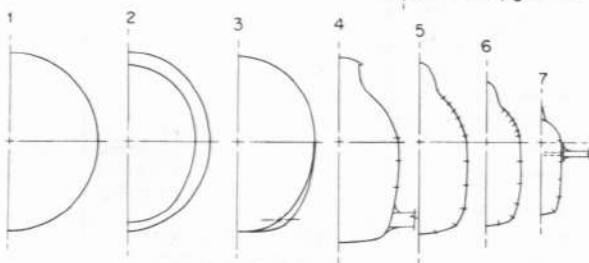
WEIGHT EMPTY .....1380 lbs.  
GROSS WEIGHT .....1845 lbs.  
FUEL CAPACITY .....50 gallons  
OIL CAPACITY ..... 7 gallons

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



1ST PLACE WINNER THOMPSON TROPHY  
RACE, CHICAGO, ILLINOIS, SEPT 1, 1930  
20 LAPS AROUND A FIVE MILE COURSE  
100 MILE TOTAL, - ELAPSED TIME: 29:43.0  
201.91 M.P.H. - PRIZE MONEY \$5,000

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



M-12 AIRFOIL  
SAME SCALE AS DRAWING



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



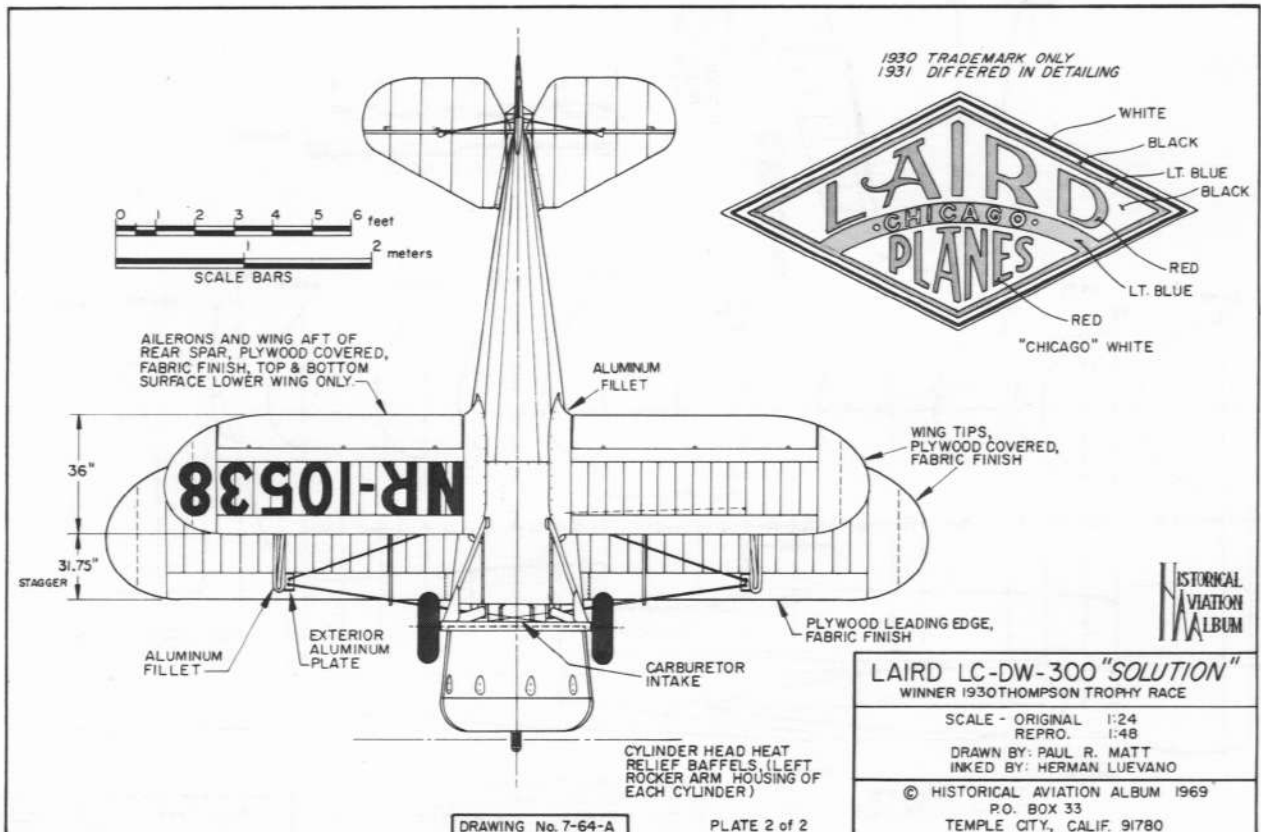
**LAIRD LC-DW-300 "SOLUTION"**  
WINNER 1930 THOMPSON TROPHY RACE

SCALE - ORIGINAL 1:24  
REPRO. 1:48

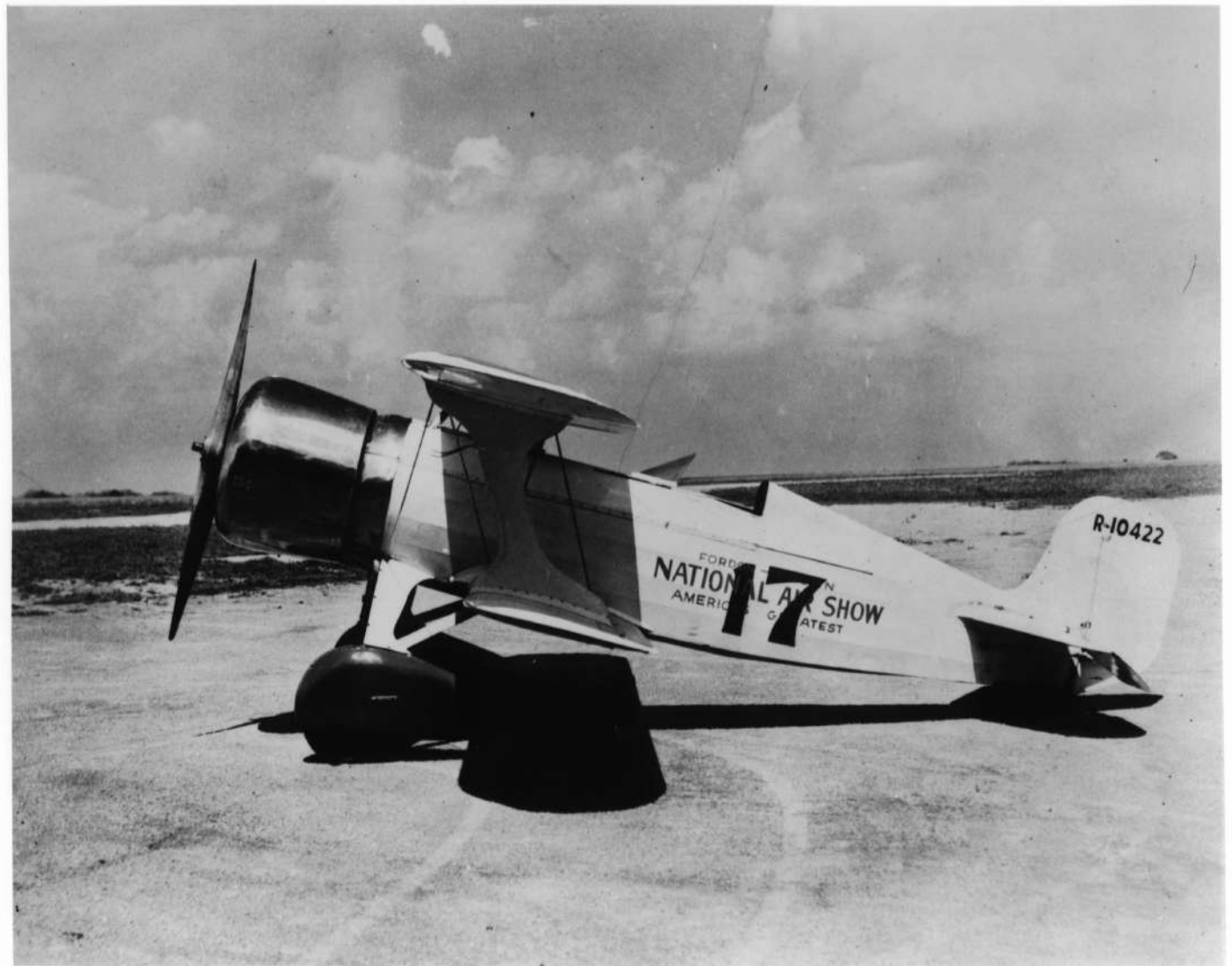
DRAWN BY: PAUL R. MATT  
INKED BY: HERMAN LUEVANO

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

# Laird LC-DW-300 "Solution"









**THE LAIRD SPEEDWING "SOLUTION"**

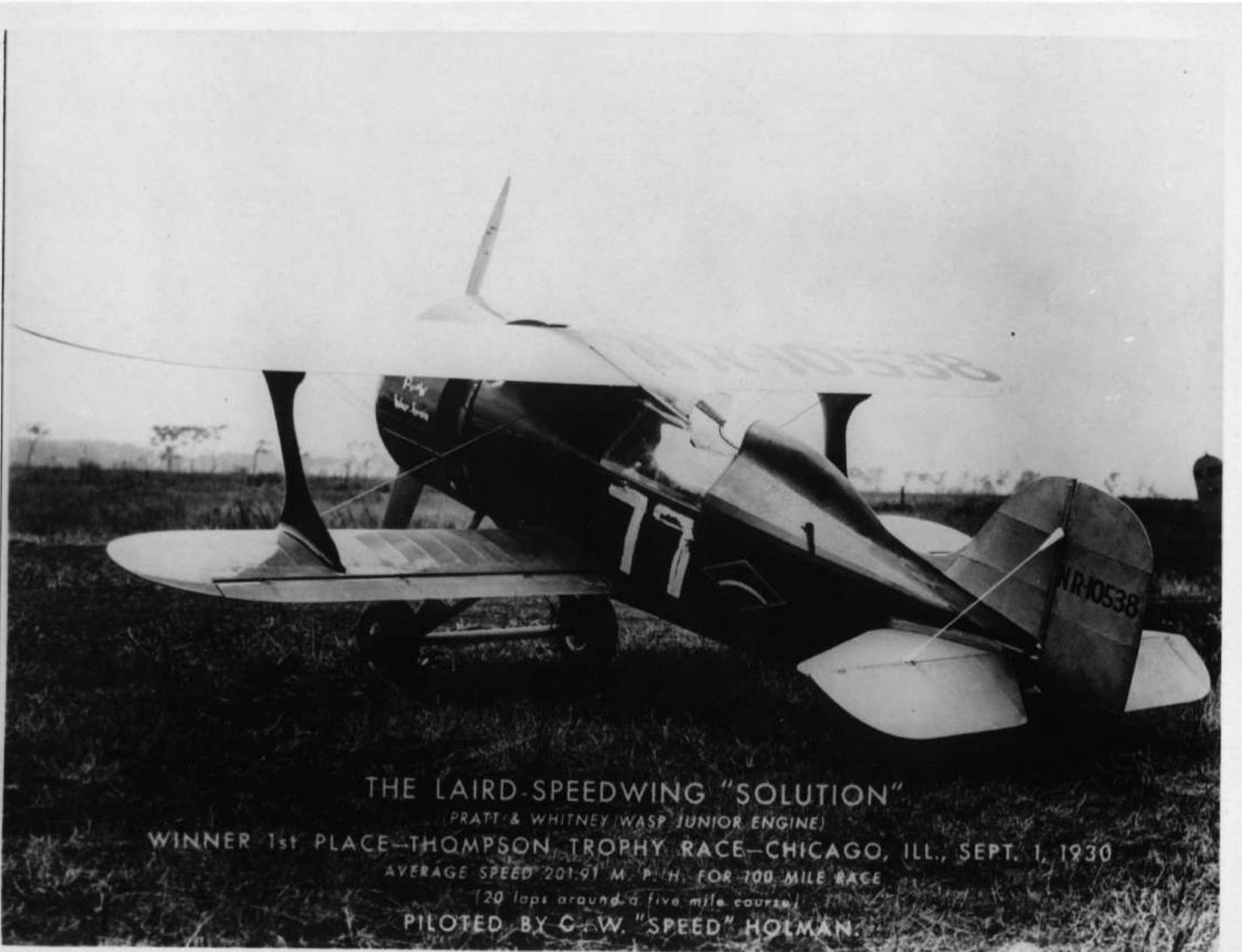
(PRATT & WHITNEY WASP JUNIOR ENGINE)

**WINNER 1st PLACE THOMPSON TROPHY RACE - CHICAGO, ILL., SEPT. 1, 1930**

AVERAGE SPEED 201.91 M. P. H. FOR 100 MILE RACE

(20 laps around a five mile course)

**PILOTED BY C. W. "SPEED" HOLMAN**



THE LAIRD-SPEEDWING "SOLUTION"

(PRATT & WHITNEY WASP JUNIOR ENGINE)

WINNER 1st PLACE—THOMPSON TROPHY RACE—CHICAGO, ILL., SEPT. 1, 1930

AVERAGE SPEED 201.91 M. P. H. FOR 100 MILE RACE

(20 laps around a five mile course)

PILOTED BY C. W. "SPEED" HOLMAN.



THE LAIRD SPEEDWING "SOLUTION"

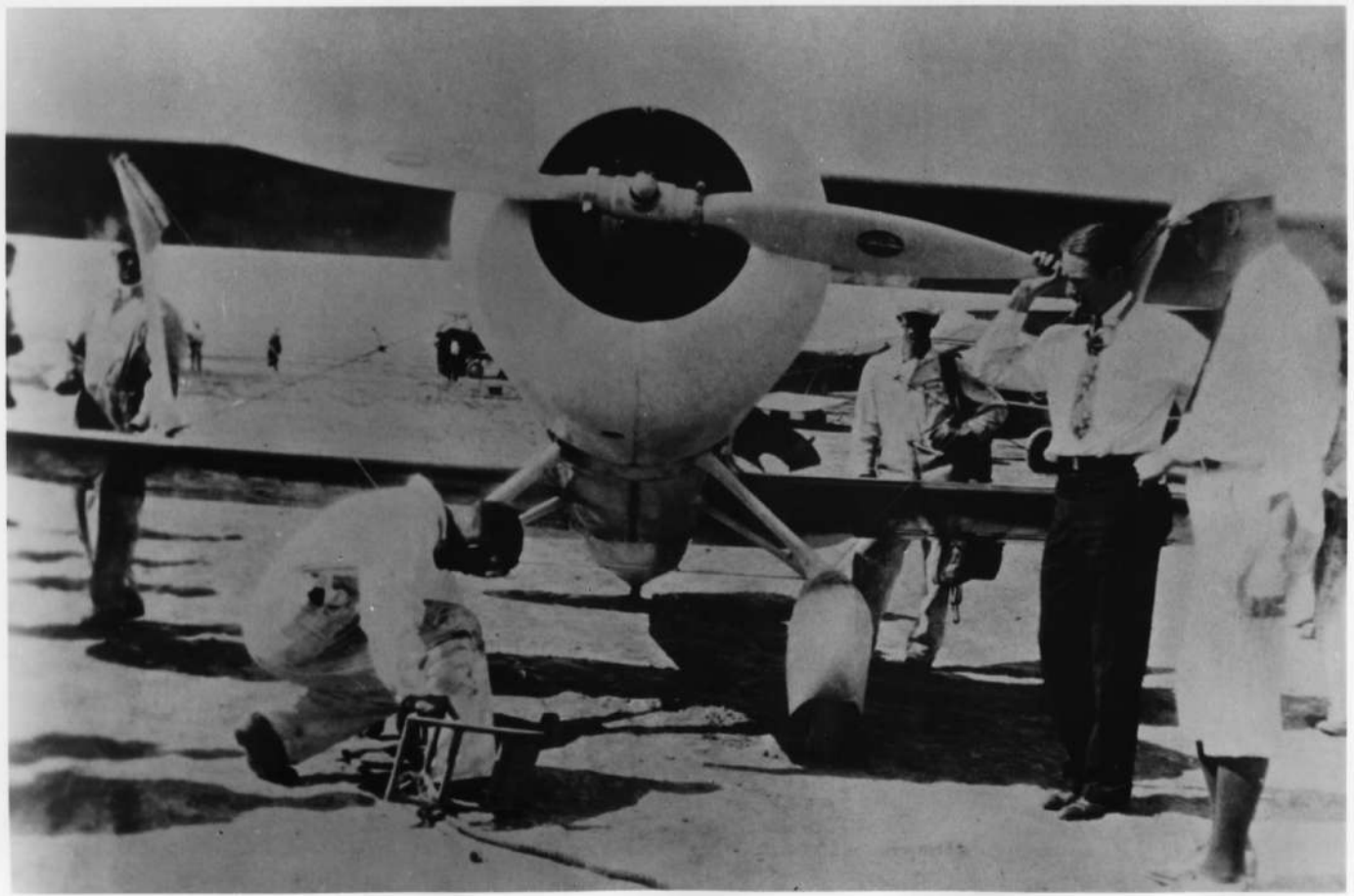
(PRATT & WHITNEY WASP JUNIOR ENGINE)

WINNER 1st PLACE—THOMPSON TROPHY RACE—CHICAGO, ILL., SEPT. 1, 1930

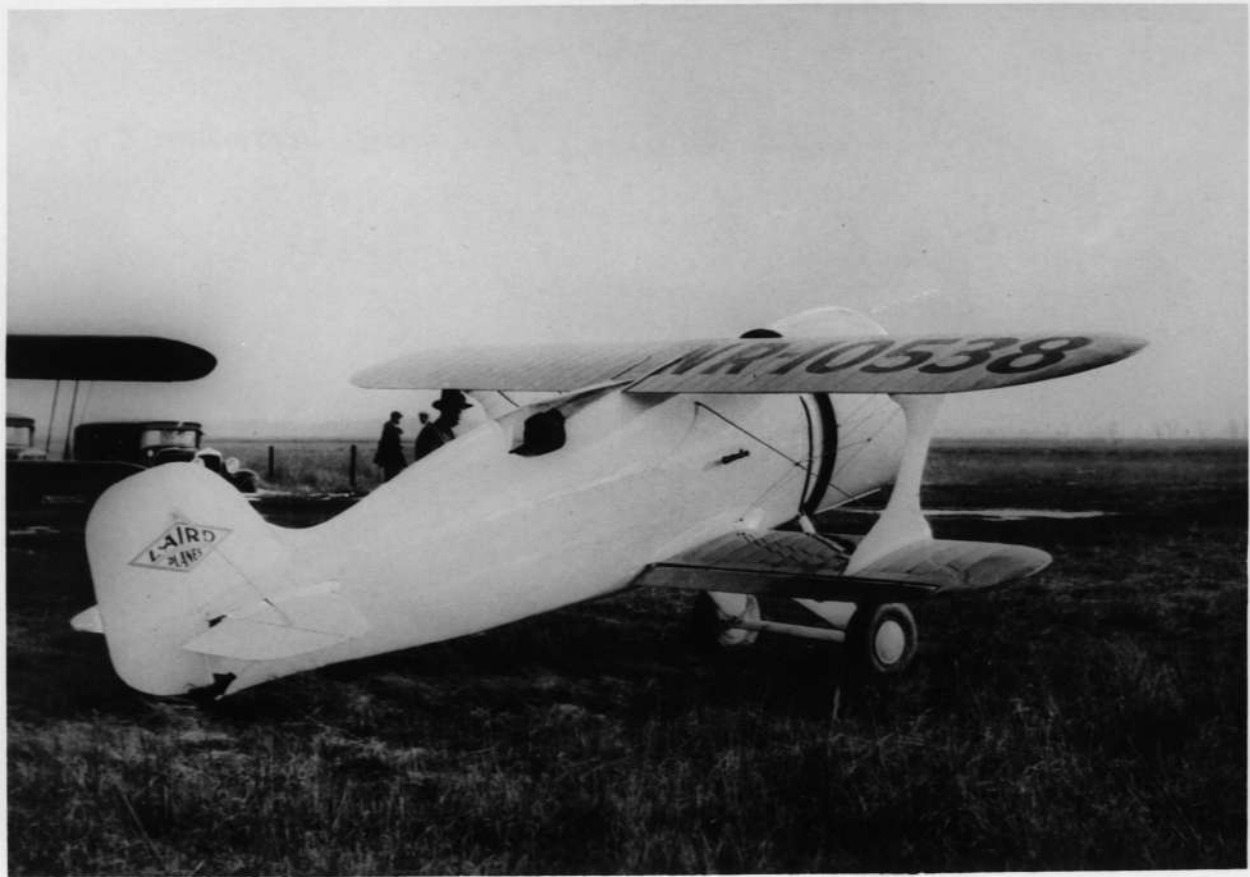
AVERAGE SPEED 201.91 M. P. H. FOR 100 MILE RACE

(20 laps around a five mile course)

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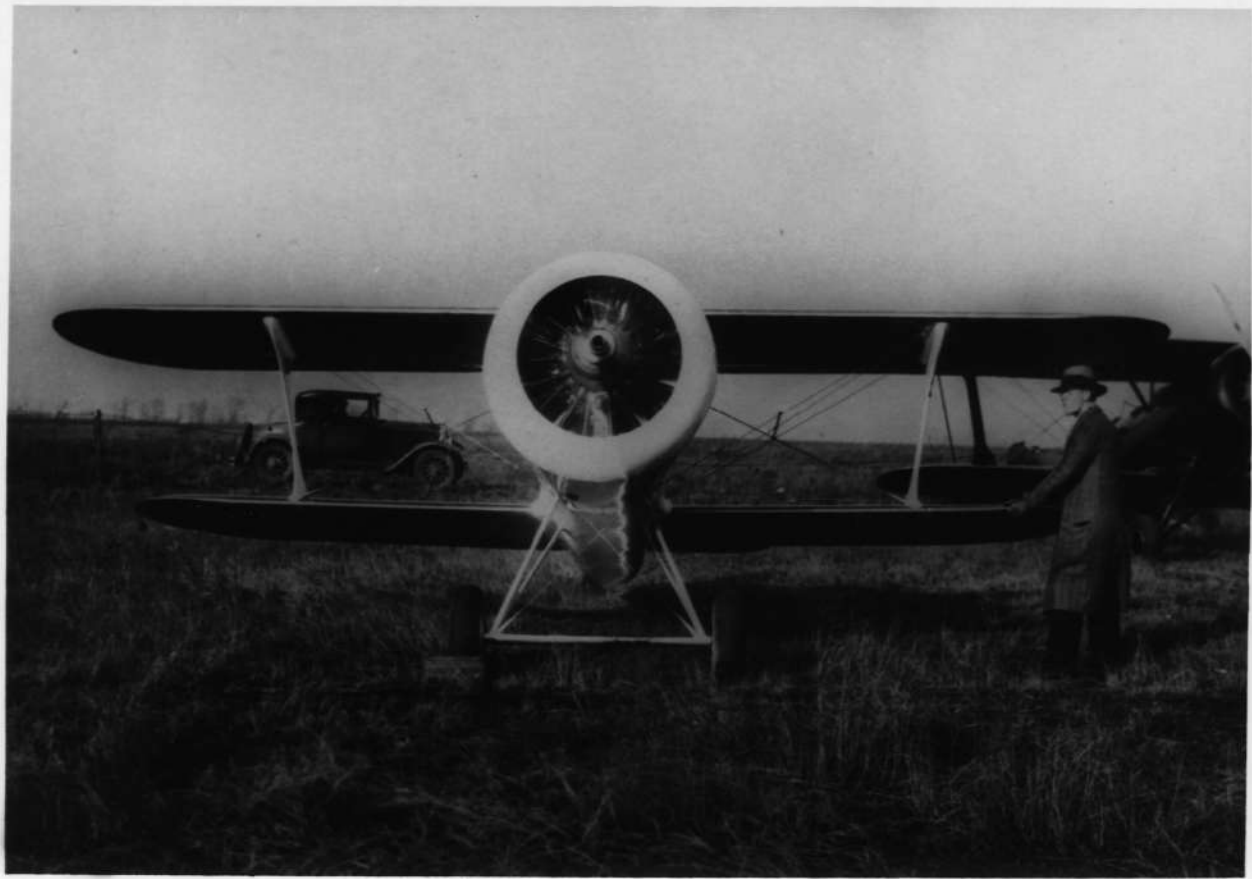












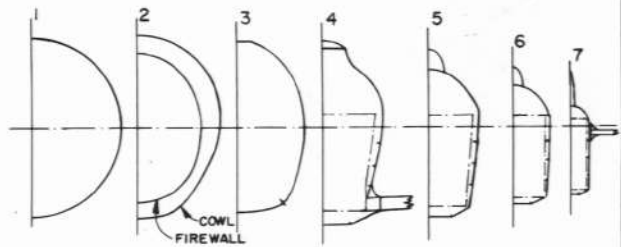
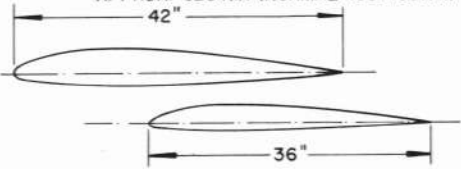
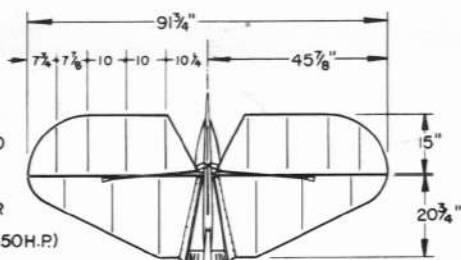




GENERAL SPECIFICATIONS  
BENDIX TROPHY CONDITION

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.)

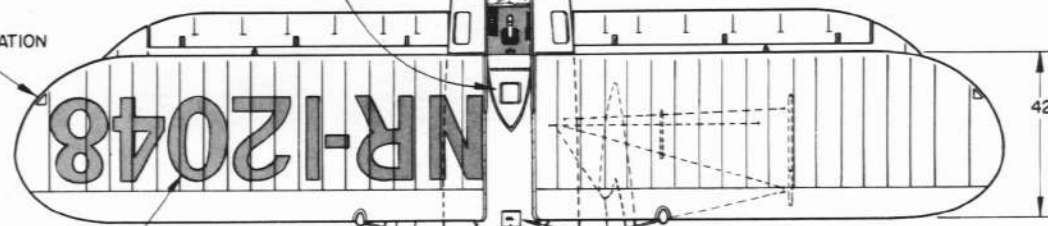
WINNER BENDIX TROPHY RACE, BURBANK, CALIF. TO CLEVELAND, OHIO, SEPT. 4, 1931, THENCE ON TO NEWARK, N. J., 2,882 MILES IN 11 HRS., 16 MINS. FOR FULL TRANSCONTINENTAL SPEED RECORD. AVERAGE SPEED FOR BENDIX RACE 223.038 MPH, AND 217 MPH AVERAGE FOR ENTIRE FLIGHT



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

METAL FILLET  
SLIDING FUEL HATCH

INSET NAVIGATION  
LIGHT



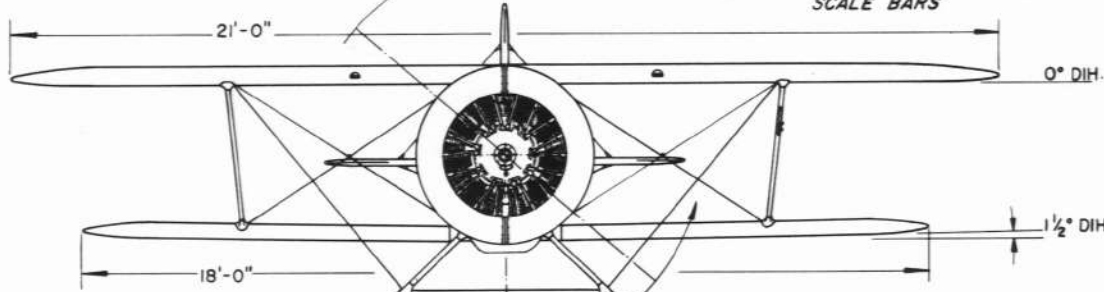
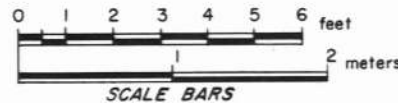
FRANKLIN GOTHIC  
STYLE LETTERING,  
VIRIDIAN GREEN

COCKPIT FRESH  
AIR INTAKE

OIL GAUGE  
OIL FILL

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 SIDES  
TO FOLD OUTWARD. CLEAR  
TO WINDSCREEN SLIDES ON  
PARALLEL SIDE TRACKS.

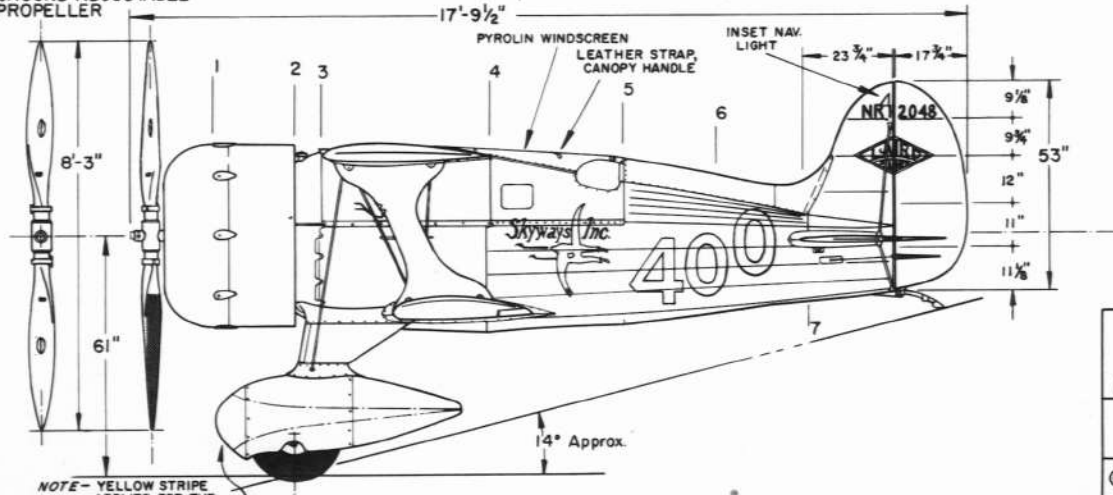


CARBURETOR INTAKE & OIL COOLER  
BEHIND BOTTOM CYLINDER WITHIN  
COWL.

PROPELLER S/N 36382-36385  
DESIGN No. 21A1-7

HAMILTON-STANDARD  
GROUND ADJUSTABLE  
PROPELLER

6.50 x 10"  
B.F. GOODRICH  
TIRES



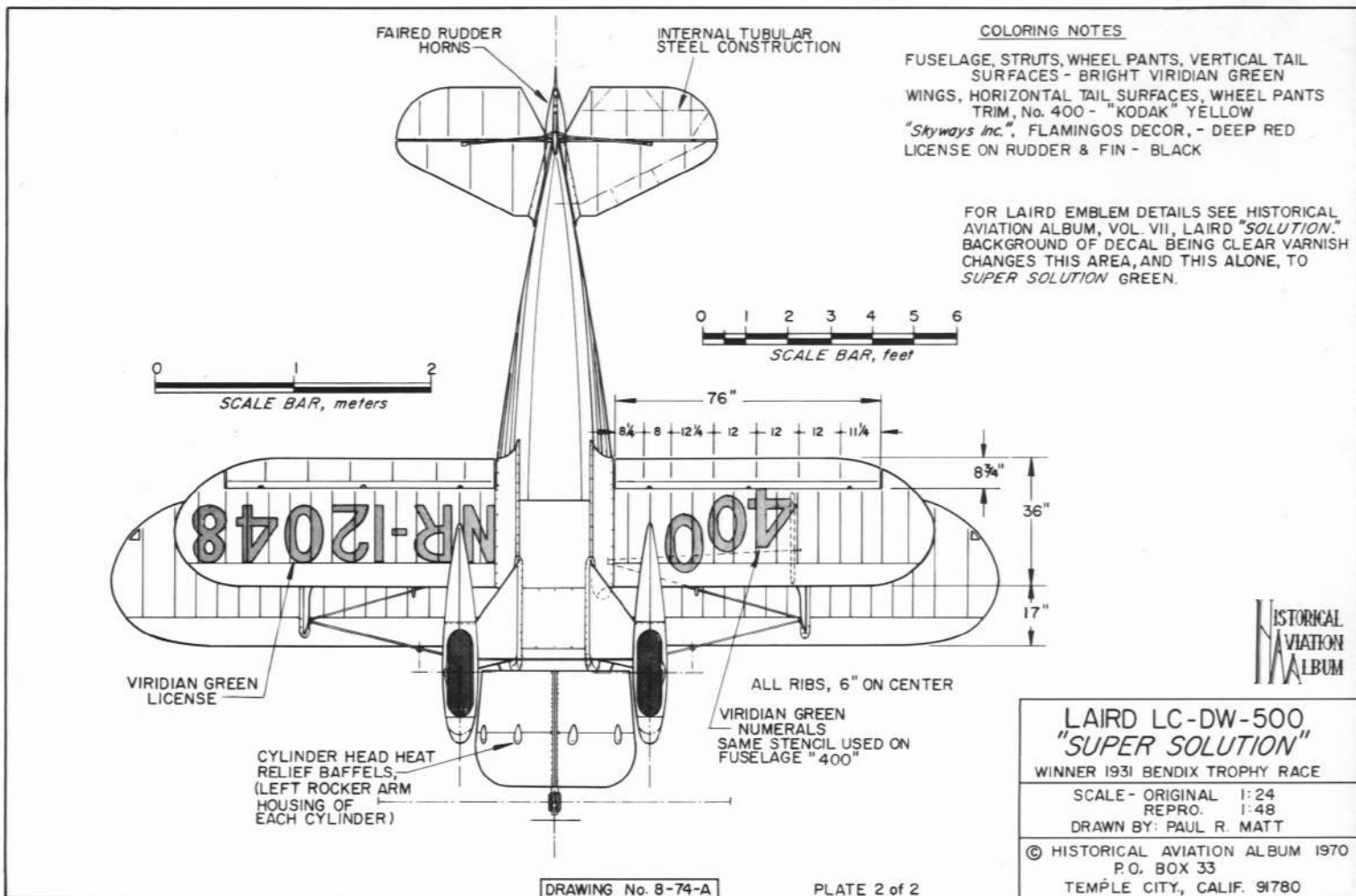
OUR SINCERE APPRECIATION IS  
EXTENDED TO MAJ. ROBERT HIRSCH,  
USAF RET., MAJ. TRUMAN C. WEAVER,  
USAF RET., E. M. "MATTY" LAIRD AND  
EV. CASSENGERES (CAHA) FOR  
THEIR ASSISTANCE IN THE PREPARA-  
TION OF THESE DRAWINGS

NOTE - YELLOW STRIPE  
APPLIED FOR THE  
THOMPSON TROPHY  
RACE ONLY

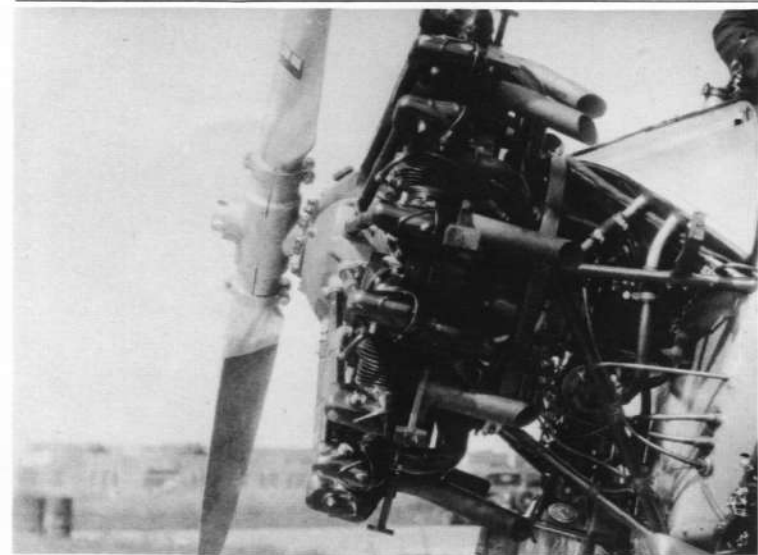
HISTORICAL  
AVIATION  
ALBUM

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





HISTORICAL AVIATION ALBUM



All photos courtesy of P & W via CAHA



THE SUPER SOLUTION AT THE P & W AIRCRAFT PLANT, OCT. 1931

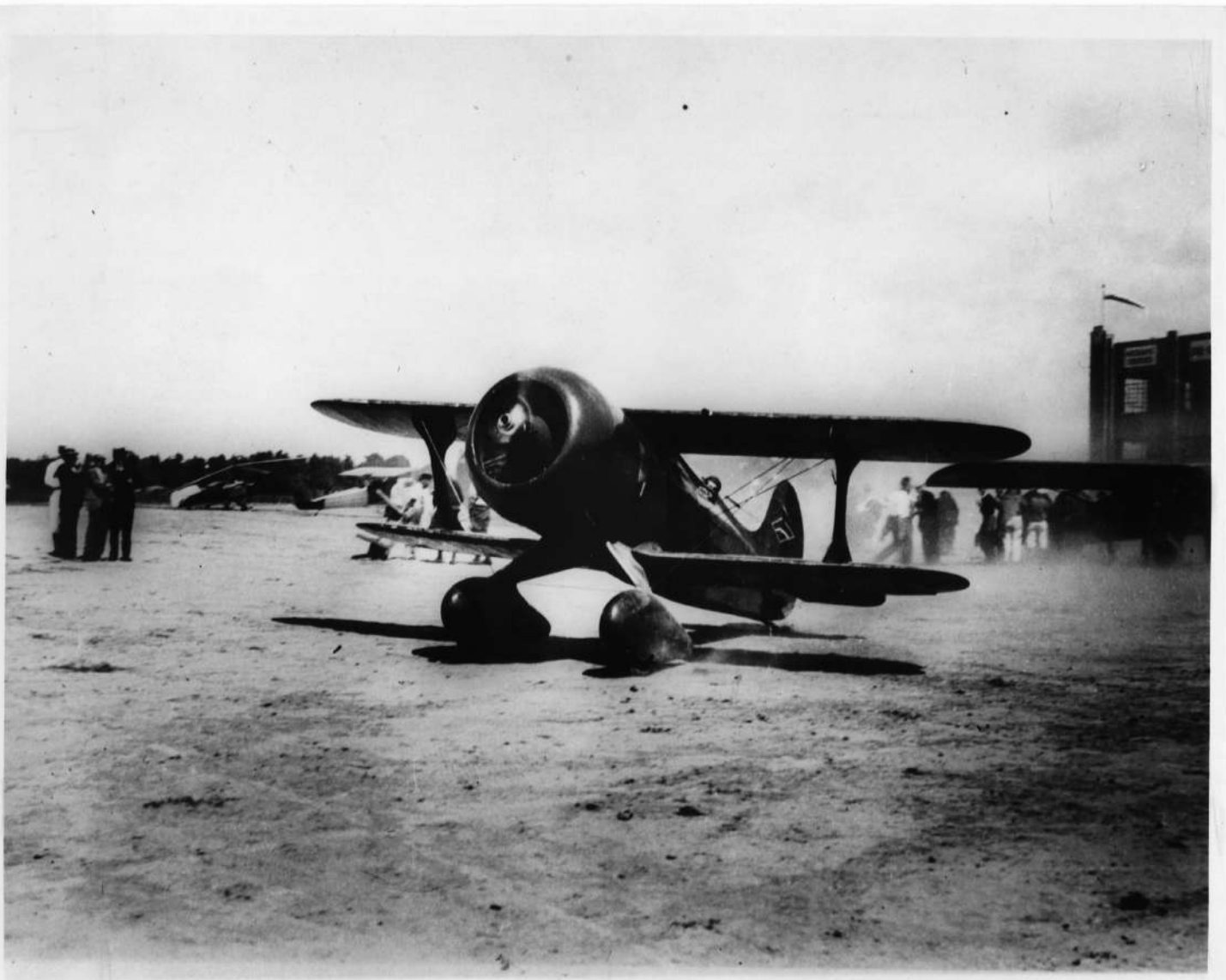


Photo #8  
THE LAIRD SUPER SOLUTION Following engine overhaul  
preparatory to Jimmy Doolittle's Tri-Capitol record setting  
flight, the SUPER SOLUTION sits parked at the Pratt & Whitney  
Aircraft Plant in East Hartford, Connecticut.



Photo #7  
**JIMMY DOOLITTLE AND THE SUPER SOLUTION AT NEWARK, N.J.**  
A victorious Jimmy Doolittle is greeted by dignitaries upon setting the transcontinental speed record of 11 hours 15 minutes in the SUPER SOLUTION, winning the first Bendix Trophy Race in the process. Later in the afternoon Jimmy flew back to Cleveland, travelling a total of 2882 miles in that day.

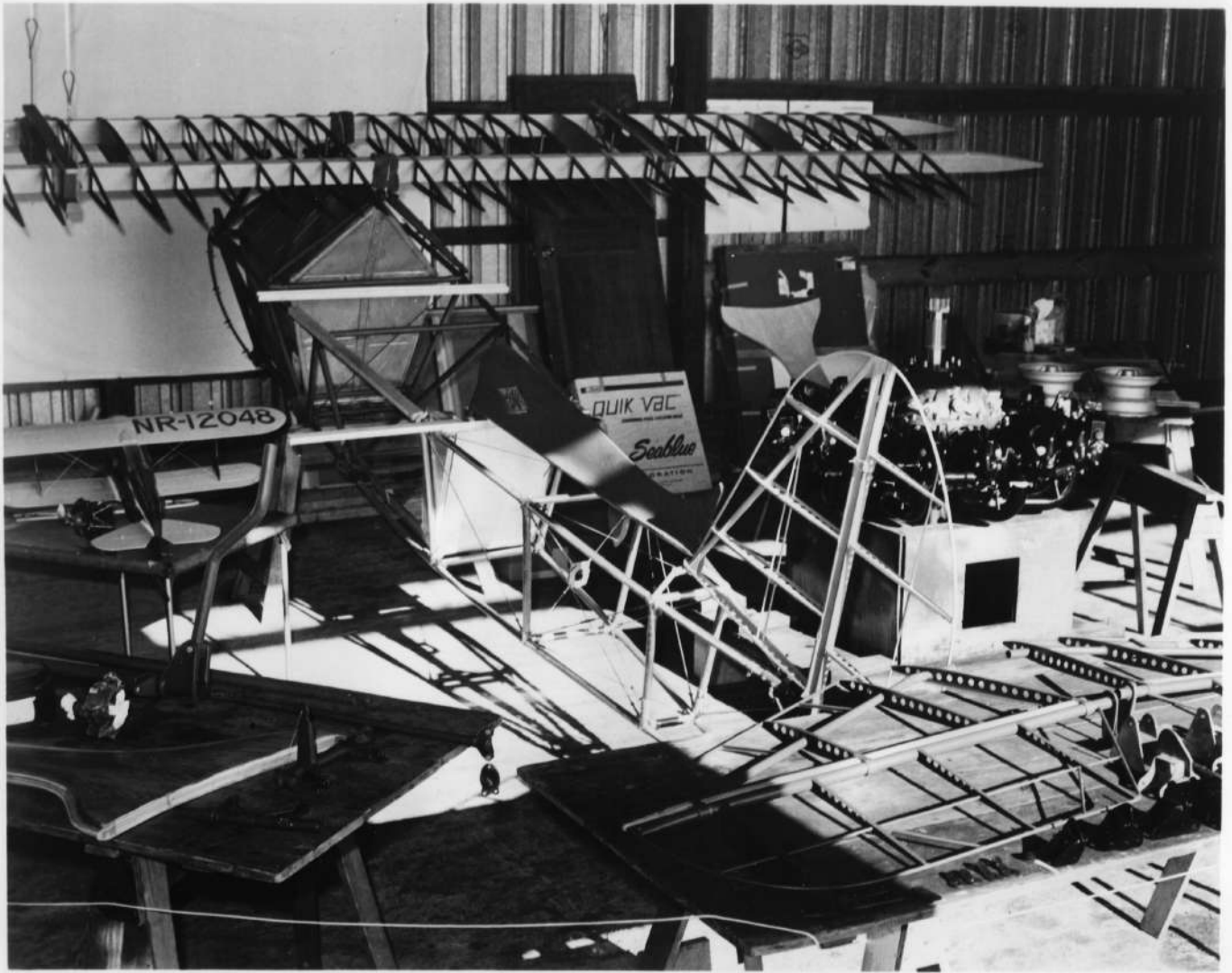




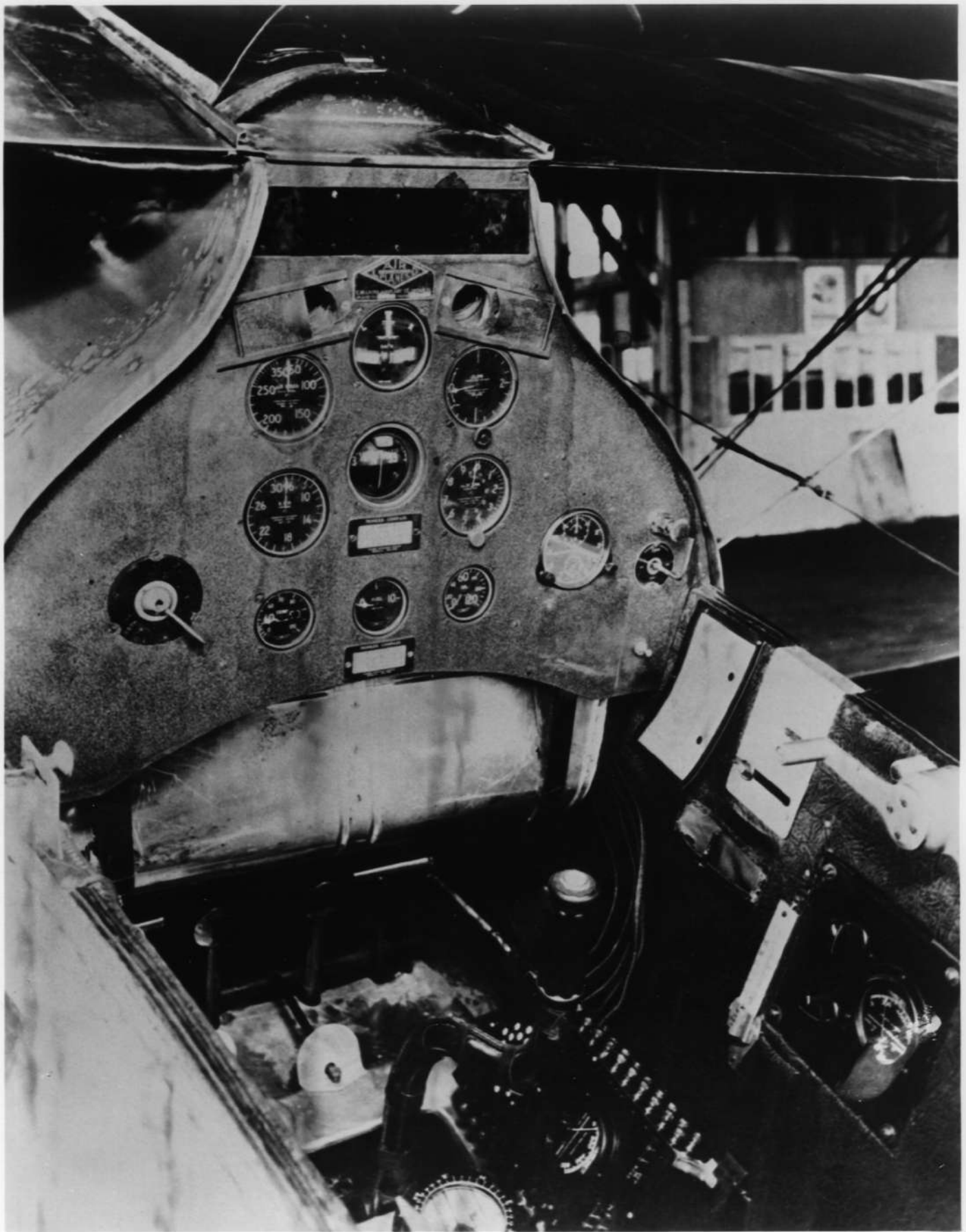


This plane was flown 340 MPH  
Highest speed ever attained by  
a land plane June 26-1933









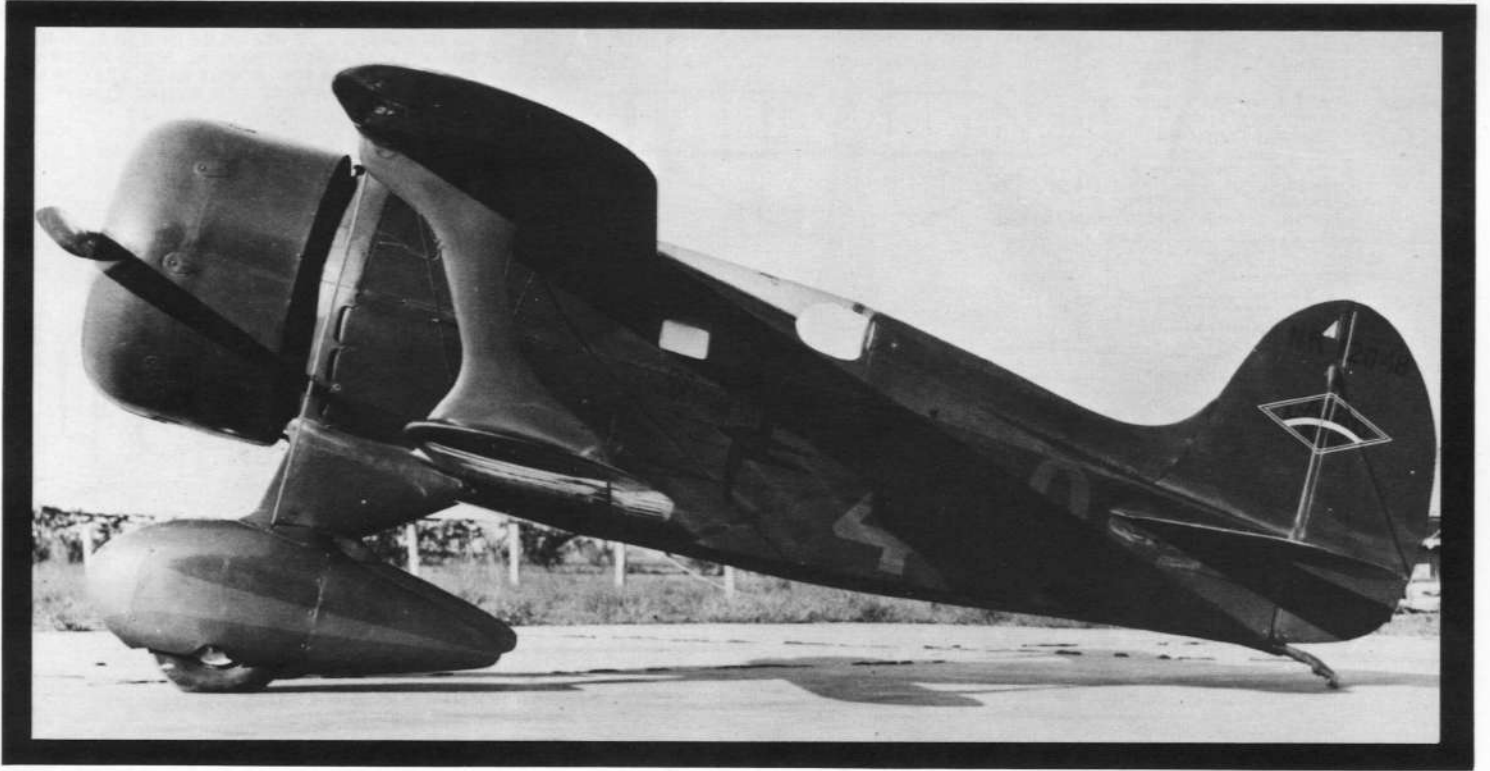






*Laird Super Solution*

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



The green and yellow Laird Super Solution in full Thompson Trophy Race configuration. She had bad forward visibility but Doolittle commented he got used to it.

**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.  
 (LAIRD CONSTRUCTION LIMITS)  
 GROSS WEIGHT, OVERLOAD 4,923 lbs.  
 (TURNER'S FIGURE)  
 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. 330/350 m.p.h.  
 (LAIRD CO. & UNITED AIRCRAFT COMPUTATIONS)  
 ROSCOE TURNER'S PERSONAL CLAIM 412 m.p.h. (1939)  
 LANDING SPEED, WITH FLAPS 87 m.p.h.

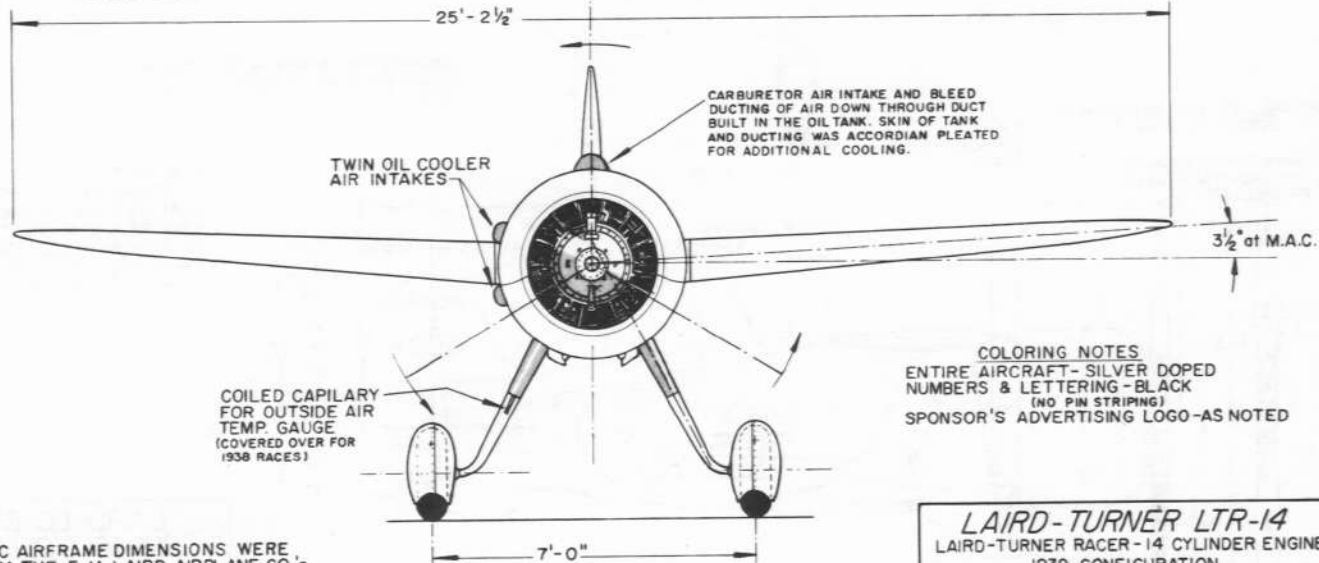
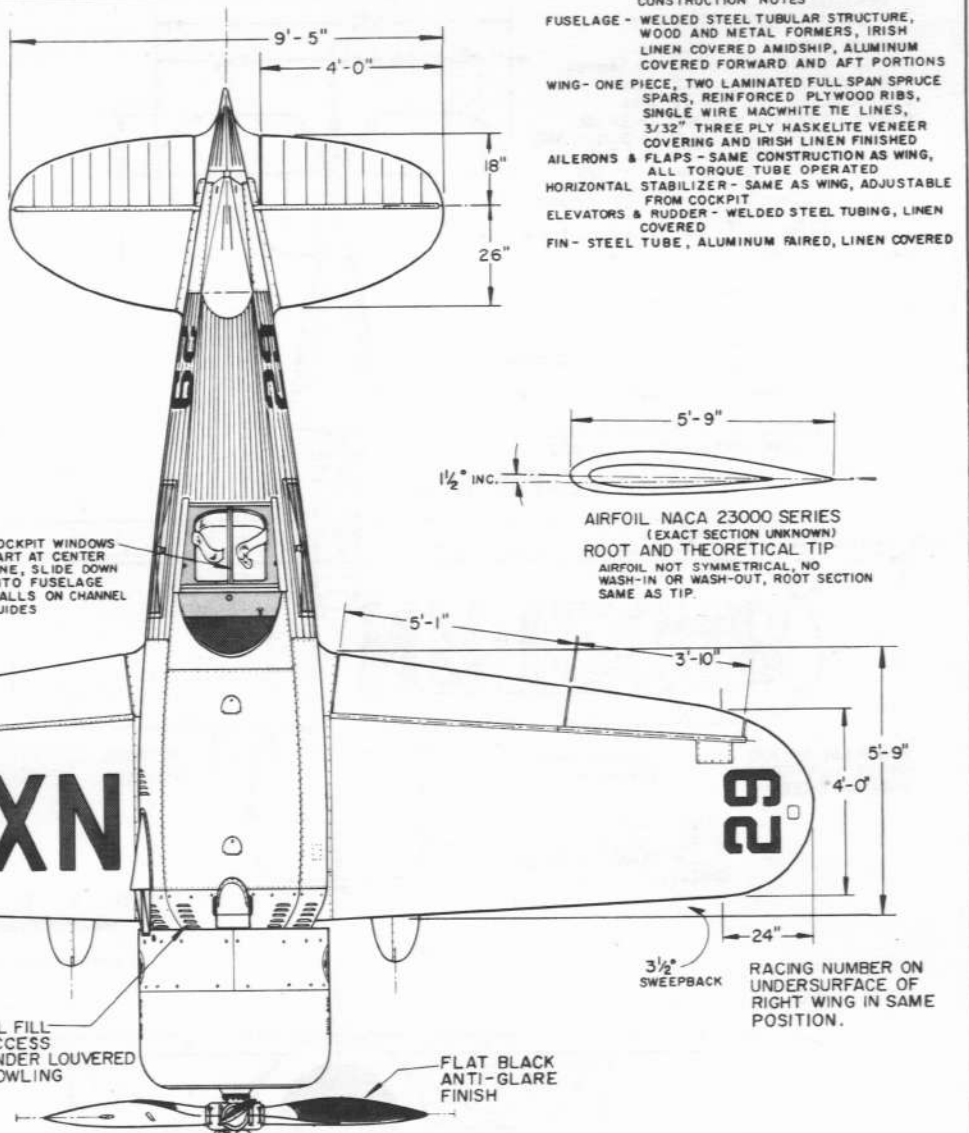
POWER: PRATT & WHITNEY S1B3-G, s/n 177  
 14 cyl. TWIN ROW WASP Sr, 1830 cu. in. DISPLACEMENT. MFGR. RATING 900 hp AT 2450 RPM AT 6,500 FEET  
 1,000 hp AT 2600 RPM, S.L., TAKEOFF USING 87 OCTANE FUEL

**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



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

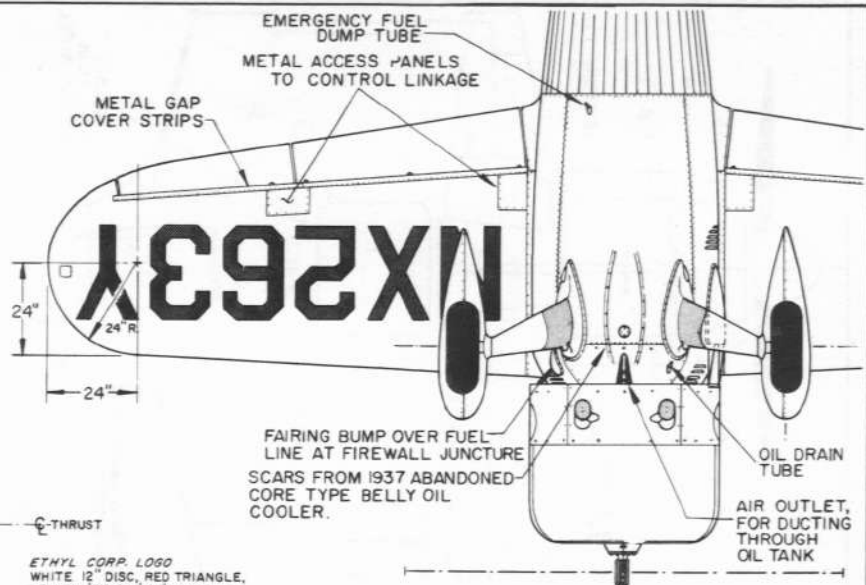
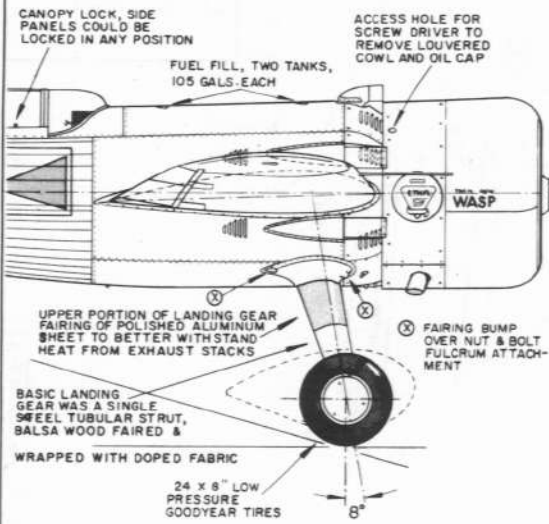
**NOTE:**  
 OUR BASIC AIRFRAME DIMENSIONS WERE TAKEN FROM THE E. M. LAIRD AIRPLANE CO.'S BLUEPRINTS AND A REVIEW OF SURVIVING LAWRENCE BROWN AIRCRAFT CO. MATERIAL

<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	
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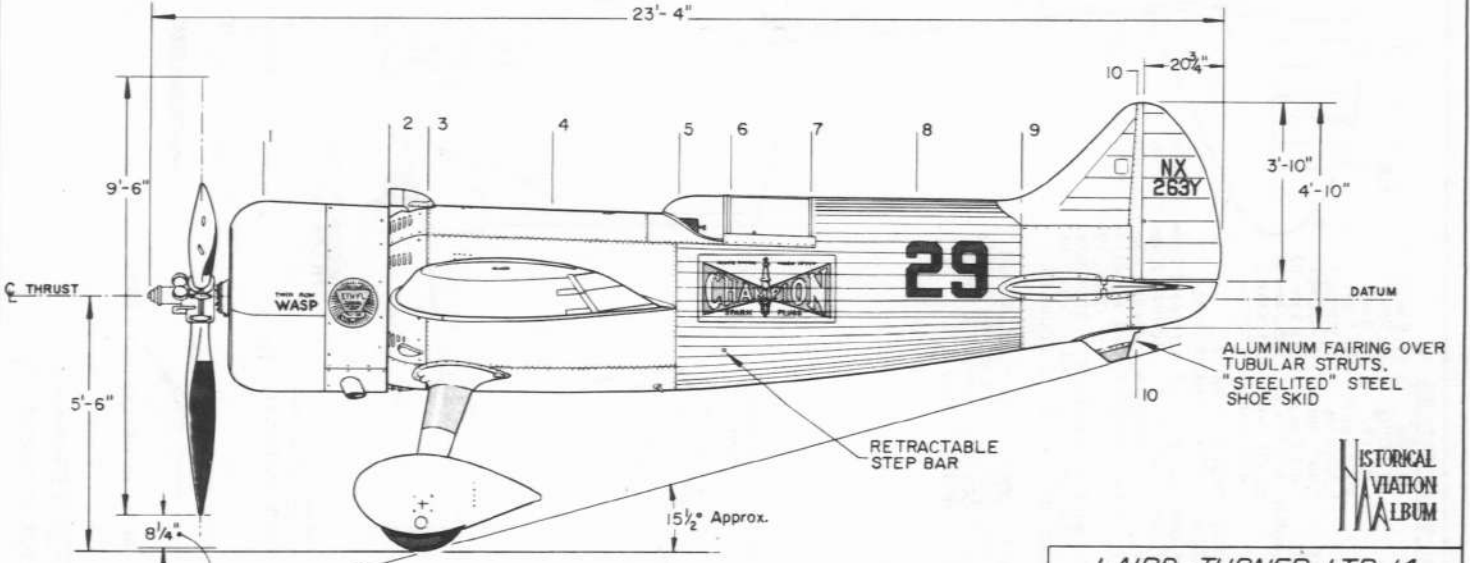
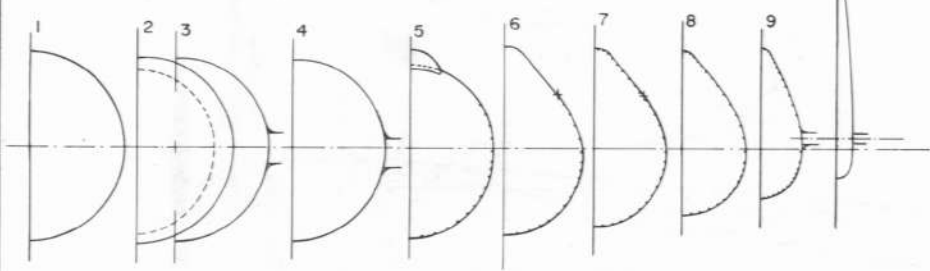
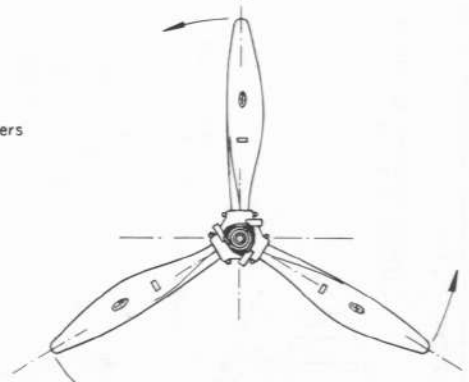
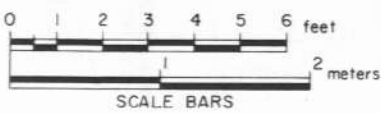




CHAMPION SPARK PLUG LOGO  
 YELLOW BACKGROUND, DARK BLUE PINCHED BAR, 'CHAMPION' WHITE, SPARK PLUG WHITE WITH TONE OF GRAY, BLACK & COPPER. ALL LETTERING & OUTLINES - BLACK



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



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



<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	
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TEMPLE CITY, CALIF. 91780	











. Ortman and Turner on the 26<sup>th</sup> Lap of the 1938  
Thompson Trophy Race, which was won by Turner, 283.717 M.P.H.

To  
John Hill  
Here is 2 of the  
greatest ever built  
Bessie Coleman  
award



1. Bessie Coleman Award  
2. Bessie Coleman Award





To my good friend  
John Hill a master craftsman  
Beverly Hills (not could do  
-1 again)

TWIN BOY  
WASP

ETHYL

29  
SPARK BY PLUGS















**GENERAL SPECIFICATIONS**

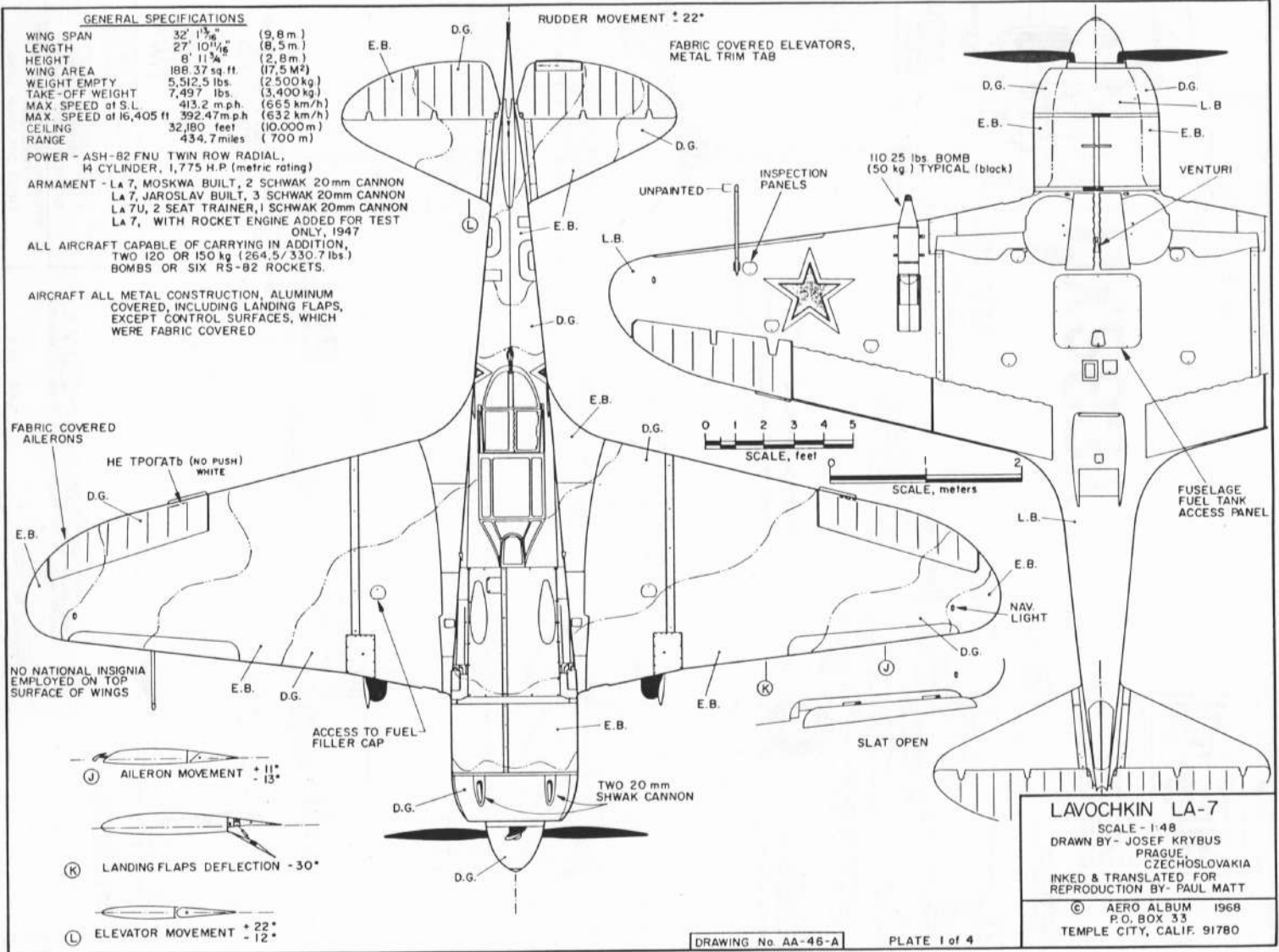
WING SPAN	32' 11 3/4"	(9.8 m)
LENGTH	27' 10 1/4"	(8.5 m)
HEIGHT	8' 11 3/4"	(2.8 m)
WING AREA	188.37 sq. ft.	(17.5 M <sup>2</sup> )
WEIGHT EMPTY	5,512.5 lbs.	(2,500 kg)
TAKE-OFF WEIGHT	7,497 lbs.	(3,400 kg)
MAX. SPEED at S.L.	413.2 m.p.h.	(665 km/h)
MAX. SPEED at 16,405 ft.	392.47 m.p.h.	(632 km/h)
CEILING	32,180 feet	(10,000 m)
RANGE	434.7 miles	(700 m)

POWER - ASH-82 FNU TWIN ROW RADIAL,  
14 CYLINDER, 1,775 H.P. (metric rating)

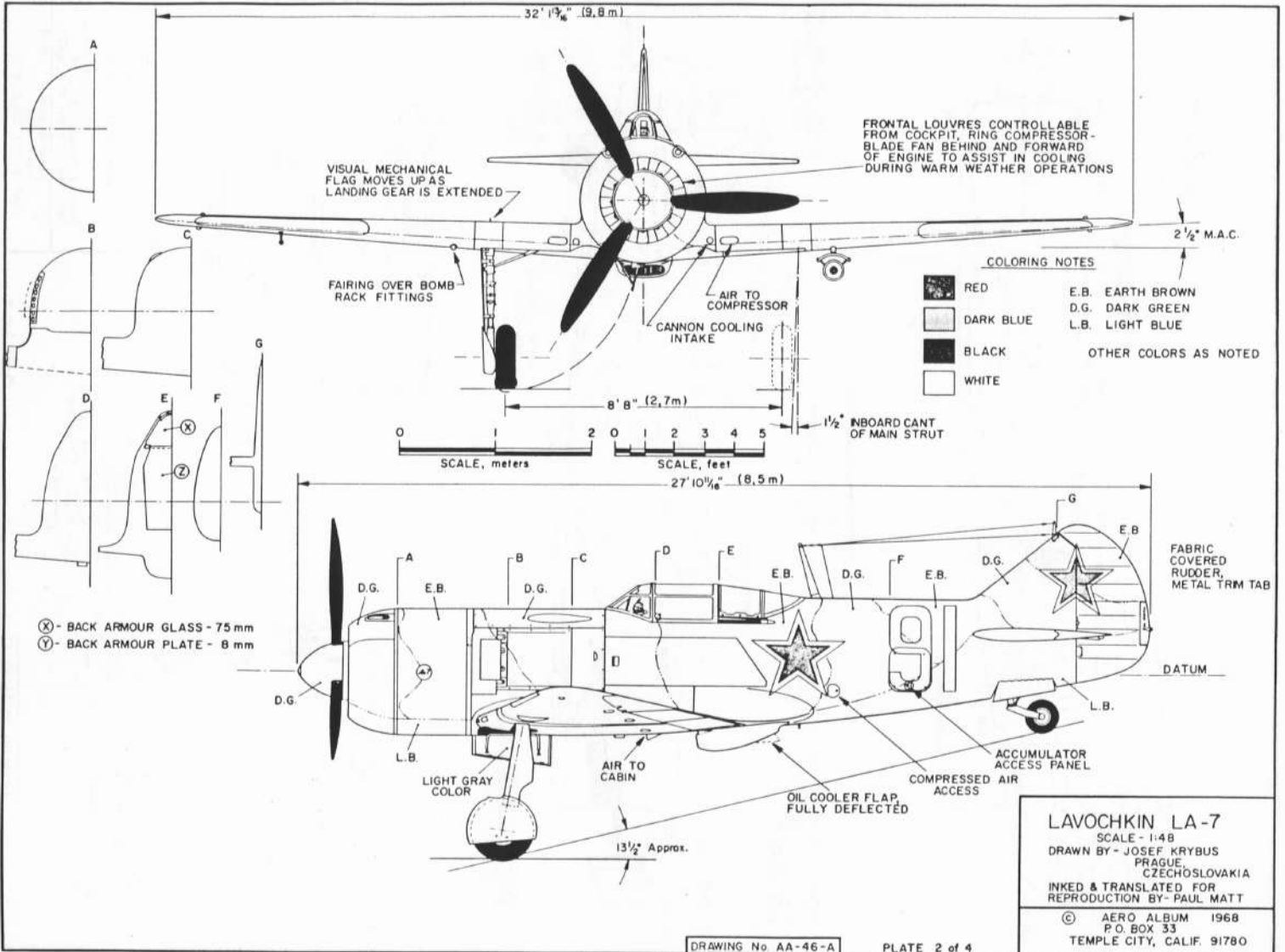
ARMAMENT - LA 7, MOSKVA BUILT, 2 SCHWAK 20mm CANNON  
LA 7, JAROSLAV BUILT, 3 SCHWAK 20mm CANNON  
LA 7U, 2 SEAT TRAINER, 1 SCHWAK 20mm CANNON  
LA 7, WITH ROCKET ENGINE ADDED FOR TEST ONLY, 1947

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

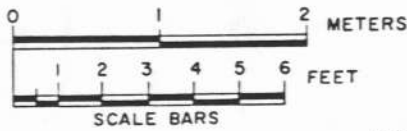
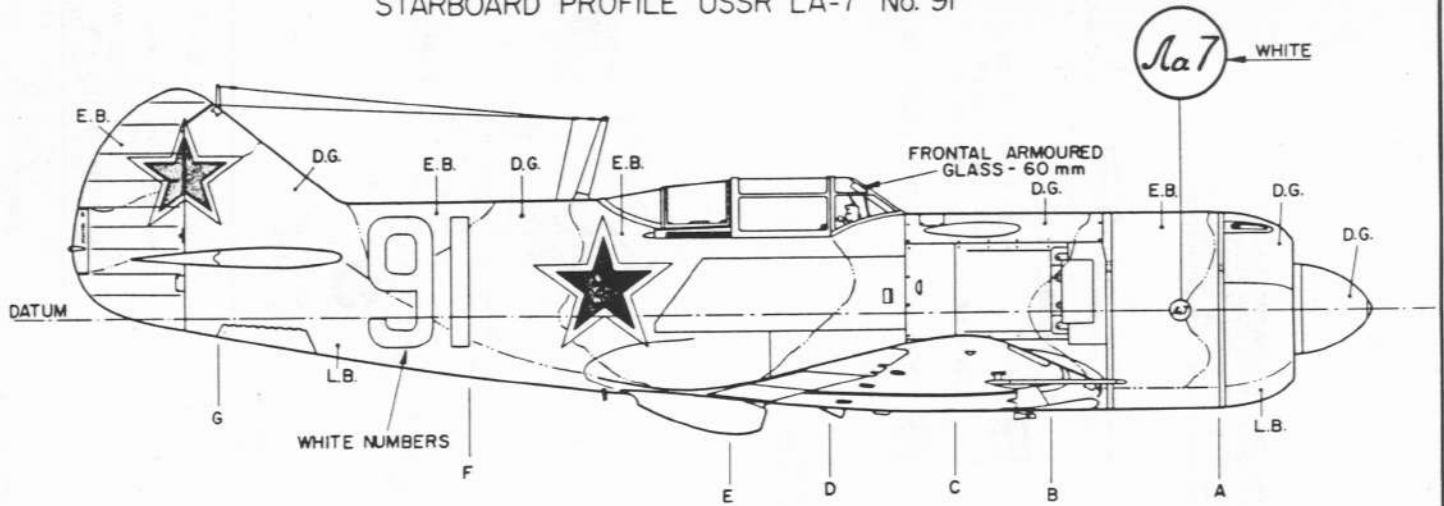


DRAWING No AA-46-A

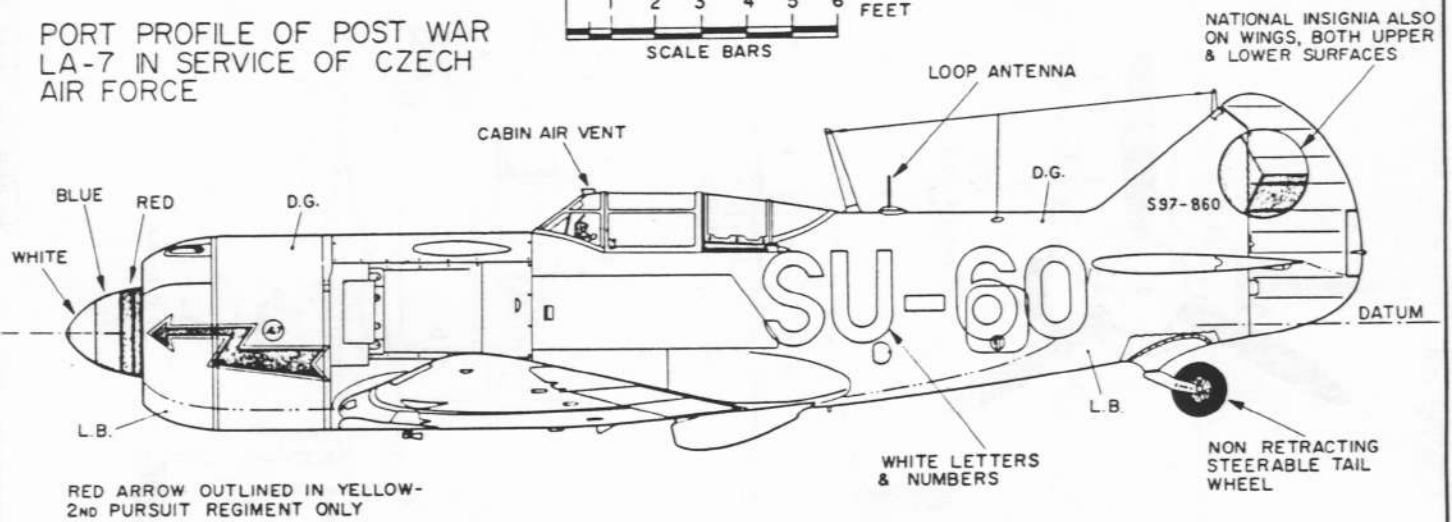
PLATE 2 of 4

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

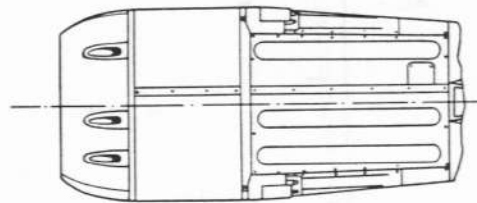
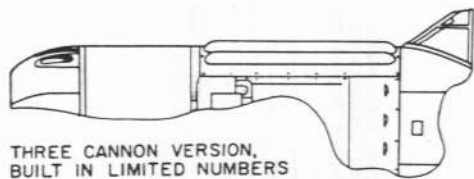
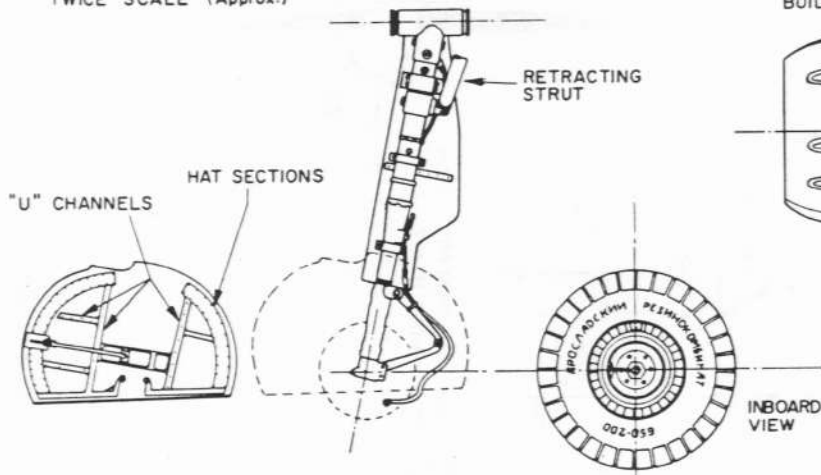
STARBOARD PROFILE USSR LA-7 No. 91



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



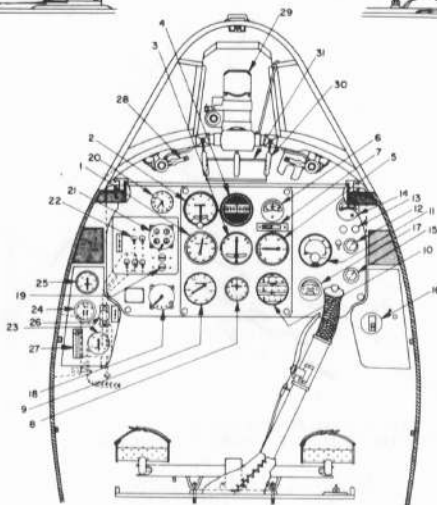
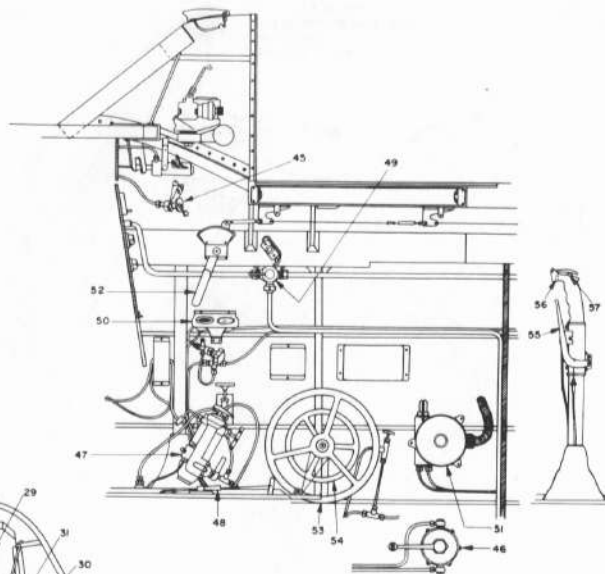
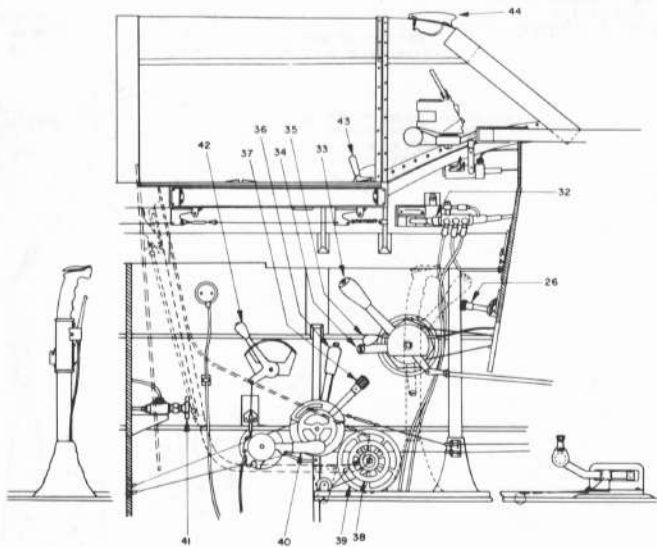
MAIN LANDING GEAR DETAILS  
TWICE SCALE (Approx.)



LAVOCHKIN LA-7

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

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

DRAWING No. AA-46-A

PLATE 4 of 4

LAVOCHKIN LA-7  
 SCALE - SEE SCALE BAR  
 DRAWN BY - JOSEF KRYBUS  
 PRAHA,  
 CZECHOSLOVAKIA  
 INKED & TRANSLATED FOR  
 REPRODUCTION BY - PAUL MATT  
 © AERO ALBUM 1968  
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 TEMPLE CITY, CALIF. 91780















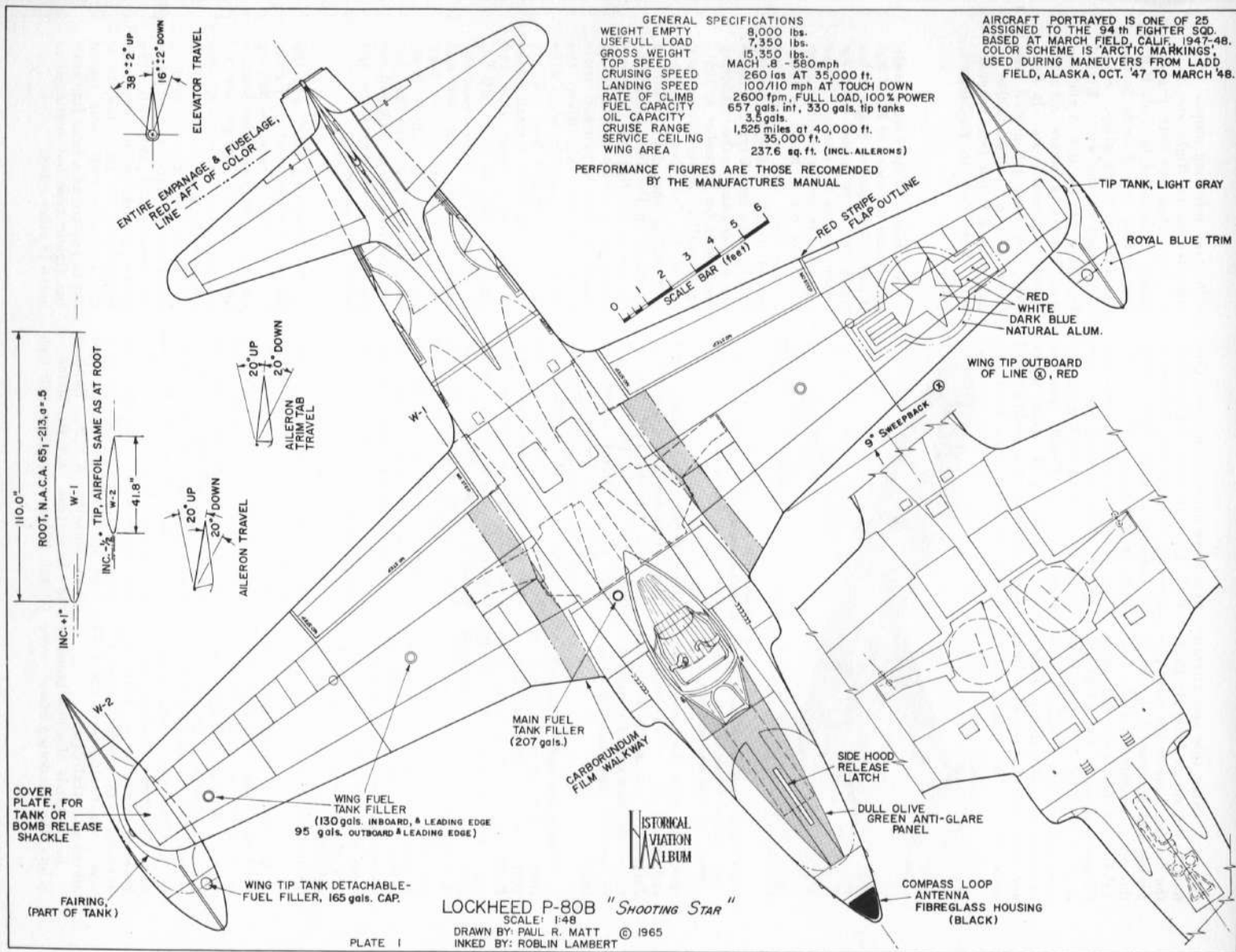








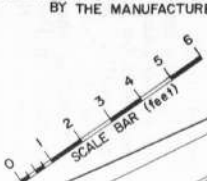
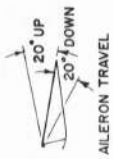
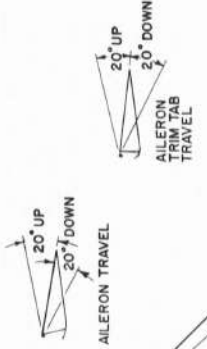
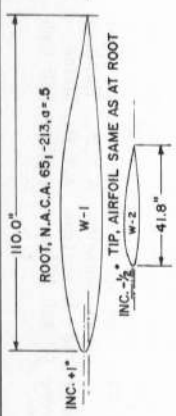
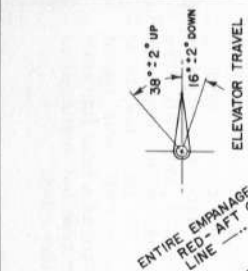




**GENERAL SPECIFICATIONS**  
 WEIGHT EMPTY 8,000 lbs.  
 USEFUL LOAD 7,350 lbs.  
 GROSS WEIGHT 15,350 lbs.  
 TOP SPEED MACH .8 - 550mph  
 CRUISING SPEED 260 las AT 35,000 ft.  
 LANDING SPEED 100/110 mph AT TOUCH DOWN  
 RATE OF CLIMB 2600 fpm, FULL LOAD, 100% POWER  
 FUEL CAPACITY 657 gals. int., 330 gals. tip tanks  
 OIL CAPACITY 3.5 gals.  
 CRUISE RANGE 1,525 miles at 40,000 ft.  
 SERVICE CEILING 35,000 ft.  
 WING AREA 237.6 sq. ft. (INCL. AILERONS)

AIRCRAFT PORTRAYED IS ONE OF 25  
 ASSIGNED TO THE 94th FIGHTER SQD.  
 BASED AT MARCH FIELD, CALIF. 1947-48.  
 COLOR SCHEME IS 'ARCTIC MARKINGS'  
 USED DURING MANEUVERS FROM LADD  
 FIELD, ALASKA, OCT. '47 TO MARCH '48.

PERFORMANCE FIGURES ARE THOSE RECOMMENDED  
 BY THE MANUFACTURERS MANUAL



RED STRIPE  
 FLAP OUTLINE

TIP TANK, LIGHT GRAY

ROYAL BLUE TRIM

RED  
 WHITE  
 DARK BLUE  
 NATURAL ALUM.

WING TIP OUTBOARD  
 OF LINE ①, RED

9° SWEEPBACK

MAIN FUEL  
 TANK FILLER  
 (207 gals.)

CARBORUNDUM  
 FILM WALKWAY

SIDE HOOD  
 RELEASE  
 LATCH

DULL OLIVE  
 GREEN ANTI-GLARE  
 PANEL

COMPASS LOOP  
 ANTENNA  
 FIBREGLASS HOUSING  
 (BLACK)

COVER  
 PLATE, FOR  
 TANK OR  
 BOMB RELEASE  
 SHACKLE

WING FUEL  
 TANK FILLER  
 (130 gals. INBOARD, & LEADING EDGE  
 95 gals. OUTBOARD & LEADING EDGE)

WING TIP TANK DETACHABLE-  
 FUEL FILLER, 165 gals. CAP.

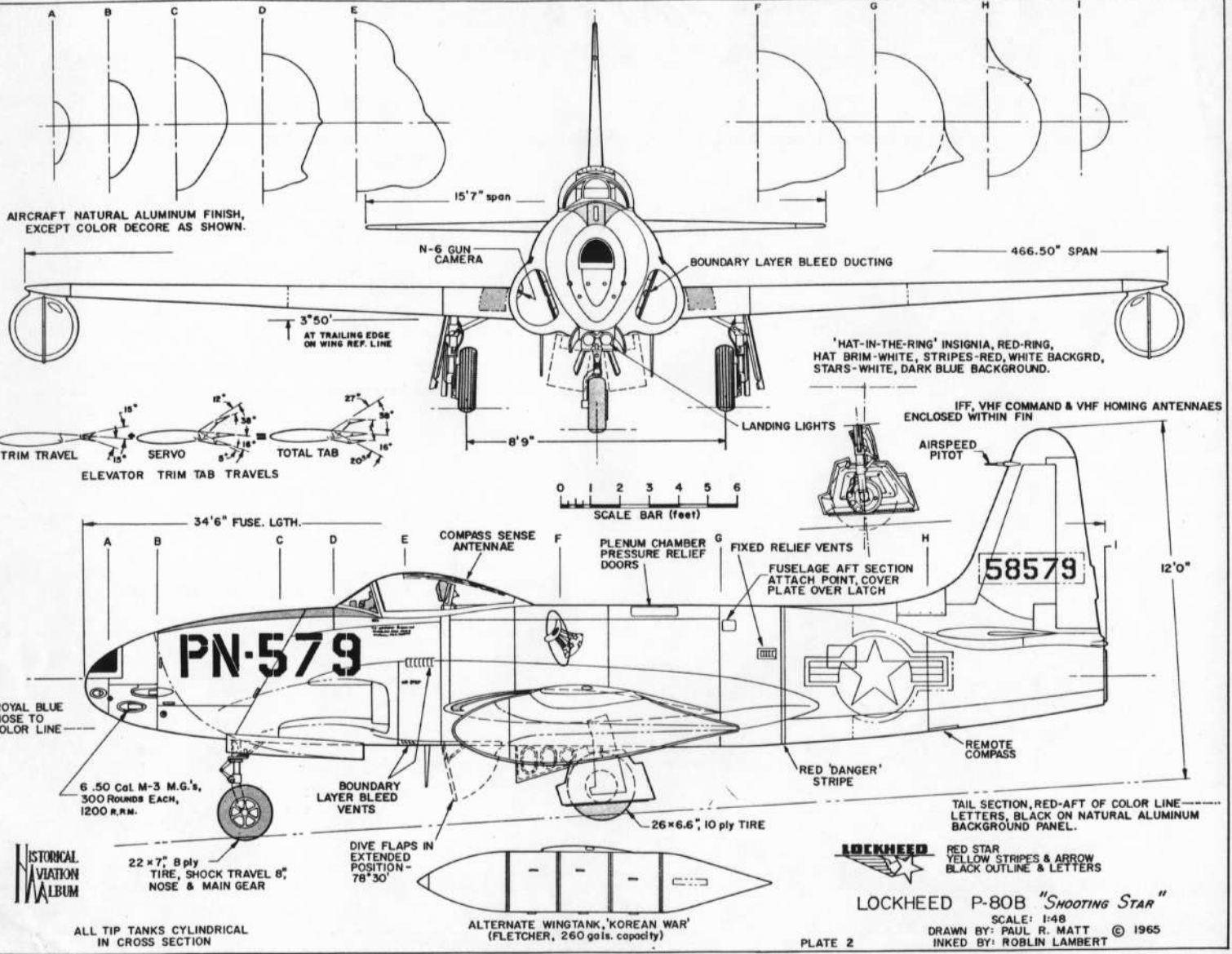
FAIRING,  
 (PART OF TANK)



LOCKHEED P-80B "SHOOTING STAR"

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

PLATE I



AIRCRAFT NATURAL ALUMINUM FINISH, EXCEPT COLOR DECORE AS SHOWN.

'HAT-IN-THE-RING' INSIGNIA, RED-RING, HAT BRIM-WHITE, STRIPES-RED, WHITE BACKGRD, STARS-WHITE, DARK BLUE BACKGROUND.

IFF, VHF COMMAND & VHF HOMING ANTENNAES ENCLOSED WITHIN FIN

SCALE BAR (feet)

ROYAL BLUE NOSE TO COLOR LINE

TAIL SECTION, RED-AFT OF COLOR LINE—LETTERS, BLACK ON NATURAL ALUMINUM BACKGROUND PANEL.

HISTORICAL AVIATION MUSEUM

LOCKHEED

RED STAR YELLOW STRIPES & ARROW BLACK OUTLINE & LETTERS

LOCKHEED P-80B "SHOOTING STAR"

SCALE: 1:48

DRAWN BY: PAUL R. MATT © 1965 INKED BY: ROBLIN LAMBERT

PLATE 2



Lockheed XP-80A













Ken



Lockheed P-80B 94th Fighter Group with Artic markings, February 10, 1948.



Lockheed P-80B, Prototype "B" series.



PILOT  
MAJ. R. M. DEHAVEN  
CREW CHIEF  
S/SGT W. J. BIRKHOLZ

DEL. 3381  
NATIONAL GUARD F-80C-1-LO  
U.S. AIR FORCE SER. NO. 47-181

H-8284

WARNING  
THIS AIRPLANE CONTAINS 1 SEAT  
EJECTION SEATBELT CONTAINING AN  
EXPLOSIVE CHARGE. SEE T.O. 11-1-50  
FOR COMPLETE INSTRUCTIONS.  
EXTERNAL CANOPY HANDLE  
ON RIGHT HAND SIDE

THIS AIRPLANE WITH AR-F-  
IF NOT AVAILABLE  
CONSULTED FOR



Ken



AMC REXF 10FEB.48. P-80



LA-N-12A

















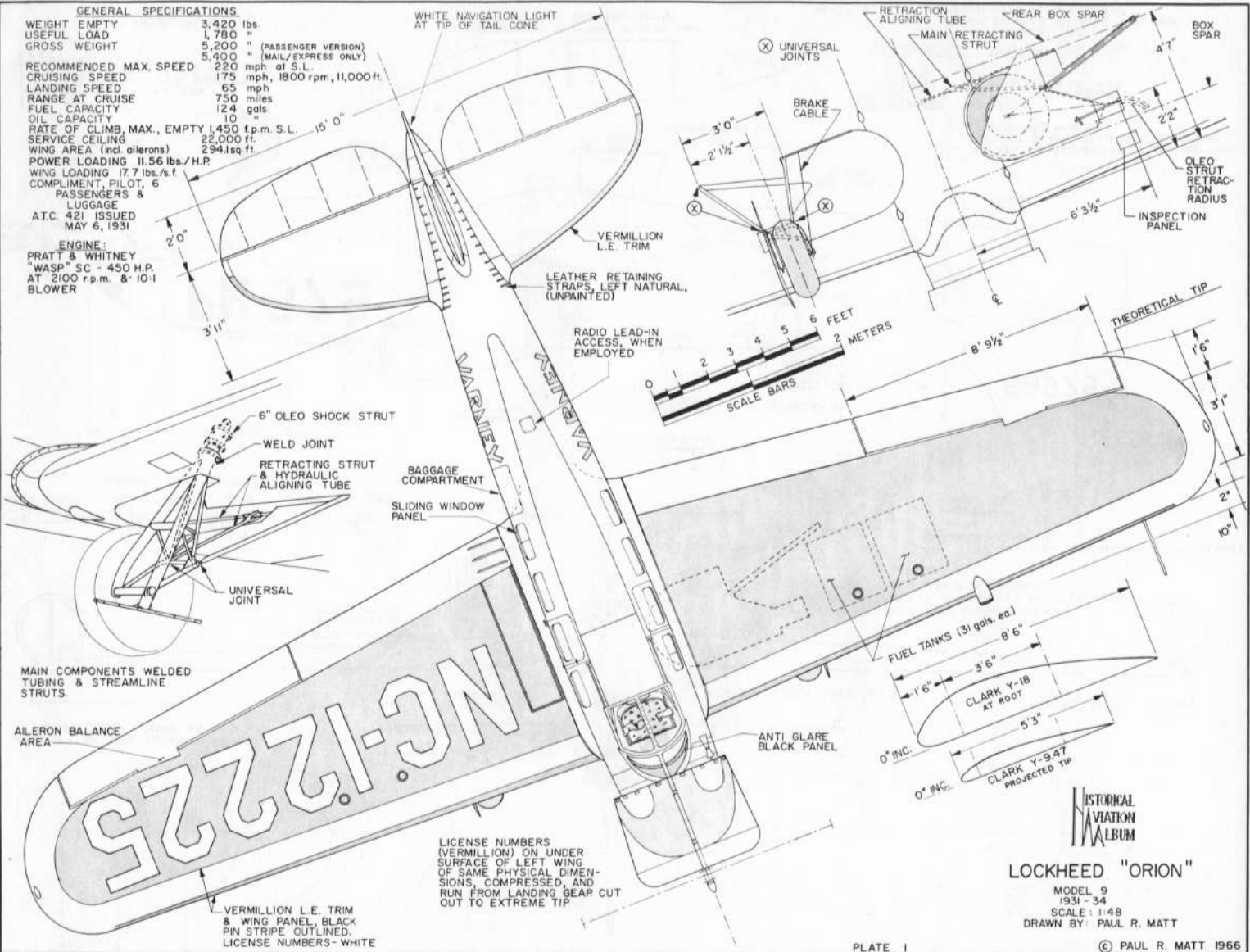






**GENERAL SPECIFICATIONS**

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, 11,000ft.
LANDING SPEED	65 mph
RANGE AT CRUISE	750 miles
FUEL CAPACITY	124 gals.
OIL CAPACITY	10 "
RATE OF CLIMB, MAX., EMPTY	1,450 f.p.m. S.L. - 15' 0"
SERVICE CEILING	22,000 ft.
WING AREA (incl. ailerons)	294.1sq.ft.
POWER LOADING	11.56 lbs./H.P.
WING LOADING	17.7 lbs./sq.ft.
COMPLIMENT, PILOT, 6	
PASSENGERS & LUGGAGE	
AT.C. 421 ISSUED	MAY 6, 1931
ENGINE:	
PRATT & WHITNEY	
"WASP" SC - 450 H.P.	
AT 2100 r.p.m. & 10:1	
BLOWER	



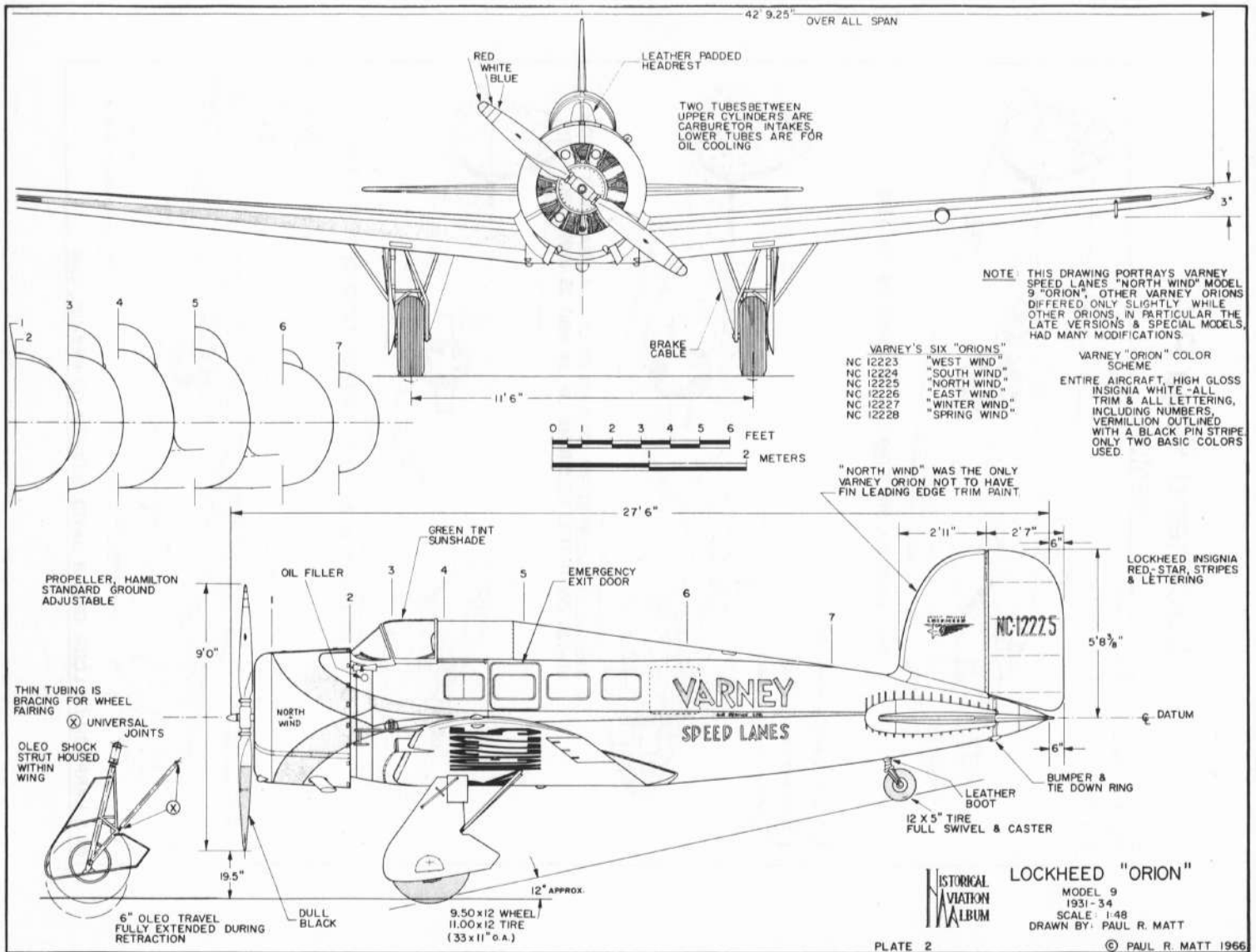
LICENSE NUMBERS (VERMILLION) ON UNDER SURFACE OF LEFT WING OF SAME PHYSICAL DIMENSIONS, COMPRESSED, AND RUN FROM LANDING GEAR CUT OUT TO EXTREME TIP

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

HISTORICAL AVIATION ALBUM

LOCKHEED "ORION"

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





NC-13747

EDWARDS

50



A-M-9

13747

W-6297

van Rossem Studios  
L. 66









70 van Dyke Studios















One "Orion" that stands out and is generally best remembered by the public did not achieve fame because of its outstanding service record, or by making special flights, but because of the personalities involved in its final use.

The third "Orion" purchased by T.W.A. in May 1933, NC-12283, had been a workhorse flying relay mail schedules between Newark, New Jersey and Los Angeles well into 1934. In January 1935 it was sold to the aircraft brokerage firm of Charles H. Babb of Glendale, California. In February the famed globe circling flyer, Wiley Post, was looking for a second hand airplane to use on a leisurely flight around the world. He was to be accompanied and financed by the renowned humorist, Will Rogers, as a goodwill ambassador. Post was no newcomer to Lockheeds, and at Babb's he found the old T.W.A. "Orion". Since his plans called for installing floats for part of the trip, a larger wing to lift the additional weight was required. Babb had the wing from the old Pure-Oil Company's 1930 "Explorer" (NR-101W) still in storage, and Post had the two major components mated. He also supervised other modifications including the installation of a more powerful 550 H.P. "Wasp" S3H-1 engine and a three bladed controllable pitch Hamilton Standard propeller. Post's approach to the Lockheed firm to mate the two airplanes had been refused on the basis that the floats would make the aircraft dangerously nose heavy.

Undaunted Post and Rogers flew to Seattle, Washington in early August with the fixed wheel undercarriage that came with the "Explorer" wing. A pair of second hand Edo floats, originally intended for a high wing Fokker bush-flying machine, were acquired at Seattle and fitted for the long overwater flight ahead. The trip to Fairbanks, Alaska was uneventful. On August 15, 1935 the fliers left for Point Barrow but became lost near Walakpi. Post set the "Orion-Explorer" down on a broad tidal river near a native village to obtain directions. After gaining the information needed the pair took off in a steep climb, but the engine stopped at about fifty feet altitude and the two immortal figures died in the ensuing crash.

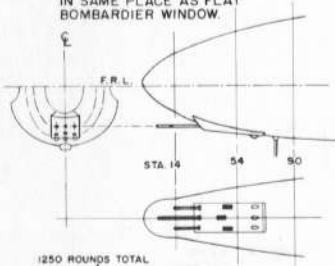


Crash of Post Rogers' "Orion-Explorer" at Walakpi, Alaska, August 15, 1935.

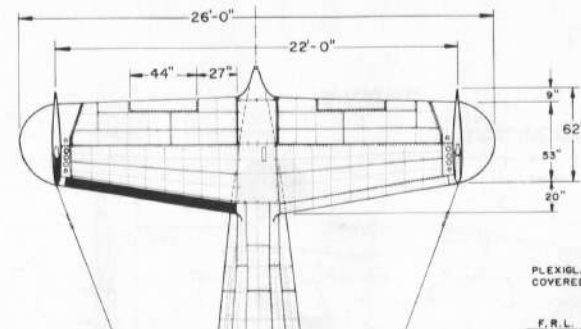
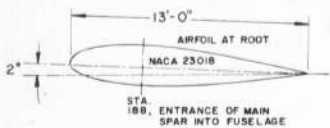




3-50 Cal CHIN GUN PACK,  
FITTED ON LATE MODELS,  
MID-1943. REPLACED AND  
IN SAME PLACE AS FLAT  
BOMBARDIER WINDOW

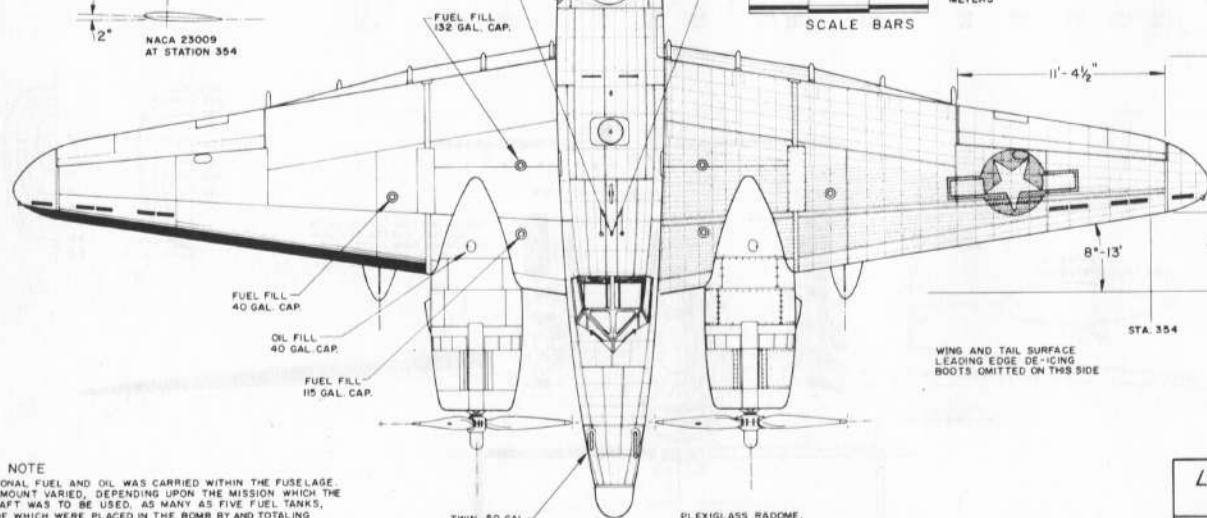
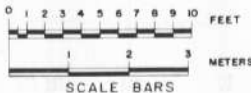


1250 ROUNDS TOTAL

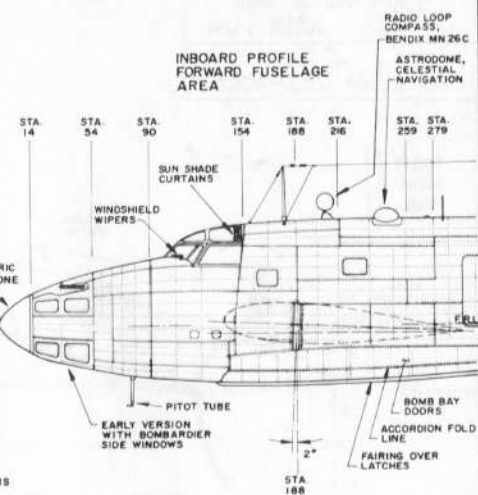


STARBOARD NATIONAL INSIGNIA  
MOVED FORWARD TO  
CLEAR WINDOW JUST  
AFT OF STA. 392

TWIN .50 CAL BROWNING M.G.,  
MARTIN 250 CE 12 ELECTRIC TURRET,  
360° ROTATION, 85° ELEVATION,  
800 ROUNDS TOTAL



INBOARD PROFILE  
FORWARD FUSELAGE  
AREA



PLEXIGLASS, FABRIC  
COVERED NOSE CONE  
F.R.L.

WINDSHIELD  
WIPERS

SUN SHADE  
CURTAINS

PITOT TUBE

EARLY VERSION  
WITH BOMBARDIER  
SIDE WINDOWS

RADIO LOOP  
COMPASS,  
BENDIX MN 26 C

ASTRODOME,  
CELESTIAL  
NAVIGATION

BOMB BAY  
DOORS

ACCORDION FOLD  
LINE  
FAIRINGS OVER  
LATCHES

WING AND TAIL SURFACE  
LEADING EDGE DE-ICING  
BOOTS OMITTED ON THIS SIDE

HISTORICAL  
AVIATION  
ALBUM

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.

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

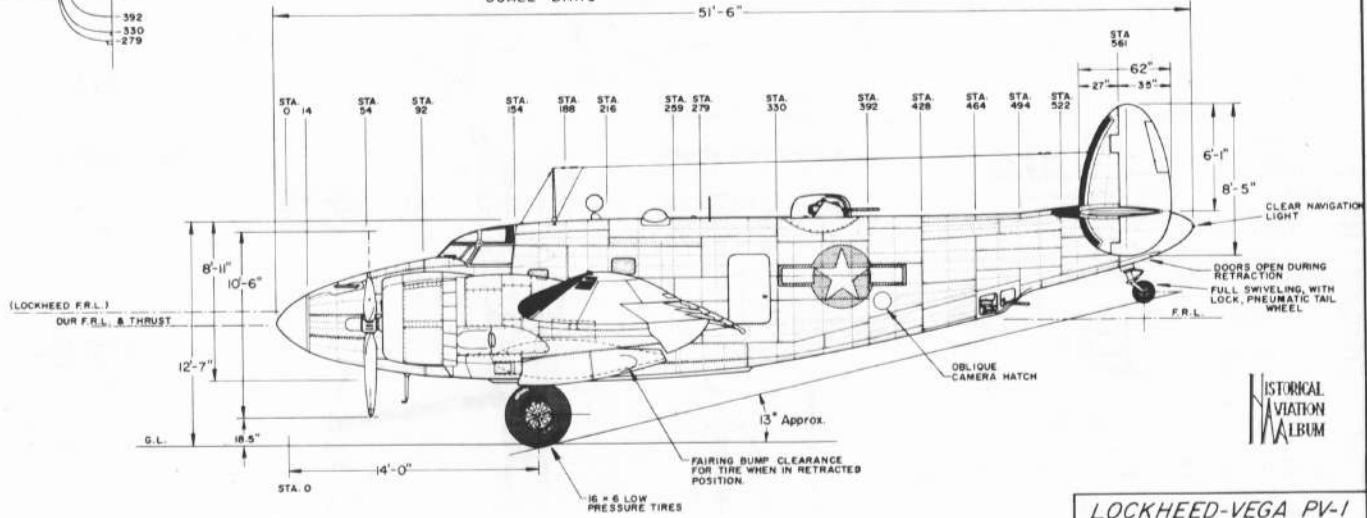
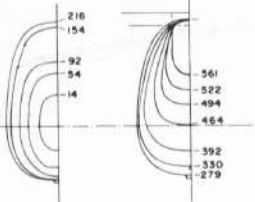
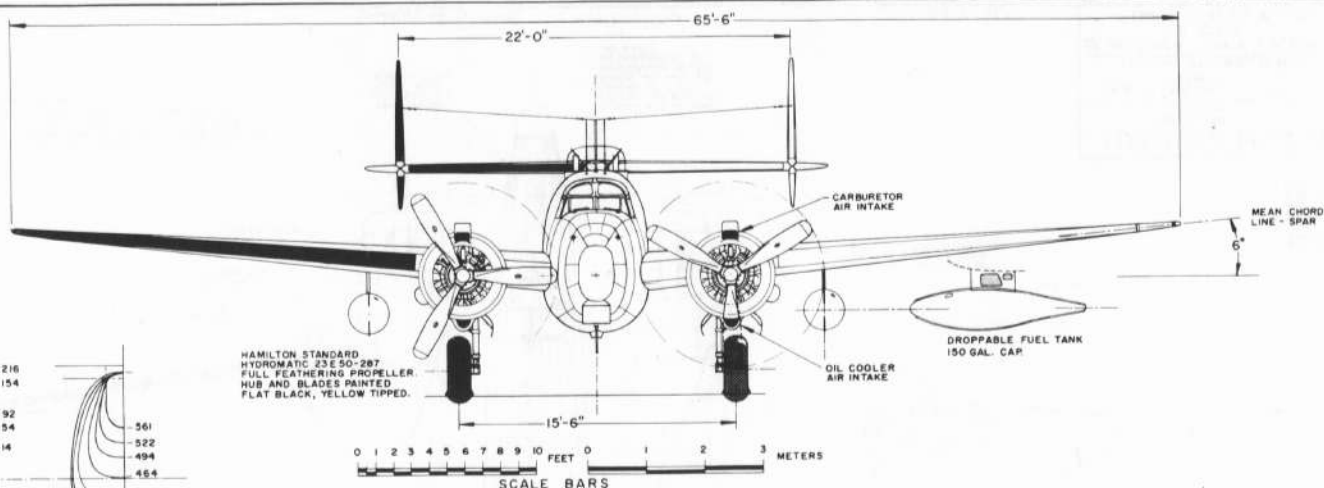
PLEXIGLASS RADOME,  
COVERED WITH DOUBLE  
LAYERS OF FABRIC,  
DOPED AND PAINTED  
CAMOUFLAGE COLORS,  
OR DECORATIVE RED  
OR WHITE

**LOCKHEED-VEGA PV-1**  
"VENTURA"  
1941-45  
SCALE - ORIGINAL 1:48  
REPRO. 1:96  
DRAWN BY - PAUL R. MATT  
© HISTORICAL AVIATION ALBUM 1976  
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
DRAWN BY - PAUL R. MATT	
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TEMPLE CITY, CALIF. 91780	

DRAWING No. EE-101-C

PLATE 2 of 3

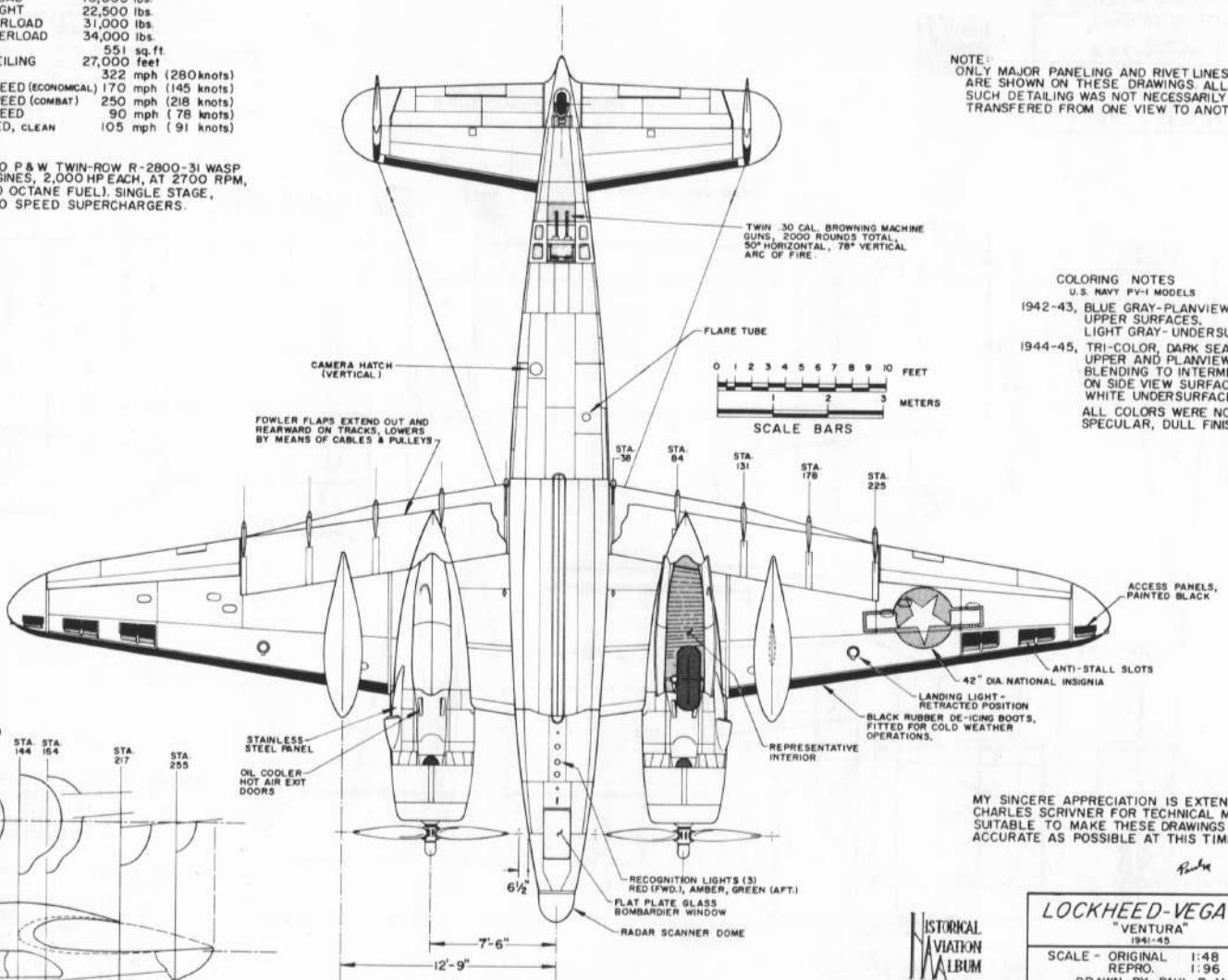
**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 12,500 lbs.  
 USEFULL 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 HP 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*

HISTORICAL AVIATION ALBUM

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

SCALE - ORIGINAL 1:48  
 REPRO. 1:96

DRAWN BY - PAUL R. MATT

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DRAWING No. EE-101-C

PLATE 3 of 3





V-437





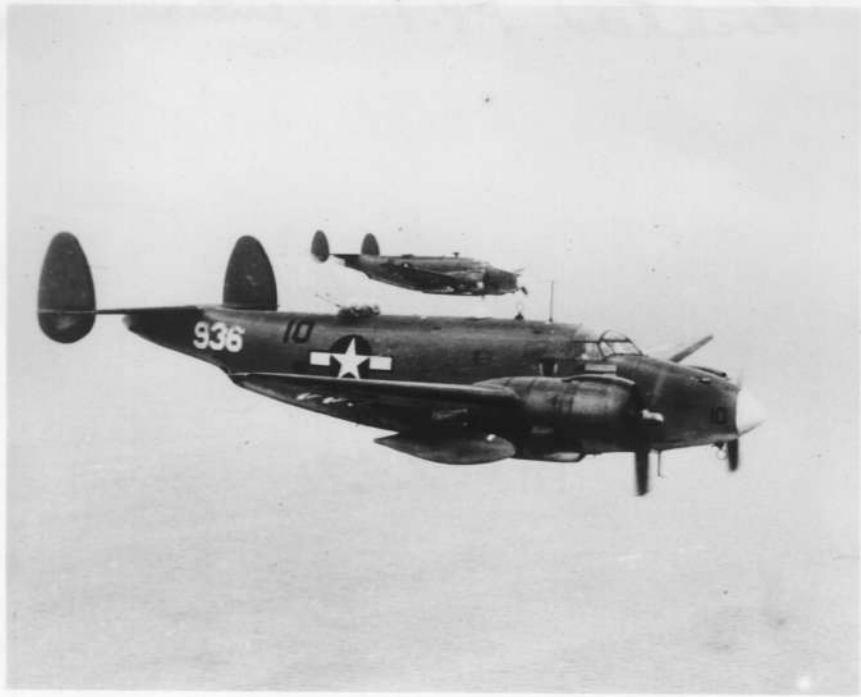
LA-N-21A



LOCKHEED PV-1 (4N)

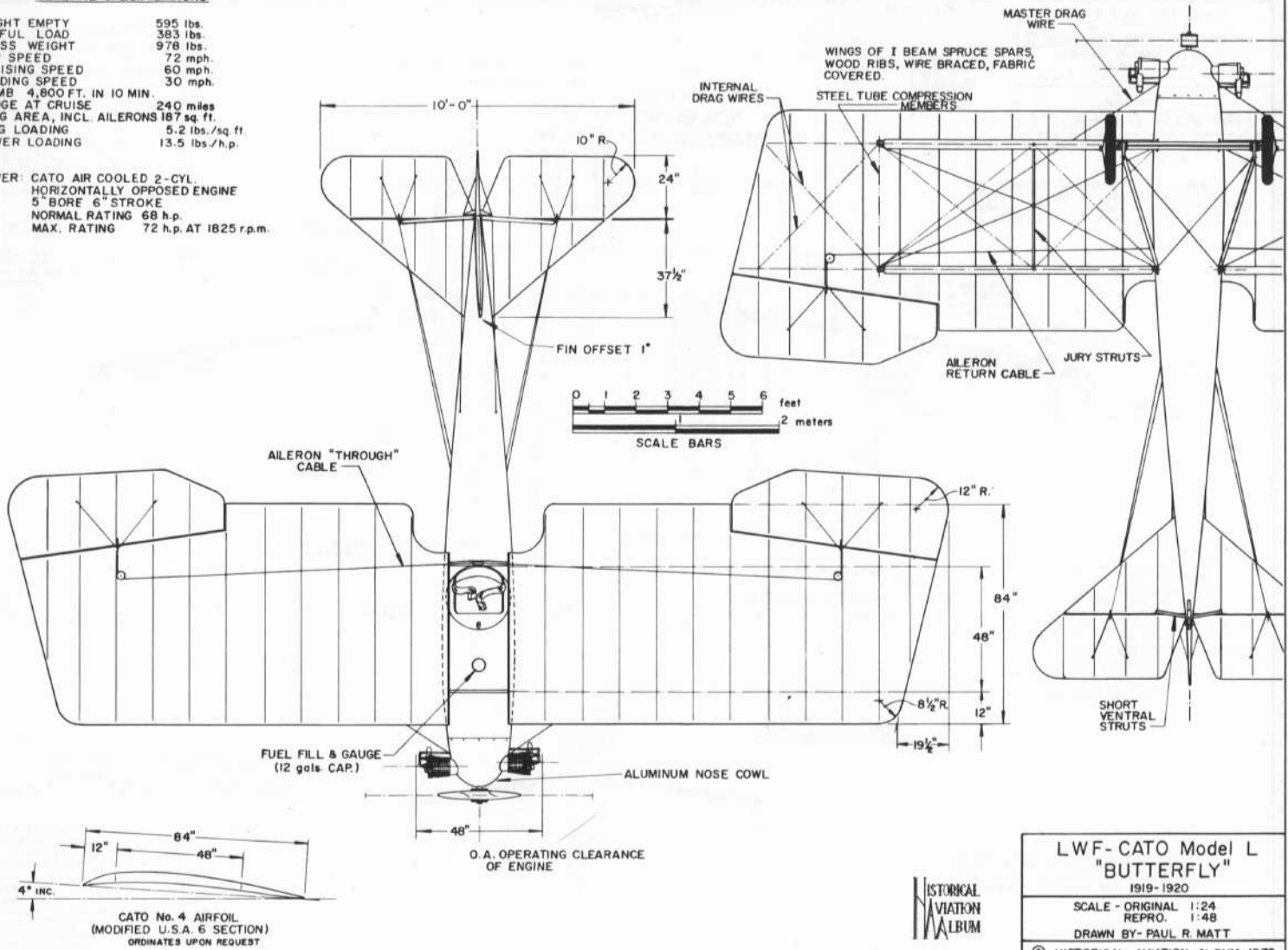






**GENERAL SPECIFICATIONS**

WEIGHT EMPTY 595 lbs.  
 USEFUL LOAD 363 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.

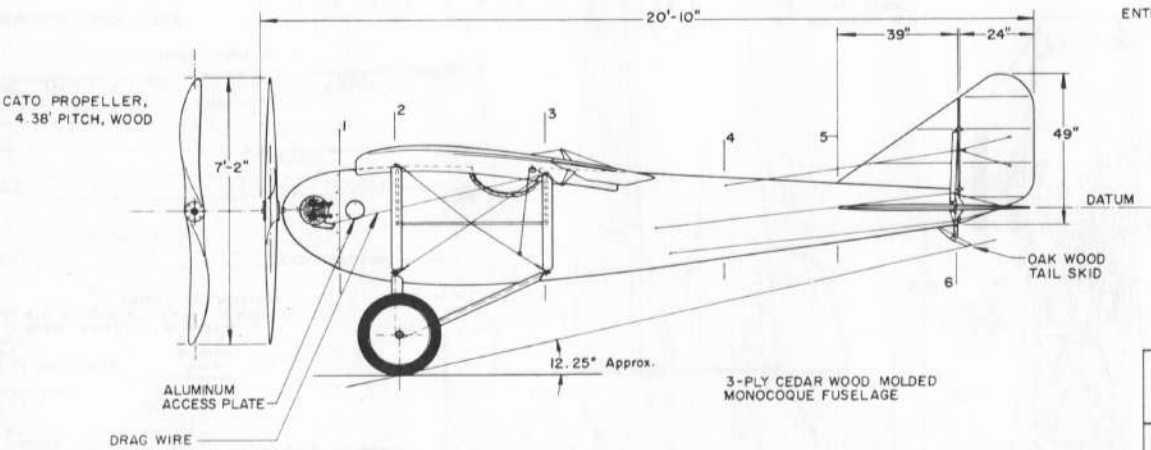
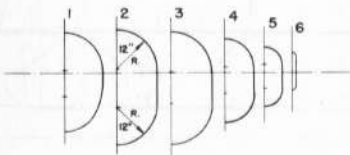
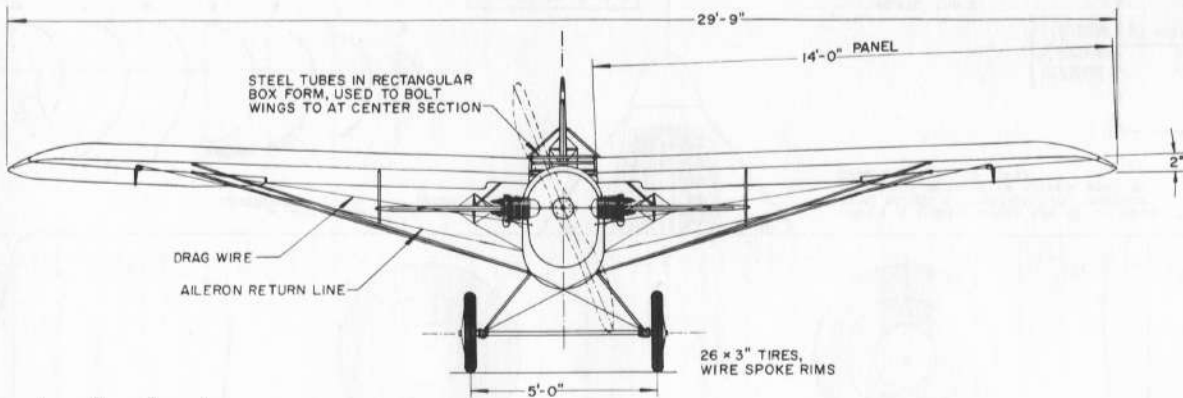


HISTORICAL AVIATION ALBUM

LWF-CATO Model L "BUTTERFLY"	
1919-1920	
SCALE - ORIGINAL	1:24
REPRO.	1:48
DRAWN BY- PAUL R. MATT	
© HISTORICAL AVIATION ALBUM 1972	
P. O. BOX 33	
TEMPLE CITY, CALIF., 91780	

DRAWING No. 11-84-A

PLATE 1 of 2



COLORING NOTE  
ENTIRE AIRCRAFT SILVER DOPED

ELEVATOR FIXED AT 0°



LWF-CATO Model L  
"BUTTERFLY"  
1919-1920

SCALE - ORIGINAL 1:24  
REPRO. 1:48

DRAWN BY - PAUL R. MATT

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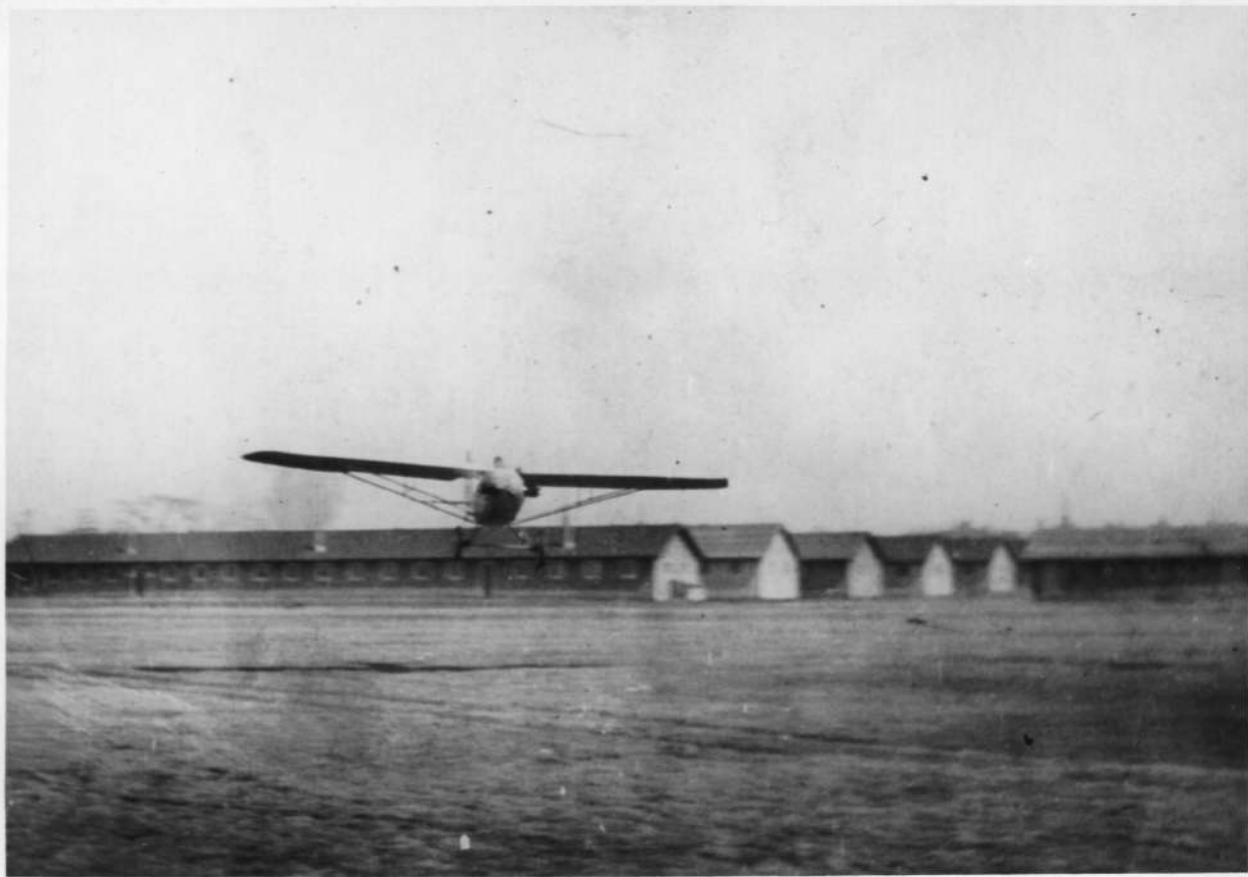
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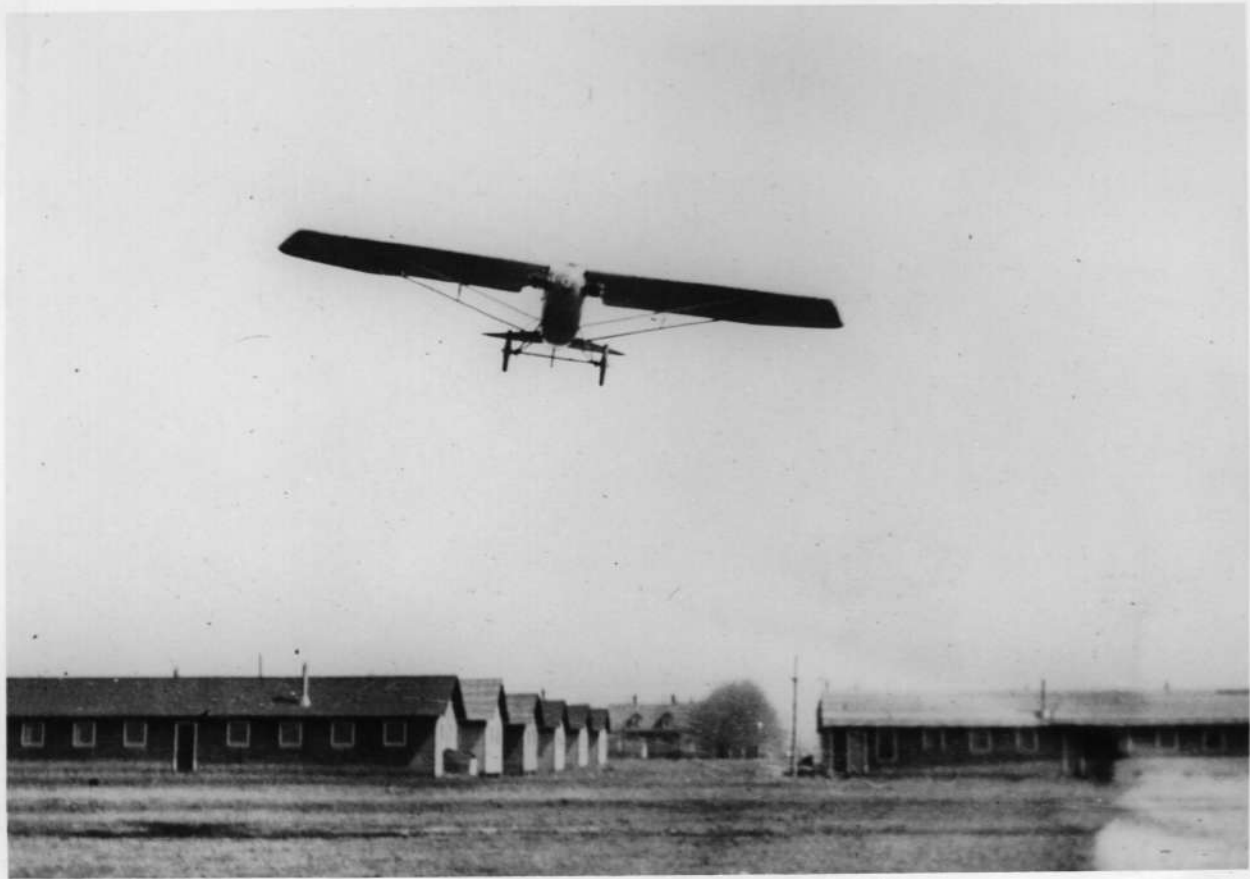
PLATE 2 of 2







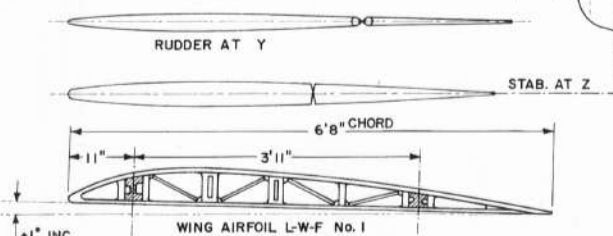
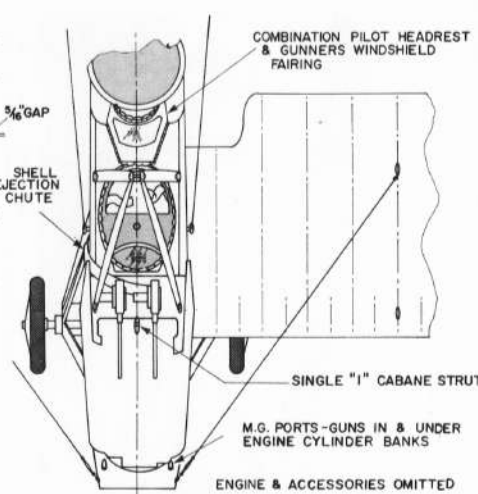
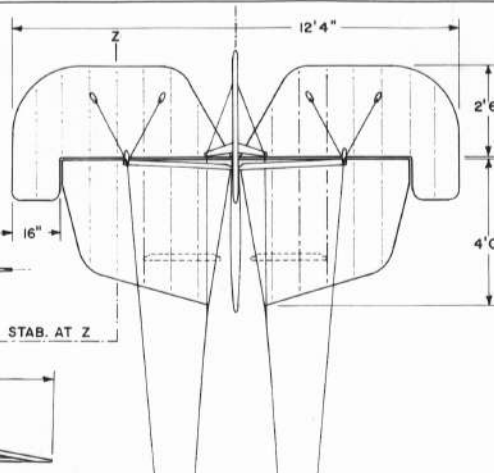






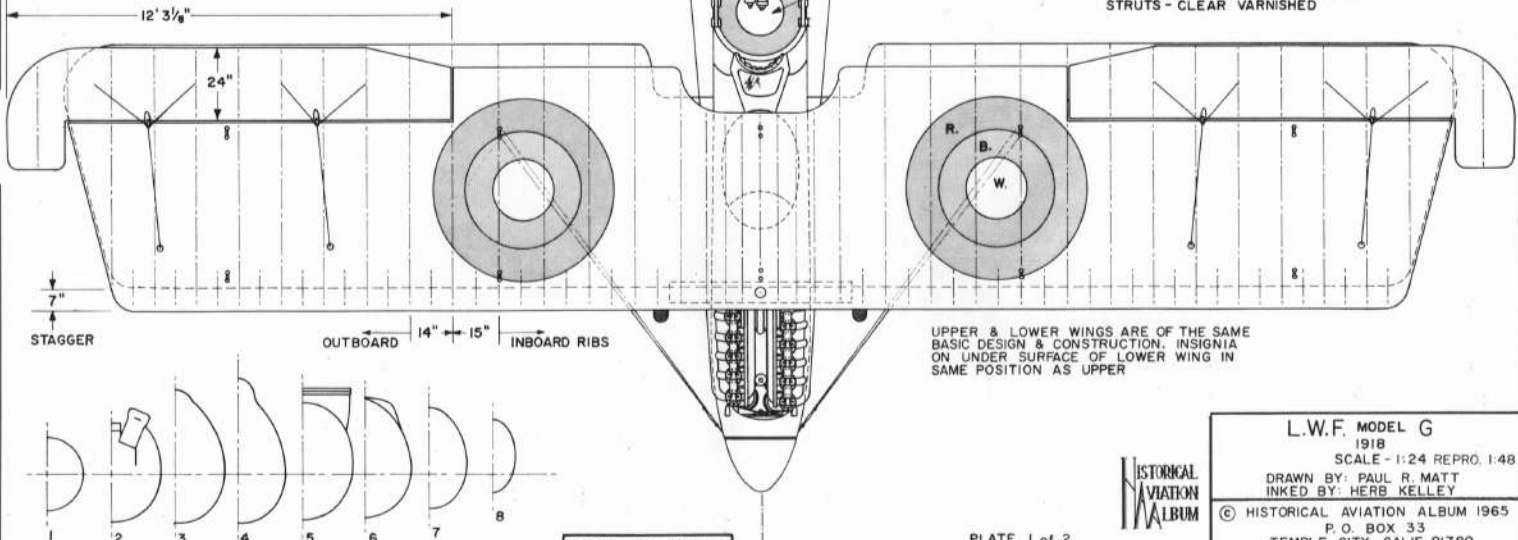
**GENERAL SPECIFICATIONS**

WEIGHT EMPTY	2,675 lbs.	PERF. FIGURES, FULL LOAD - NO BOMBS
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.	



30 BROWNING M.G.s  
(ALL GUNS SAME)  
GUNNER'S STOOL

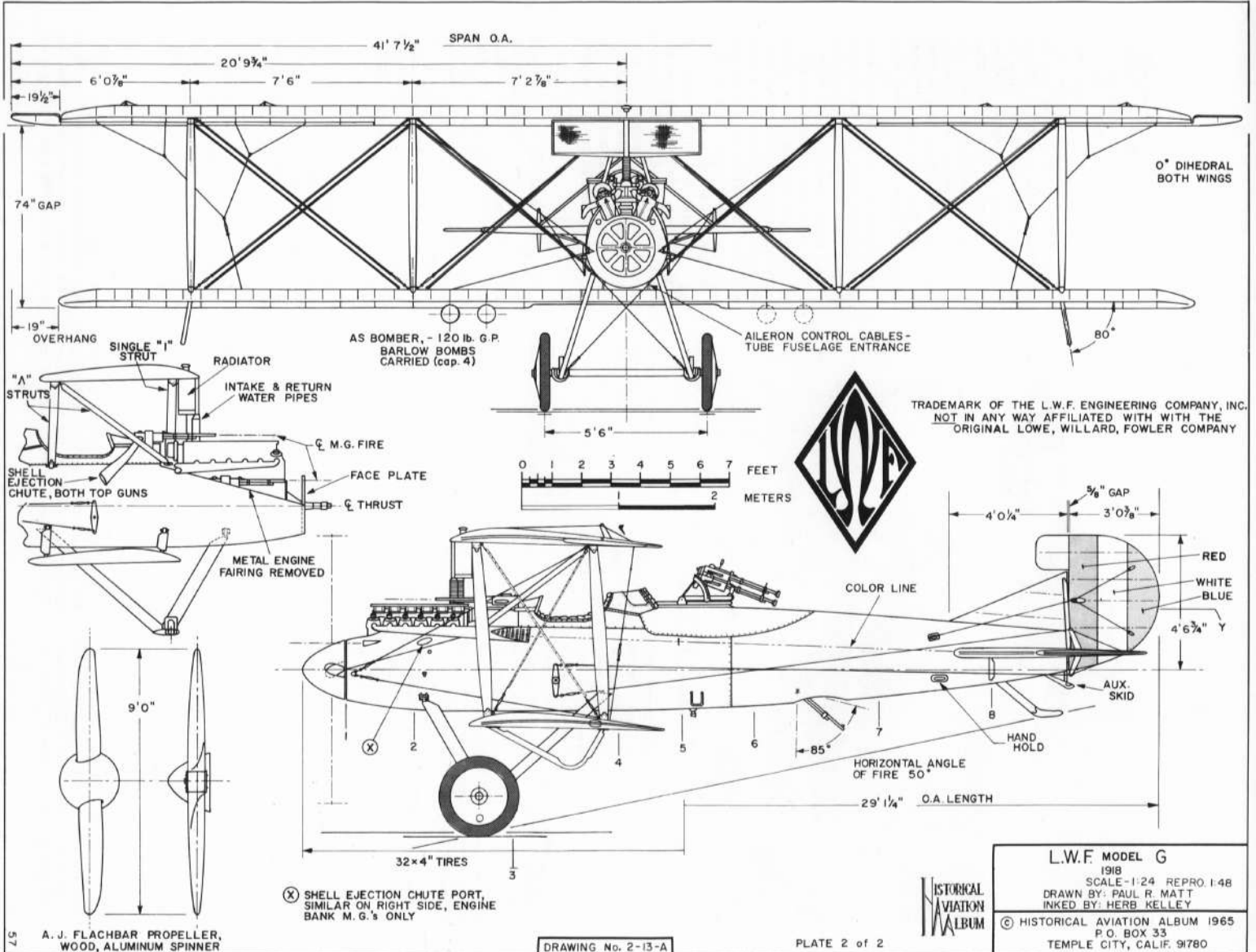
**COLORING NOTES**  
ALL PLAN VIEW SURFACES - DARK EARTH BROWN  
(UPPER SURFACES OF WINGS, TAIL SURFACES & TOP OF FUSELAGE TO COLOR LINE)  
UNDER SURFACES - PALE SKY BLUE  
STRUTS - CLEAR VARNISHED



DRAWING No. 2-13-A

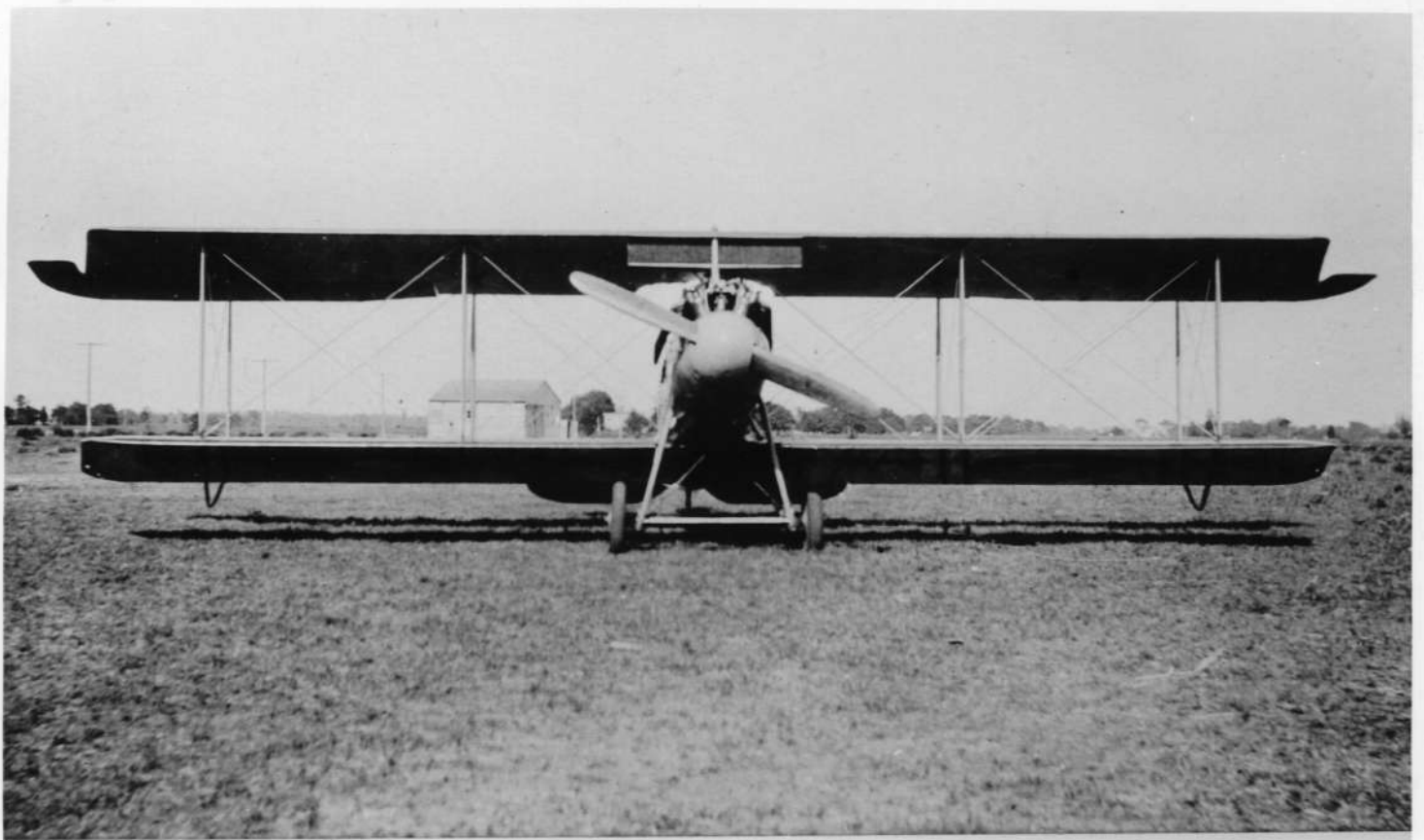


**L.W.F. MODEL G**  
1918  
SCALE - 1:24 REPR. 1:48  
DRAWN BY: PAUL R. MATT  
INKED BY: HERB KELLEY  
© HISTORICAL AVIATION ALBUM 1965  
P. O. BOX 33  
TEMPLE CITY, CALIF. 91780



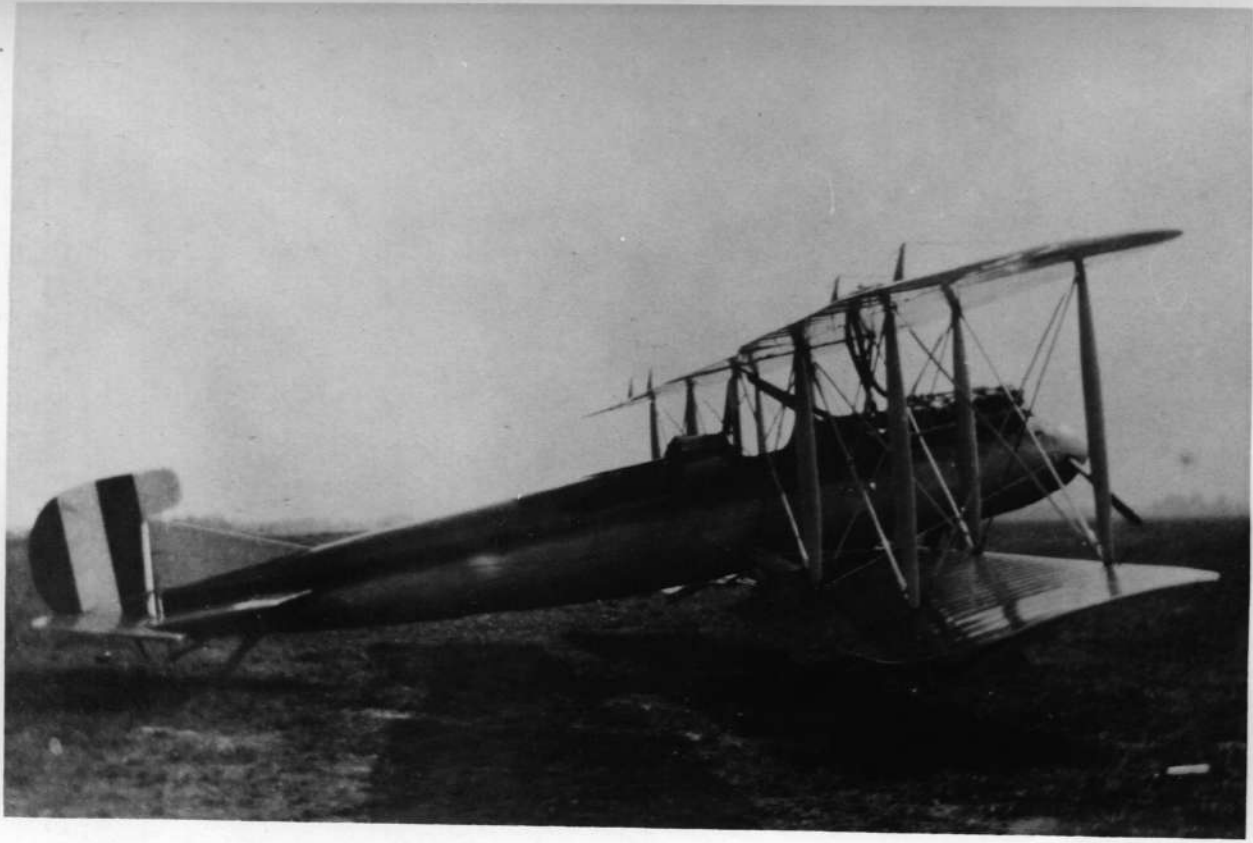






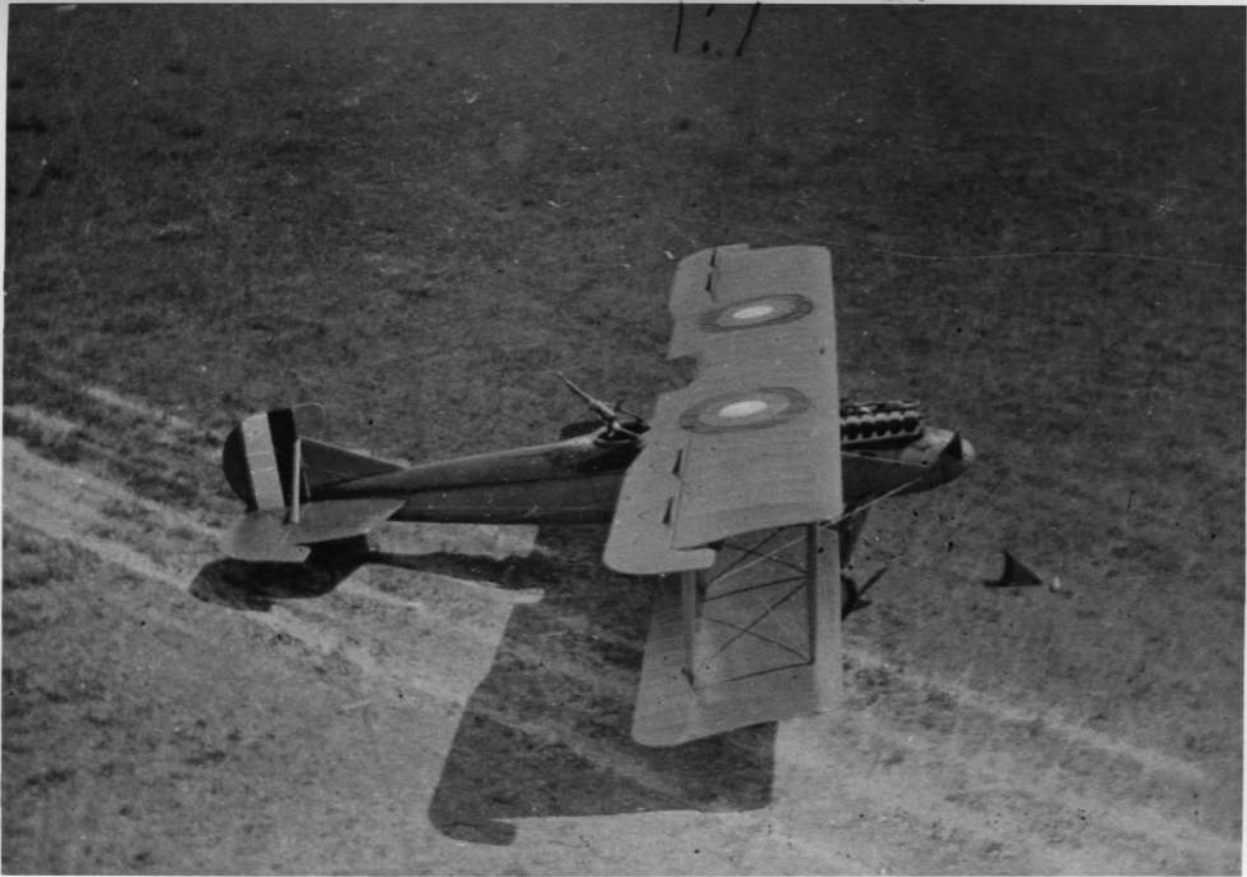








121











**MODEL G****Specifications****GENERAL:**

Type: Two seater land tractor biplane.  
 Use: Military reconnaissance, advanced training  
 or commercial.

**DIMENSIONS:**

Length overall, 29'2"  
 Height overall, 10'7"  
 Width overall, 46'6"

**WINGS:**

Wing curve L-W-F No. 1.  
 Chord 80", Gap 80", Stagger + 8".  
 Span: Upper wing 46'6", lower wing 38'4".

**AREAS:**

Total supporting area 555 square feet.  
 Area of ailerons 42 square feet.  
 Area of elevators 22 square feet.  
 Area of horizontal stabilizer 29 square feet.  
 Area of vertical stabilizer 5.5 square feet.  
 Area of rudder 11.5 square feet.

**CONTROL:**

Deperdussin control center column single or dual.  
 Stick control can be furnished if preferred.

**POWER PLANT:**

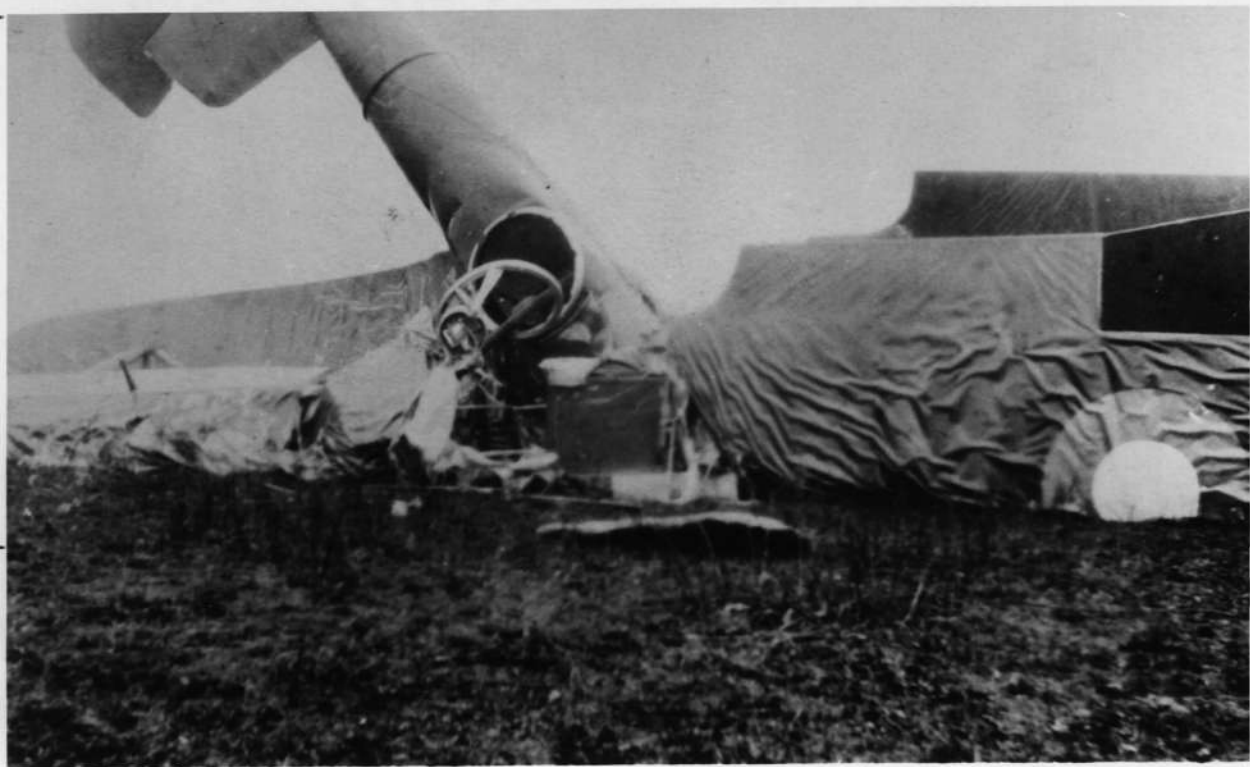
Liberty 12 cylinder engine, 350 B.H.P.  
 Gasoline consumption per B.H.P. per hour .54 lbs.  
 Oil consumption per B.H.P. per hour .03 lbs.  
 Propeller: Two blade, R.P.M. 1,650.

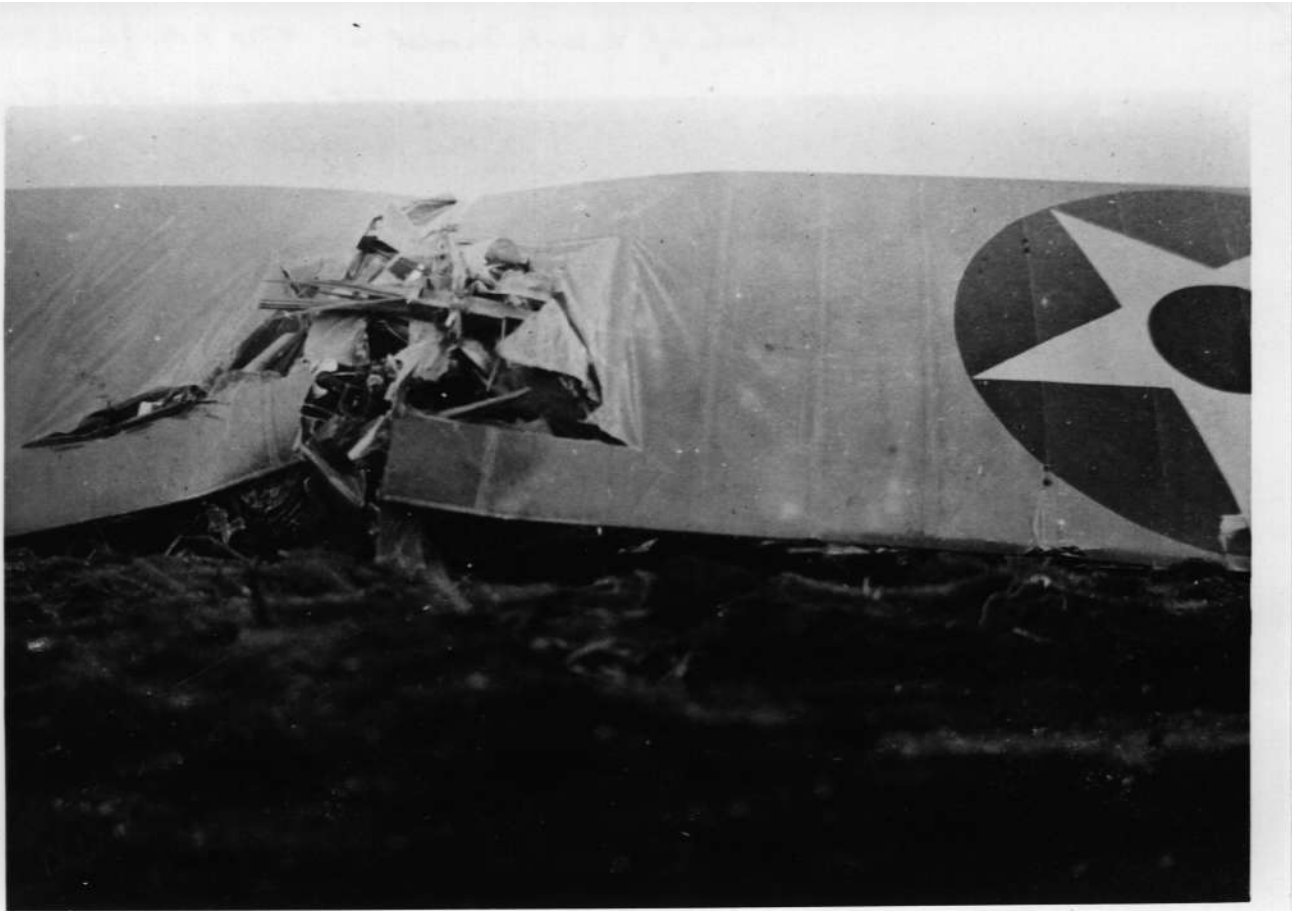
**WEIGHTS:**

Gross weight, fully loaded	3,522 lbs.
Light weight, empty	2,498 lbs.
Useful load	1,024 lbs.
Water (11 gallons)	92 lbs.
Gasoline capacity (86 gallons)	532 lbs.
Oil capacity (6 gallons)	42 lbs.
Two men or equivalent	330 lbs.
Accessories	28 lbs.

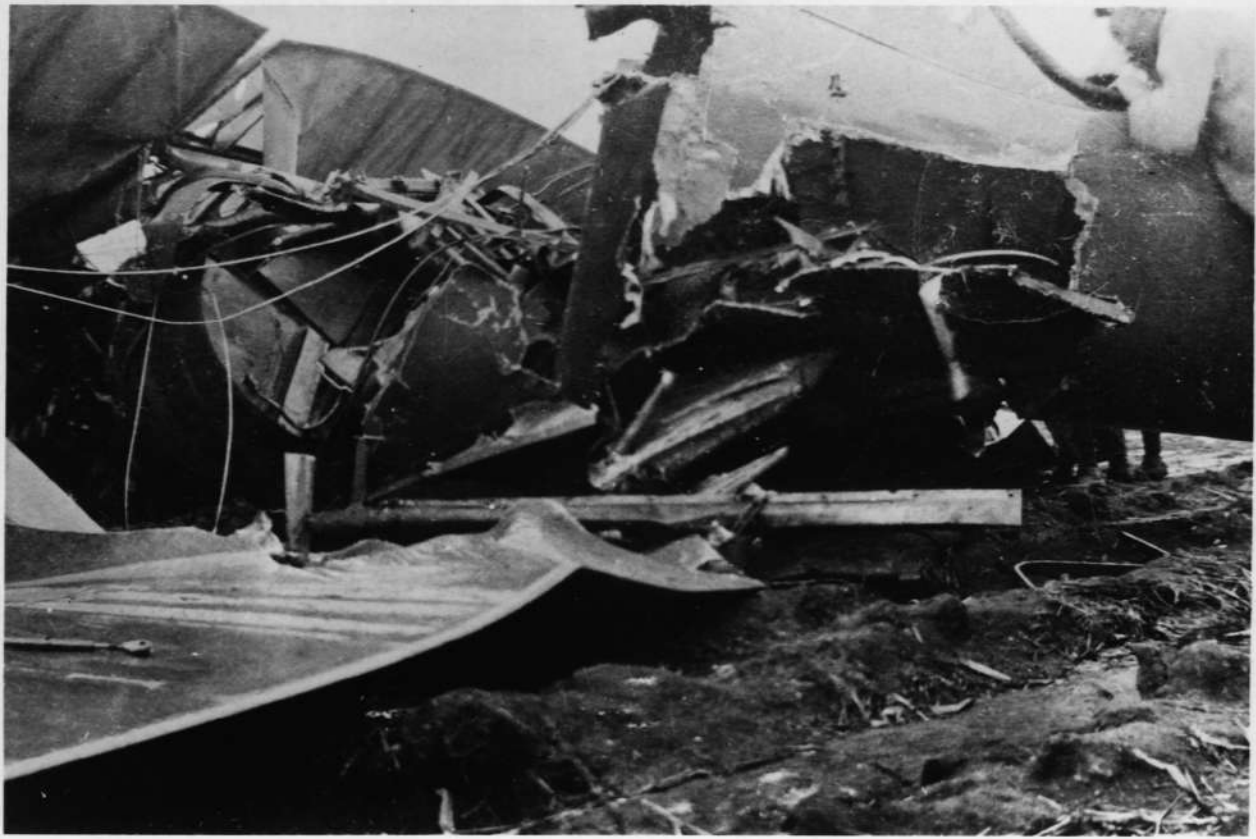
**PERFORMANCE (fully loaded):**

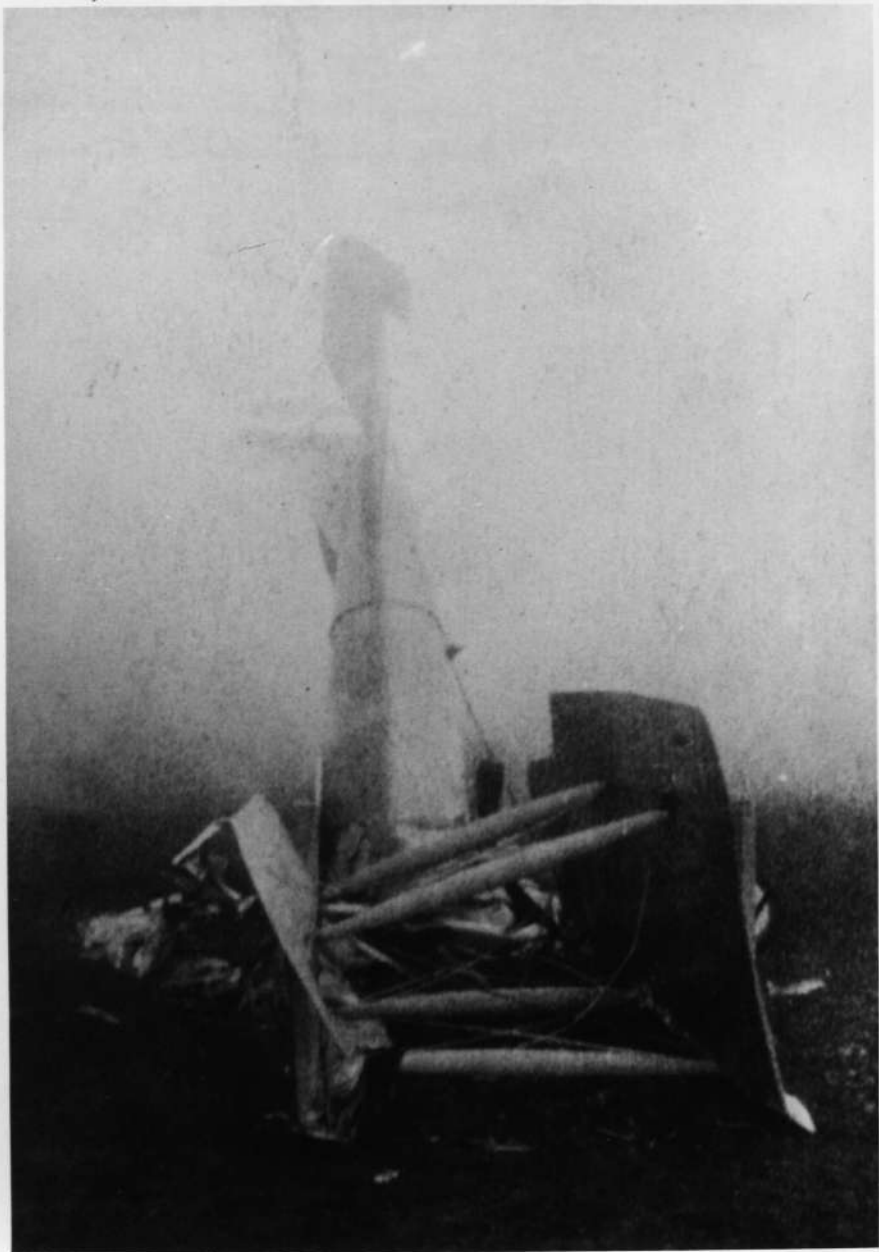
High speed, 125 miles per hour.  
 Low speed (landing), 47 miles per hour.  
 Climbing speed, 10,000 feet in 7½ minutes.  
 Ceiling, 24,000 feet.  
 Endurance at full speed, 2¾ hours.  
 This machine is capable of carrying a cargo of  
 about 1,200 lbs. in addition to the above load.







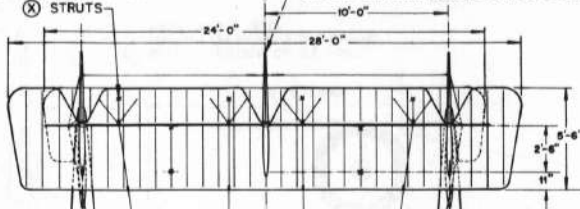






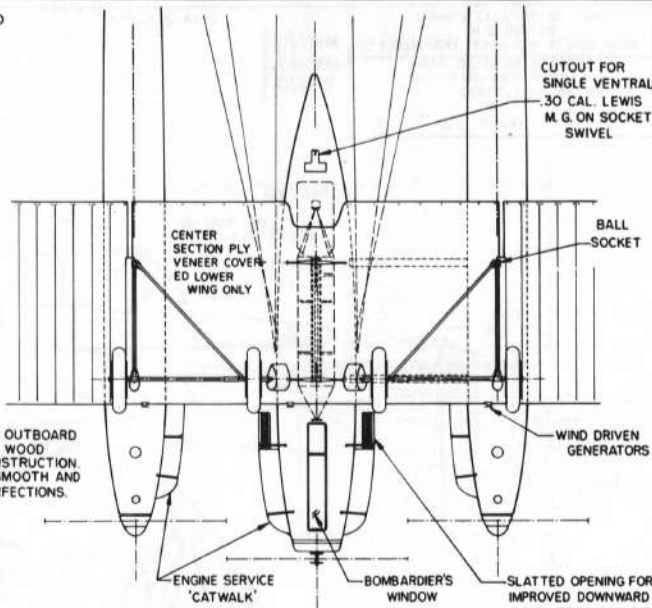


INTERPLANE BRACING REF STRUTS



CENTER VERTICAL, RUDDER ONLY, NO FIN EMPLOYED

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



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

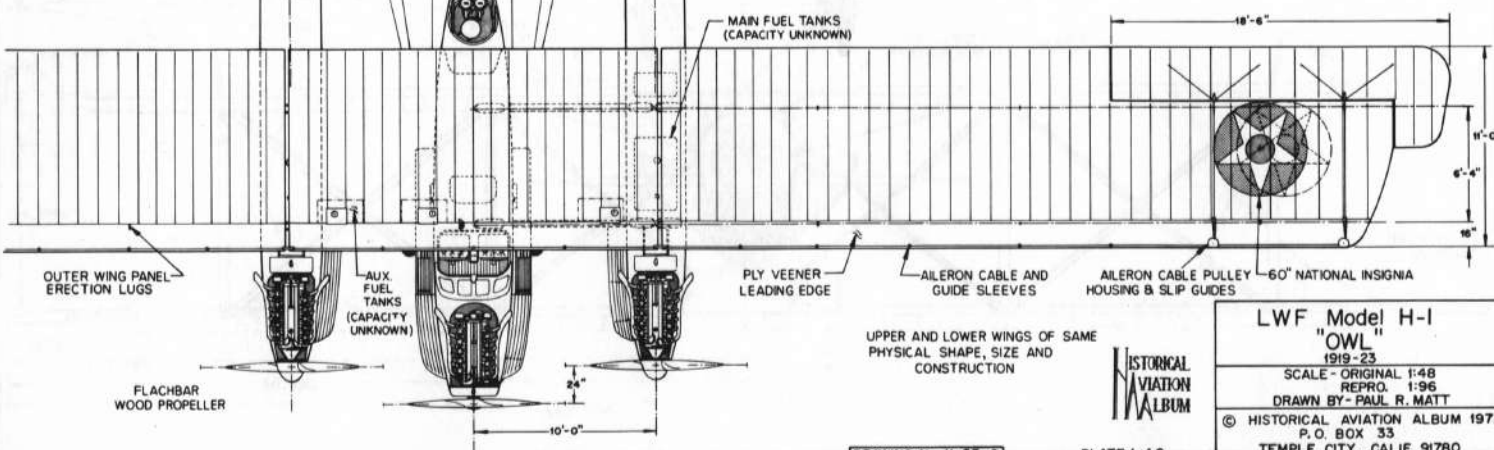
GENERAL SPECIFICATIONS

WEIGHT EMPTY 12,400 LBS.  
 USEFUL LOAD 7,600 LBS.  
 GROSS WEIGHT 20,000 LBS.  
 WING AREA (INCL.AILERONS) 2,700 SQ.FT.  
 POWER LOADING  
 TOP SPEED, S.L. 110 M.P.H.  
 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 12+ 400 HP @ 1700 RPM

COLORING NOTES

ENTIRE AIRCRAFT GLOSS OLIVE DRAB (GREEN)  
 A.S. NUMBER & WHEEL COVERS - WHITE  
 NATIONAL INSIGNIA, RED, WHITE & BLUE

TWIN 30 CAL. LEWIS GUNS ON SCARFF MOUNT



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



LWF Model H-1 "OWL" 1919-23

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

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

DRAWING No. 11-85-C

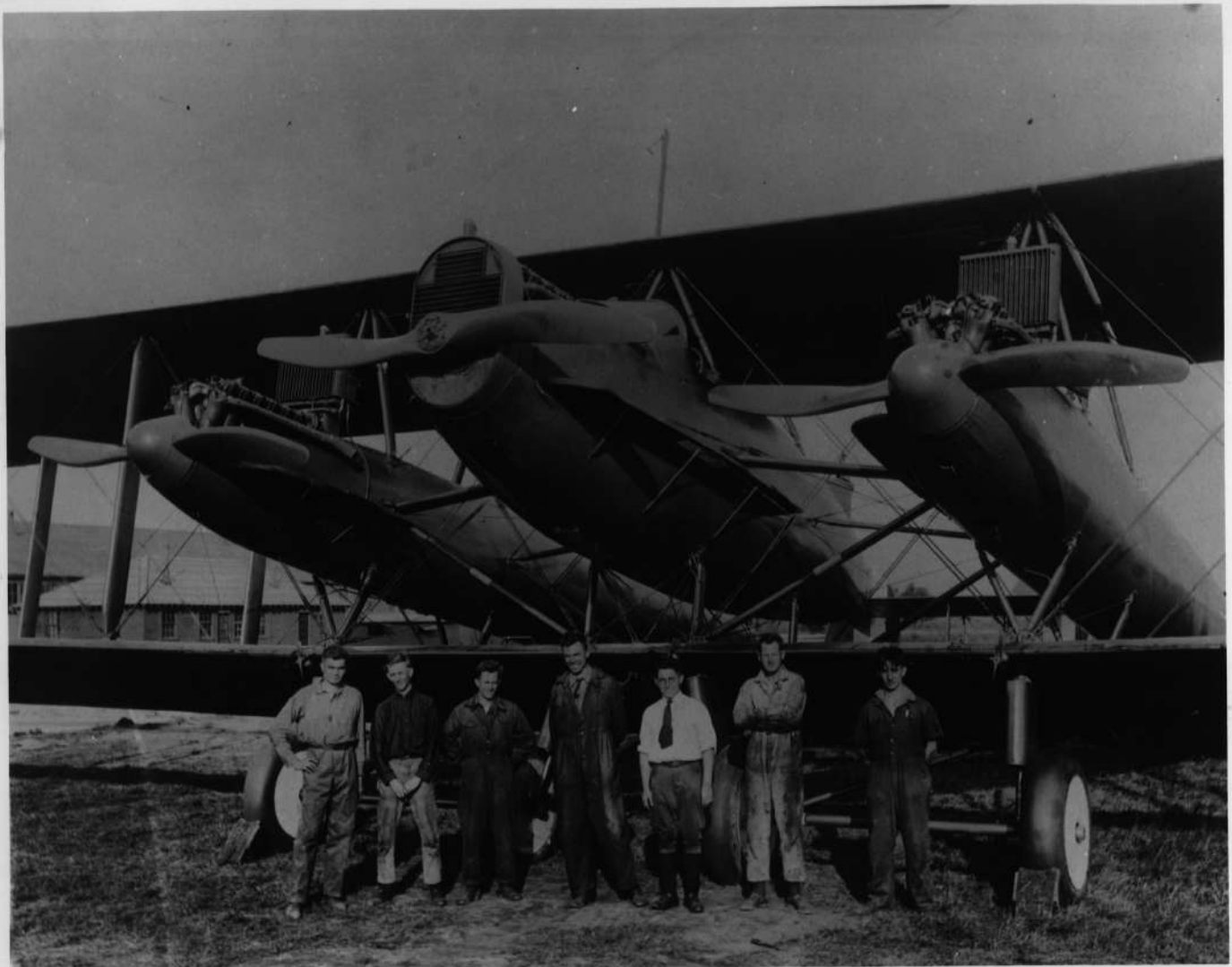
PLATE 1 of 2





AIR PARK MAINTENANCE  
ENGINEERING SECTION

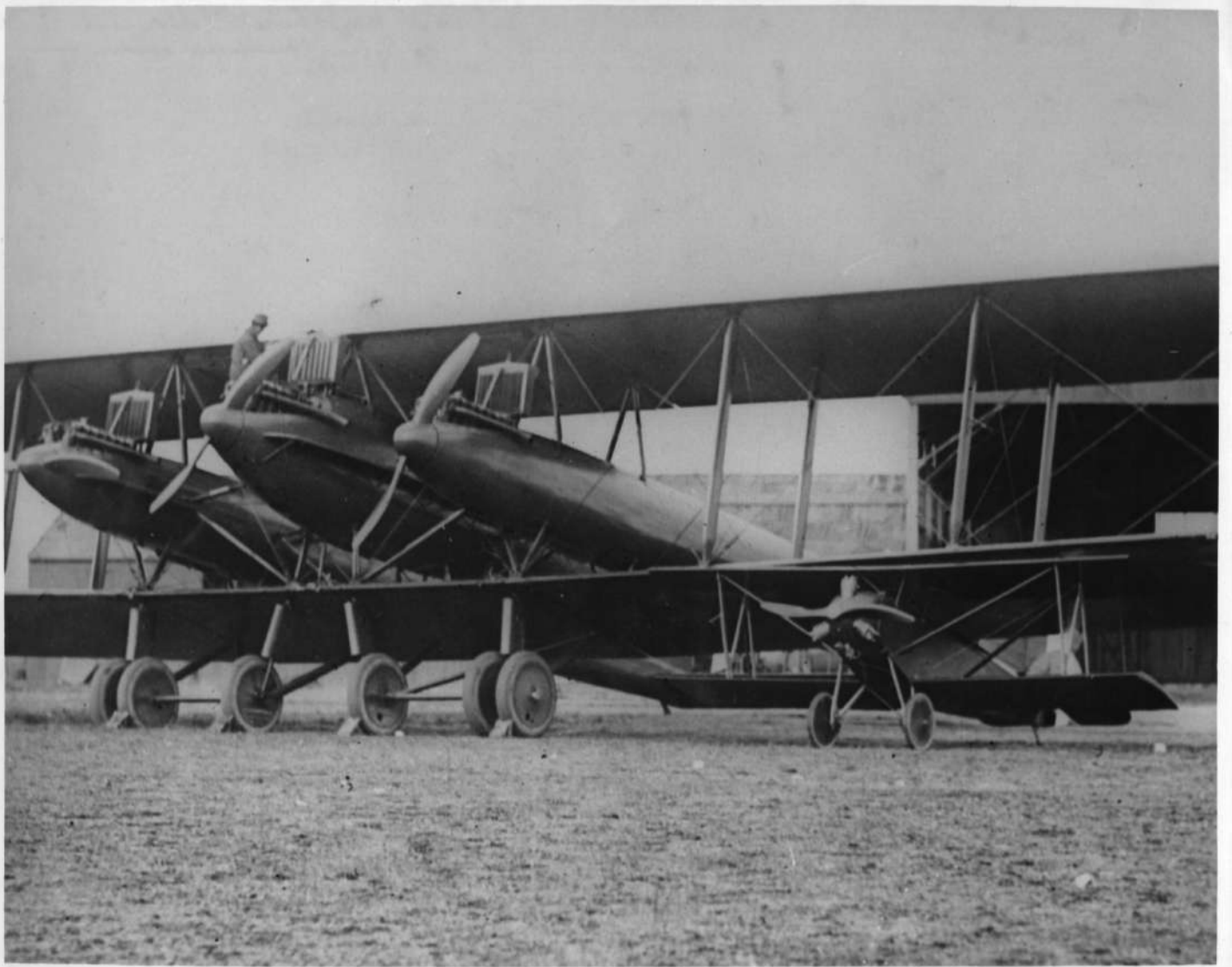
THE OWL  
L. W. F. ENGINEERING CORP.

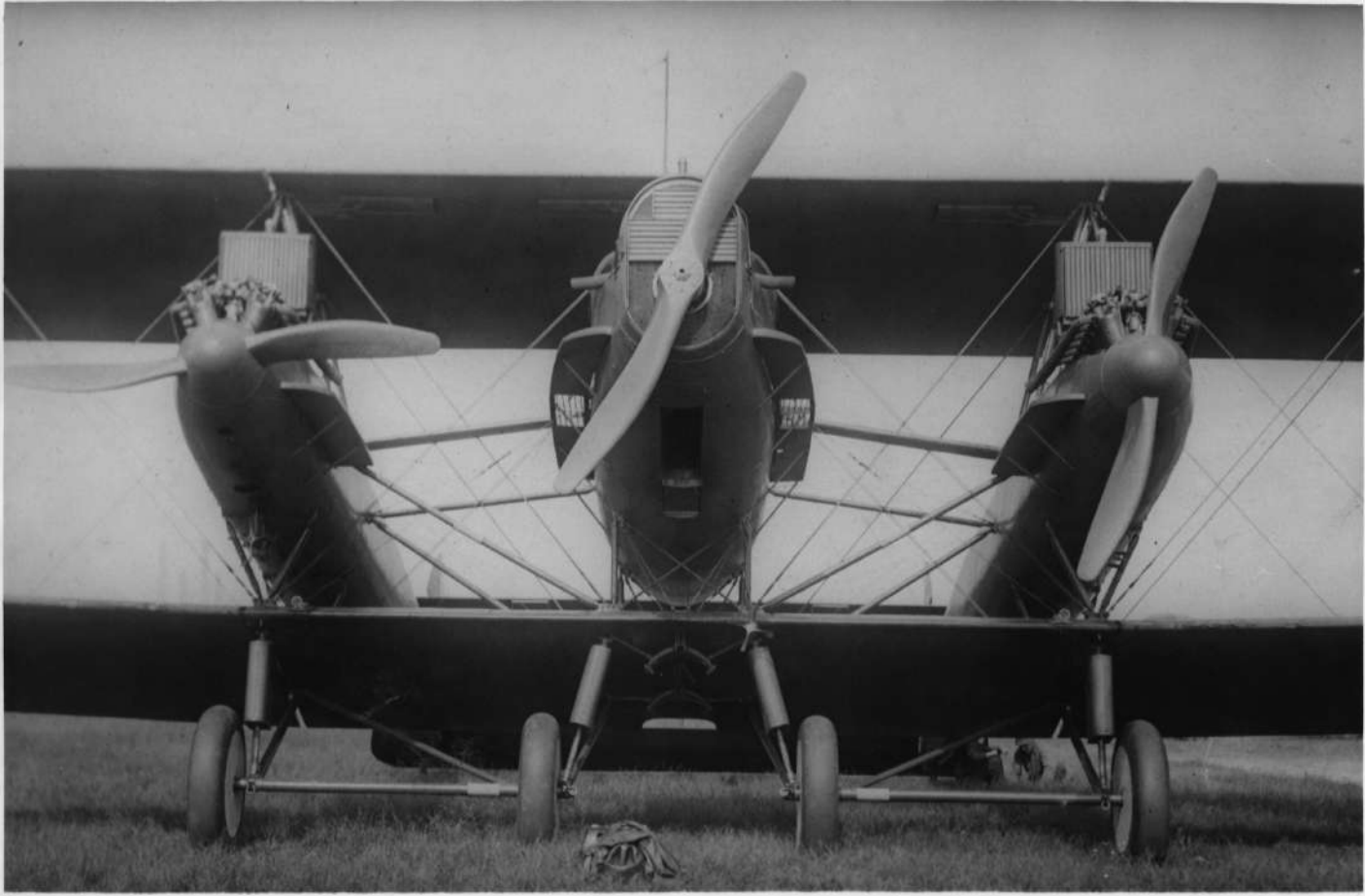


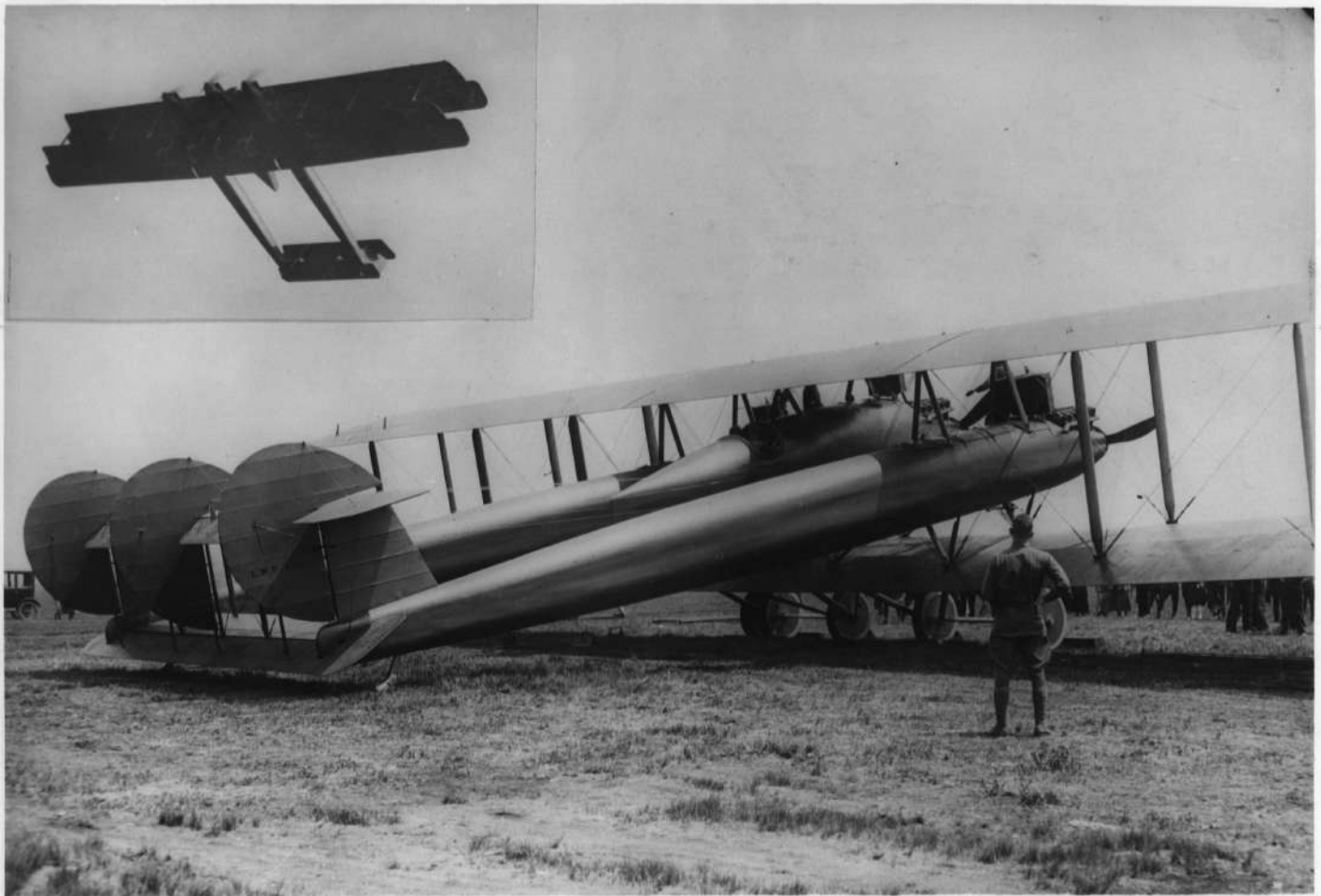
GEORGE      HENRY      GIL      CHAS.      RAOUL      WM.      PETE  
KRAIGHER    STAFFELT    ANDREWS    ARENS    HUFFMAN    COOK    TORANTO

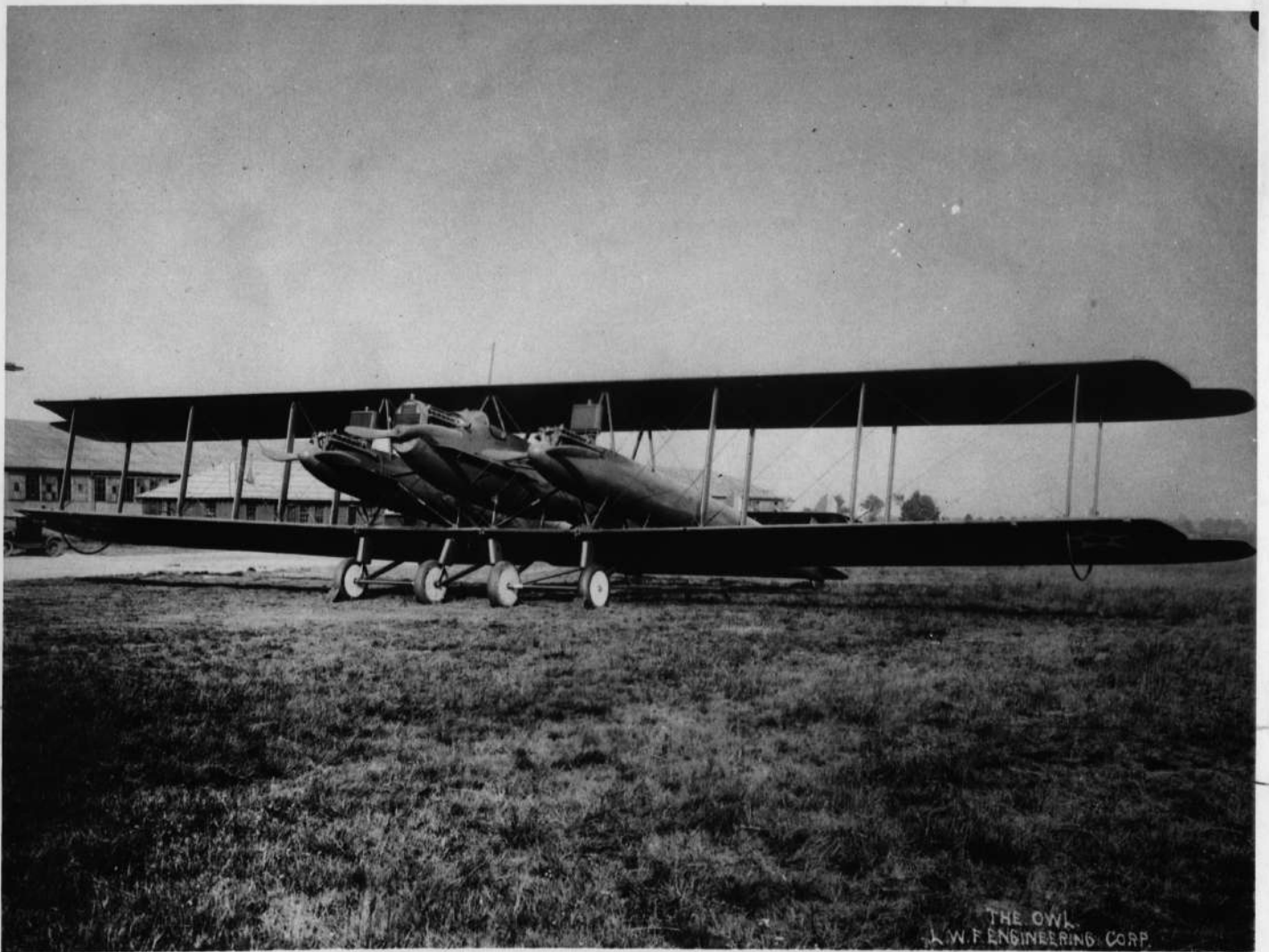












THE OWL  
L. W. F. ENGINEERING CORP.



AIR PARK  
ENGINEER

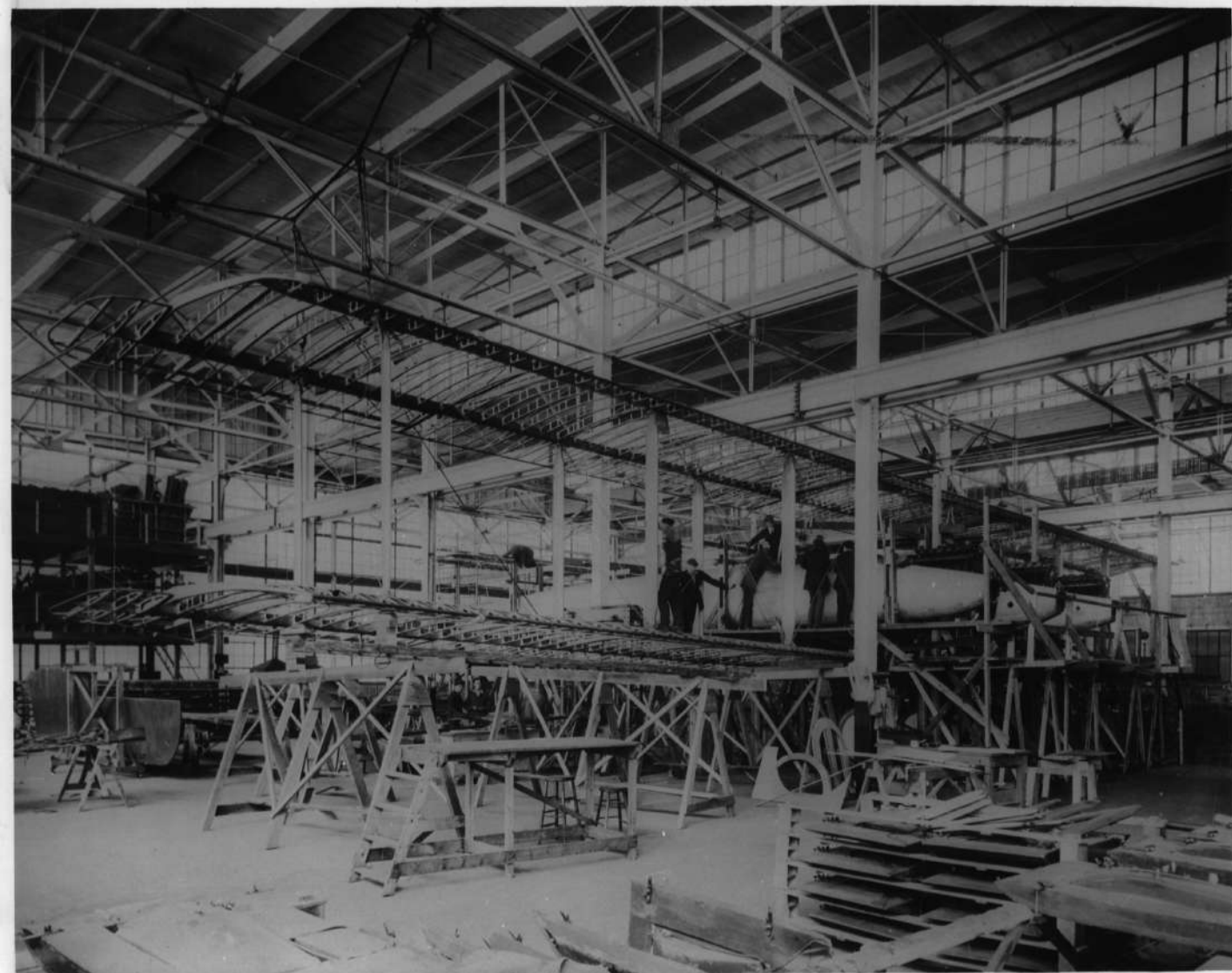
THE OWL





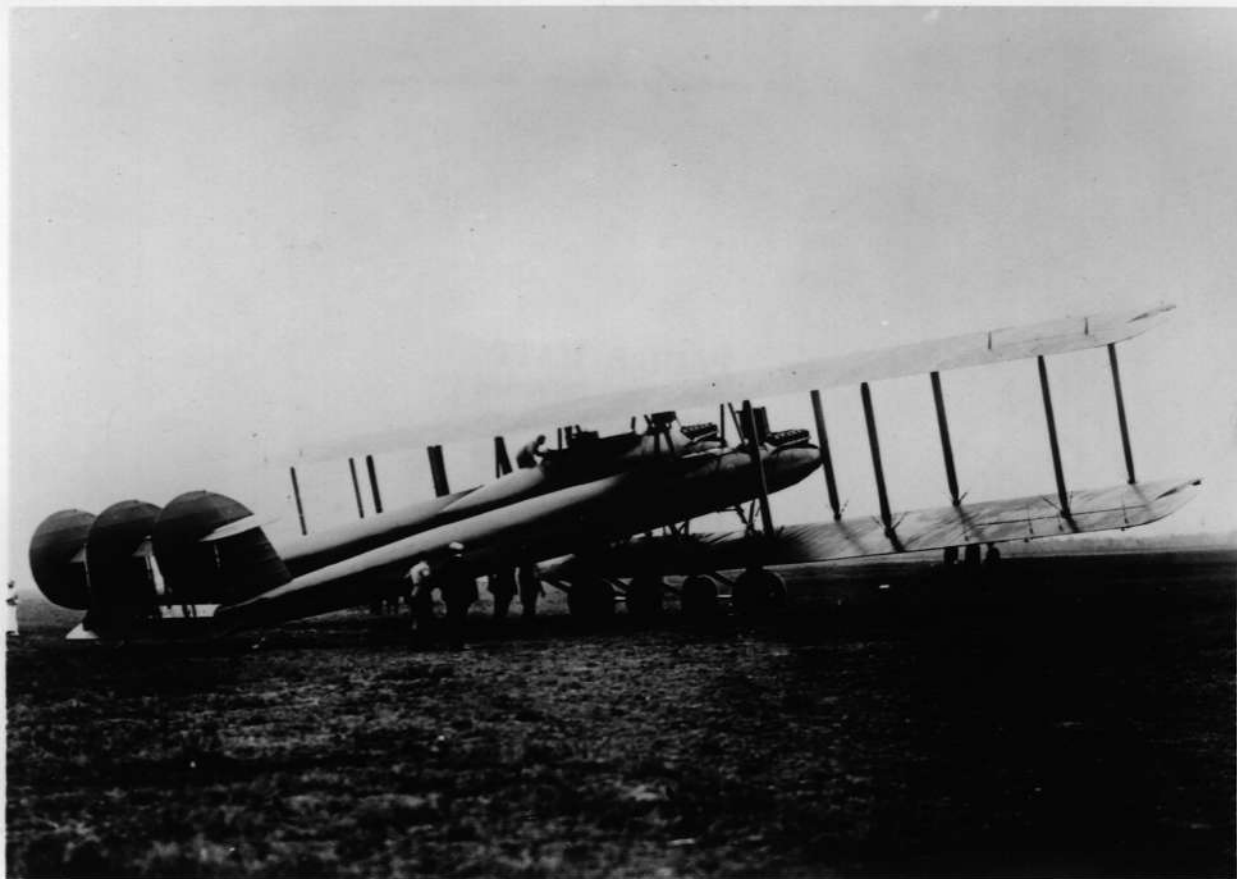


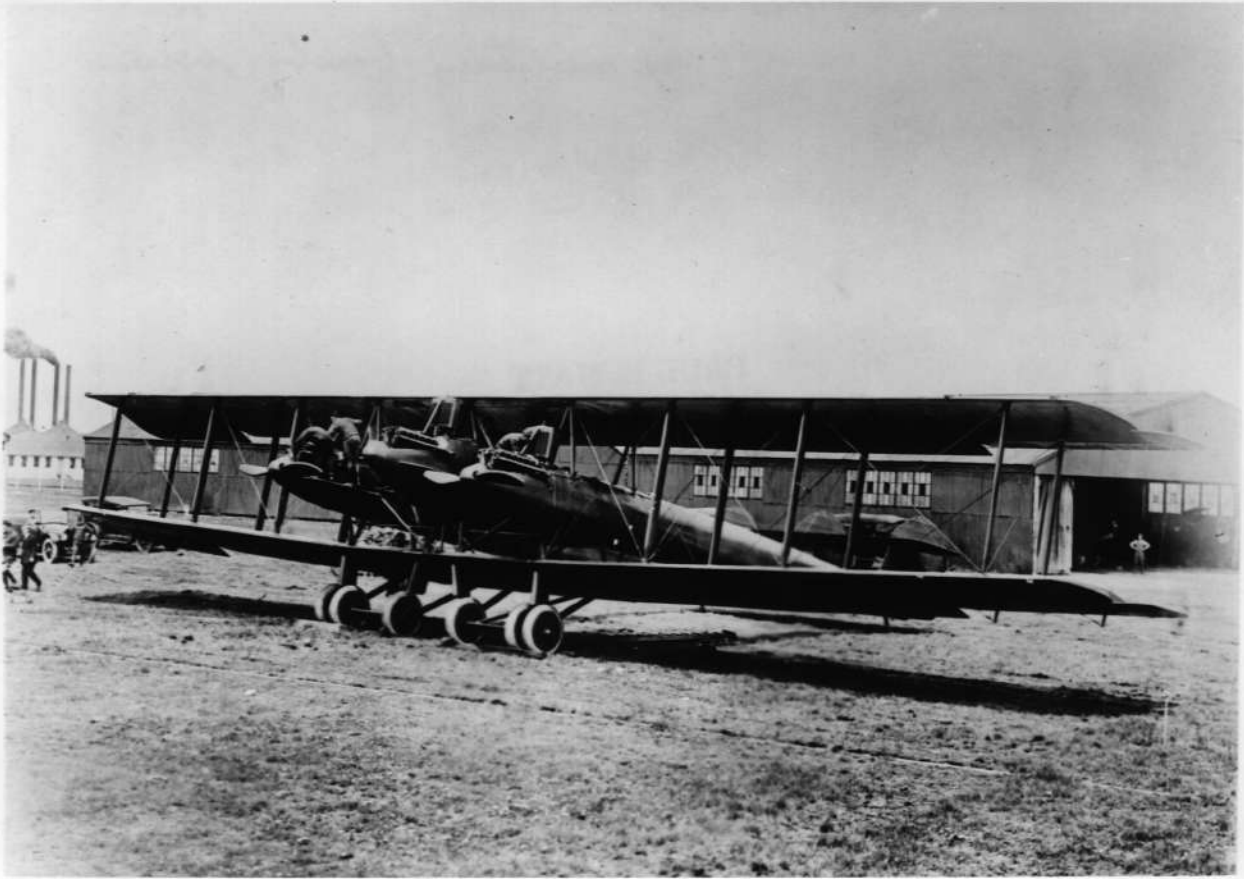


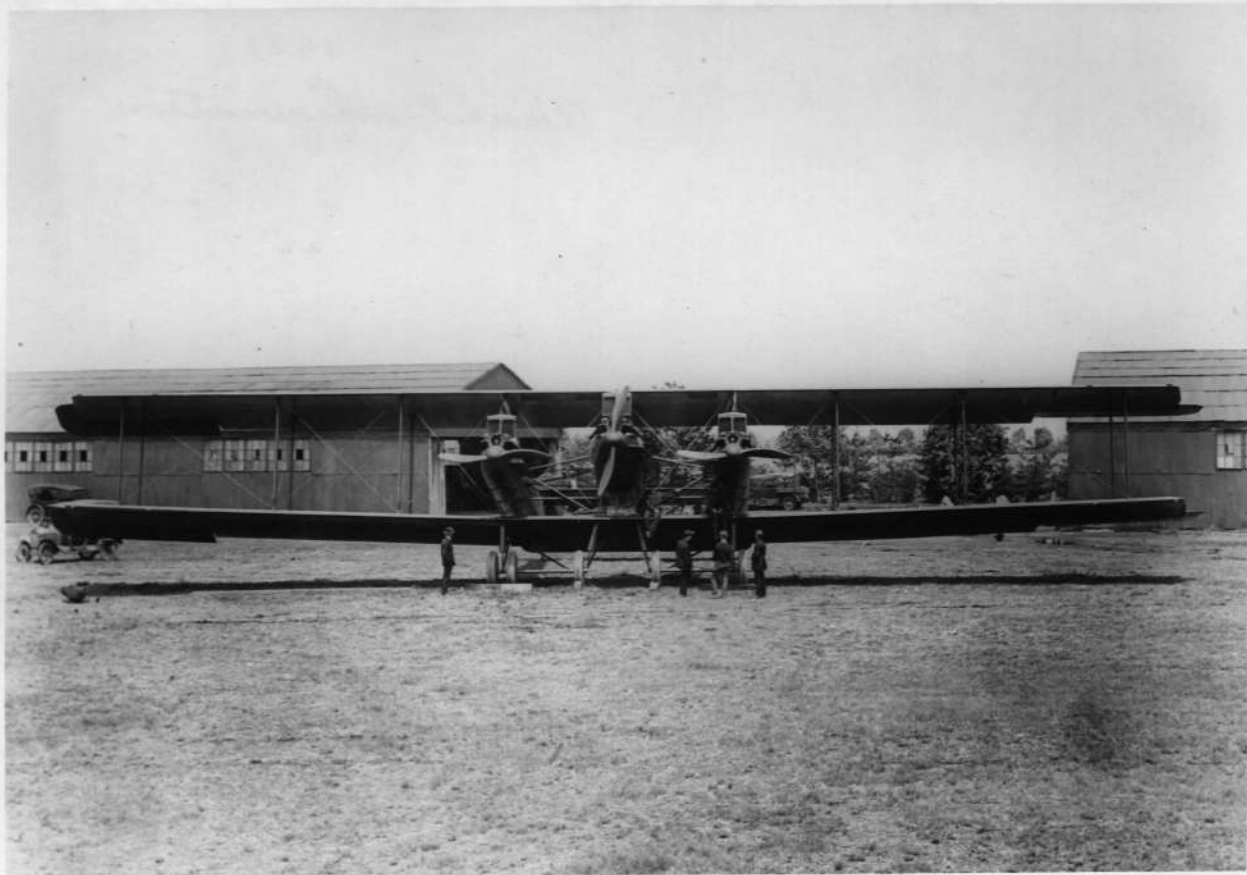


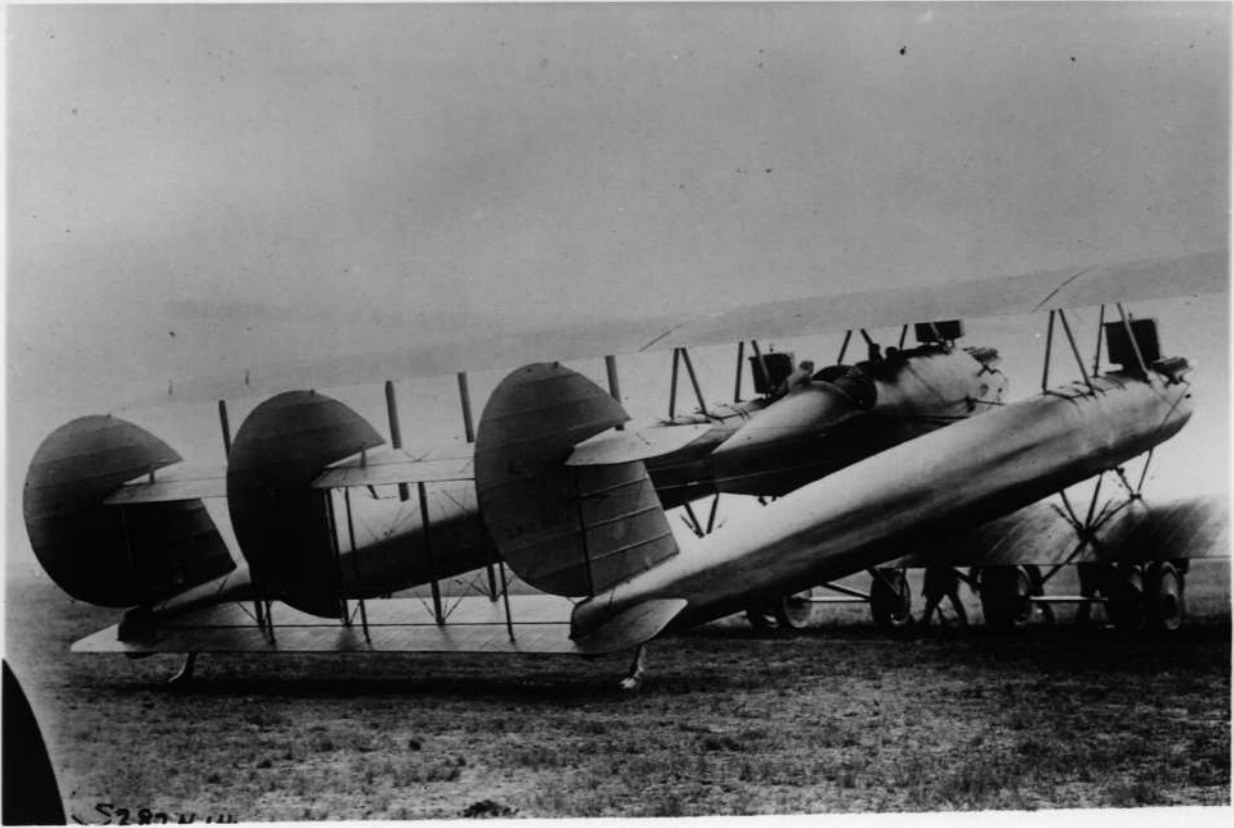


A-10574 A.S.







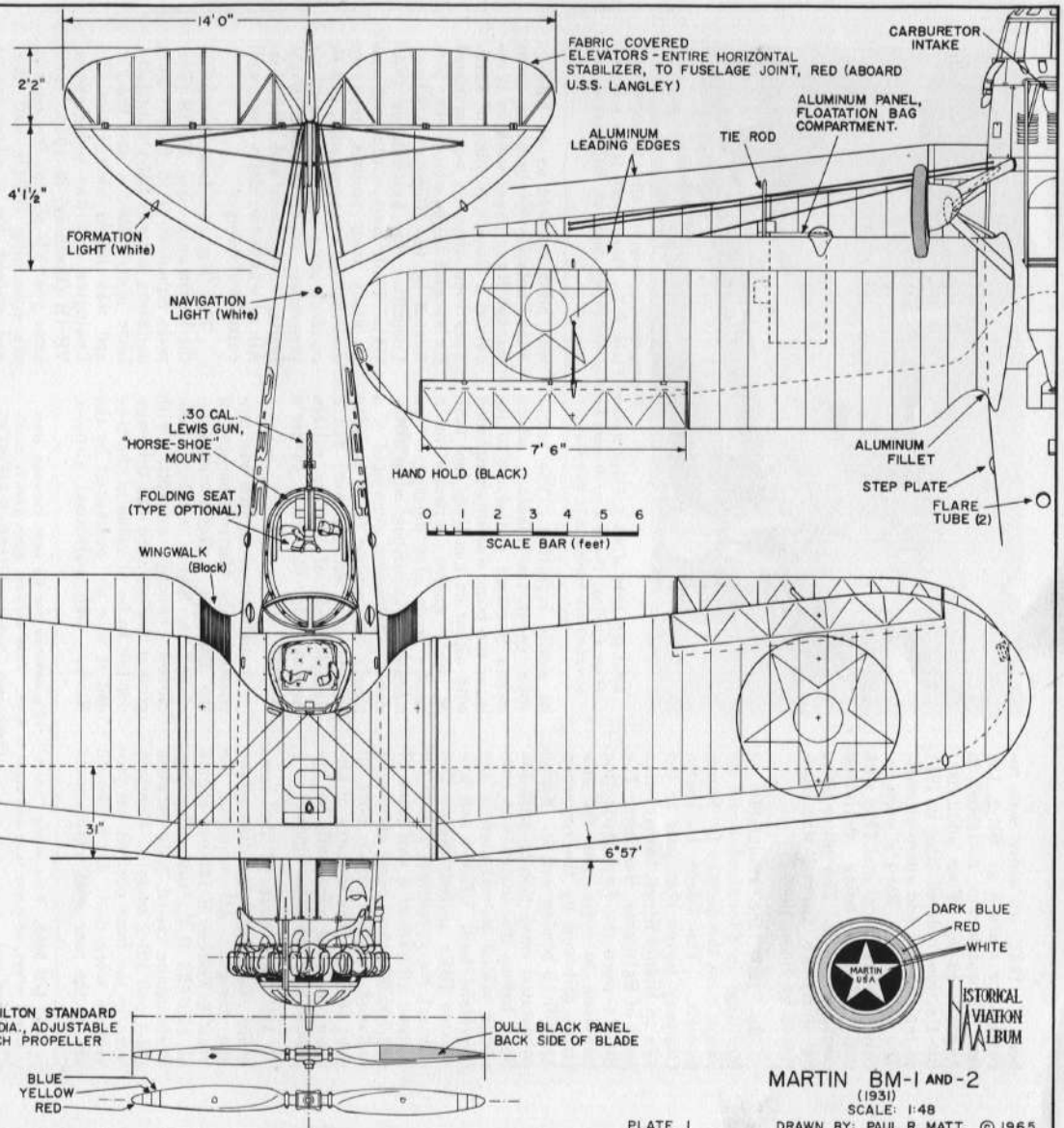


S282 V. 14

**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 WHT. 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)



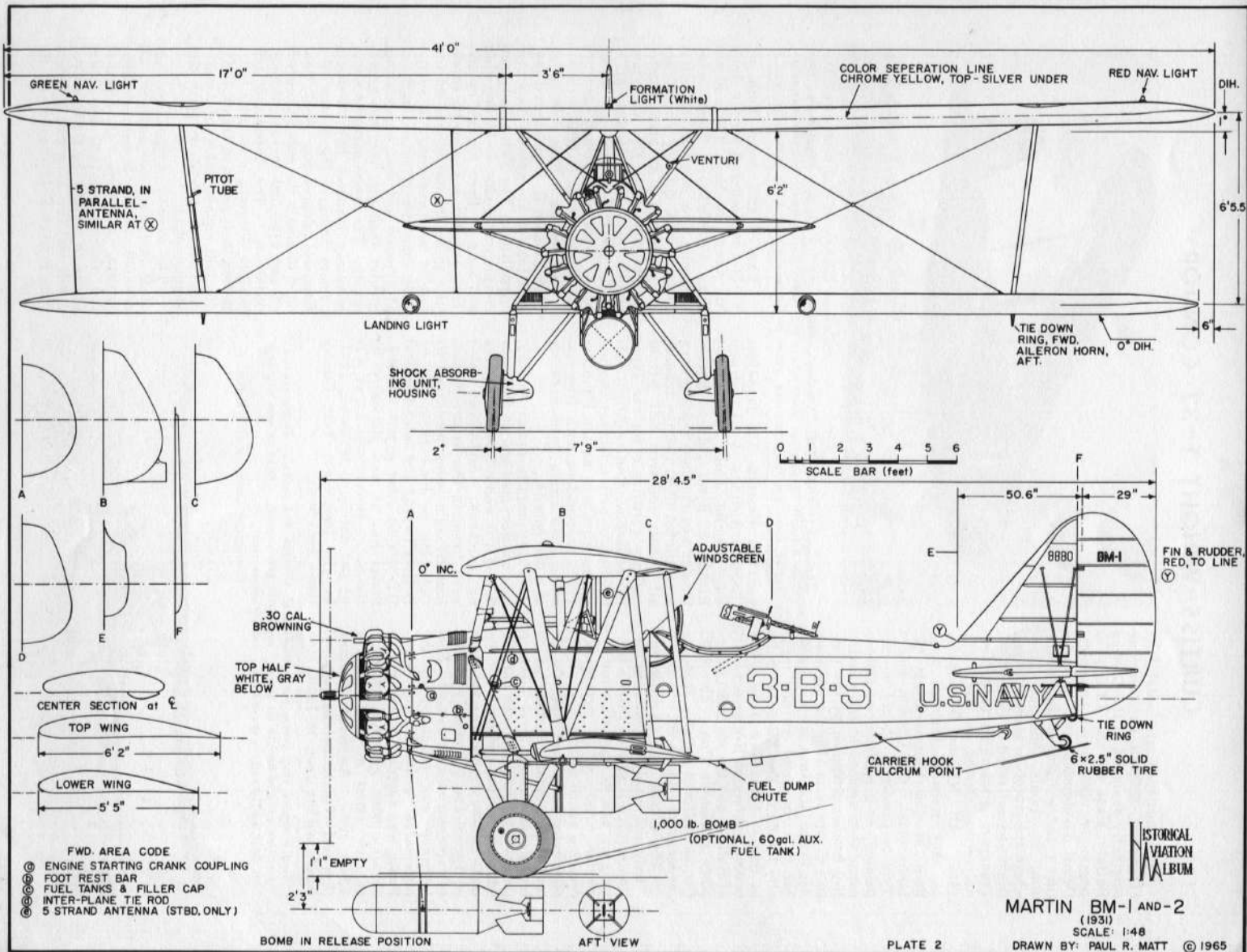
**MARTIN BM-1 AND -2**  
 (1931)

SCALE: 1:48

DRAWN BY: PAUL R. MATT © 1965

PLATE I





- FWD. AREA CODE
- ⓐ ENGINE STARTING CRANK COUPLING
  - ⓑ FOOT REST BAR
  - ⓒ FUEL TANKS & FILLER CAP
  - ⓓ INTER-PLANE TIE ROD
  - ⓔ 5 STRAND ANTENNA (STBD. ONLY)

HISTORICAL AVIATION ALBUM

MARTIN BM-1 AND -2

(1931)

SCALE: 1:48

PLATE 2

DRAWN BY: PAUL R. MATT © 1965













**GENERAL SPECIFICATIONS**

LANDPLANE TYPE, MARTIN SPECS R-47600

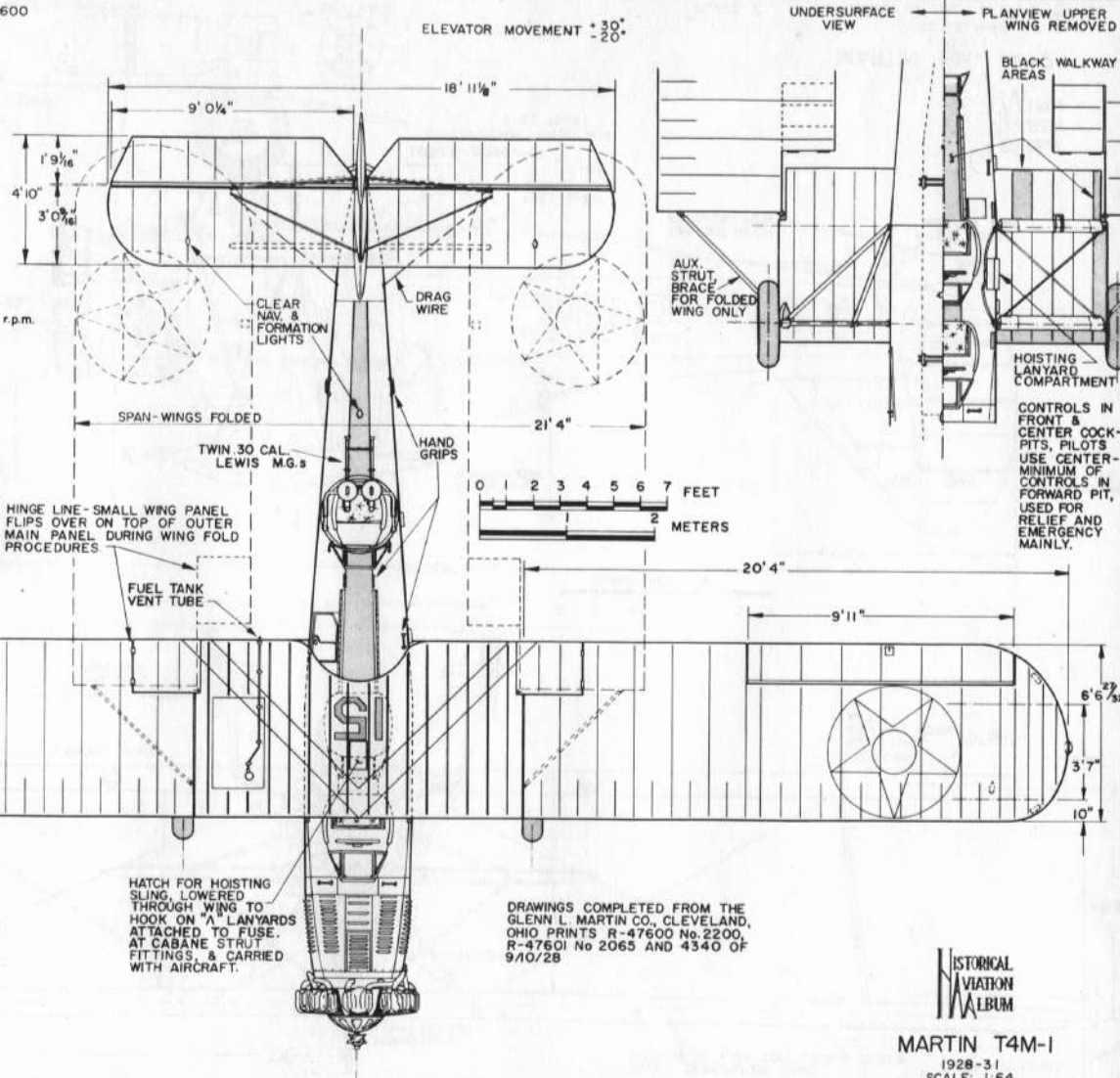
WEIGHT EMPTY	3890 lbs.
USEFUL LOAD	347 lbs.
CREW	400 lbs.
EQUIPMENT	308 lbs.
ORDNANCE	2079 lbs.
FUEL (104 gals normal)	624 lbs.
OIL (8 gals)	60 lbs.
GROSS WEIGHT (Scout)	6547 lbs.
GROSS WEIGHT (With Torpedo)	7309 lbs.
WING LOADING (Full Load)	110 lbs./sq ft.
POWER LOADING (Full Load)	140 lbs./H.P.
CLIMB IN 10 min.	3850 ft.
SERVICE CEILING	10,150 ft.
ENDURANCE (Full Power)	3.5 hrs.
ENDURANCE (Cruise)	7.5 hrs.
RANGE (Full Power)	435 miles
RANGE (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.
FUEL CAPACITY (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



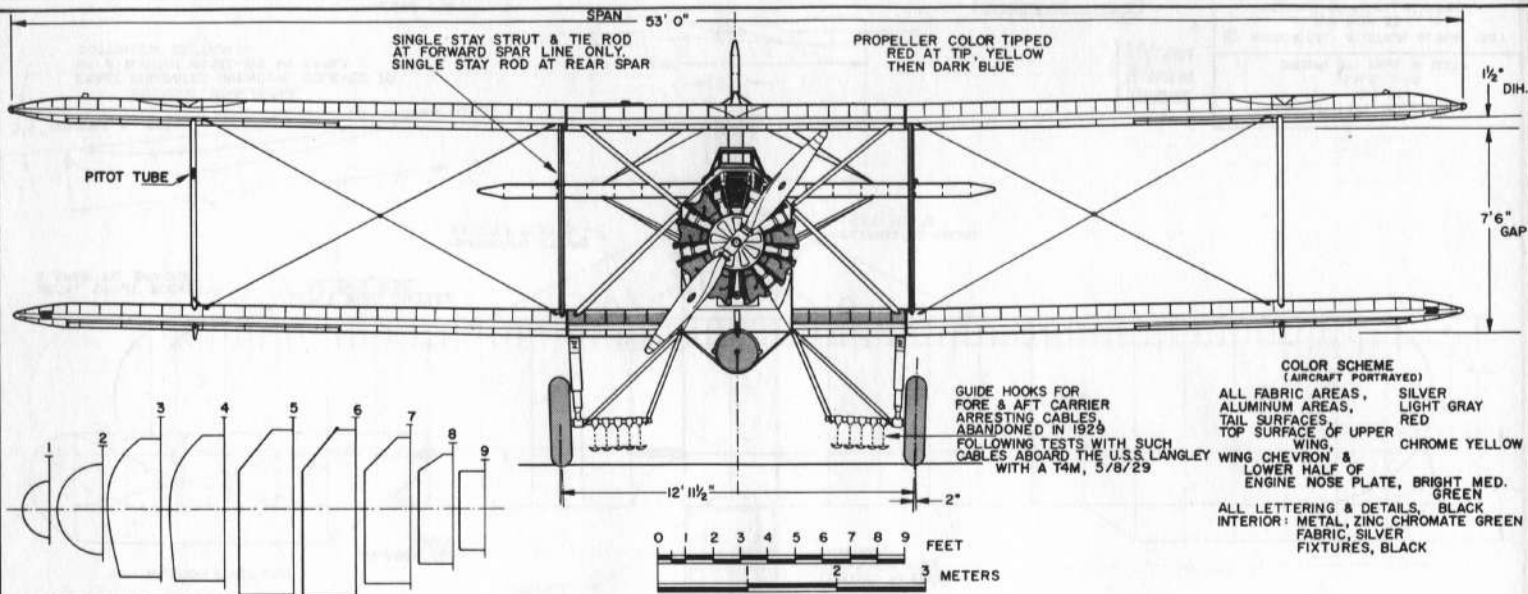
**MARTIN T4M-1**  
1928-31  
SCALE: 1:64  
DRAWN BY: PAUL R. MATT

DRAWING No. 4-29-D

PLATE 1 of 2

© HISTORICAL AVIATION ALBUM, 1967





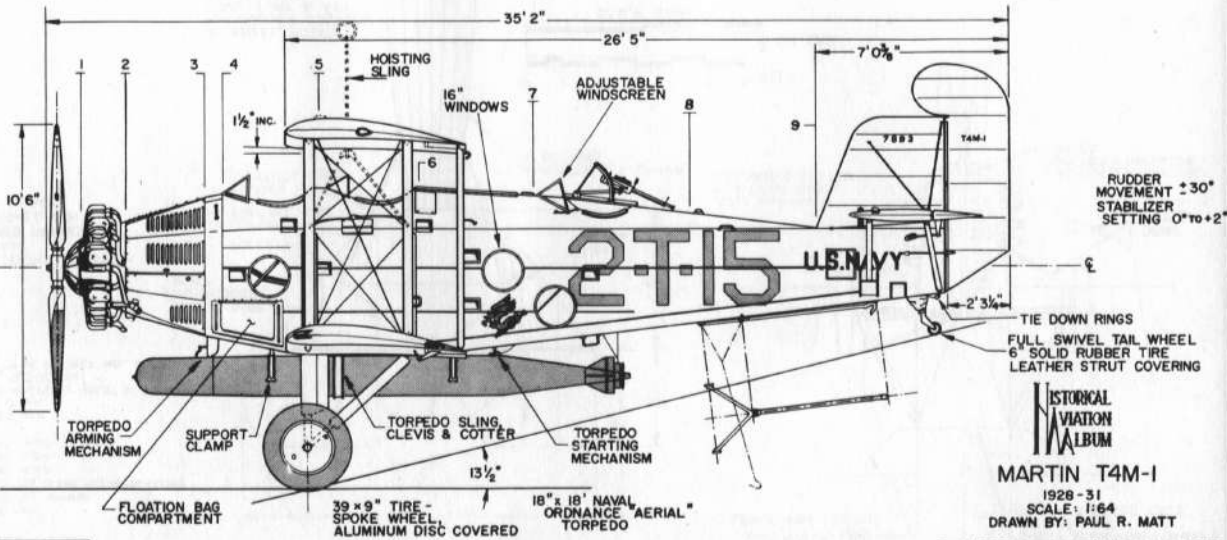
**COLOR SCHEME**  
(AIRCRAFT PORTRAYED)

ALL FABRIC AREAS, SILVER  
ALUMINUM AREAS, LIGHT GRAY  
TAIL SURFACES, RED  
TOP SURFACE OF UPPER WING, CHROME YELLOW  
WING CHEVRON & LOWER HALF OF ENGINE NOSE PLATE, BRIGHT MED. GREEN  
ALL LETTERING & DETAILS, BLACK  
INTERIOR: METAL, ZINC CHROMATE GREEN  
FABRIC, SILVER  
FIXTURES, BLACK

FUSELAGE FABRIC COVERED AFT OF TEMPLATE 4, ALUMINUM FORWARD AS WELL AS FAIRINGS AND INSPECTION PLATES.  
HAMILTON STANDARD GROUND ADJUSTABLE PROPELLER

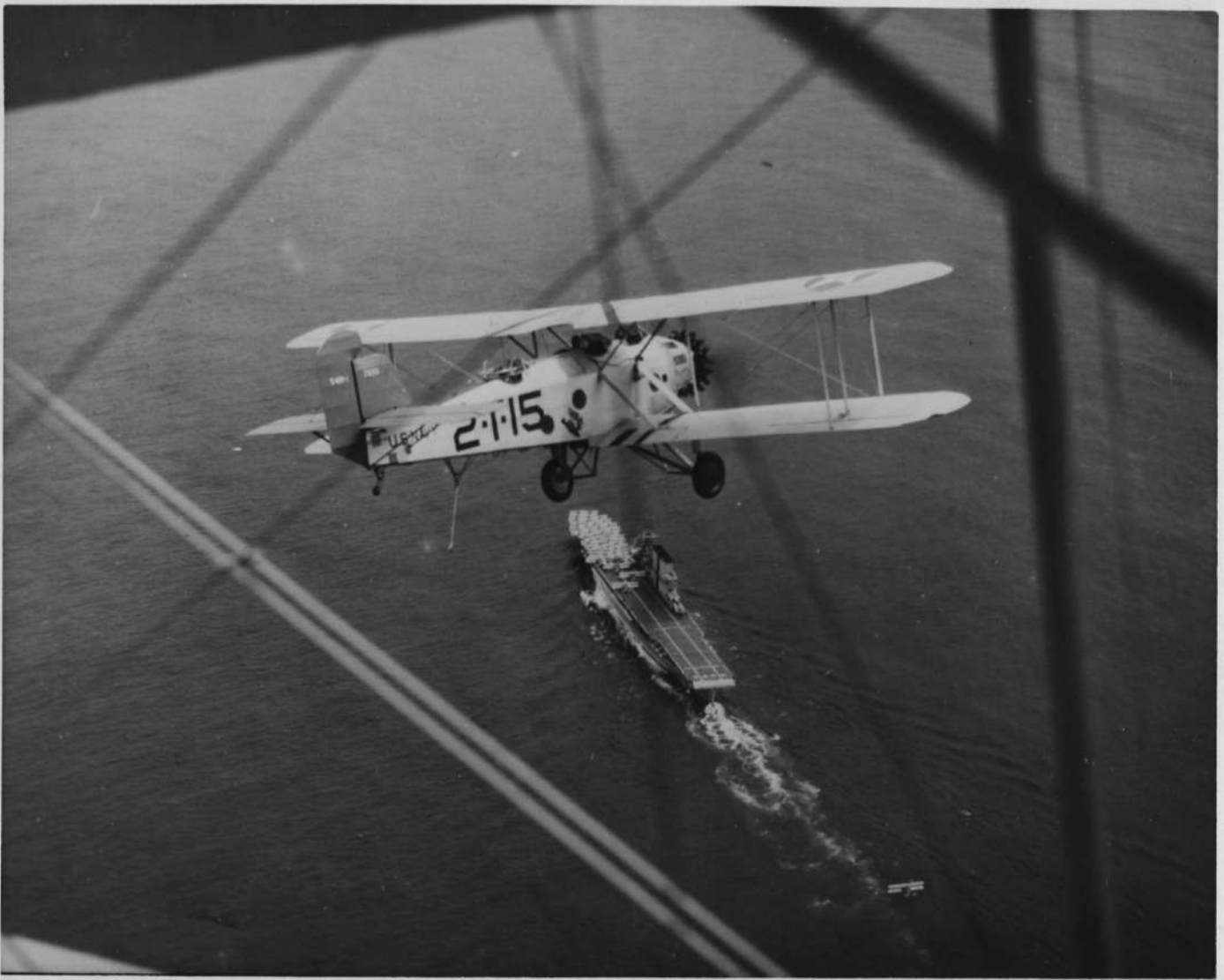
VT-2B  
(TORPEDO SQUADRON TWO)  
FIRE BREATHING FLYING DRAGON  
DRAGON - RED  
SPIRE - GREEN  
CLAWS & TAIL TIP - YELLOW  
TORPEDO - BLACK

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



**HISTORICAL AVIATION ALBUM**

**MARTIN T4M-1**  
1928-31  
SCALE: 1:64  
DRAWN BY: PAUL R. MATT



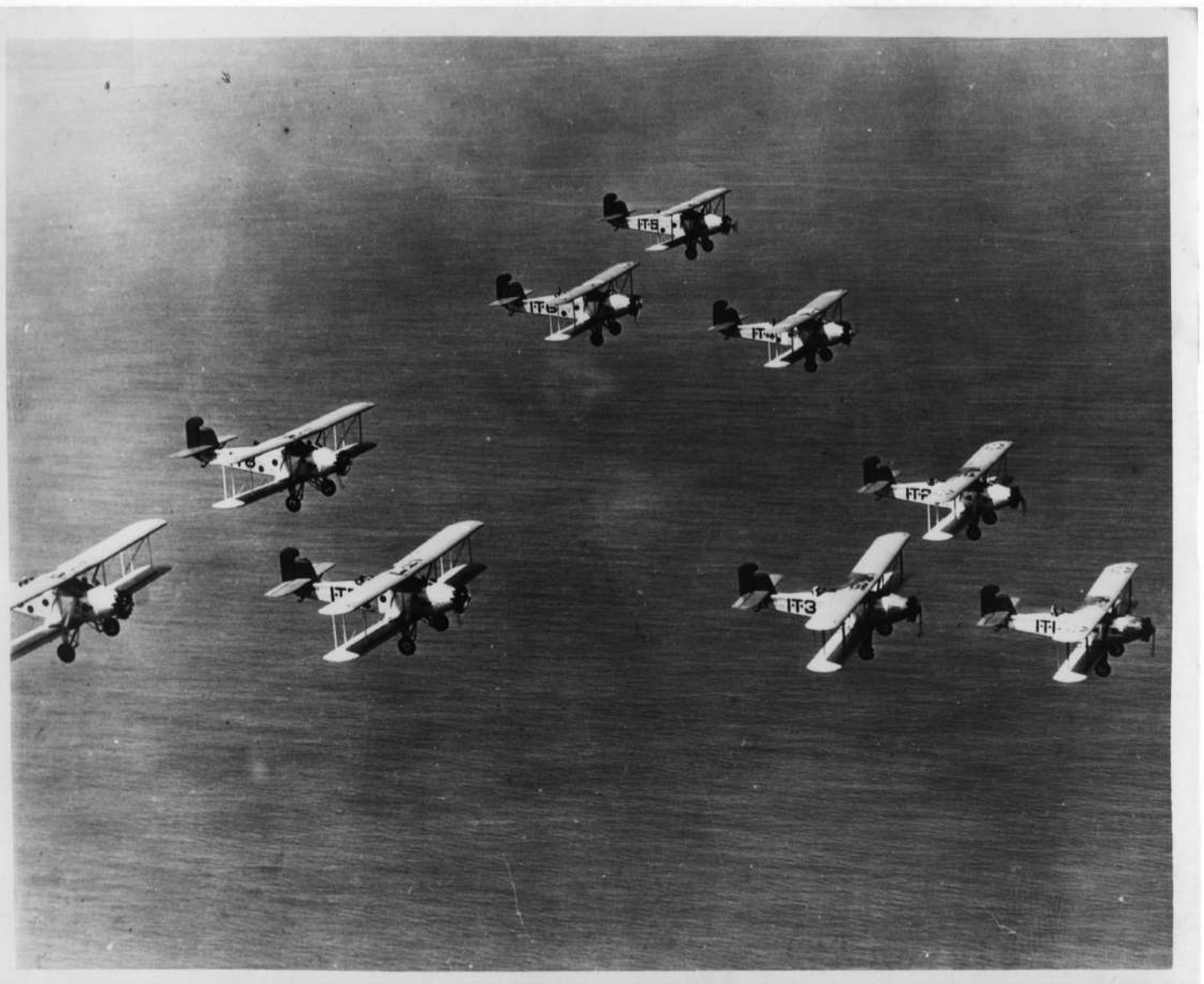




















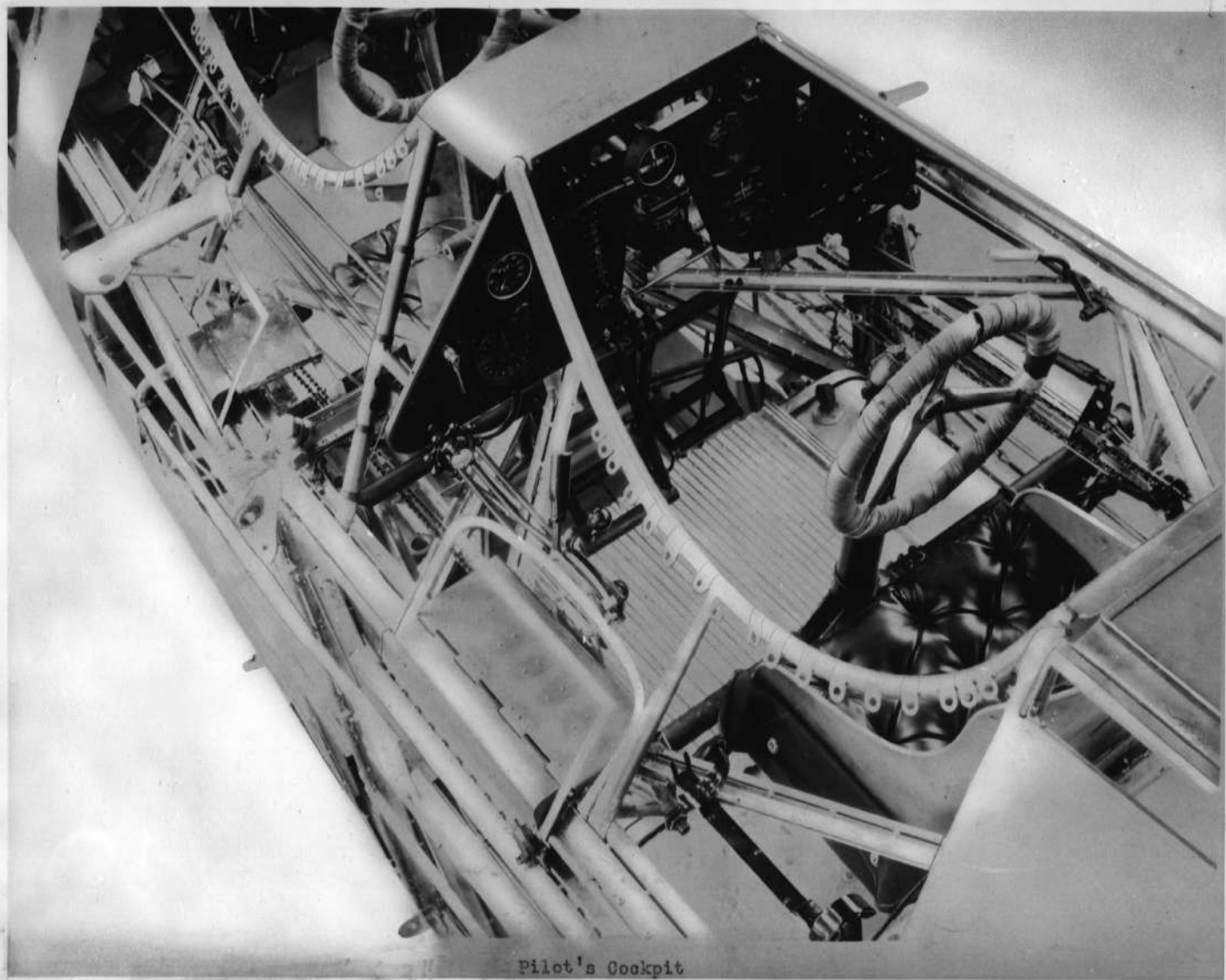




1798



366 9-31



Pilot's Cockpit













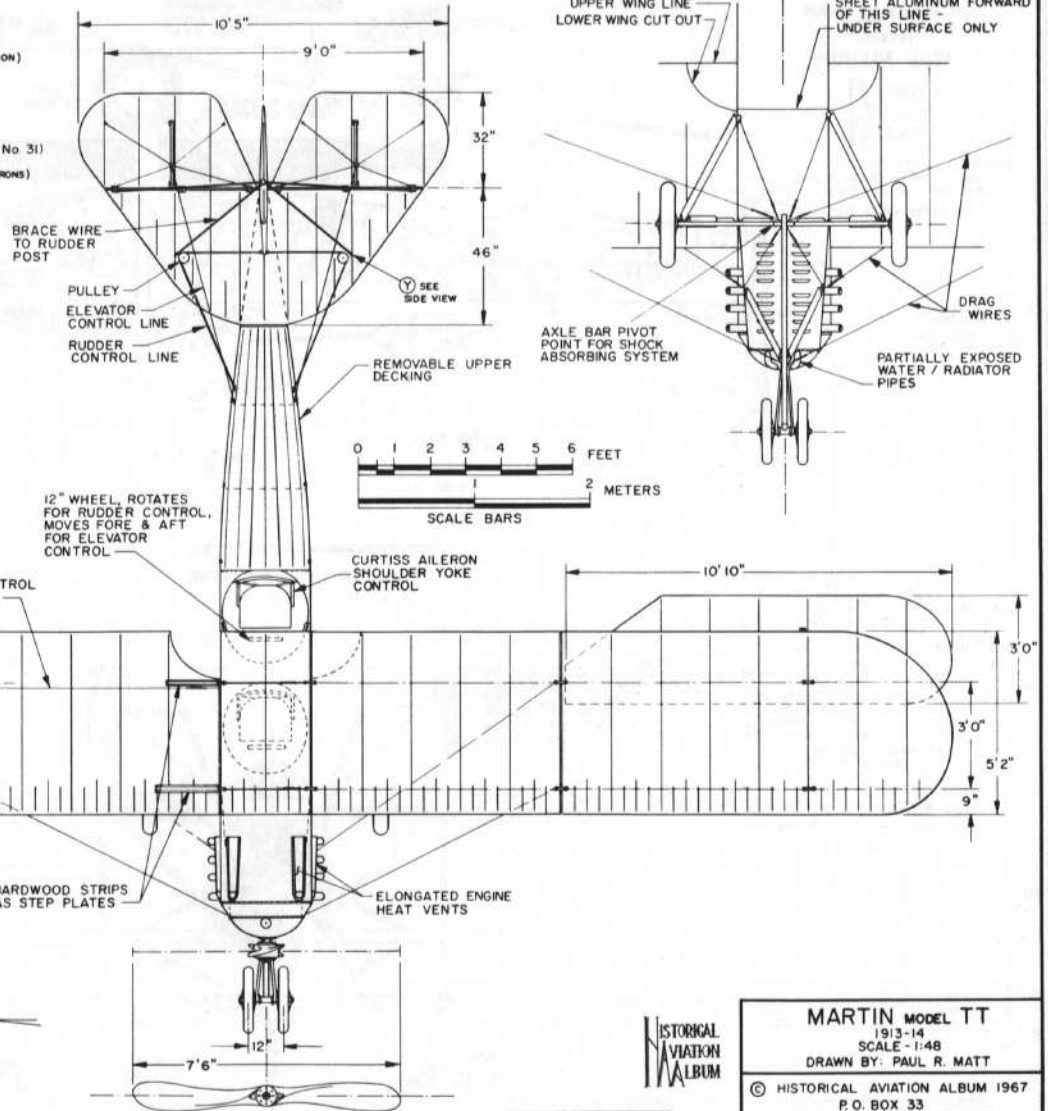


**GENERAL SPECIFICATION**

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

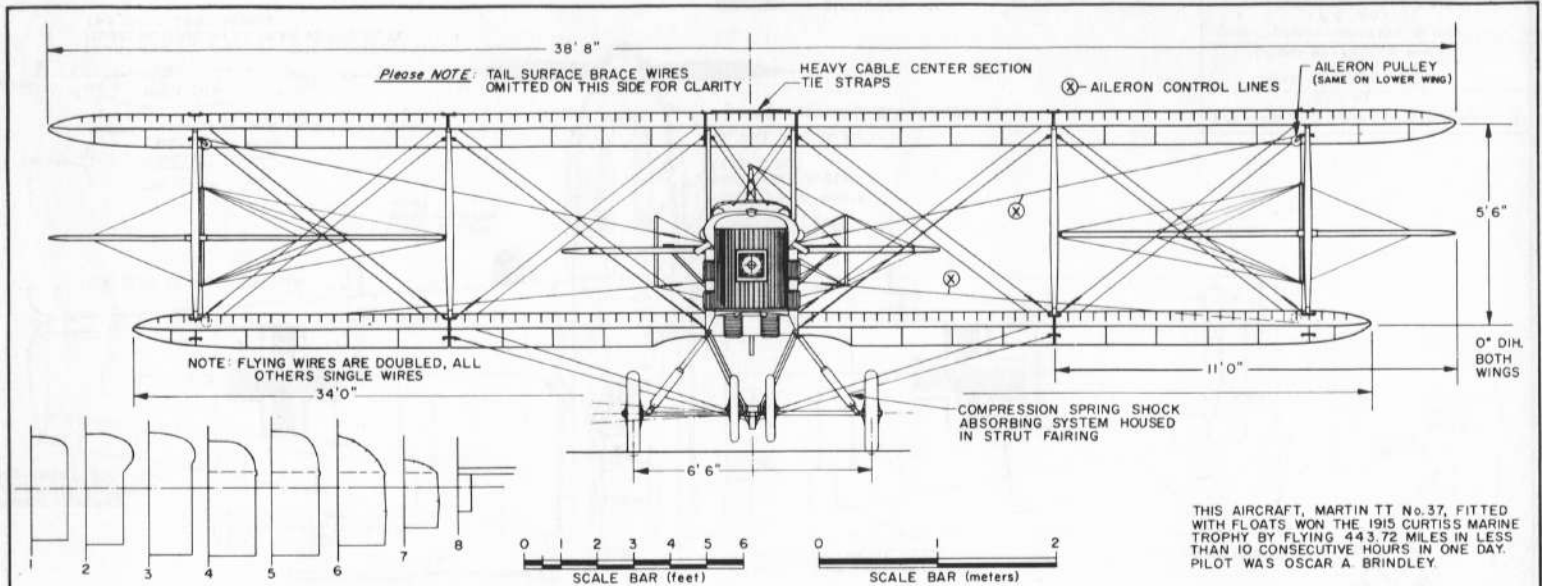


HISTORICAL AVIATION ALBUM

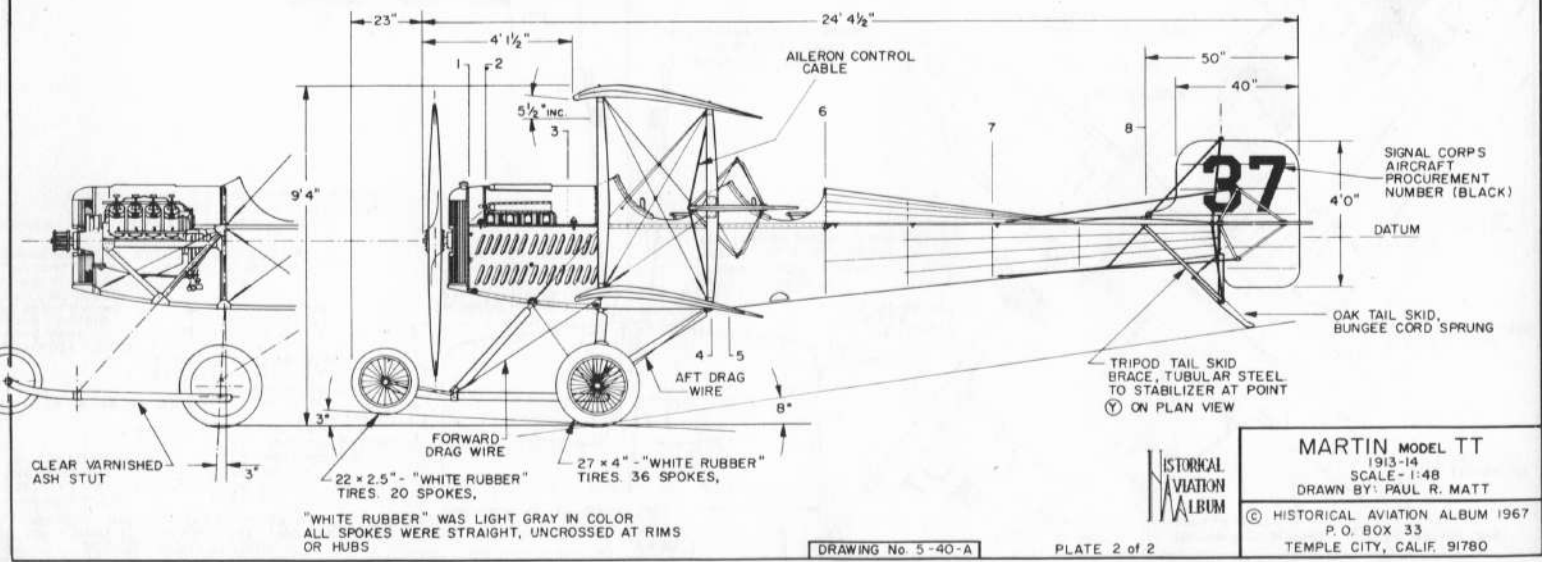
**MARTIN MODEL TT**  
 1913-14  
 SCALE - 1:48

DRAWN BY: PAUL R. MATT

© HISTORICAL AVIATION ALBUM 1967  
 P.O. BOX 33  
 TEMPLE CITY, CALIF. 91780



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.



**MARTIN MODEL TT**  
 1913-14  
 SCALE-1:48  
 DRAWN BY: PAUL R. MATT

HISTORICAL AVIATION ALBUM

© HISTORICAL AVIATION ALBUM 1967  
 P. O. BOX 33  
 TEMPLE CITY, CALIF. 91780



GLEN L. MARTIN HALL SCOTT MILITARY TRACTOR BROKE ALL EXISTING RECORDS FOR SPEED, CLIMB, DURATION.

M-1418





MARTIN ARMY TRACTOR

SIDE VIEW

M-1415



Martin Tractor # 37.

A-15184 4A.X



HAROLD A. TAYLOR  
CORONADO

544

151 A.C.

Martin Tractor # 37. Hangar # 5 & Administration Building in background.





Martin (4521)

550

151847A.C



547

(452.11)

151645A.C



M. J. ... (1934)

151648A.C.



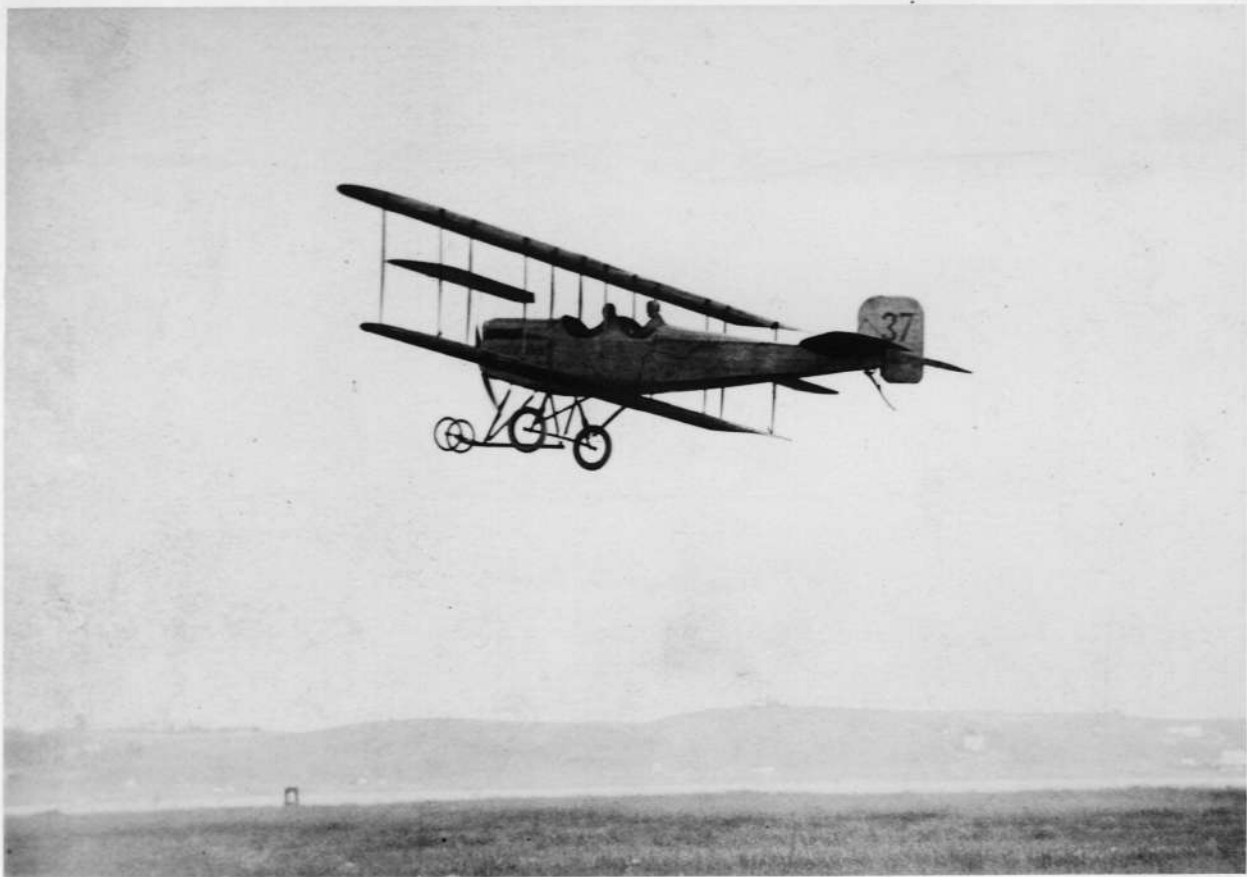














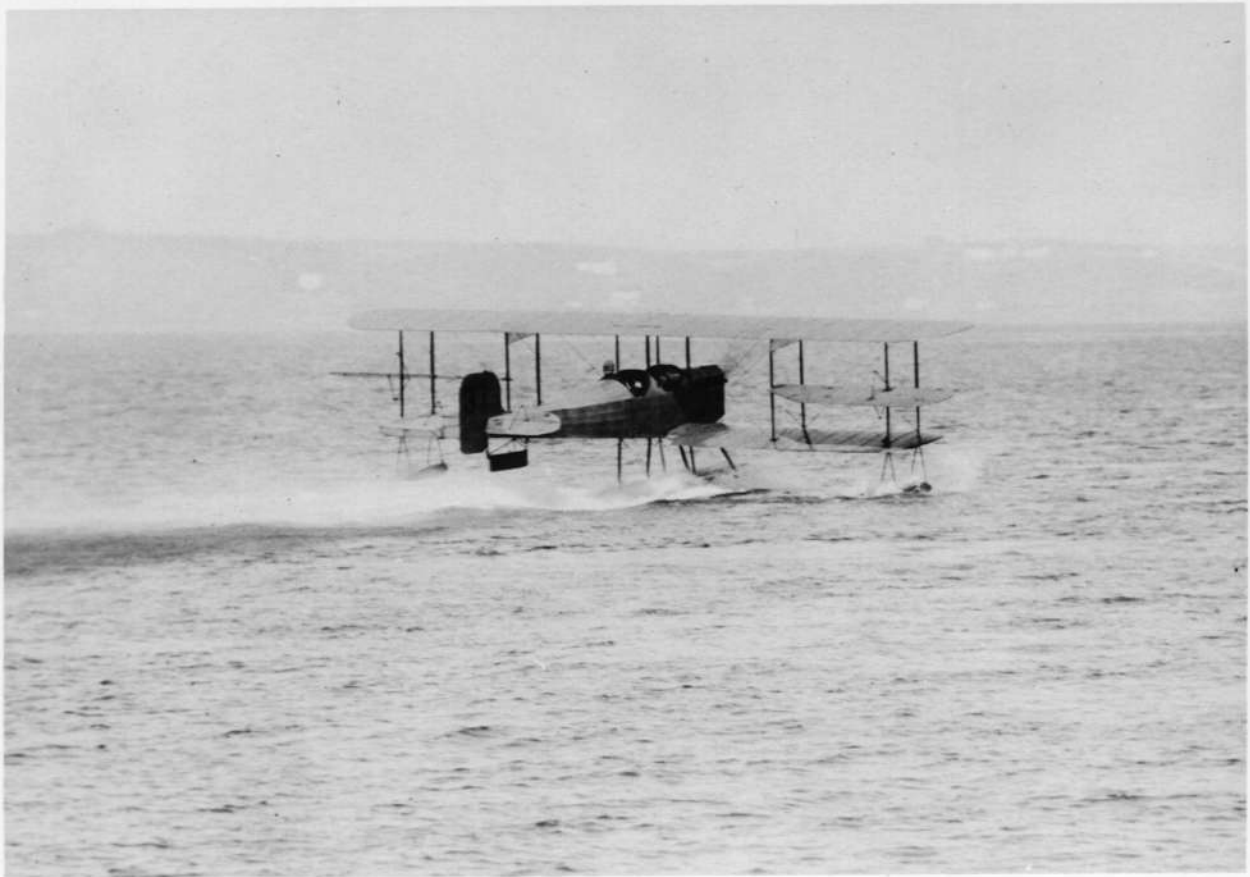










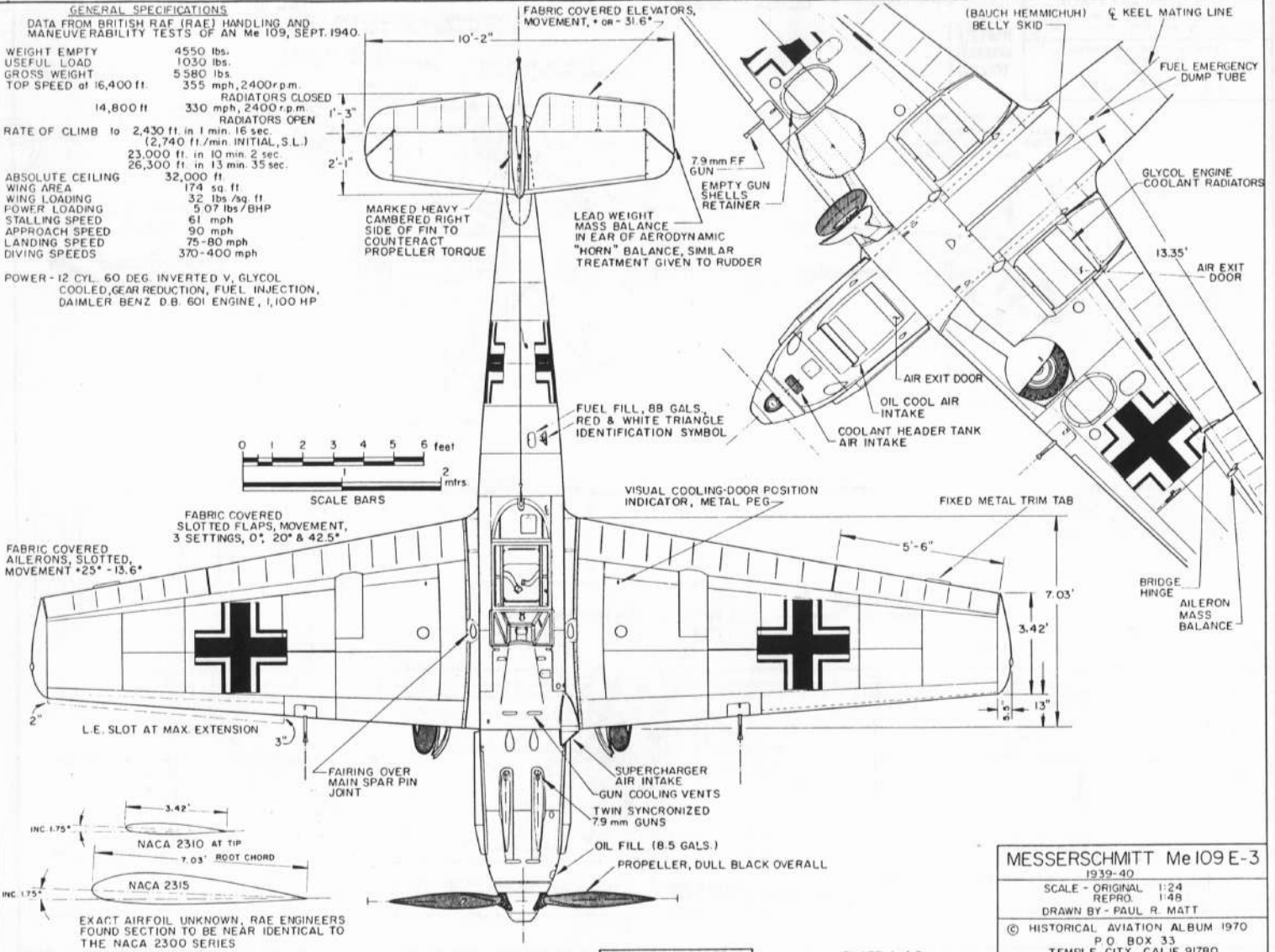


**GENERAL SPECIFICATIONS**

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, 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.)	RADIATORS CLOSED
23,000 ft. in 10 min. 2 sec.	RADIATORS OPEN
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
DIVING SPEEDS	370-400 mph

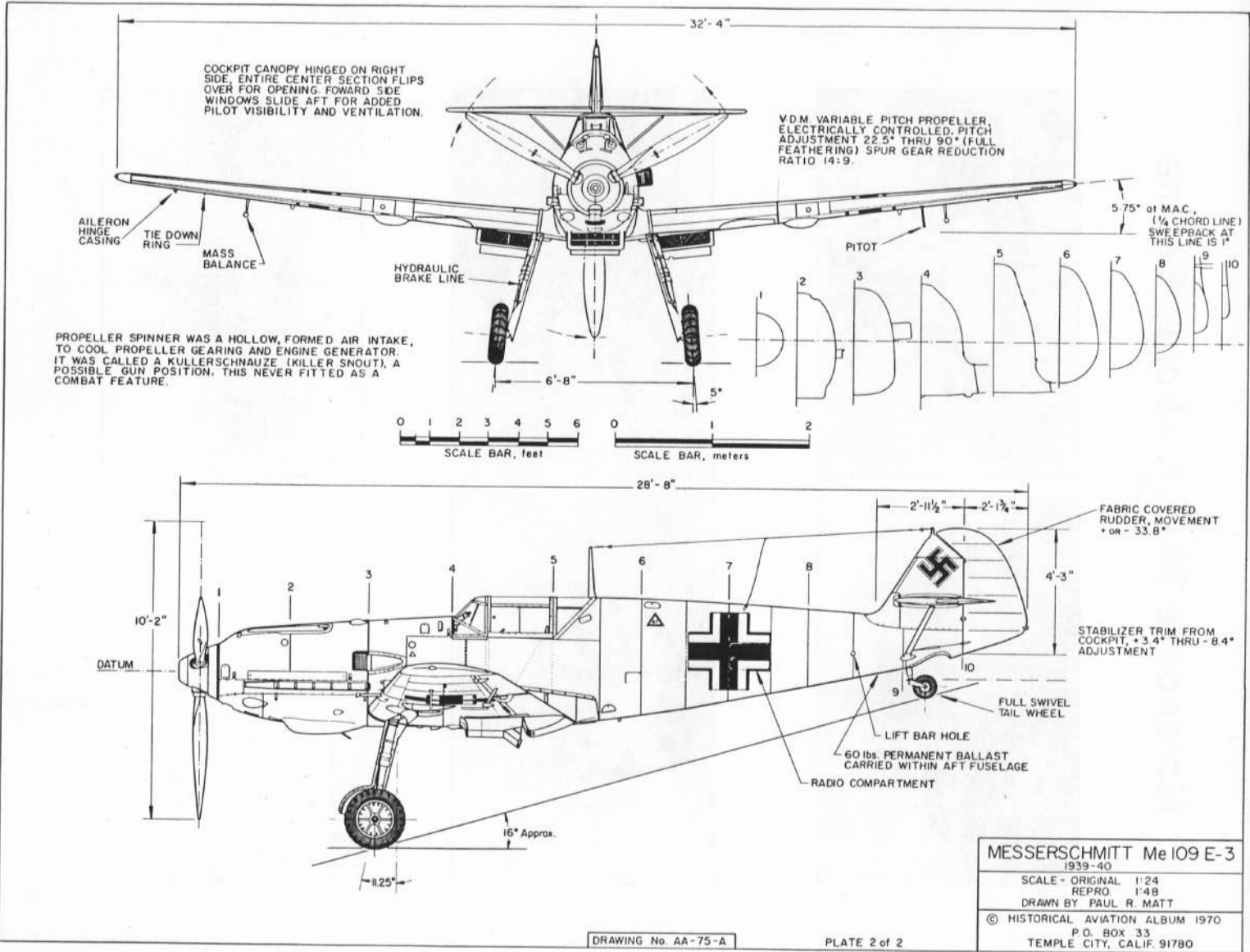
POWER - 12 CYL. 60 DEG. INVERTED V, GLYCOL COOLED, GEAR REDUCTION, FUEL INJECTION, DAIMLER BENZ D.B. 601 ENGINE, 1,100 HP

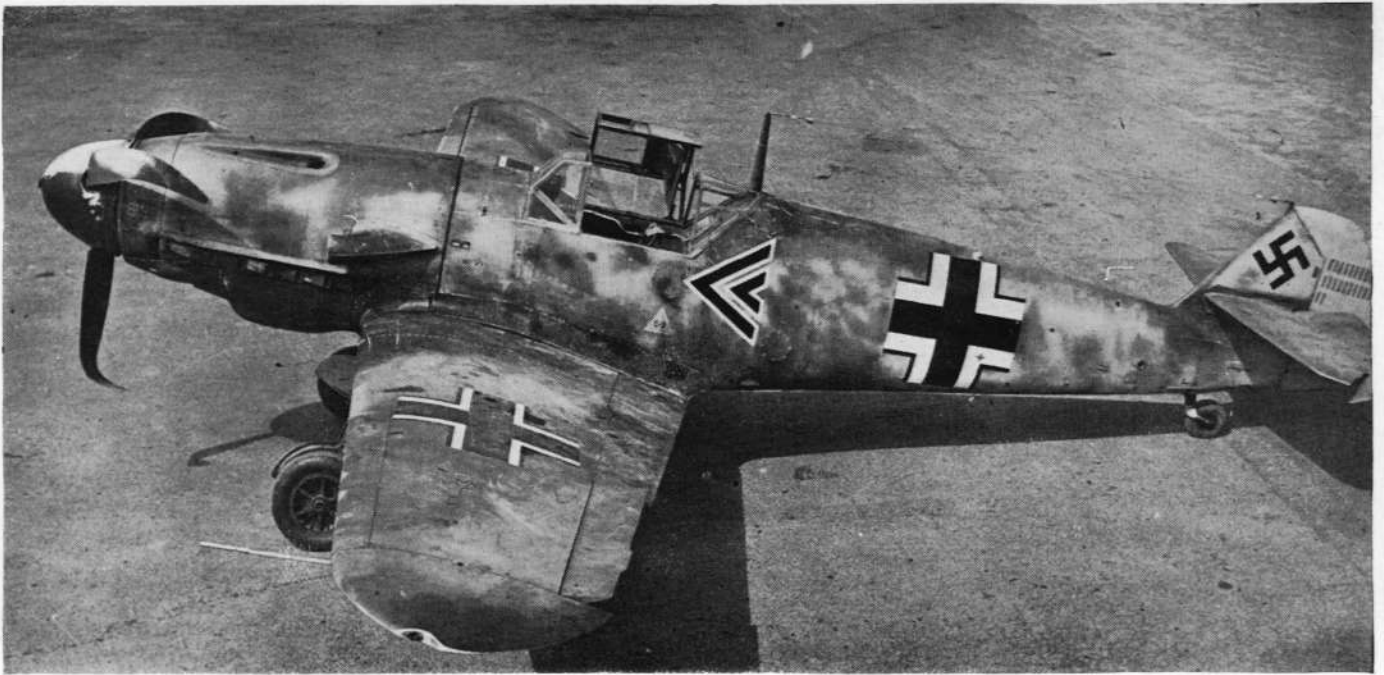


DRAWING No. AA-75-A

PLATE 1 of 2

**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  
 TEMPLE CITY, CALIF. 91780





*Photo by courtesy of the Ministry of Aircraft Production.*

**The  
MESSERSCHMITT Me 109F**

*Copyright by the Harborough Publishing Company, Ltd., Allen House, Newark Street, Leicester*











MESCHMITT Me. 109K-6 (9G)



M'SCHMIT ME. 109G (1G)



**MESSERSCHMITT ME 109G (7G)**













WAR BOND DRIVE

Beim Schießen der ...  
auf Vorderteil - Gummirat

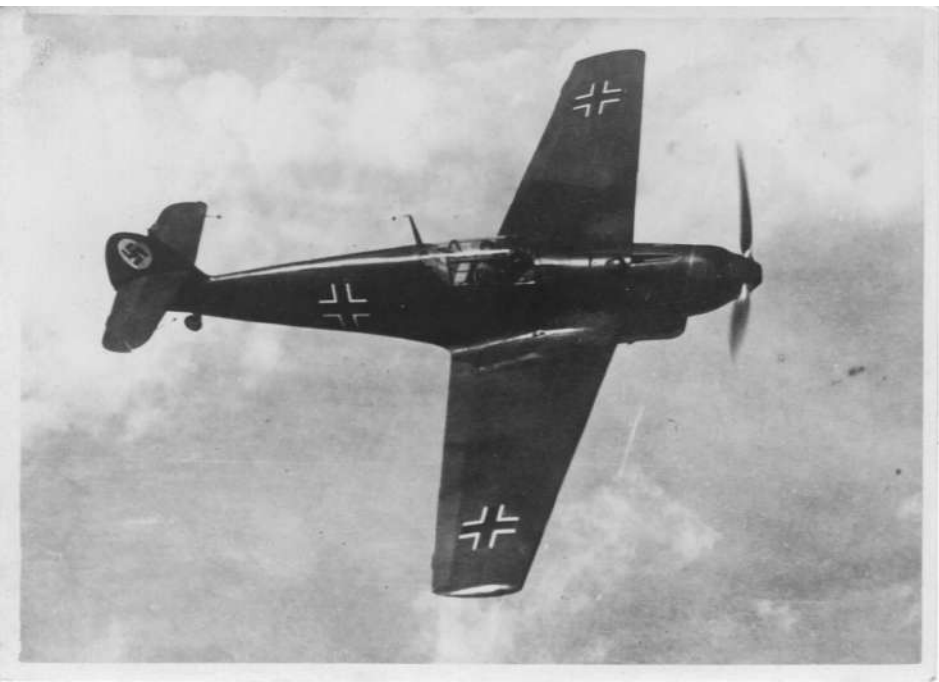


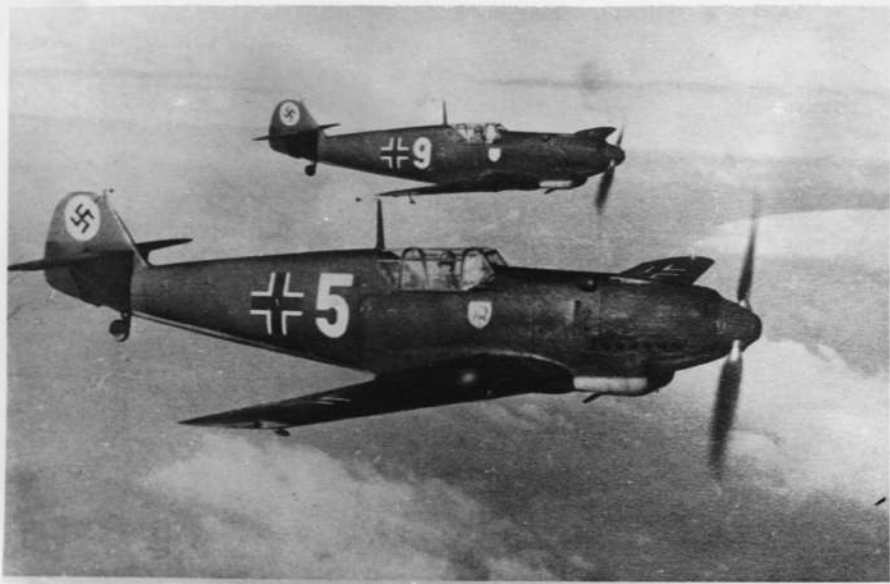








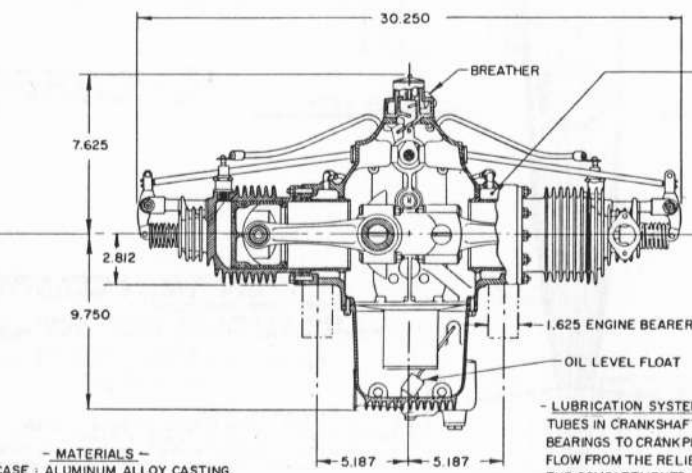
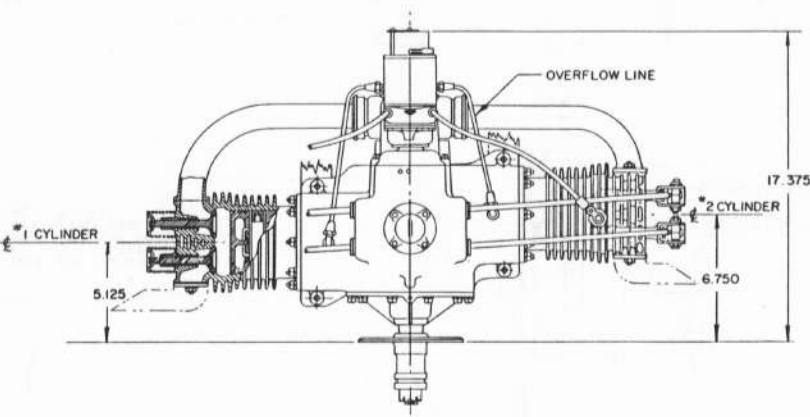












- SPECIFICATIONS -

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

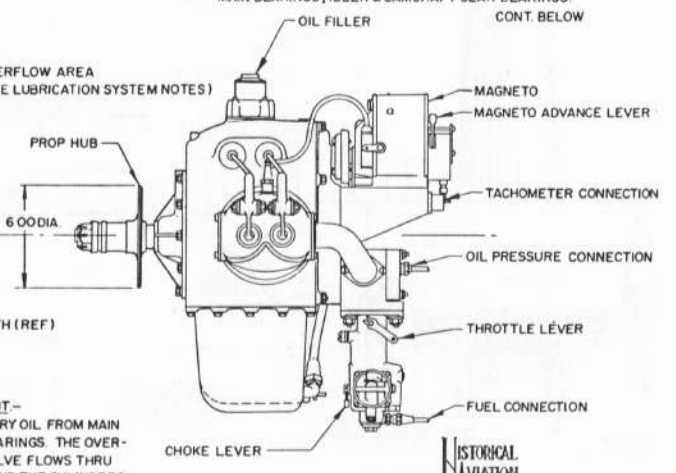
BORE : 3.750  
 STROKE : 3.625  
 DISPLACEMENT : 80.10 CU. IN.  
 COMPRESSION RATIO : 5.10 : 1  
 RATED H. P. : 29.1 AT 2500 RPM AT SEA LEVEL  
 WEIGHT DRY : 89.50 LBS.  
 OIL PRESSURE AT CRUISE R.P.M. : 12.16 LB./SQ. IN.  
 FUEL CONSUMPTION : .513 LBS./H.P./HR.

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.

CARBURETION : 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



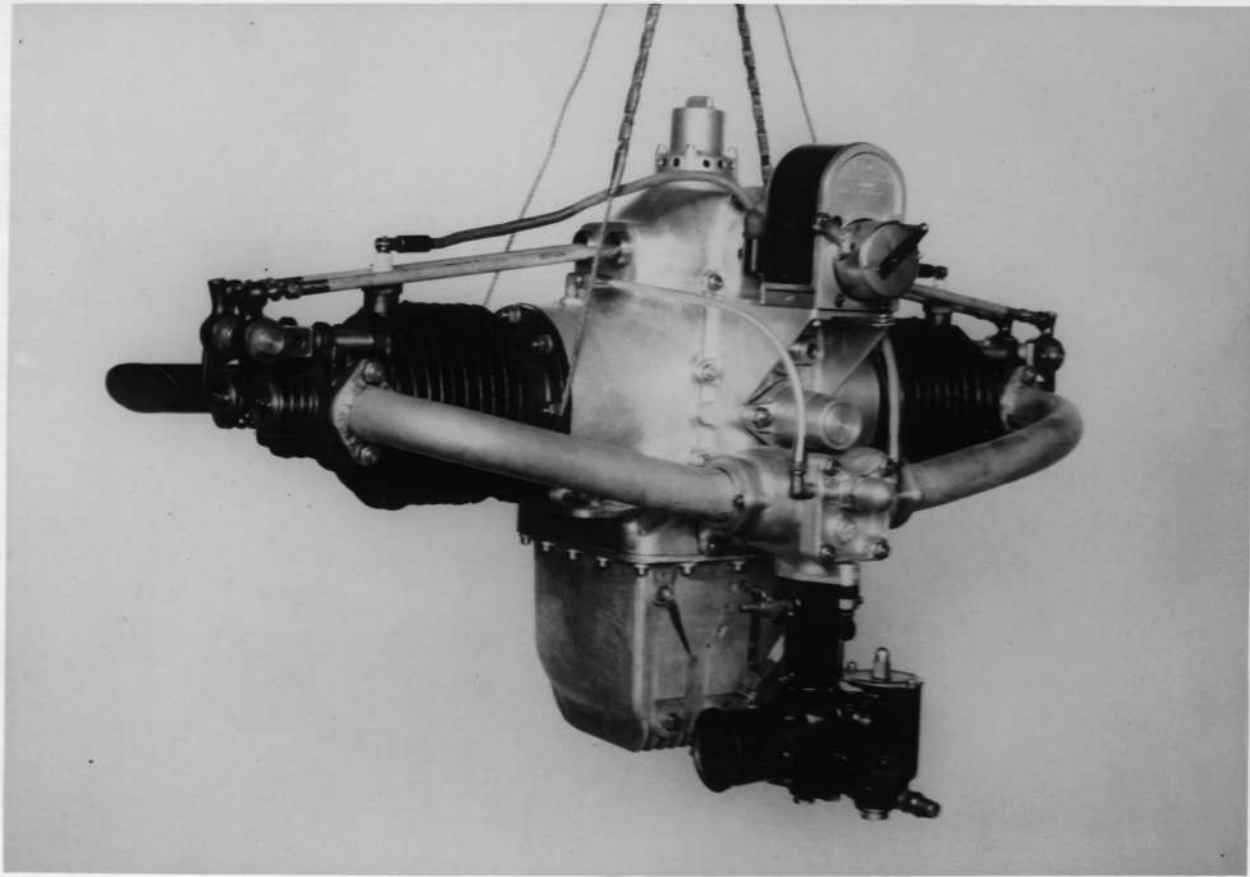
- MATERIALS -  
 CRANKCASE : ALUMINUM ALLOY CASTING  
 CRANKSHAFT : S. A. E. 3240 STEEL FORGING  
 CONNECTING RODS : FORGED DURALUMINUM WITH BRONZE PISTON PIN BUSHINGS.  
 PISTONS : MACHINED ALUM. WITH 4.125 TEETOR RINGS.  
 CYLINDERS : CAST IRON WITH INTEGRAL FINS & VALVE SEATS.  
 VALVES : COBALT CHROME.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

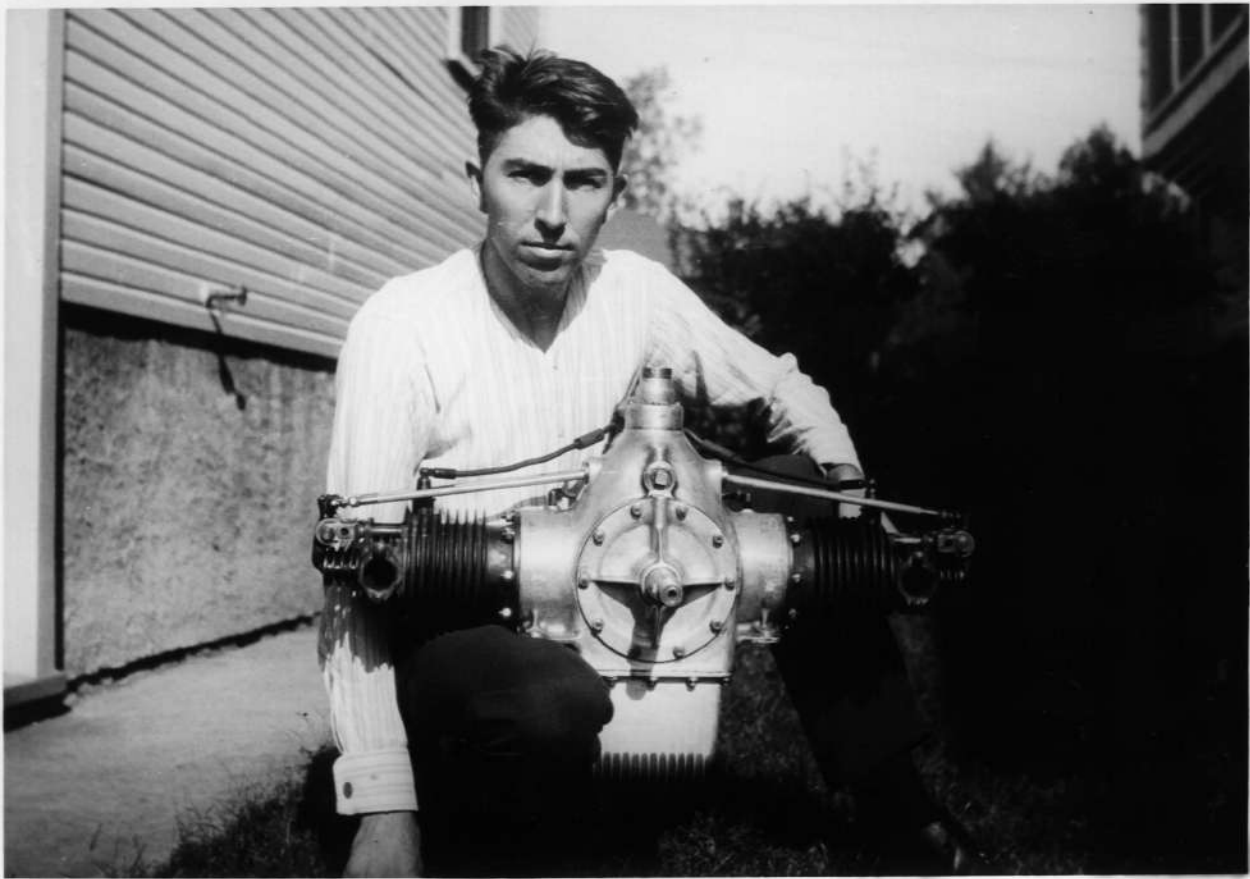
- LUBRICATION SYSTEM CONT. -  
 TUBES IN CRANKSHAFT CARRY OIL FROM MAIN BEARINGS TO CRANK PIN BEARINGS. THE OVERFLOW FROM THE RELIEF VALVE FLOWS THRU THE COMPARTMENTS AROUND THE CYLINDERS SKIRTS. THE OIL SUMP IS PROVIDED WITH AN OIL LEVEL INDICATOR, FILTERS & A THERMOMETER FITTING.

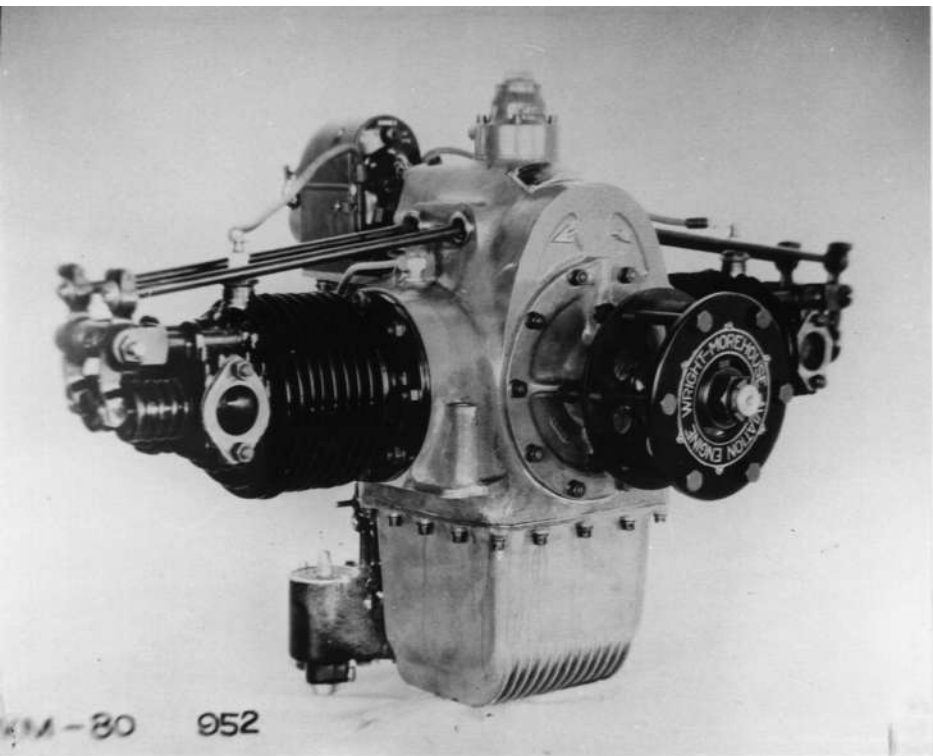


MOREHOUSE 29.1 H.P. AIRCRAFT ENGINE

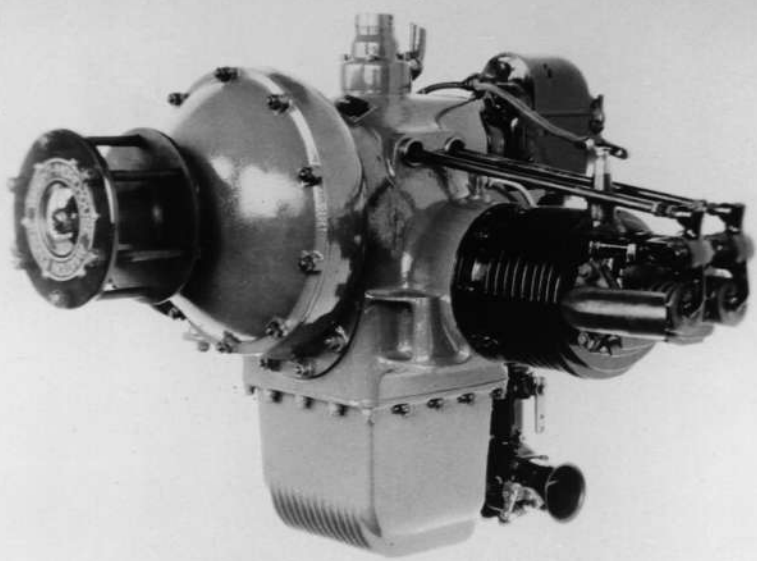
1925  
 SCALE : 1/16 (3/4" = 1")  
 DRAWN BY : ROB LAMBERT



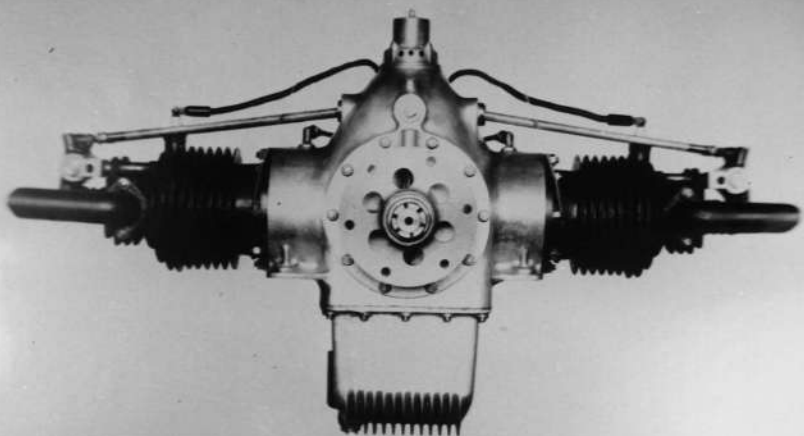


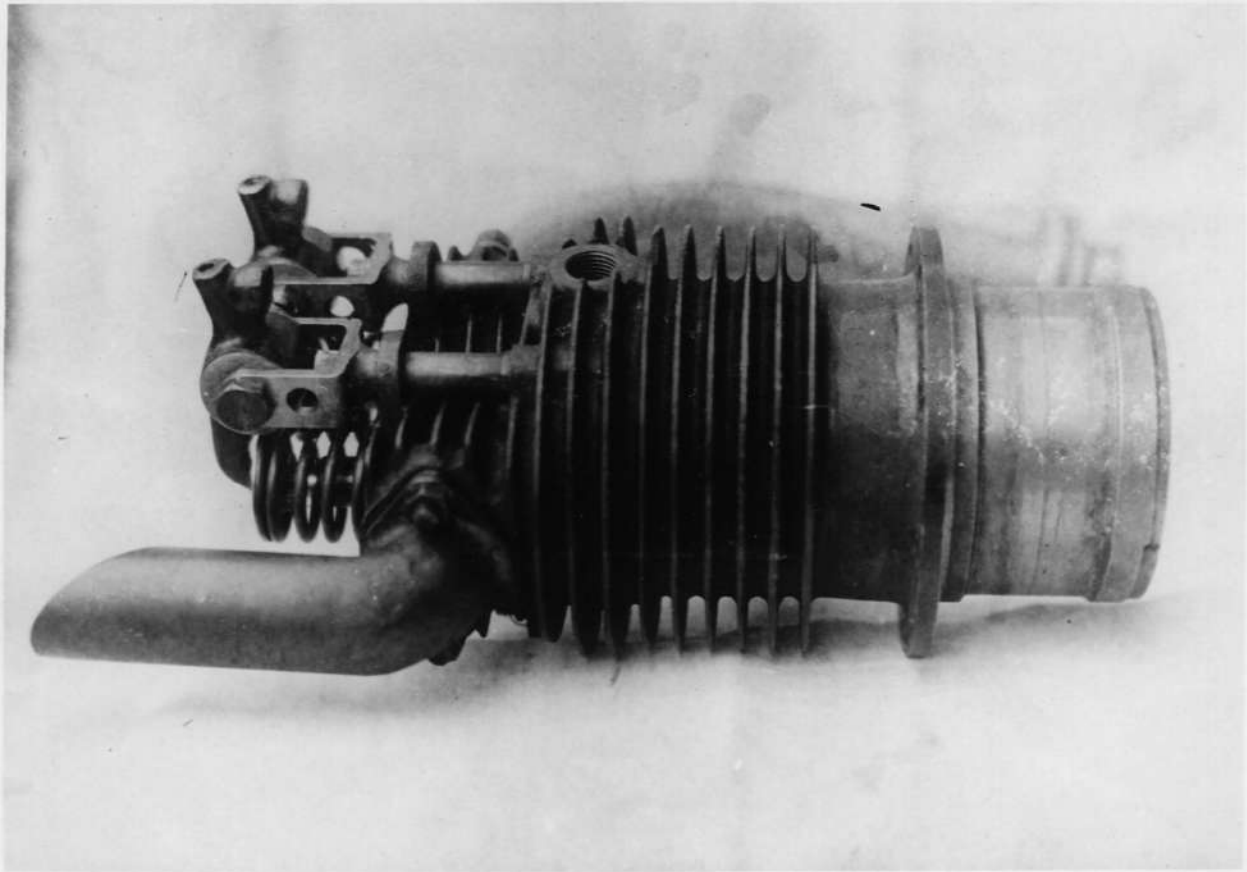


614-80 952

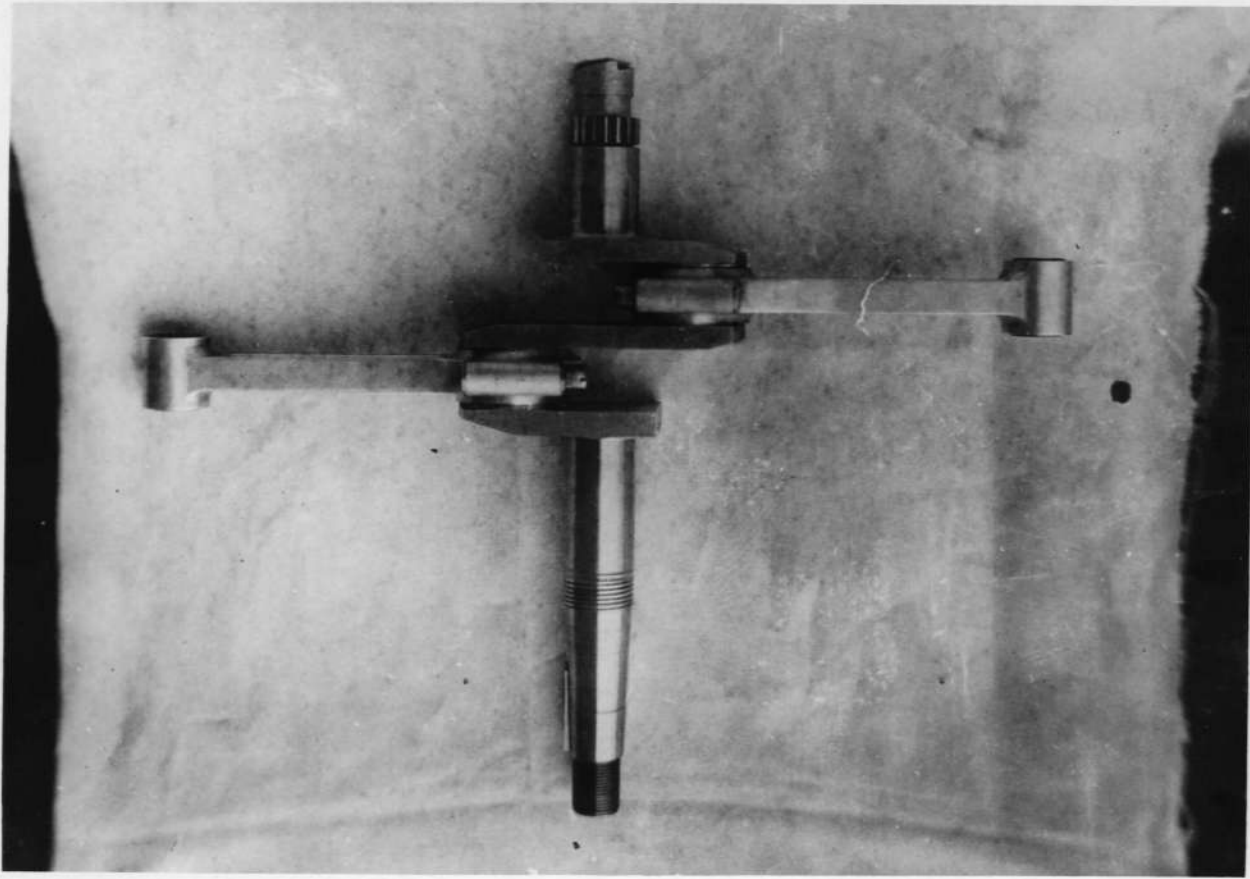


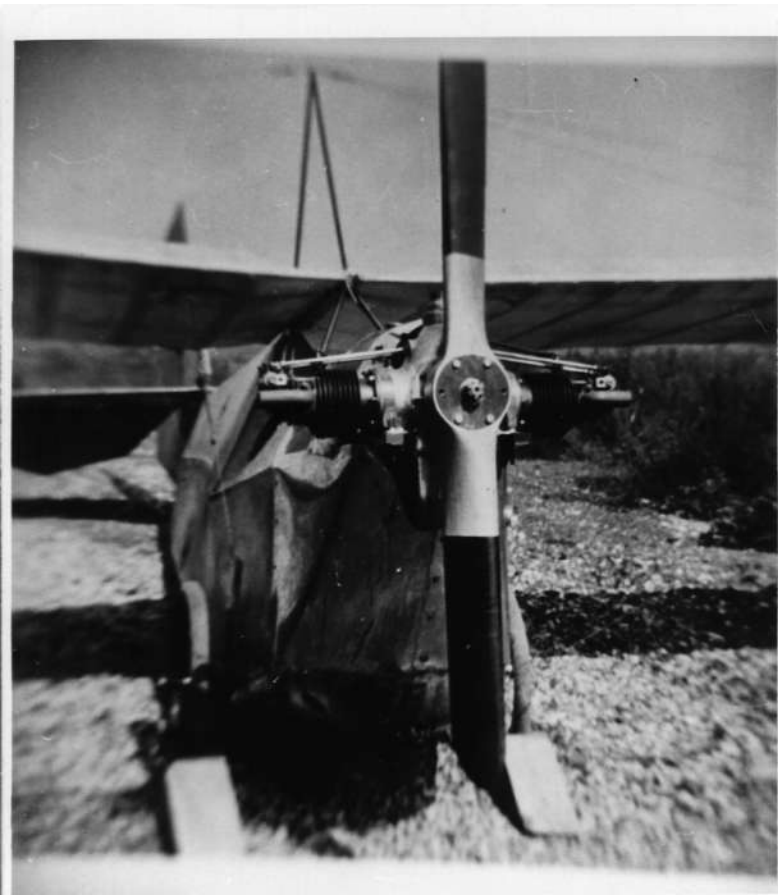
262

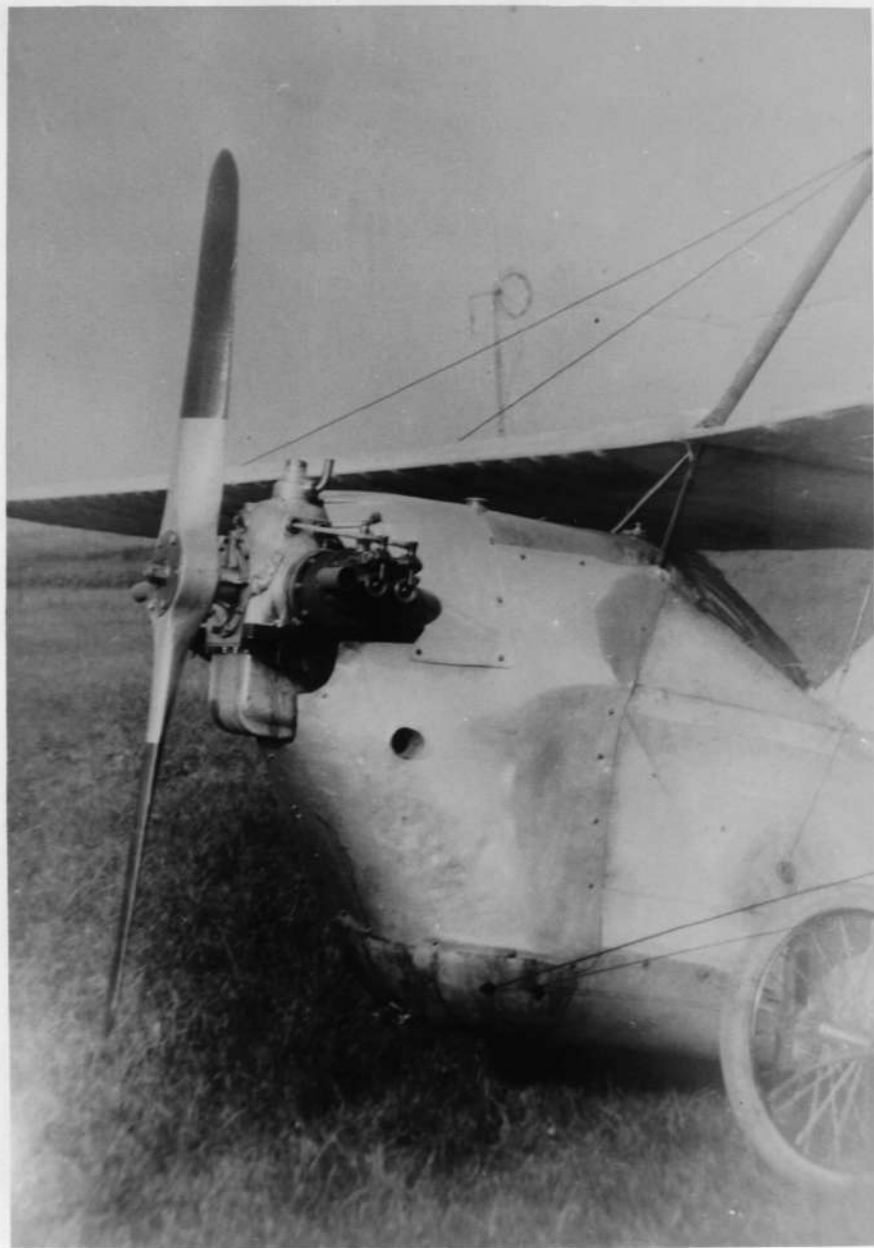


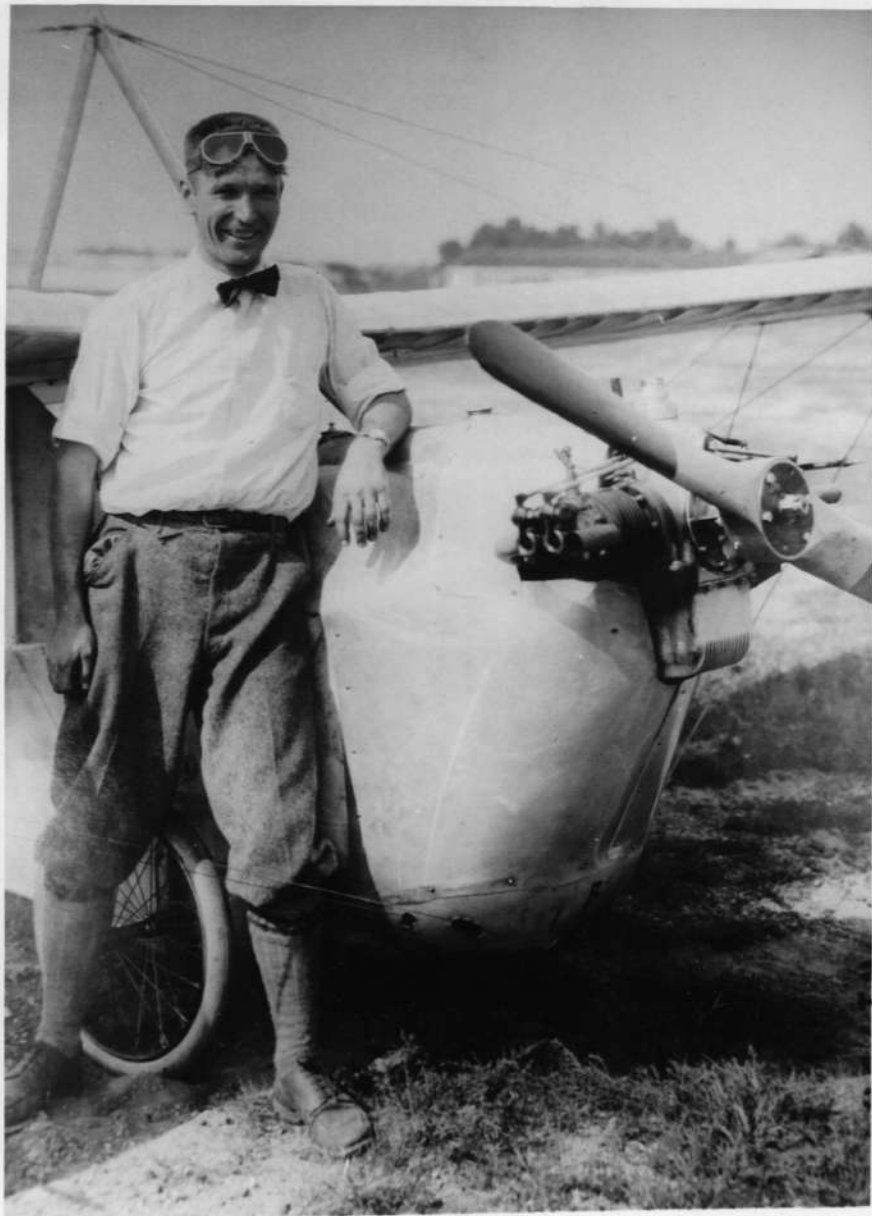










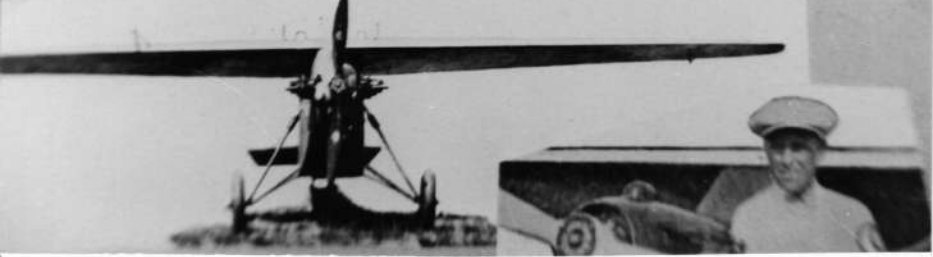


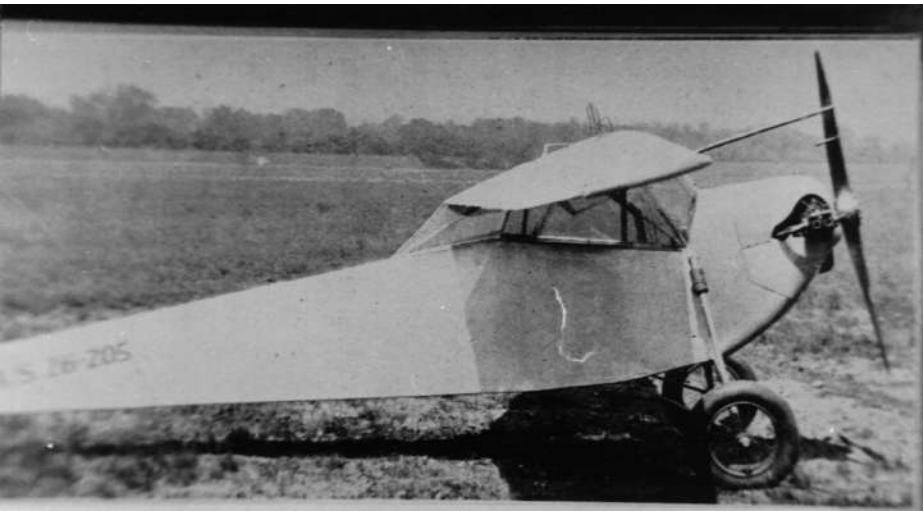


Net Weight	8 lbs.	High Speed	185 m.p.h.
Useful Load	280 lbs.	Rate of Climb	600 ft. per min.
Total Weight	650 lbs.	Absolute Ceiling	17,000 ft.
Span	27 ft.	Range (4 hrs.)	300 mi.



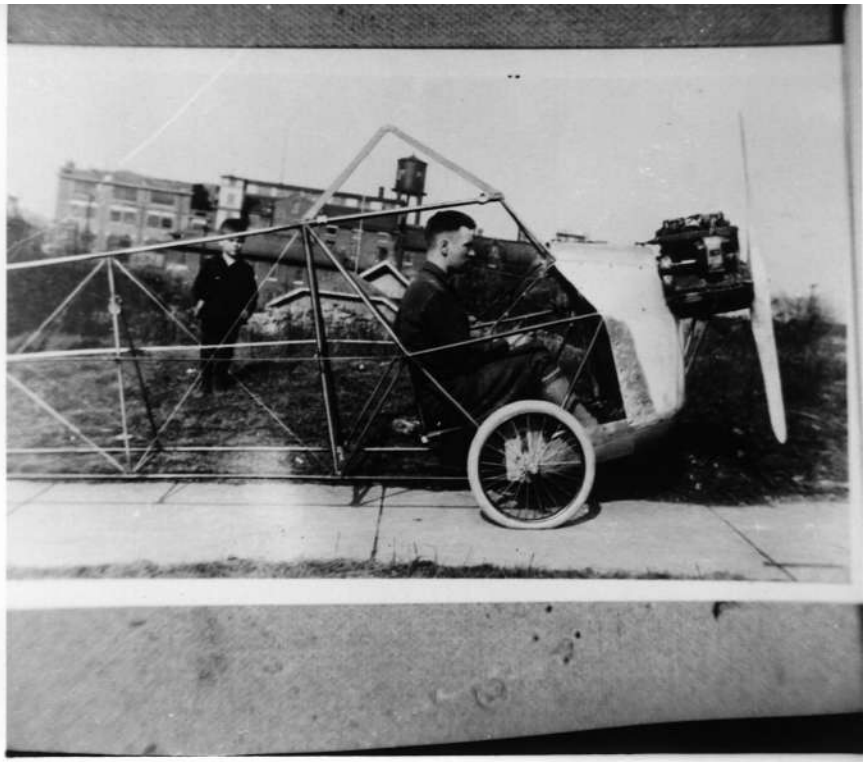
Photo of the new Driggs Dart powered with the Wright-Kearhouse two-cylinder air-cooled motor. This is the first aircraft of this type in the Commercial Reliability tour. The veteran Jack Laasa will pilot the Dart in the tour.





#### SPECIFICATIONS

320 lbs.	Length	194 ft.
42 lbs.	Motor	Wright-Morehouse 30 of 2500
8 lbs.	High Speed	95 m.p.h.
290 lbs.	Rate of Climb	600 ft. per min.
650 lbs.	Absolute Ceiling	17,000 ft.
77 ft.	Range (4 hrs.)	300 mi.







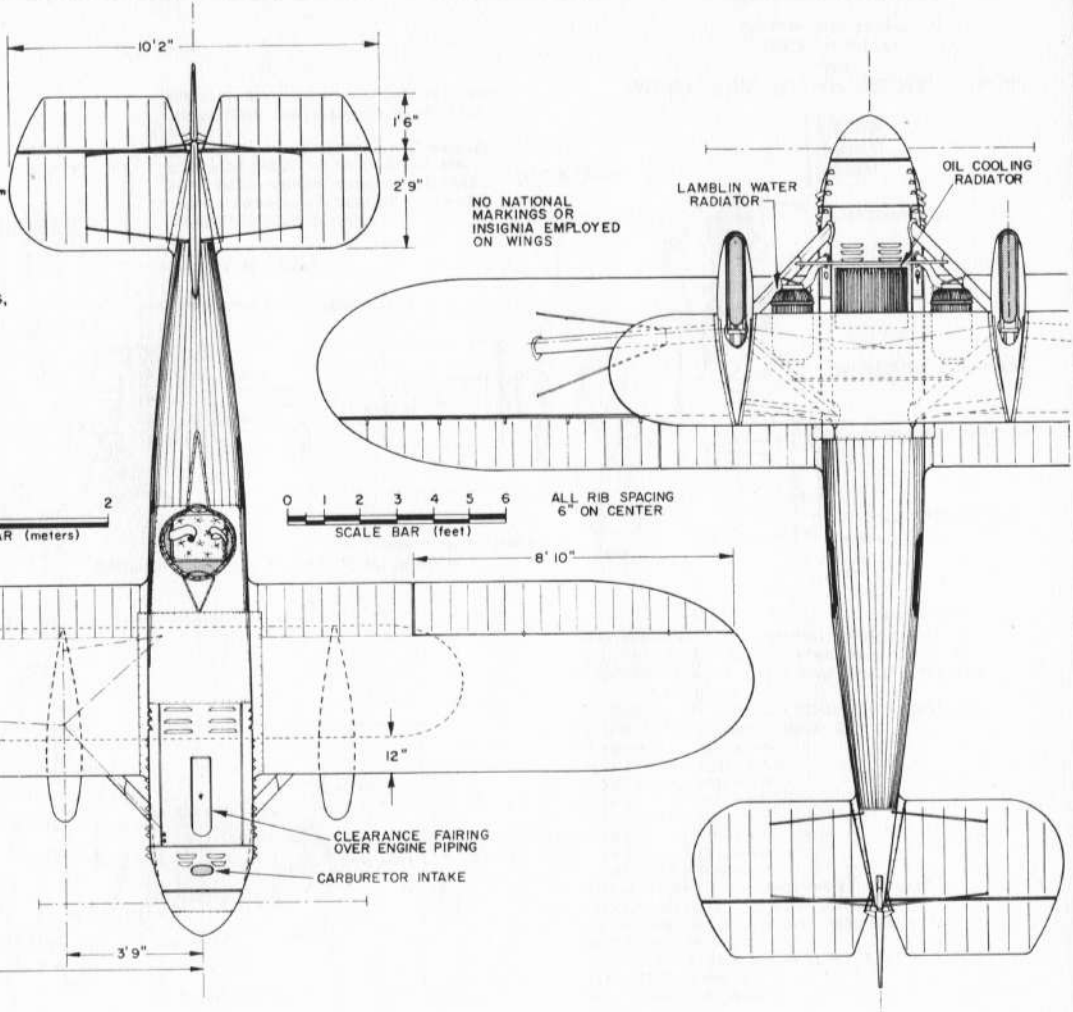
**GENERAL SPECIFICATIONS**

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 r.p.m.  
 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

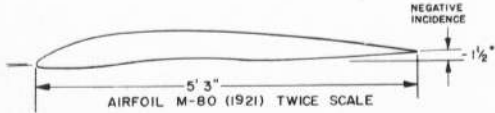
5' 3"

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

9' 3"

3' 9"

CLEARANCE FAIRING  
 OVER ENGINE PIPING  
 CARBURETOR INTAKE



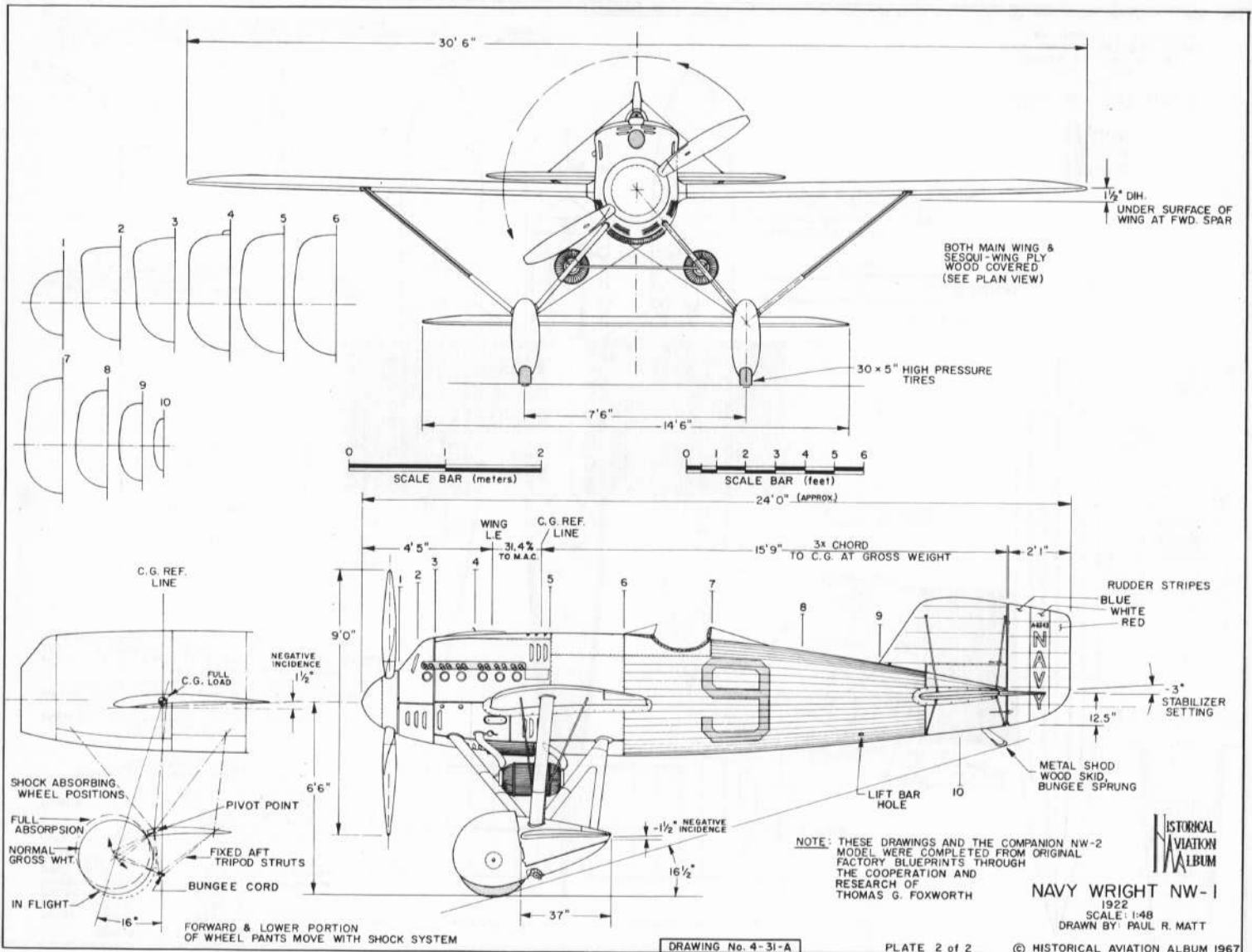
HISTORICAL  
 AVIATION  
 ALBUM

NAVY WRIGHT NW-1  
 1922  
 SCALE: 1:48  
 DRAWN BY: PAUL R. MATT

DRAWING No. 4-31-A

PLATE 1 of 2

© HISTORICAL AVIATION ALBUM 1967







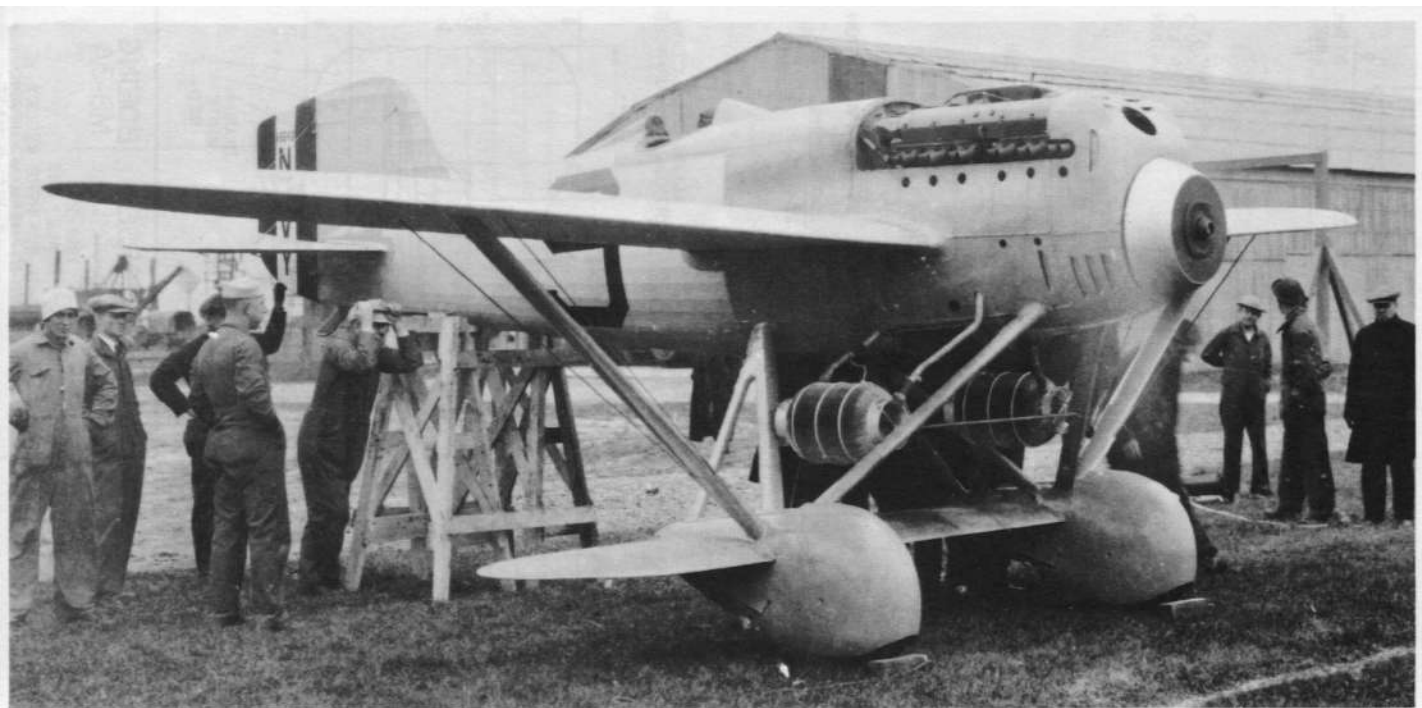


Photo courtesy USAF

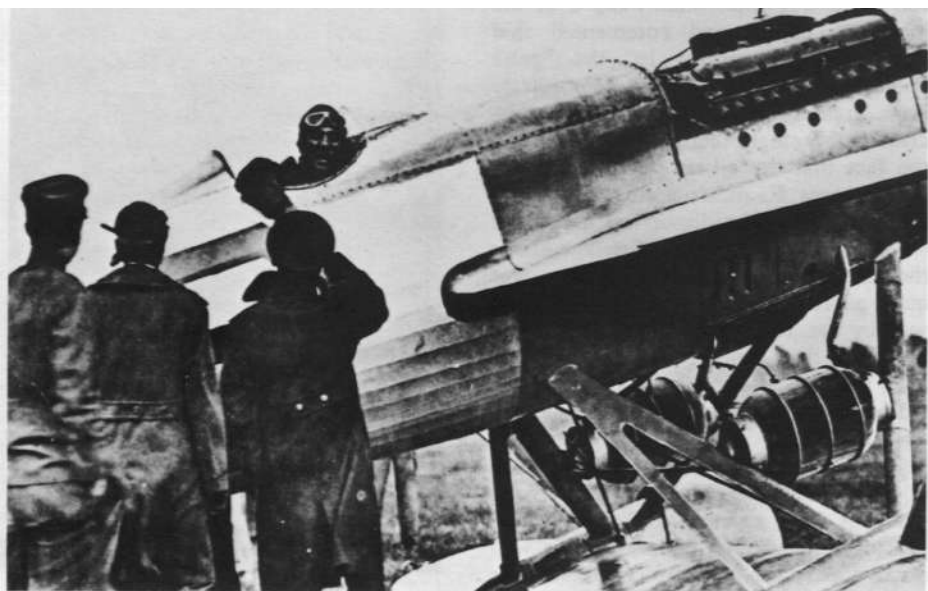


Photo courtesy U.S. Marine Corps

**Congratulations for "Sandy" Sanderson after the first flight of the Navy-X. He hit 209 mph on this flight. Tests were made with engine cowl off.**







*Nov-1*

**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.

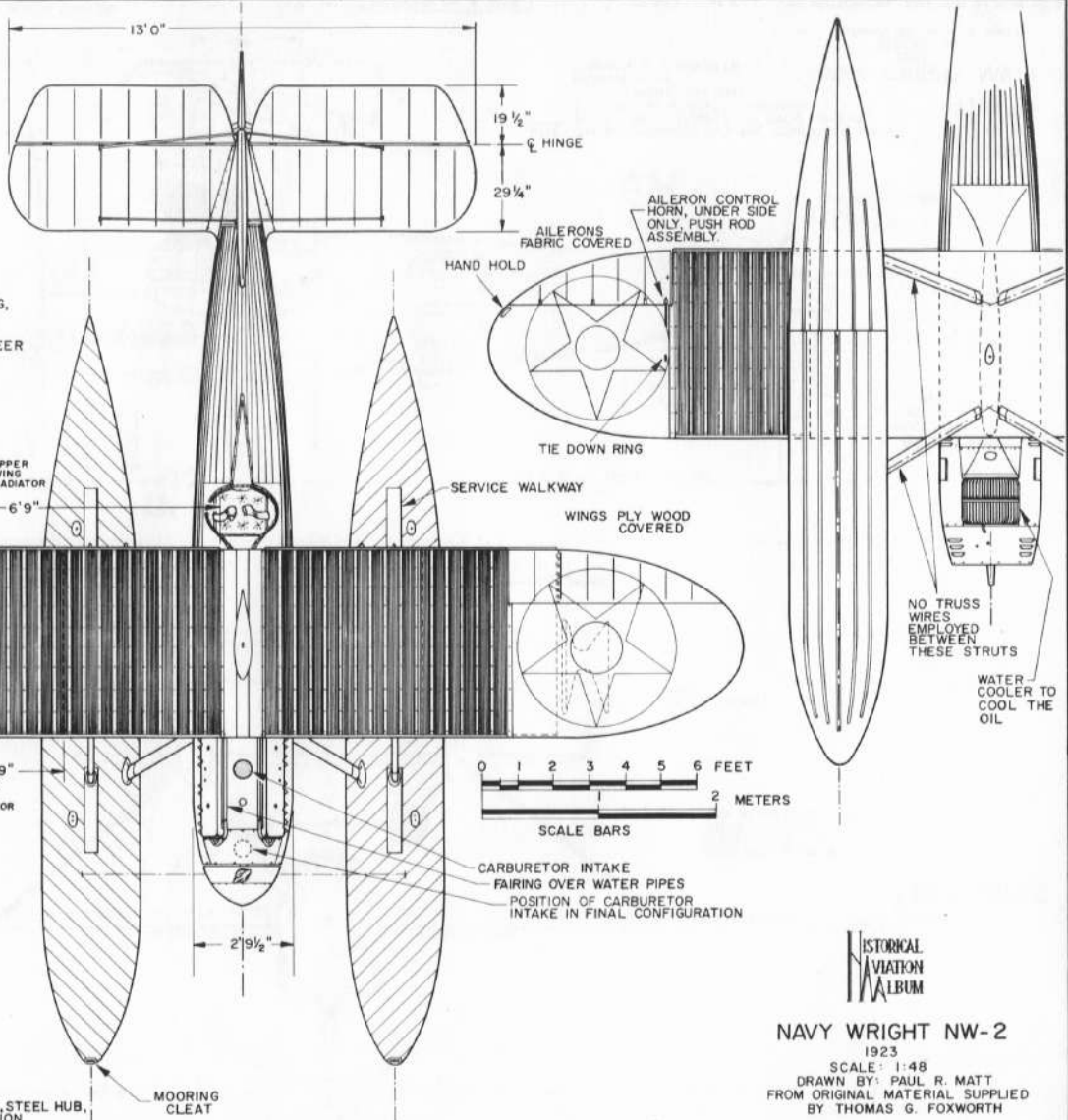
(COMPUTED ON BASIS OF MAX. POWER OUTPUT OF 650 H.P.)

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



HISTORICAL AVIATION ALBUM

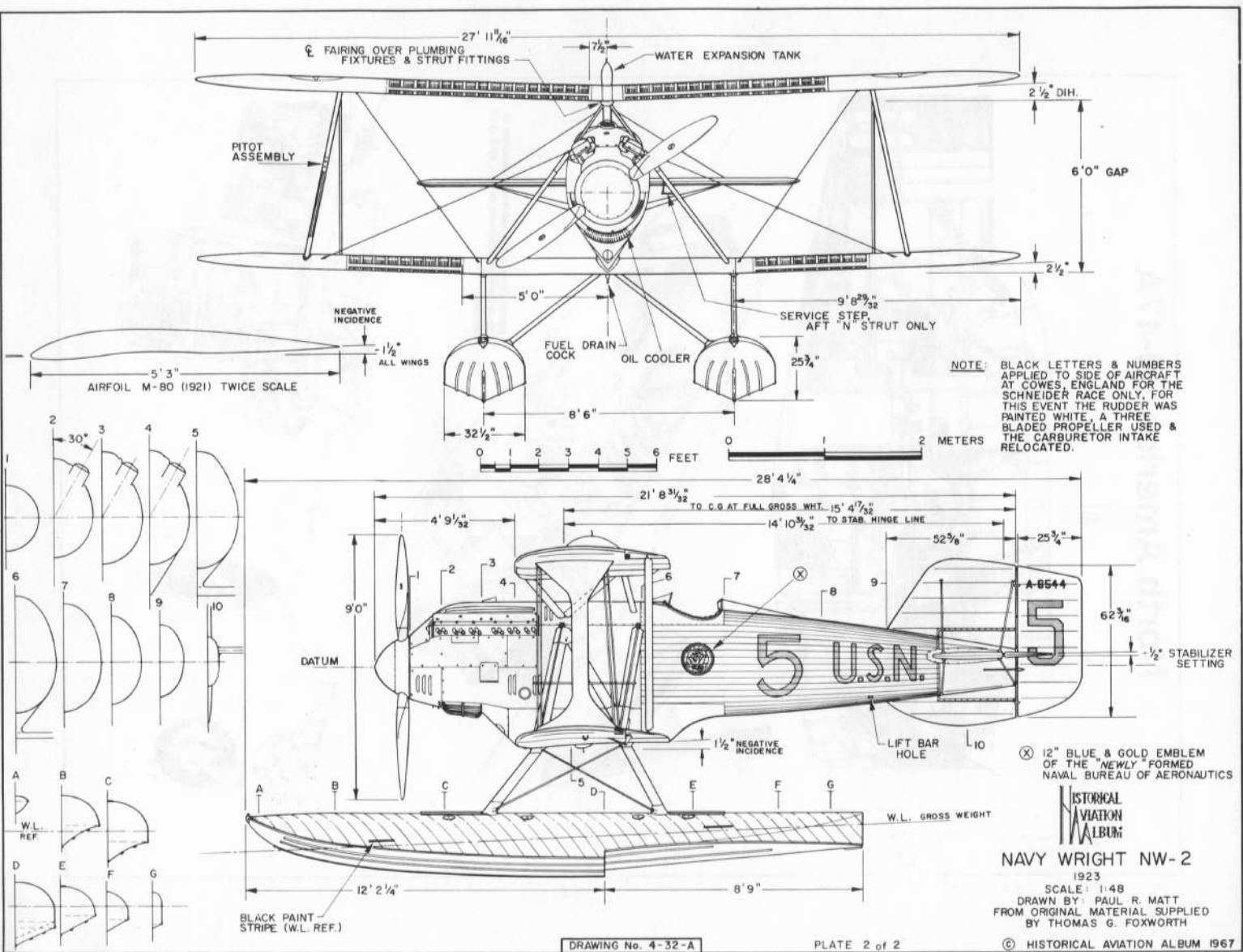
NAVY WRIGHT NW-2  
 1923

SCALE: 1:48  
 DRAWN BY: PAUL R. MATT  
 FROM ORIGINAL MATERIAL SUPPLIED BY THOMAS G. FOXWORTH

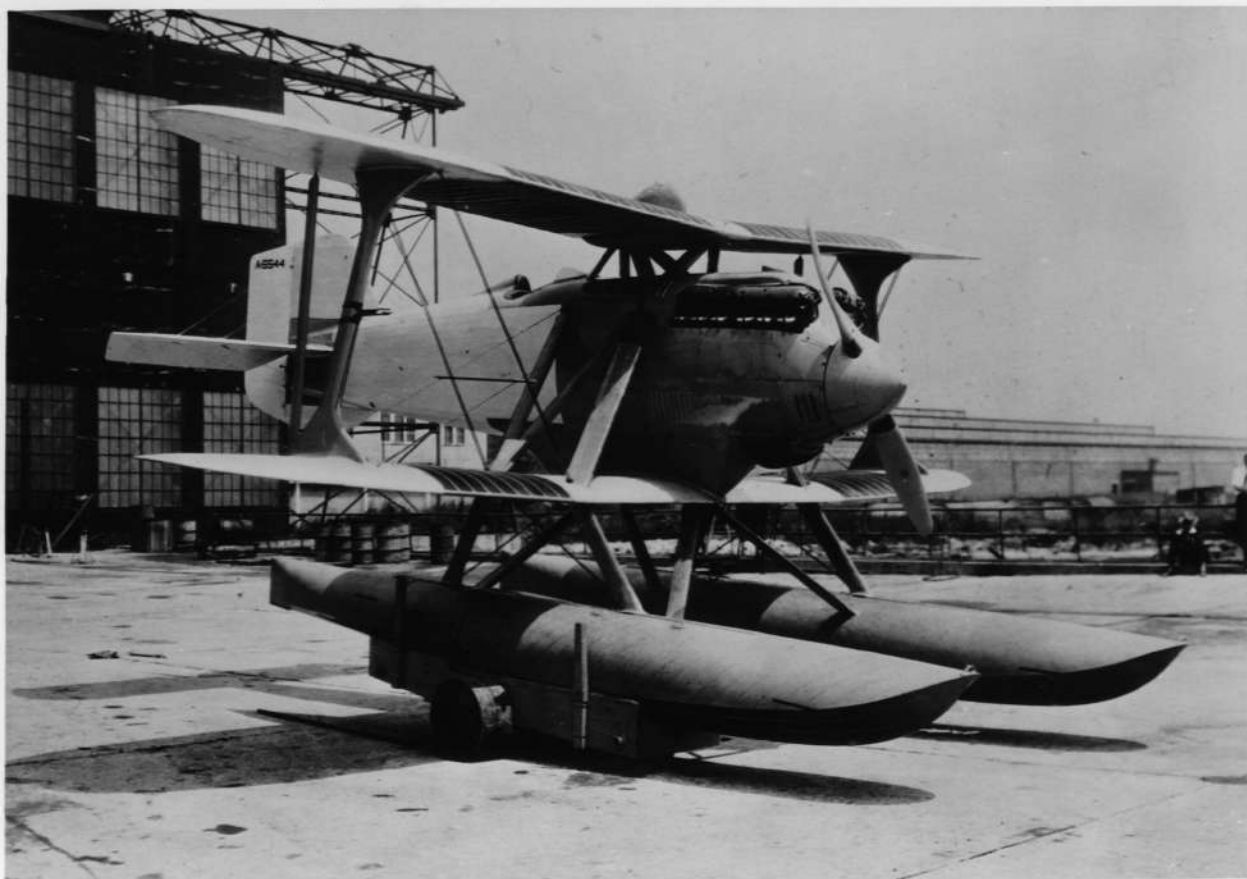
DRAWING No. 4-32-A

PLATE 1 of 2

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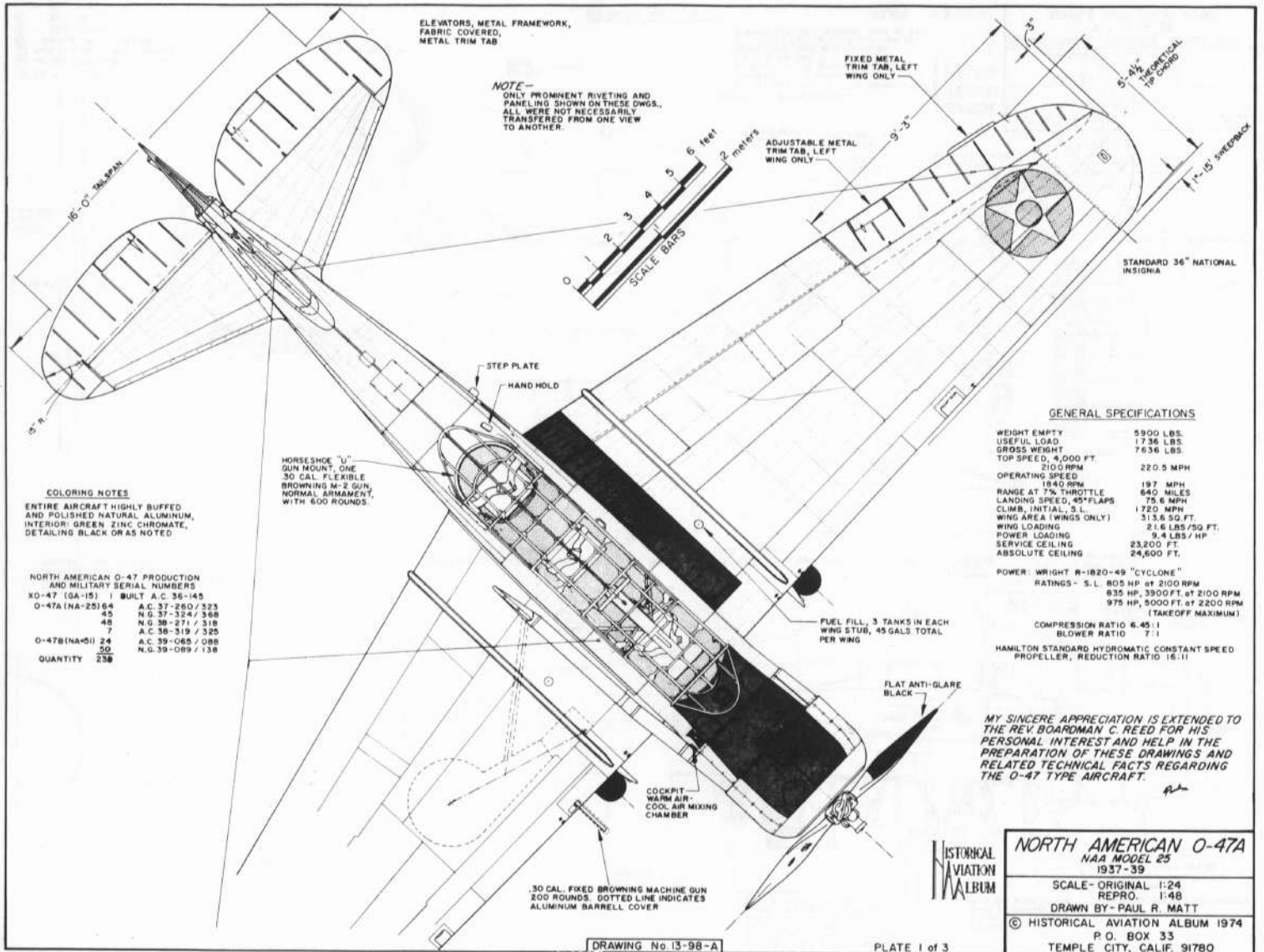
DRAWING No. 4-32-A



NW-2

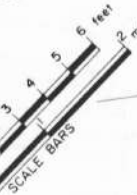






ELEVATORS, METAL FRAMEWORK,  
FABRIC COVERED,  
METAL TRIM TAB

NOTE -  
ONLY PROMINENT RIVETING AND  
PANELING SHOWN ON THESE OWGS.  
ALL WERE NOT NECESSARILY  
TRANSFERRED FROM ONE VIEW  
TO ANOTHER.



FIXED METAL  
TRIM TAB, LEFT  
WING ONLY

ADJUSTABLE METAL  
TRIM TAB, LEFT  
WING ONLY

STANDARD 36° NATIONAL  
INSIGNIA

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

O-47 (GA-15)	1	BUILT	A.C. 36-145
O-47A (NA-25164)	45	A.C. 37-260 / 323	
	48	N.G. 37-324 / 368	
	7	N.G. 38-271 / 318	
	7	A.C. 38-319 / 325	
O-47B (NA-511)	24	A.C. 39-085 / 088	
	50	N.G. 39-089 / 138	
QUANTITY	238		

GENERAL SPECIFICATIONS

WEIGHT EMPTY	5900 LBS.
USEFUL LOAD	1736 LBS.
GROSS WEIGHT	7636 LBS.
TOP SPEED, 4,000 FT.	210 MPH
OPERATING SPEED	220.5 MPH
1840 RPM	197 MPH
RANGE AT 75% THROTTLE	640 MILES
LANDING SPEED, 45° FLAPS	75.6 MPH
CLIMB, INITIAL, 5 L.	1720 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-1820-49 "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

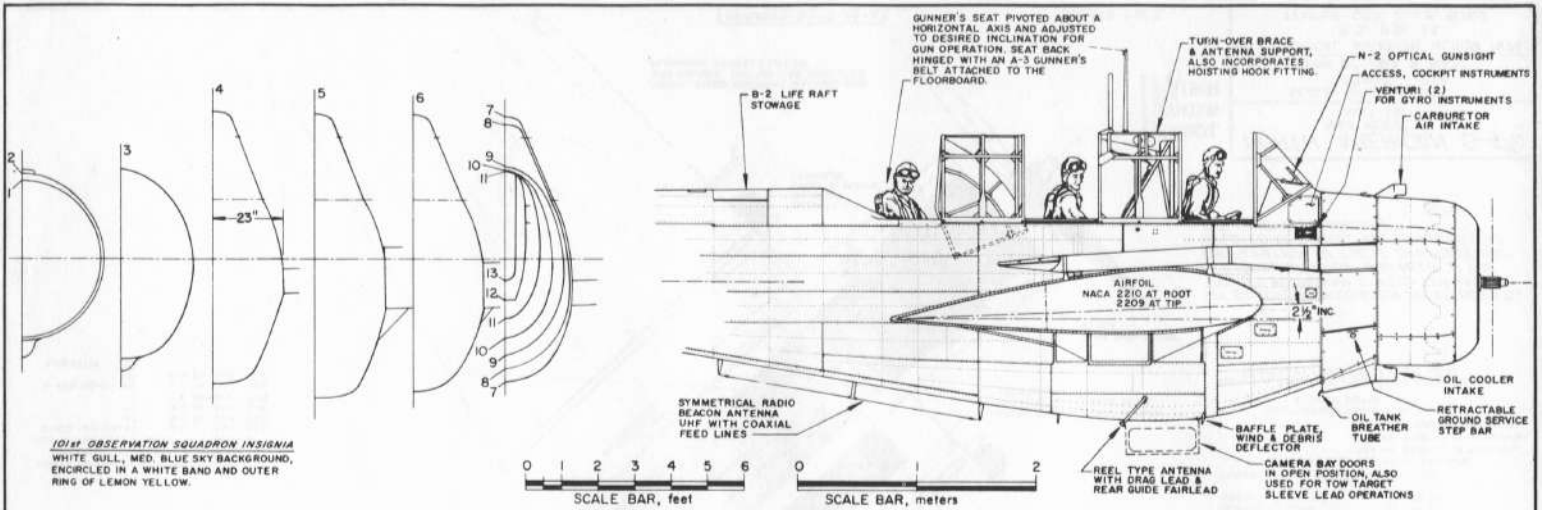
MY SINCERE APPRECIATION IS EXTENDED TO  
THE REV. BOARDMAN C. REED FOR HIS  
PERSONAL INTEREST AND HELP IN THE  
PREPARATION OF THESE DRAWINGS AND  
RELATED TECHNICAL FACTS REGARDING  
THE O-47 TYPE AIRCRAFT.

HISTORICAL  
NAVIGATION  
ALBUM

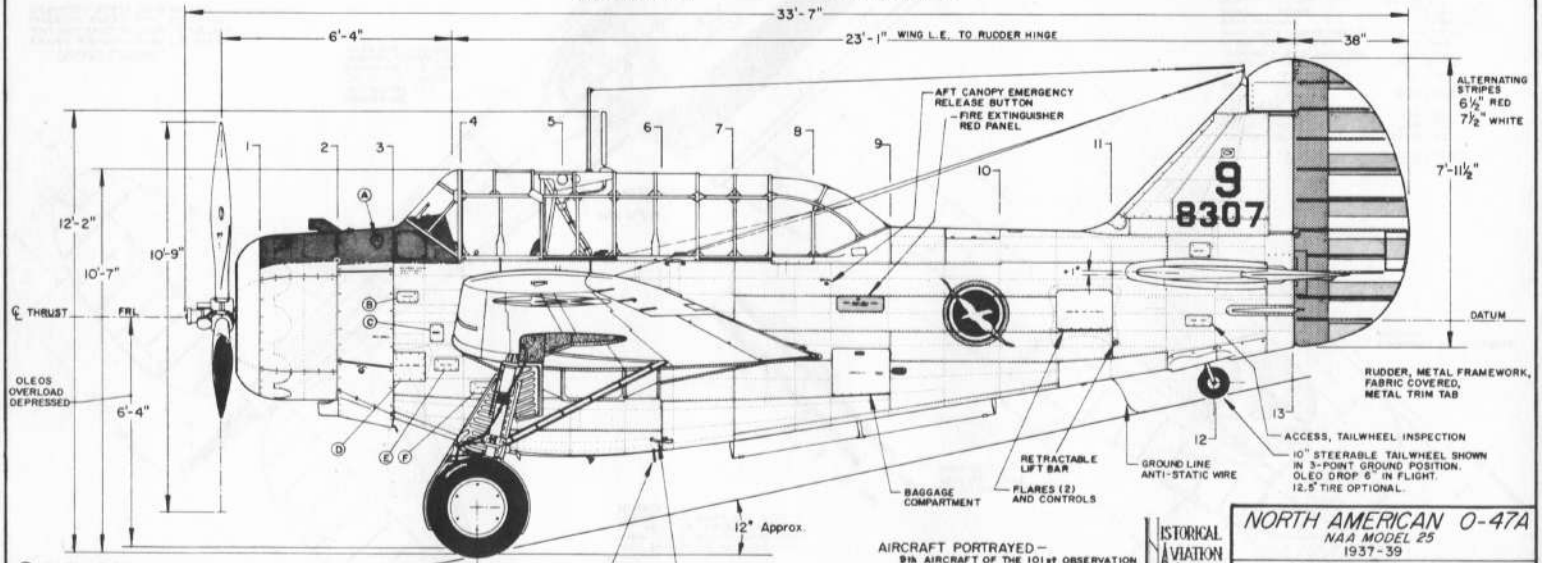
NORTH AMERICAN O-47A  
NAA MODEL 25  
1937-39

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

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



101st OBSERVATION SQUADRON INSIGNIA  
 WHITE GULL, MED. BLUE SKY BACKGROUND,  
 ENCIRCLED IN A WHITE BAND AND OUTER  
 RING OF LEMON YELLOW.



- (A) OIL FILL, (9.5 GALS. NORMAL)
- (B) ACCESS, FUEL LINE CONNECTIONS
- (C) FUEL FILL, MAIN TANK, (60 GALS.)
- (D) MAIN ELECTRICAL FUSE PANEL
- (E) ACCESS, TRIM CABLES
- (F) ACCESS, PULLEYS

AIRCRAFT PORTRAYED -  
 B-1B AIRCRAFT OF THE 101st OBSERVATION  
 SQUADRON, 26th DIVISION AVIATION,  
 MASSACHUSETTS NATIONAL GUARD.  
 S/N N.G. 38-307, C/N 25-584  
 COMPLETED JUNE 9, 1939, FLIGHT  
 DELIVERED TO 101st SQDN. ARRIVING AT  
 BOSTON MUNICIPAL AIRPORT JUNE 15, 1939



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

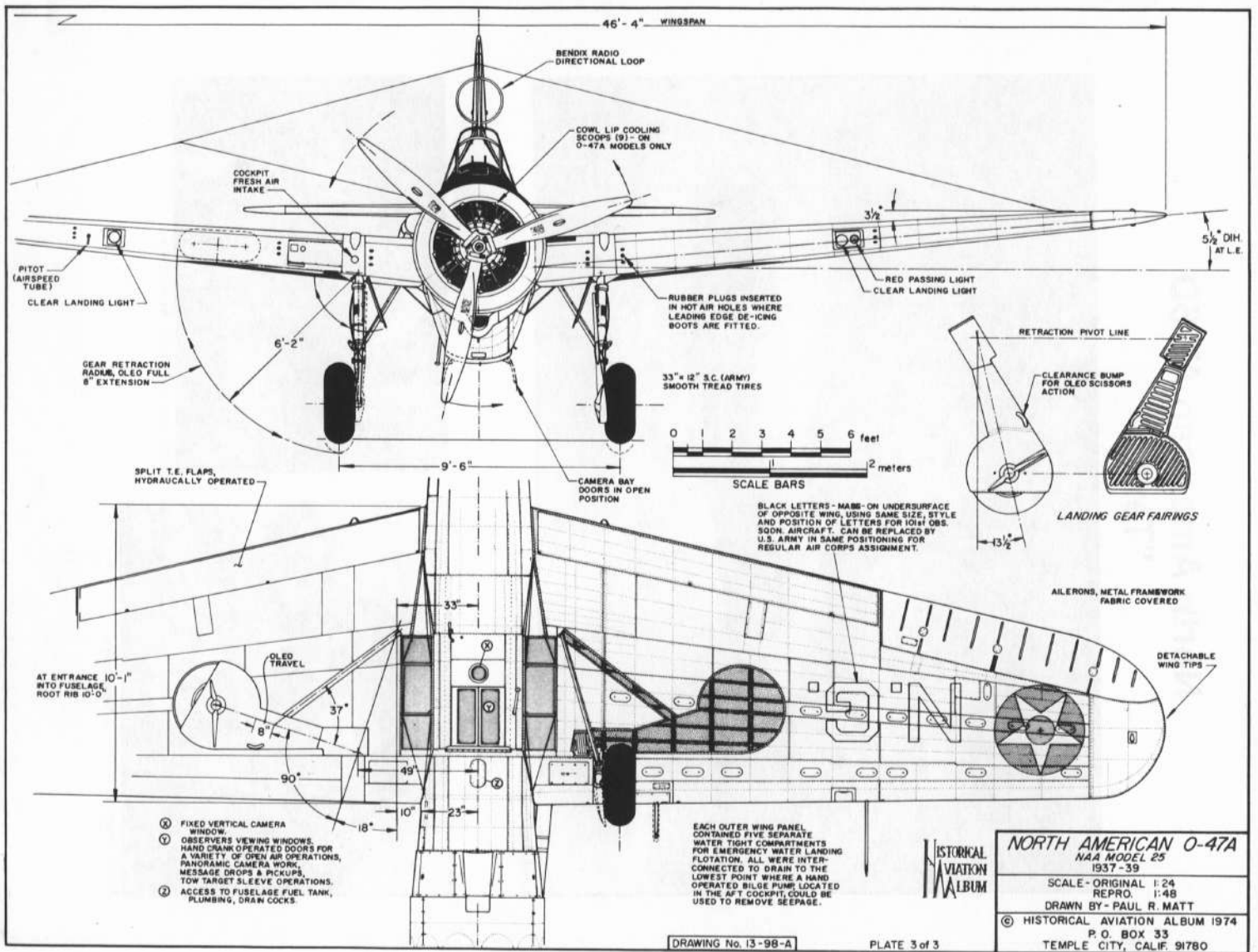
SCALE - ORIGINAL 1:24  
 REPRO. 1:48

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DRAWING No. 13-98-A

PLATE 2 of 3





DRAWING No. 13-98-A

PLATE 3 of 3



80-77

















O-47A REWORK (NA-2)  
N.O. 38-318 20.2016







FINAL ASSEMBLY  
NA-51 3/4LEFT FRONT VIEW  
NAA-O-47B 9-29-39 2020/238



FINAL ASSEMBLY  
NA-51 LEFT SIDE VIEW  
NAA-O-47B 9-29-39 20201/240

NORTH AMERICAN AVIATION, INC.  
PHOTOGRAPHIC DEPARTMENT



XO-47 (GA-15)  
20.141/156





$\frac{3}{4}$  REAR VIEW LT. SIDE  
NAA-O-47A (5-10-35) 20.20/127





NORTH AMERICAN AVIATION, INC.

CHICAGO CALIFORNIA

20.2017 238





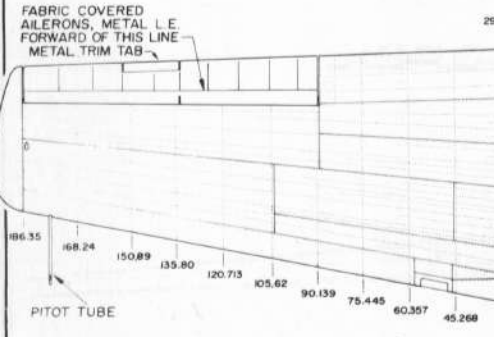
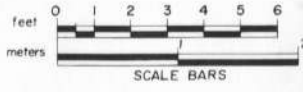
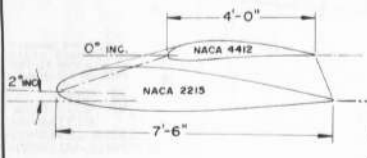
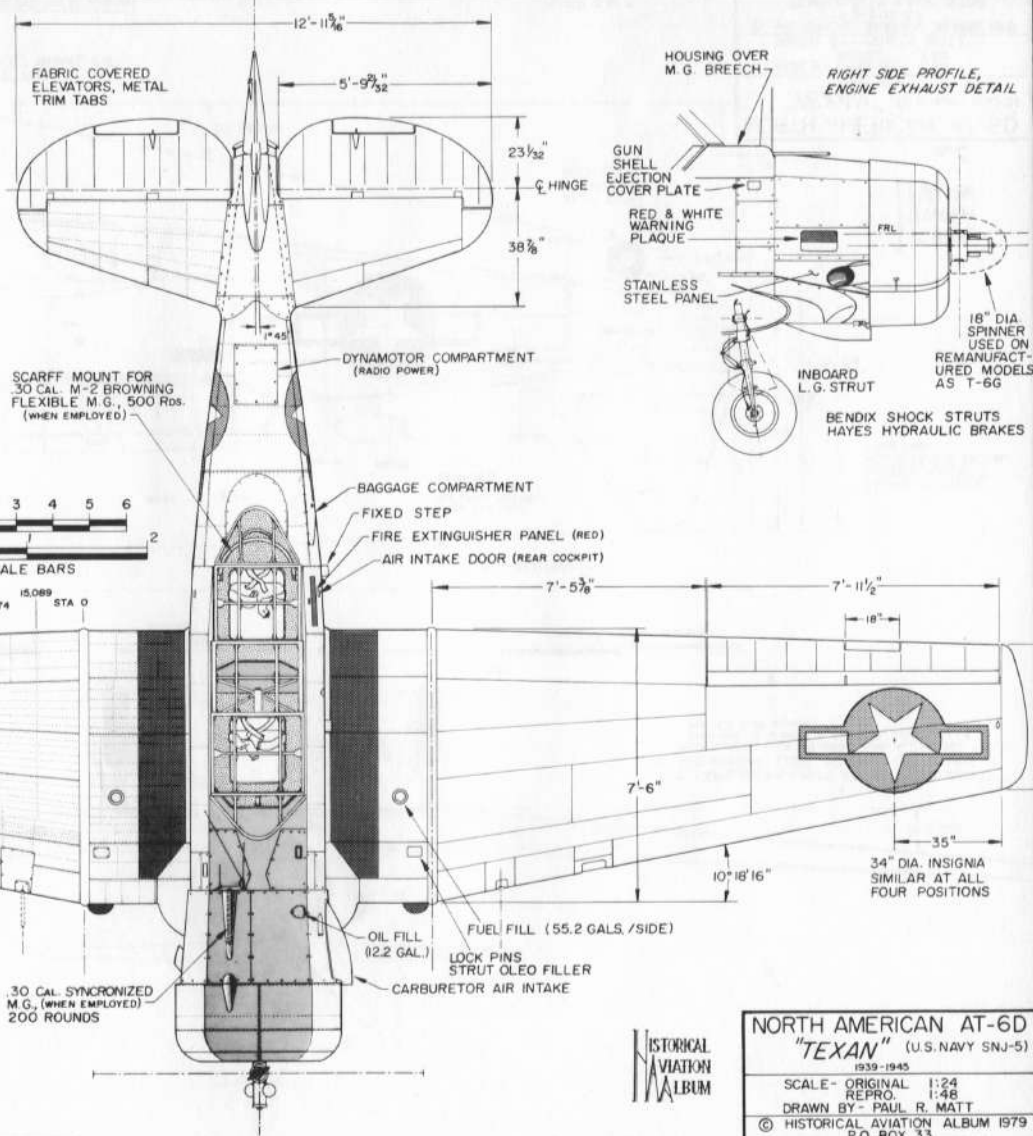




**GENERAL SPECIFICATIONS**

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



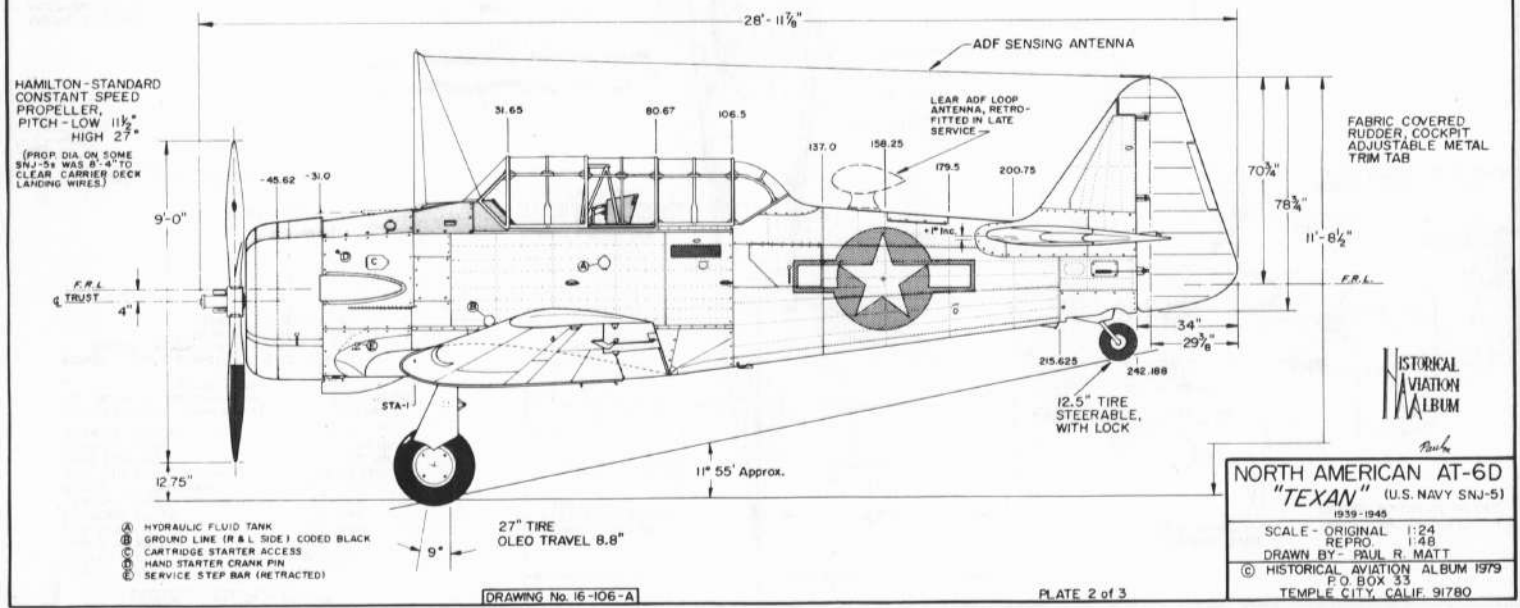
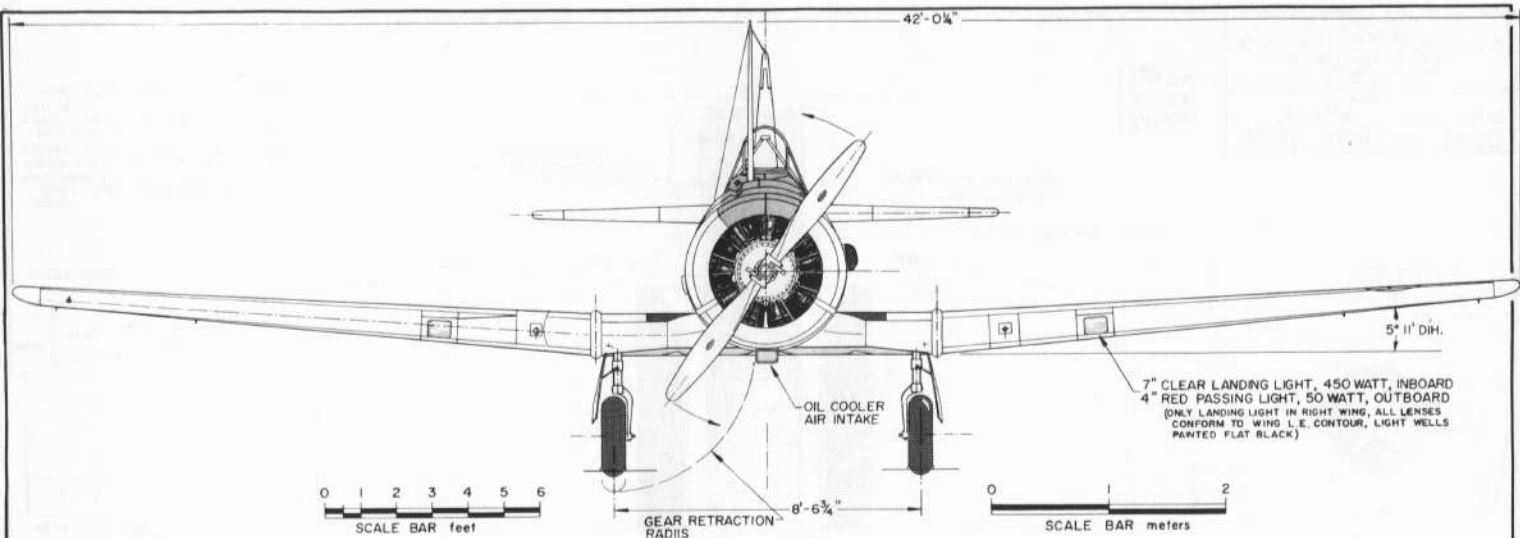
NOTE:  
 RIVET LINES ARE DRAWN ON THE SIDE VIEW AND RIGHT SIDES ON PLAN-VIEWS ONLY. SIMPLIFIED PANELING IS SHOWN ON THE LEFT SIDE PLAN-VIEWS. ALL LINES WERE NOT NECESSARILY TRANSFERRED FROM ONE VIEW TO ANOTHER.  
 WING PANELS DRAWN IN FLAT PLANE.

DRAWING No. 16-106-A

PLATE 1 of 3

HISTORICAL AVIATION ALBUM

**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,  
 PITCH - LOW  $11\frac{1}{2}^{\circ}$   
 HIGH  $27^{\circ}$   
 (PROP. DIA. ON SOME  
 SNJ-5s WAS 8'-4" TO  
 CLEAR CARRIER DECK  
 LANDING WIRES)

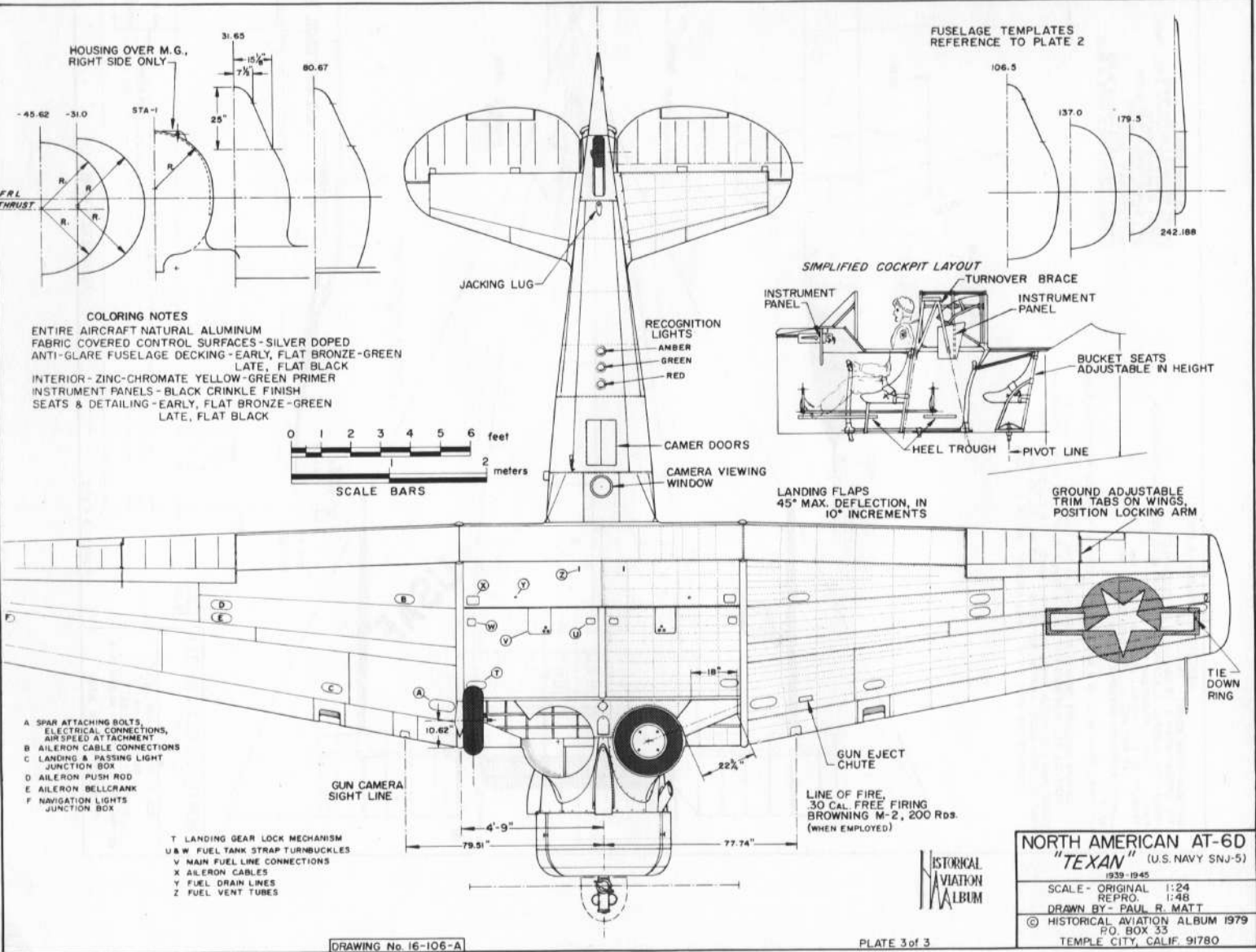
FABRIC COVERED  
 RUDDER, COCKPIT  
 ADJUSTABLE METAL  
 TRIM TAB

HISTORICAL  
 AVIATION  
 ALBUM

**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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DRAWING No. 16-106-A

PLATE 2 of 3



DRAWING No. 16-106-A

PLATE 3 of 3

**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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77-80-44  
AT-6A









NA-16-3  
20.201/138

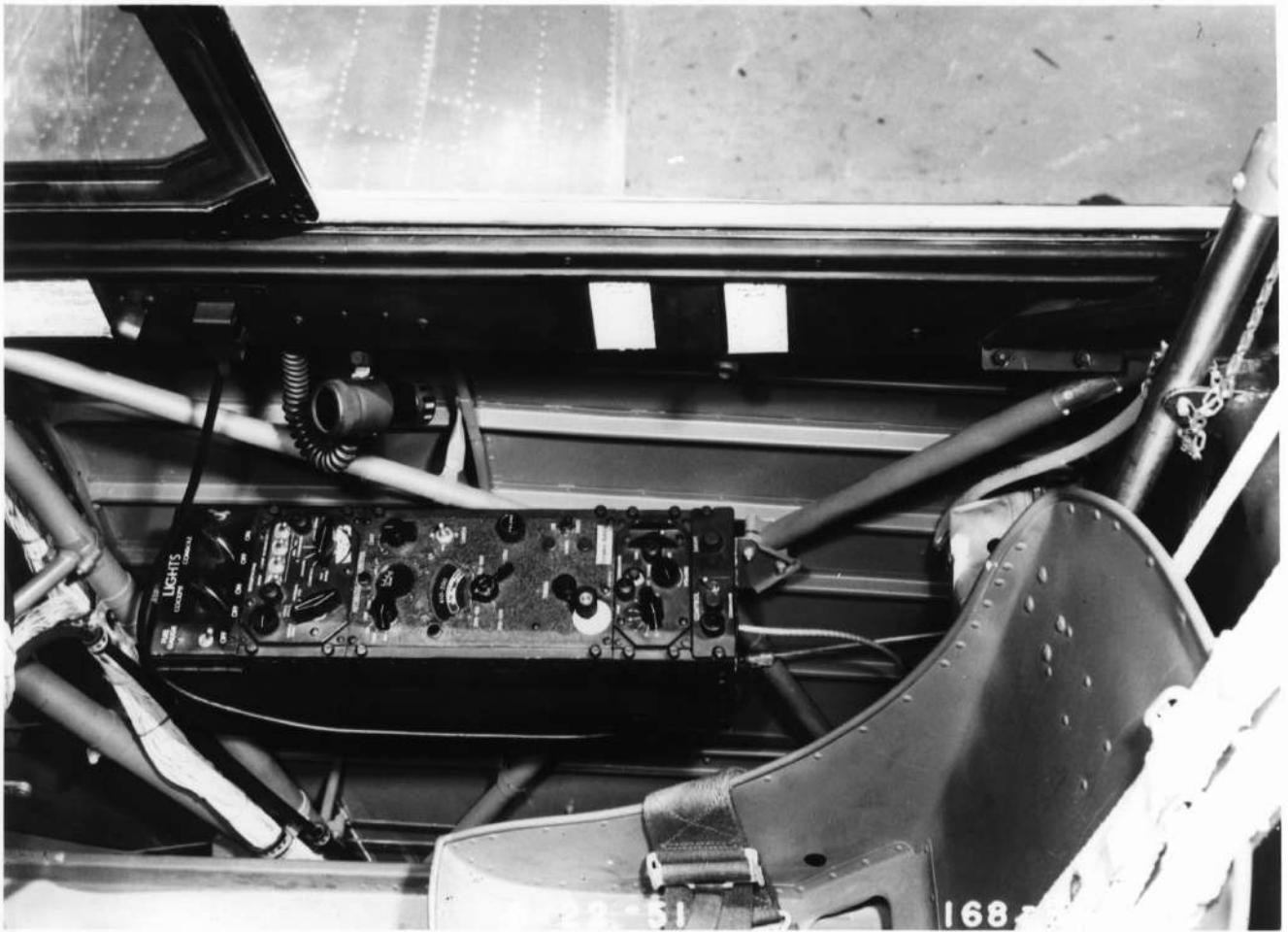


**AFT-INSTR PANEL AT-6D**



AFT - LH SIDE

AT-6D



**AFT - RH SIDE**

**AT-6D**









"MARINE TRAINER"









ALAMEDA 30587 SNJ-5

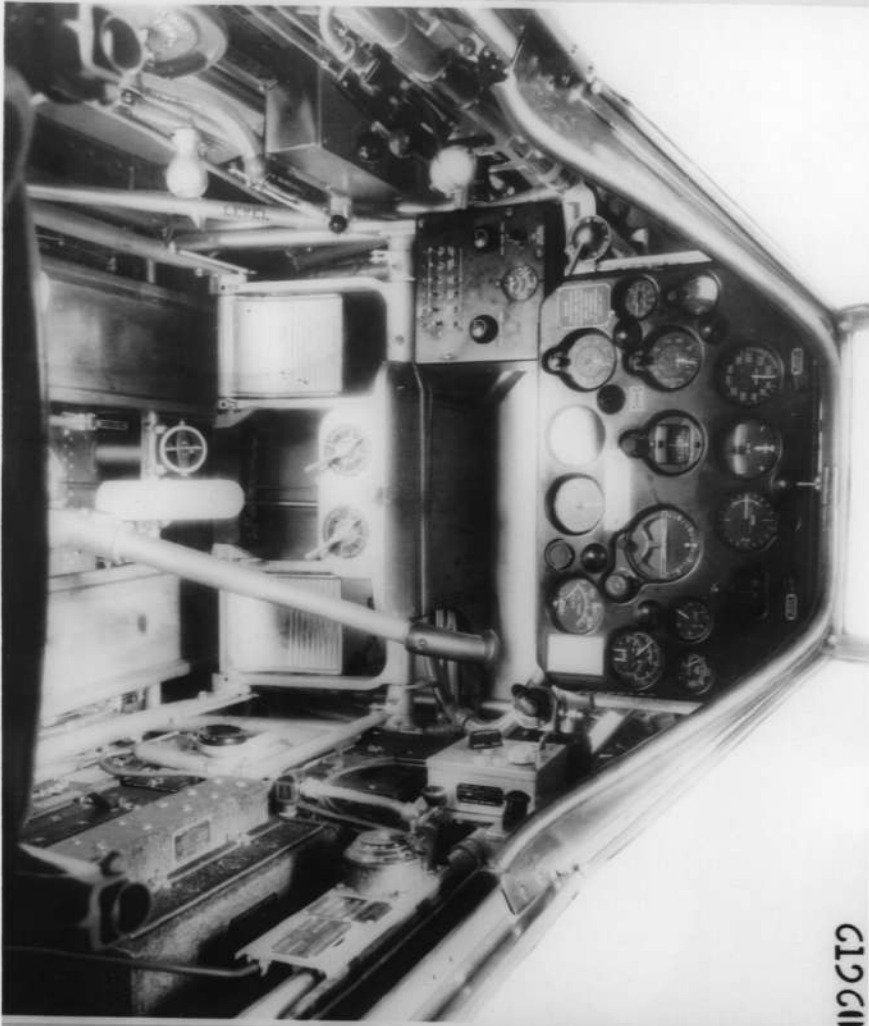


2004

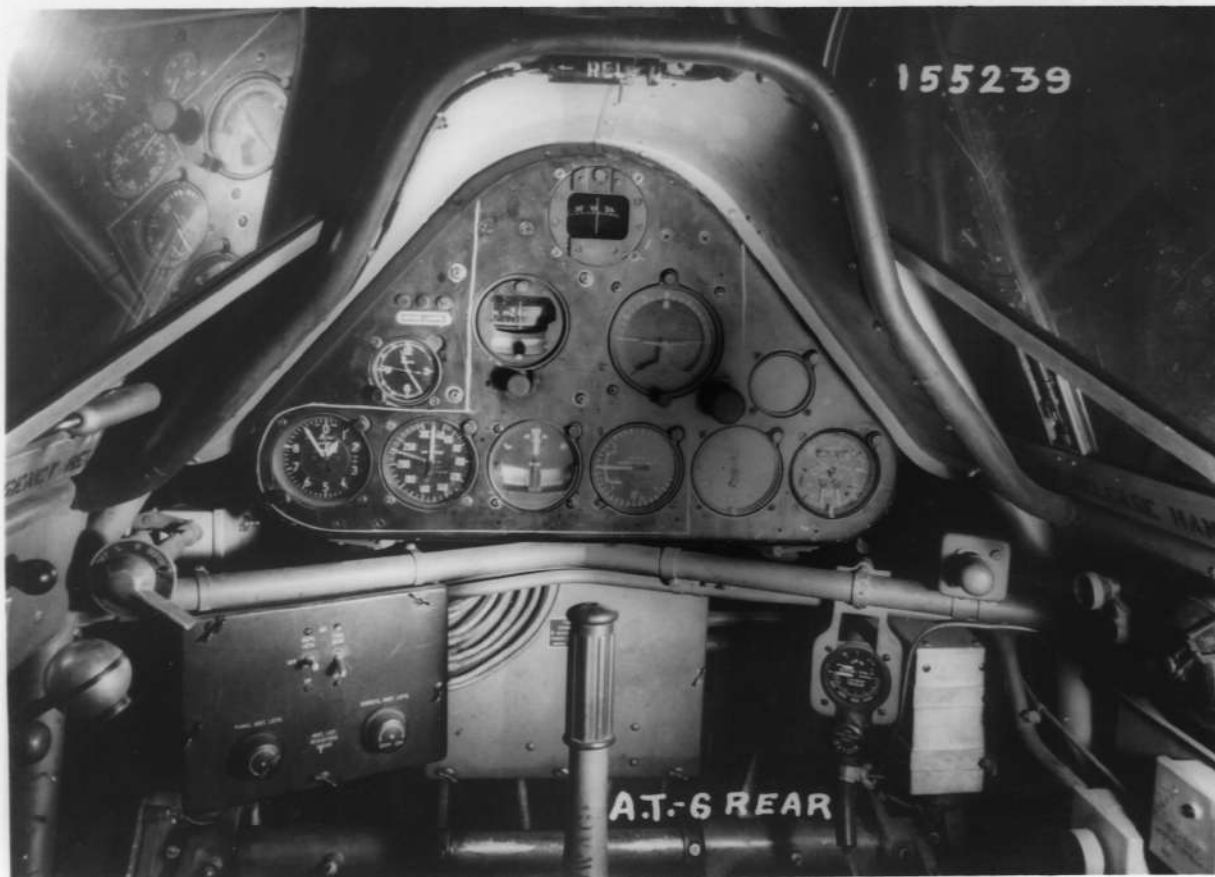




RF-9C



02612



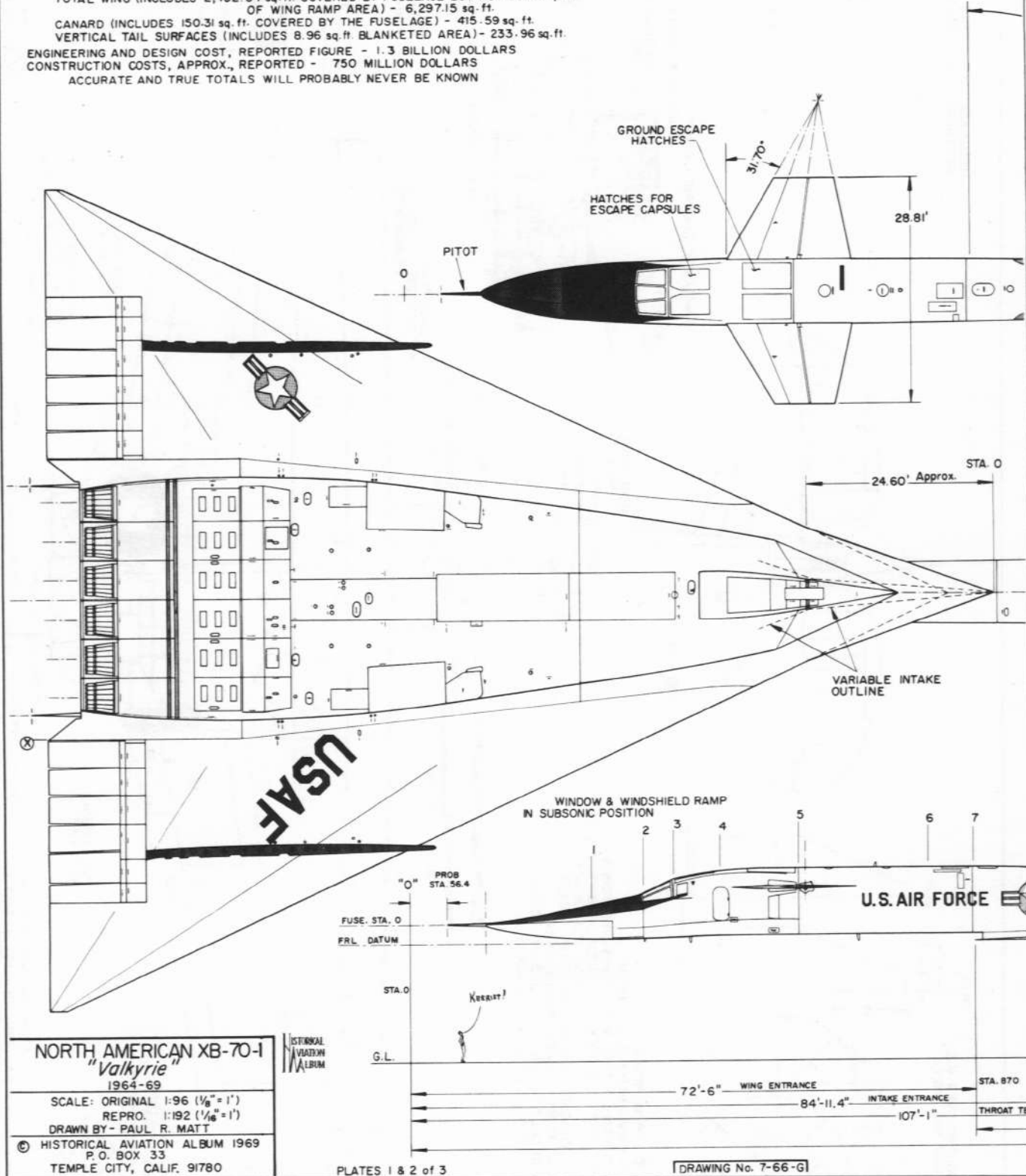


**GENERAL SPECIFICATIONS AND DATA**

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

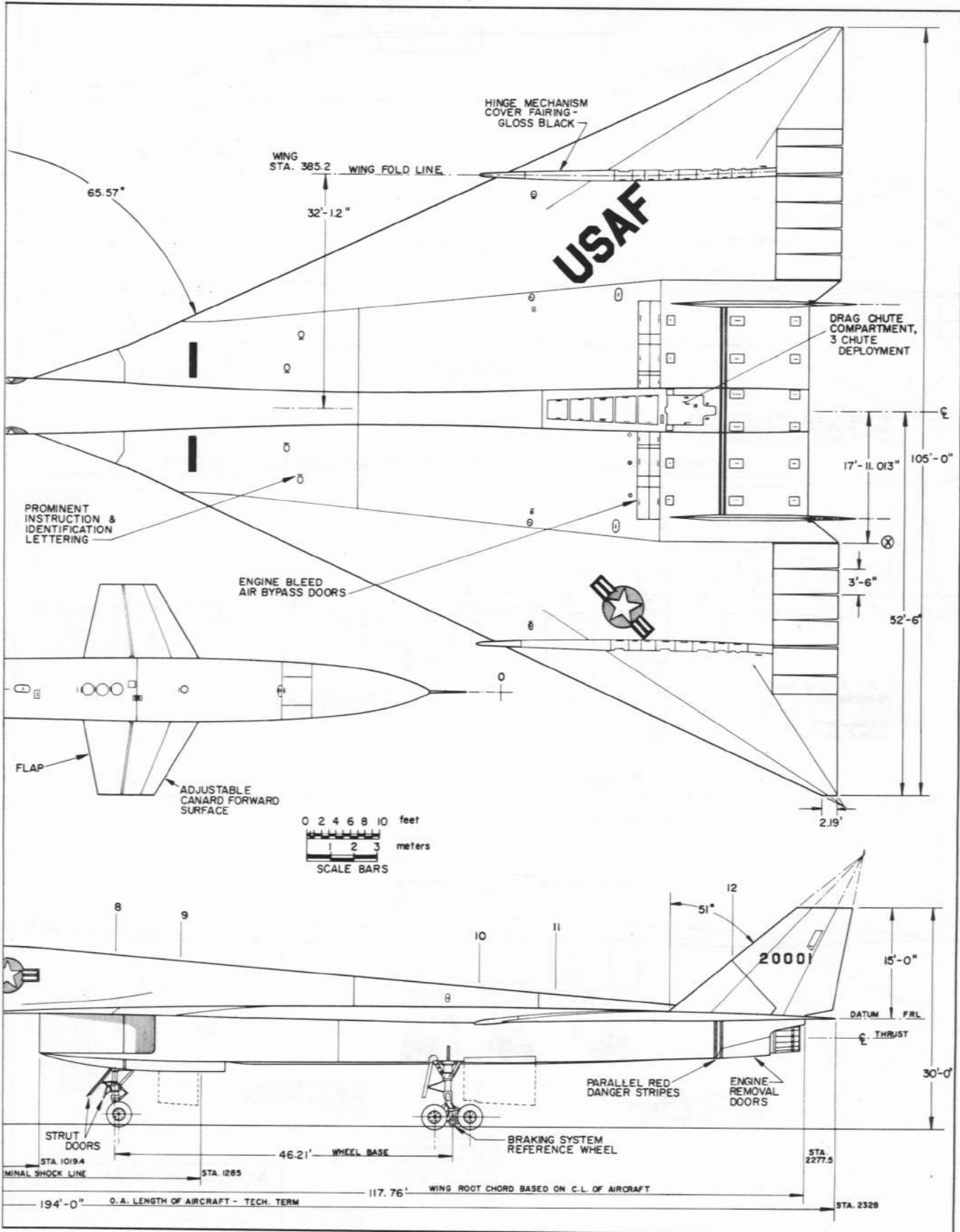
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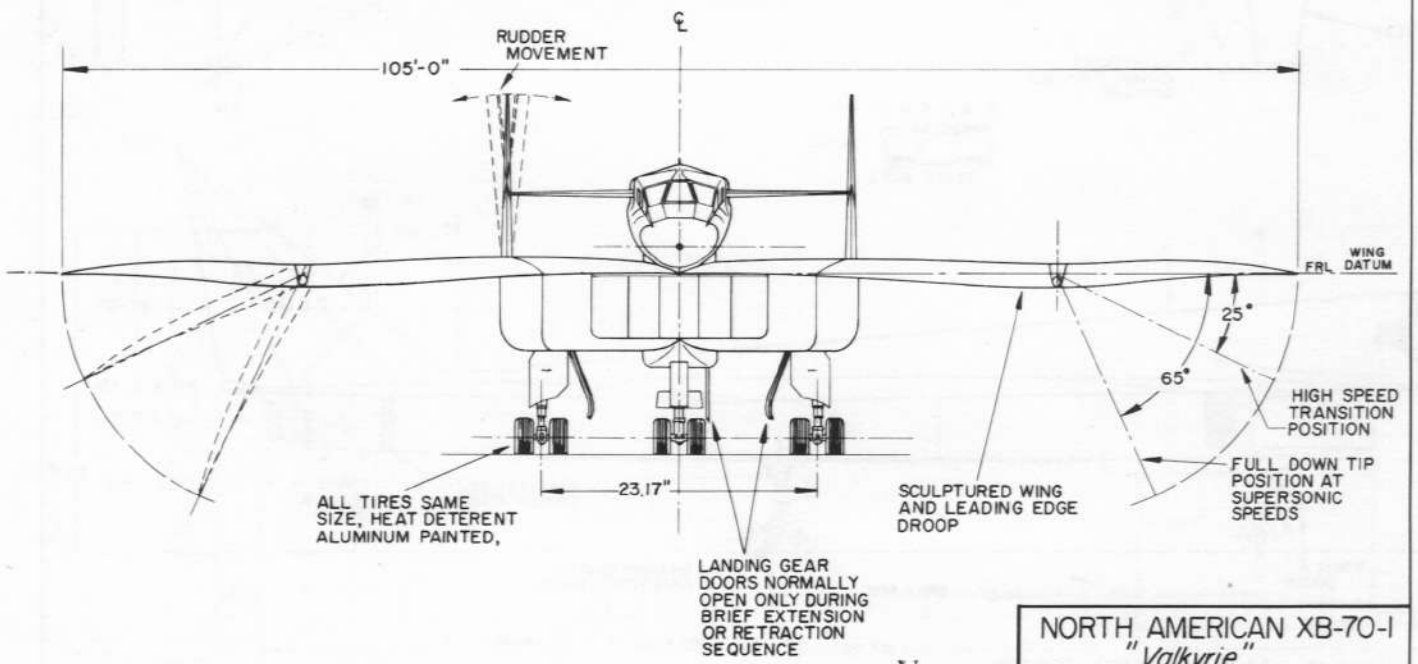
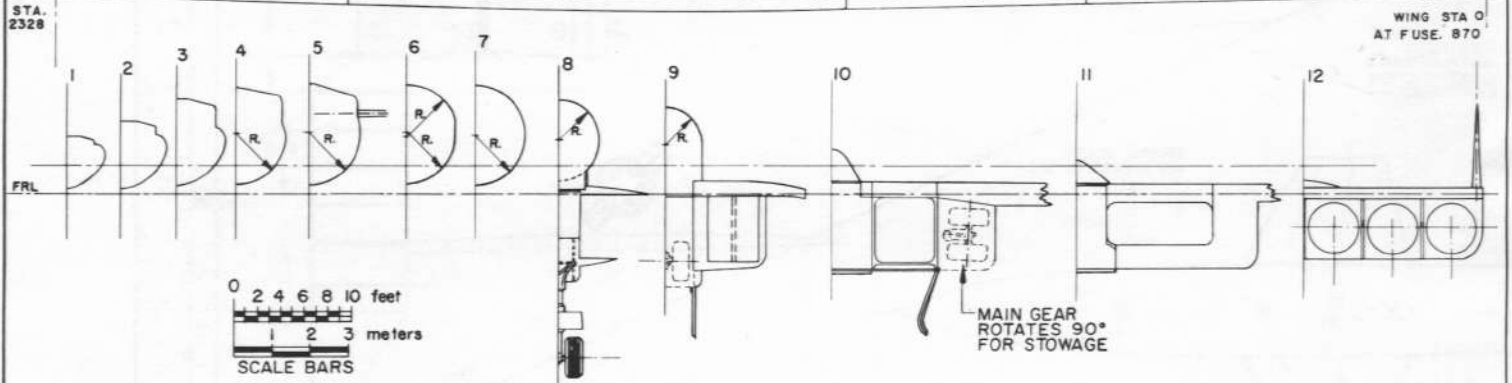
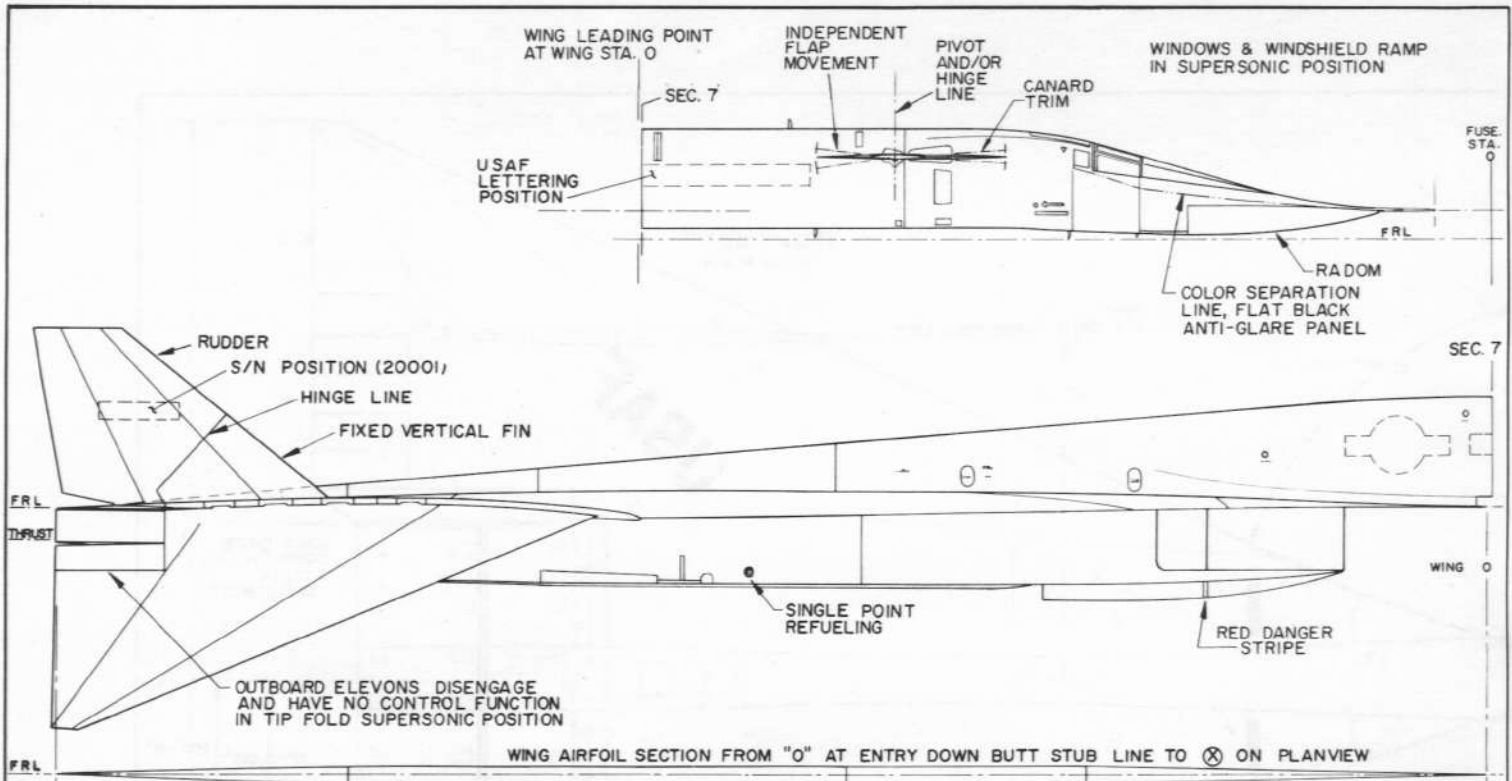
REPRO. 1:192 (1/16" = 1')

DRAWN BY - PAUL R. MATT

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HISTORICAL AVIATION ALBUM





NORTH AMERICAN XB-70-1  
 "Valkyrie"  
 1964-69  
 SCALE: ORIGINAL 1:96 (1/16" = 1')  
 REPR. 1:192 (1/32" = 1')  
 DRAWN BY - PAUL R. MATT

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HISTORICAL AVIATION ALBUM





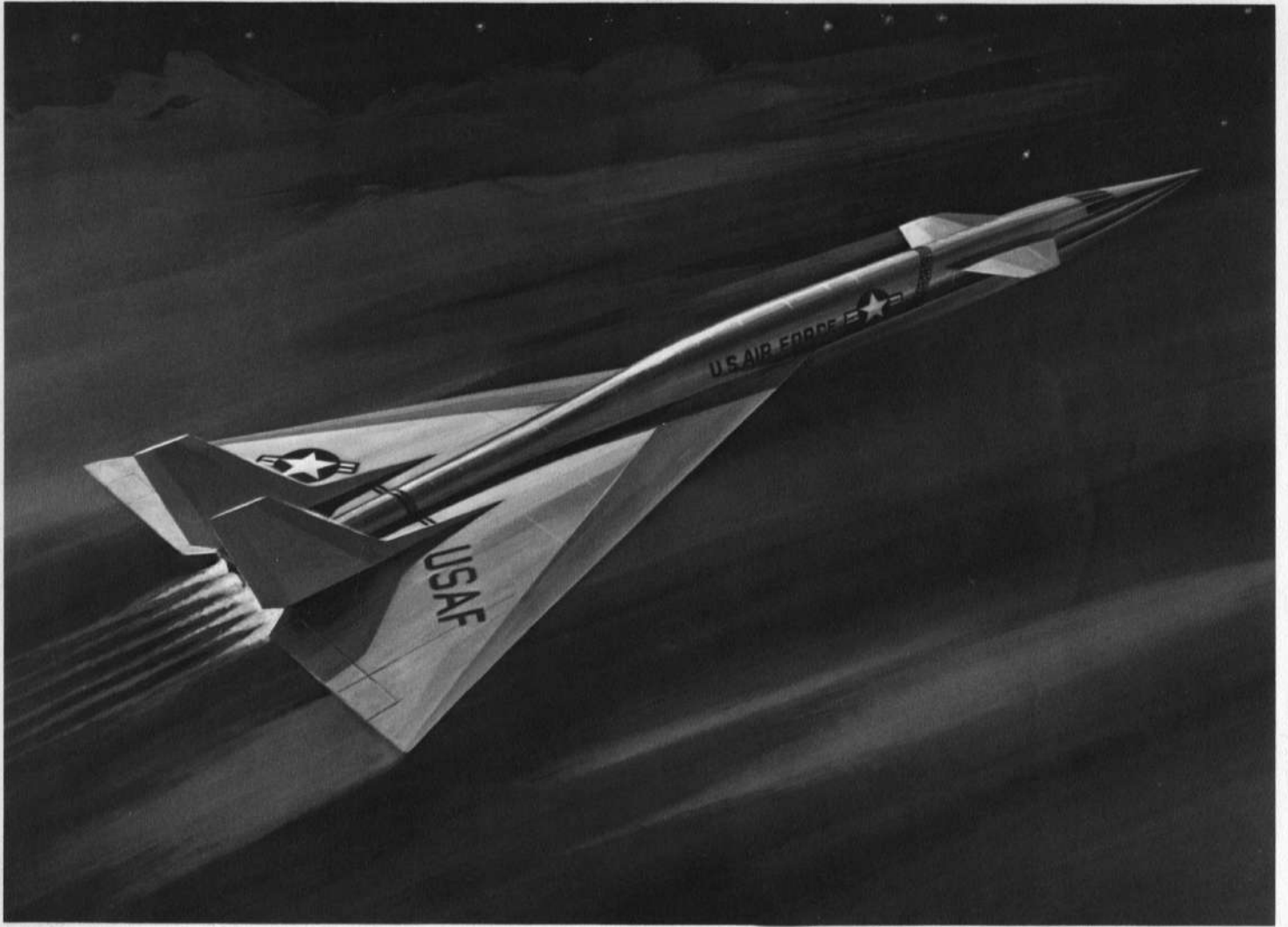


The XB-70 2,000 MPH research aircraft and the X-15A-2 Hypersonic flight research vehicle built by the Los Angeles Division of North American Rockwell Corporation



NORTH AMERICAN XB-70-1 VALKYRIE

North American Rockwell



USAF B-70 "Valkyrie"





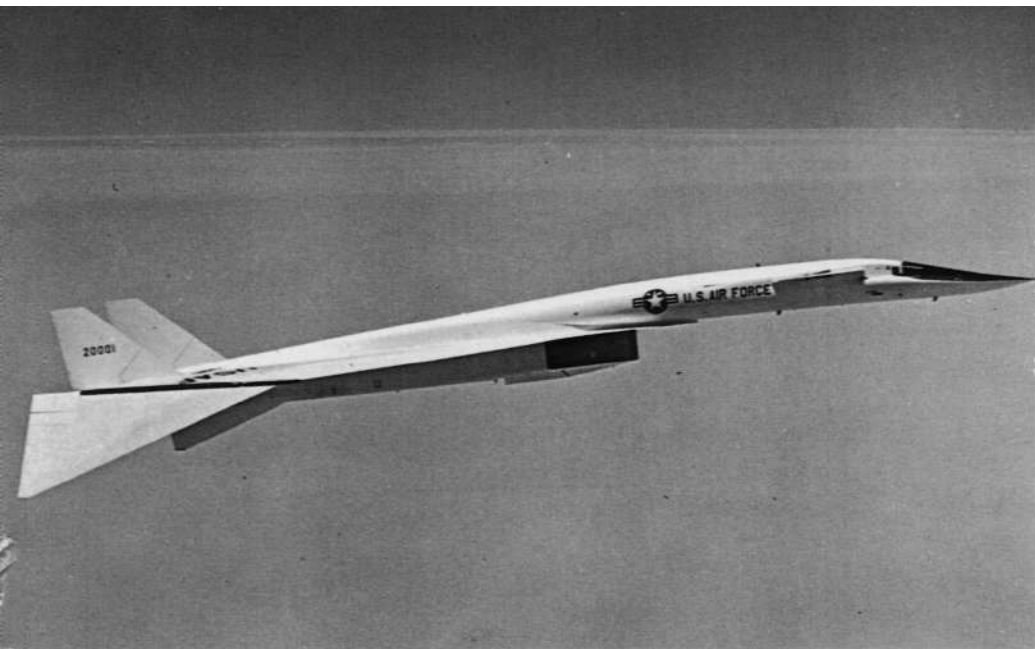


JAN 65



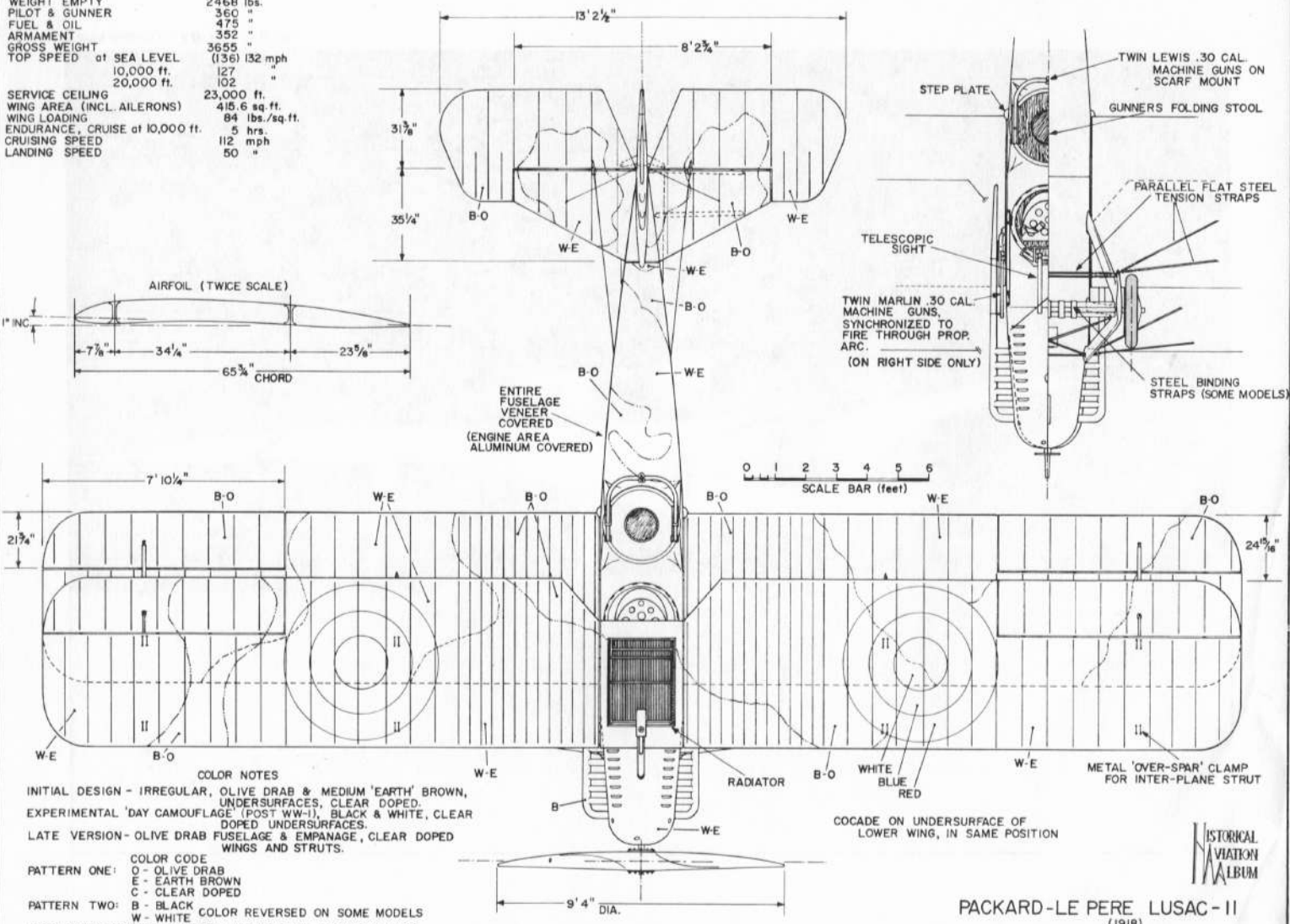






GENERAL SPECIFICATIONS

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 "



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

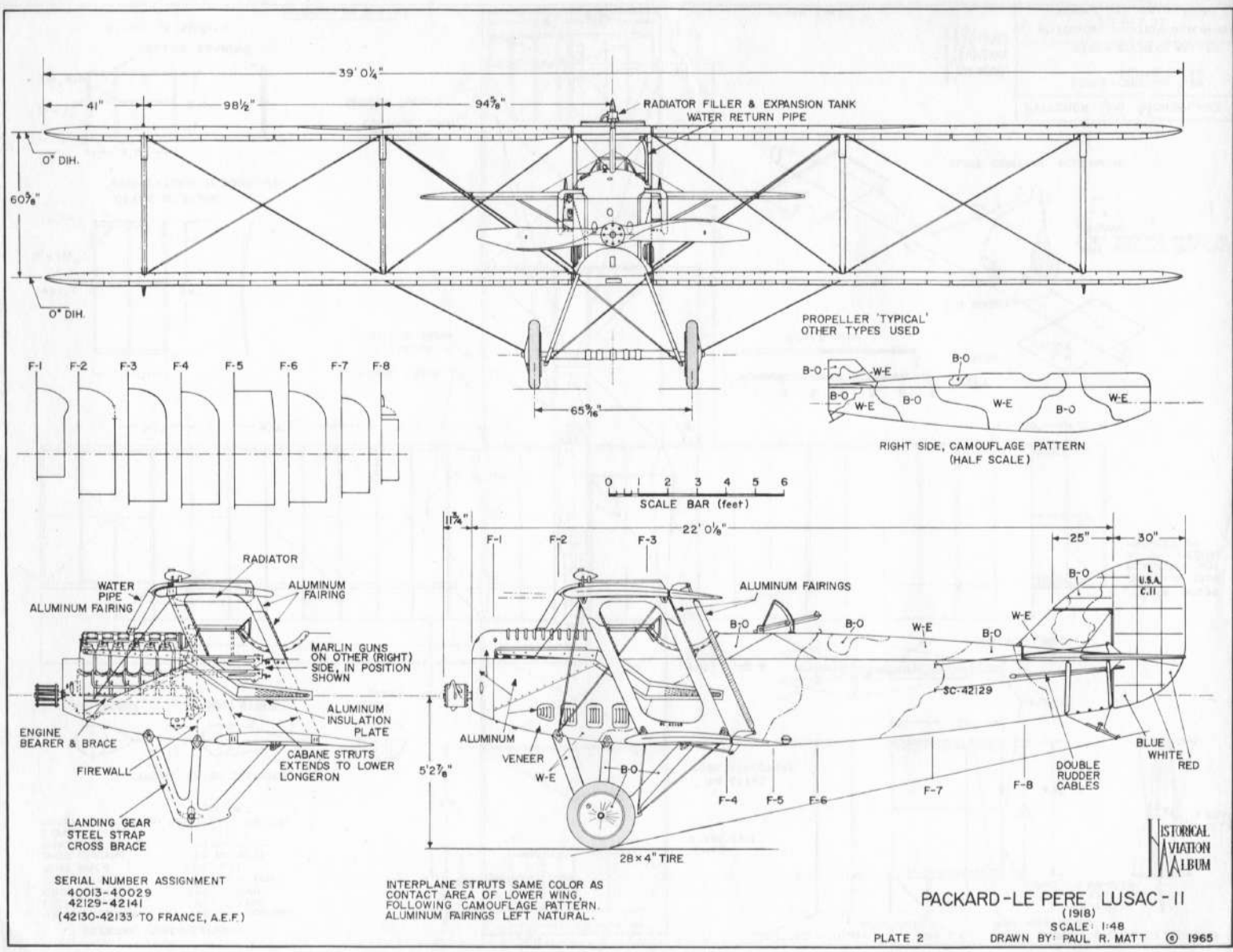
**COLOR CODE**  
 PATTERN ONE: O - OLIVE DRAB, E - EARTH BROWN, C - CLEAR DOPED  
 PATTERN TWO: B - BLACK, W - WHITE. COLOR REVERSED ON SOME MODELS

BASIC CAMOUFLAGE PATTERN AND OUTLINE DID NOT CHANGE  
 COLOR LINE \_\_\_\_\_

PACKARD-LE PERE LUSAC-II

(1918)  
 SCALE: 1:48  
 PLATE I DRAWN BY: PAUL R. MATT © 1965

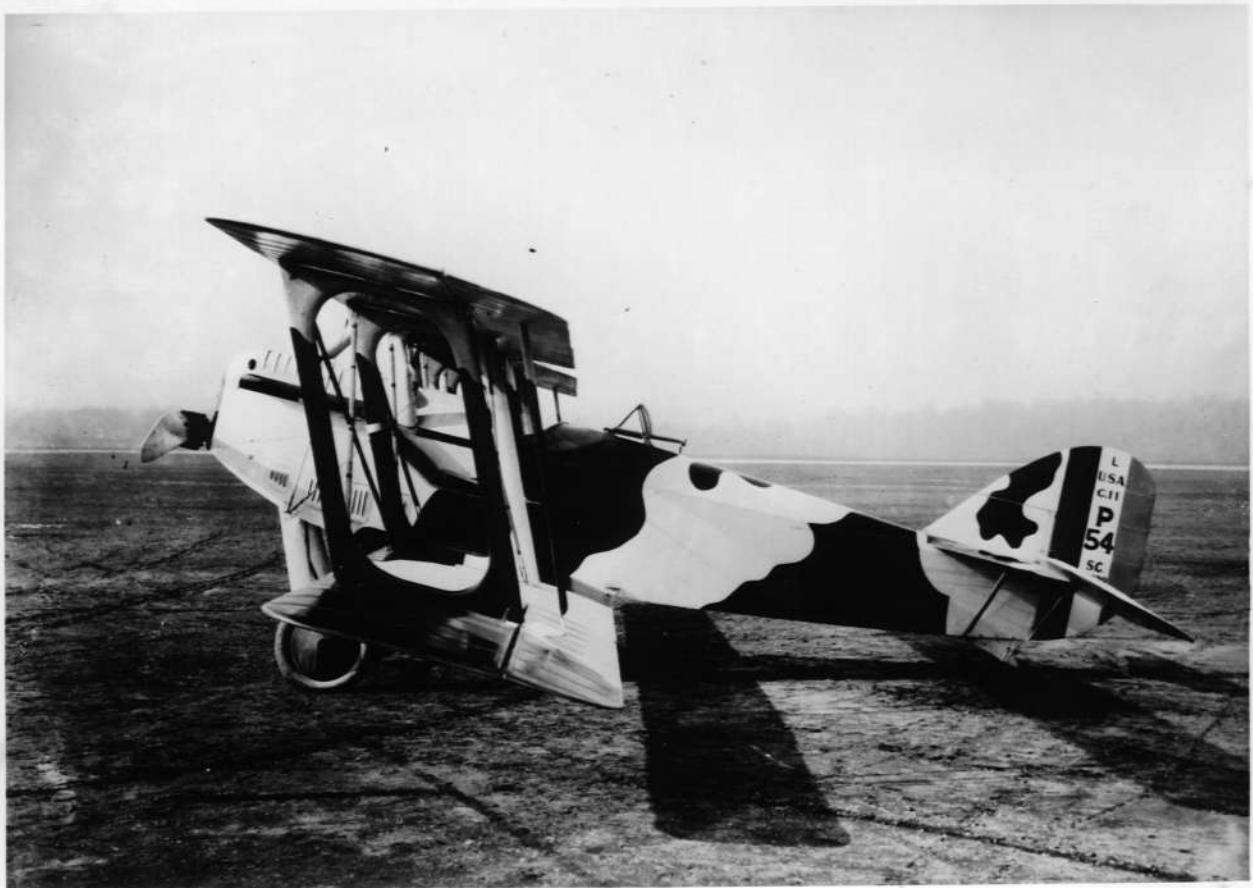
















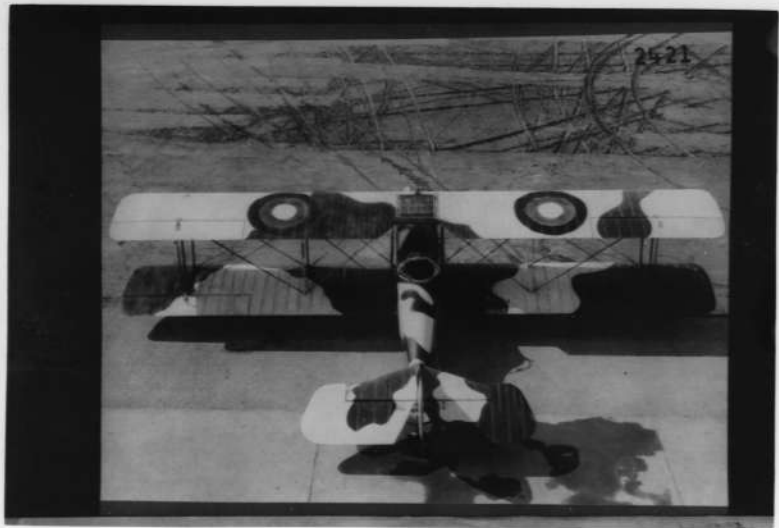
















The Packard Biplane, with special 8 cylinder Packard aviation engine

### The Packard Aeroplane

The Packard two-place tractor was designed around and made a complete unit with the Model 1-A-744 Packard Aviation Engine. This machine will make about 100 m.p.h. with full load, on account of its light weight and clean-cut design, and yet its landing speed is as low as the average training aeroplane.

Fast cross-country trips are made possible in this ship, with the ability to land in relatively small fields. The general specifications are as follows:

#### Power Plant

Packard 8 cylinder 160 h.p. at 1525 r.p.m. Weight, complete with hub, starter, battery and engine water, 585 lbs. Fuel consumption, .50 to .54 lbs. per h.p. hour at sea level.

#### Weights, Areas, etc.

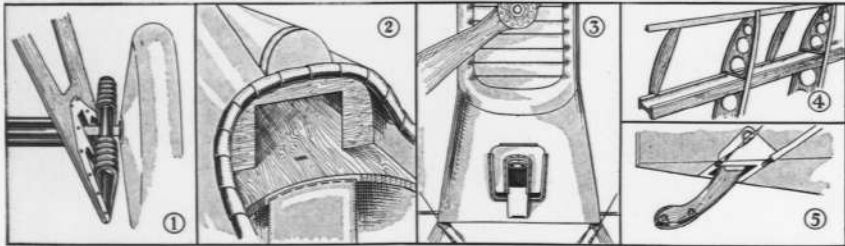
Area, main planes	387 sq. ft.
Weight, machine empty	1,520 lbs.
Normal flying weight	2,167 lbs.
Weight, lbs. per h.p.	13.5 lbs.
Wing loading, per sq. ft.	5.6 lbs.
Permissible extra luggage	100 lbs.

#### Performance (Estimated)

Altitude (feet)	Speed (m.p.h.)	Time of Climb (minutes)	Fuel range (hrs.)
0	102	0	2.5
5,000	100.5	7.5	3
10,000	98	18.1	3.5
15,000	90.8	34.5	4

Absolute ceiling, 19,500 feet.

#### SOME DETAILS OF THE PACKARD TWO SEATER TRACTOR



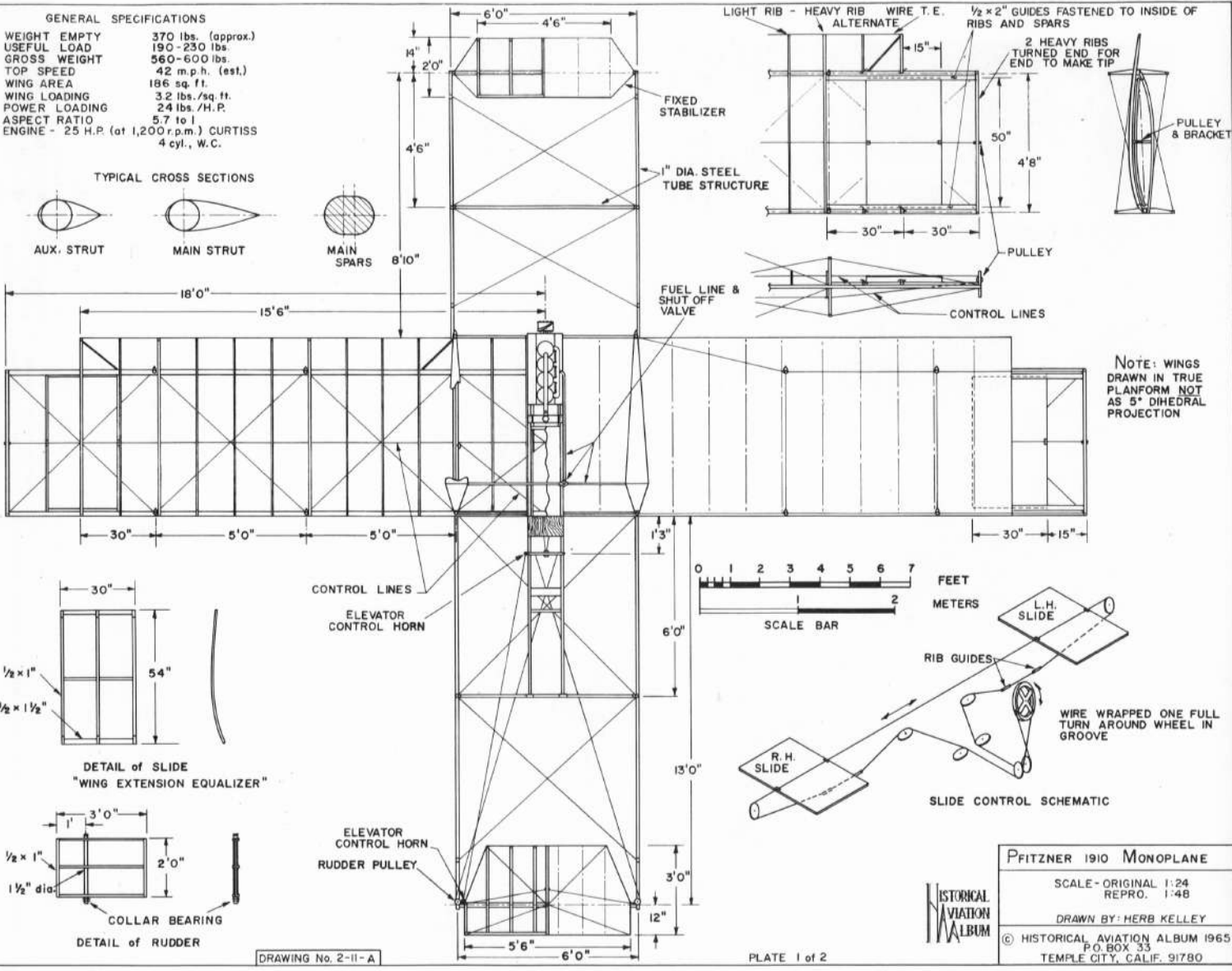
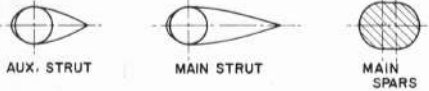
1—The shock absorber arrangement. The axle is square, where it runs in the chassis slot. The elastic cord is divided into two groups, one fore and one aft of the axle. 2—The roomy suit case locker compartment behind the pilot's seat. A veneer cover with dovetailed edges fits over the opening. 3—Double sliding cover plates are used to permit easy access to the under side of the engine in the vicinity of the air intake, projecting through the fuselage bottom. 4—Wing construction. Webs are of thin mahogany veneer. Cap strips and triangular section leading edge of spruce. Short false ribs run from leading edge to main front beam. 5—Tail skid and anchor plate for stabilizer braces



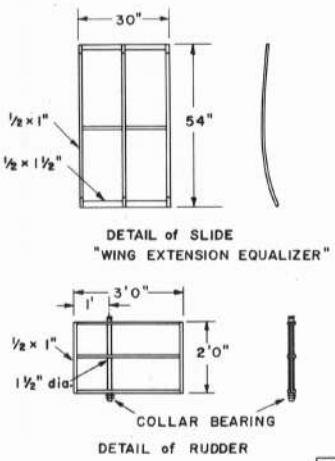
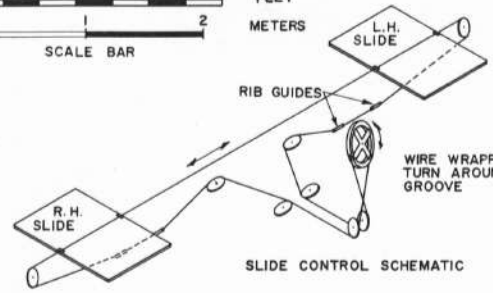
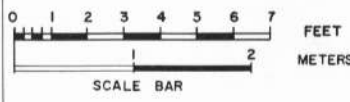
GENERAL SPECIFICATIONS

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 2.4 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

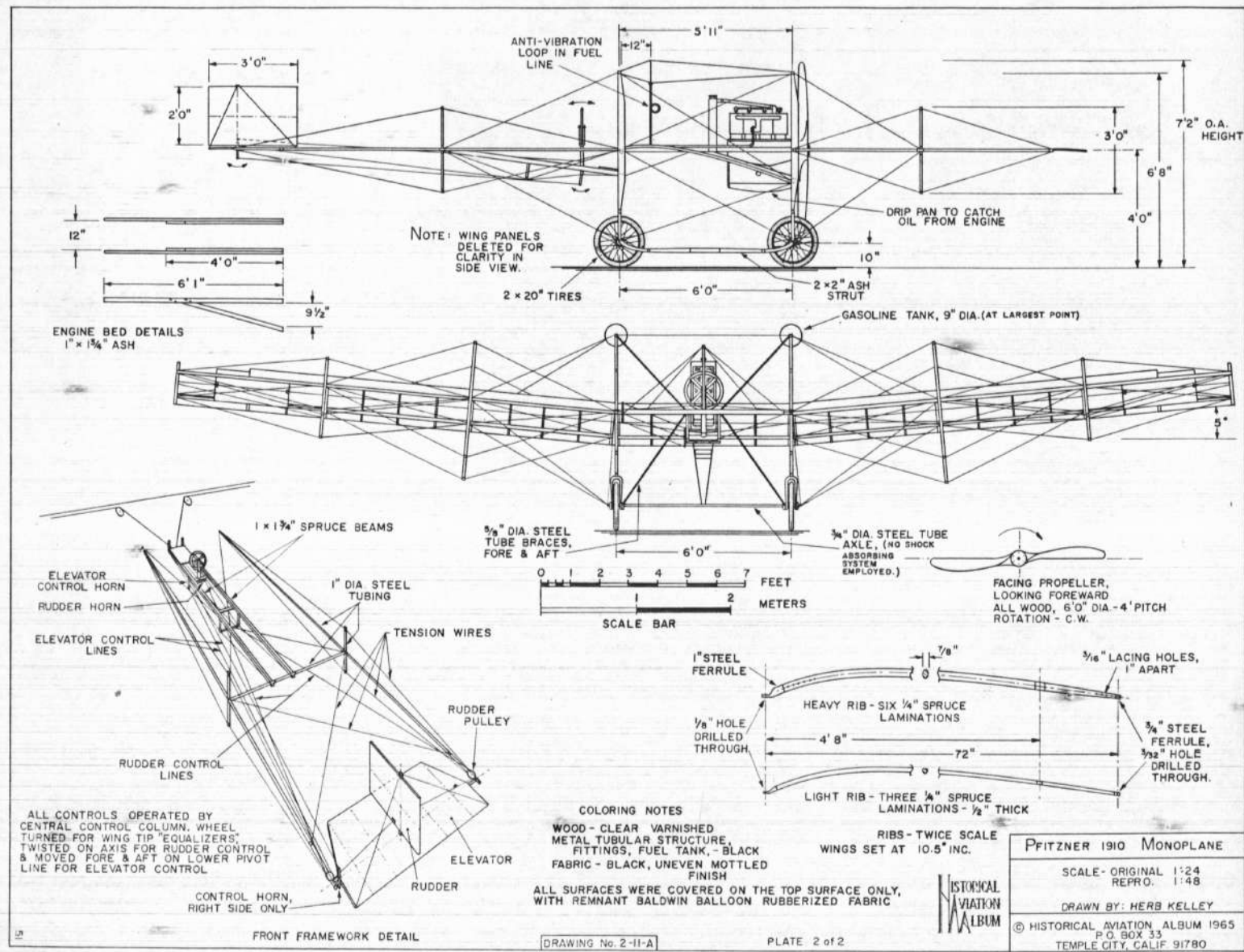


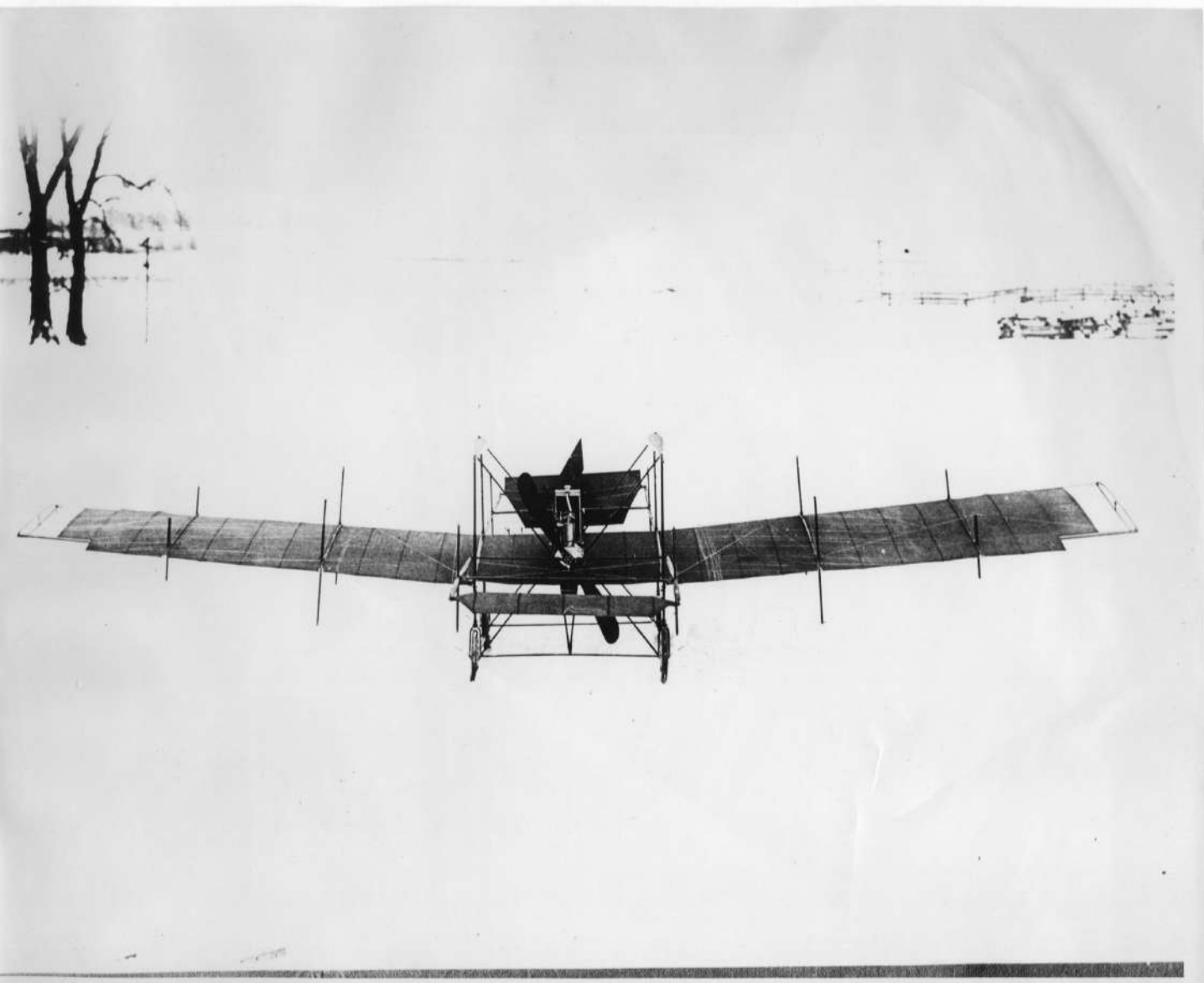
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PLATE 1 of 2

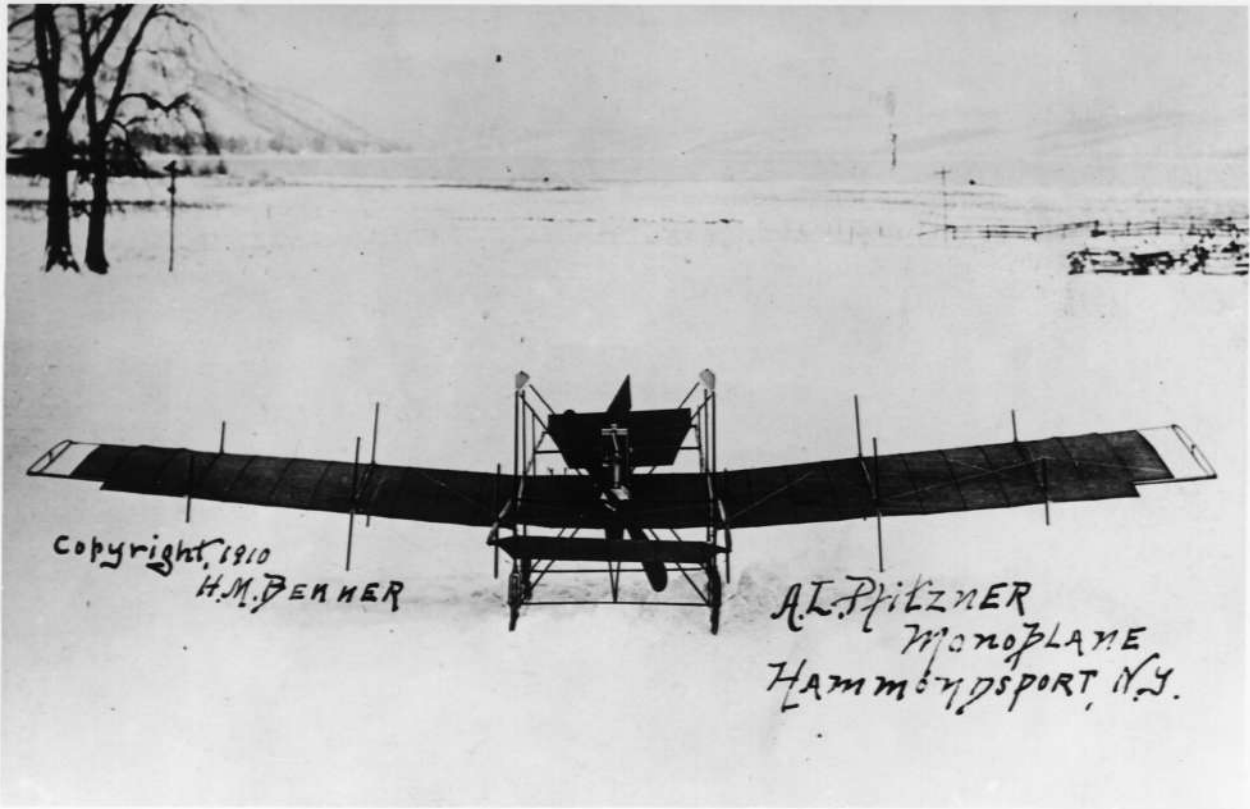
PFITZNER 1910 MONOPLANE  
 SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY: HERB KELLEY  
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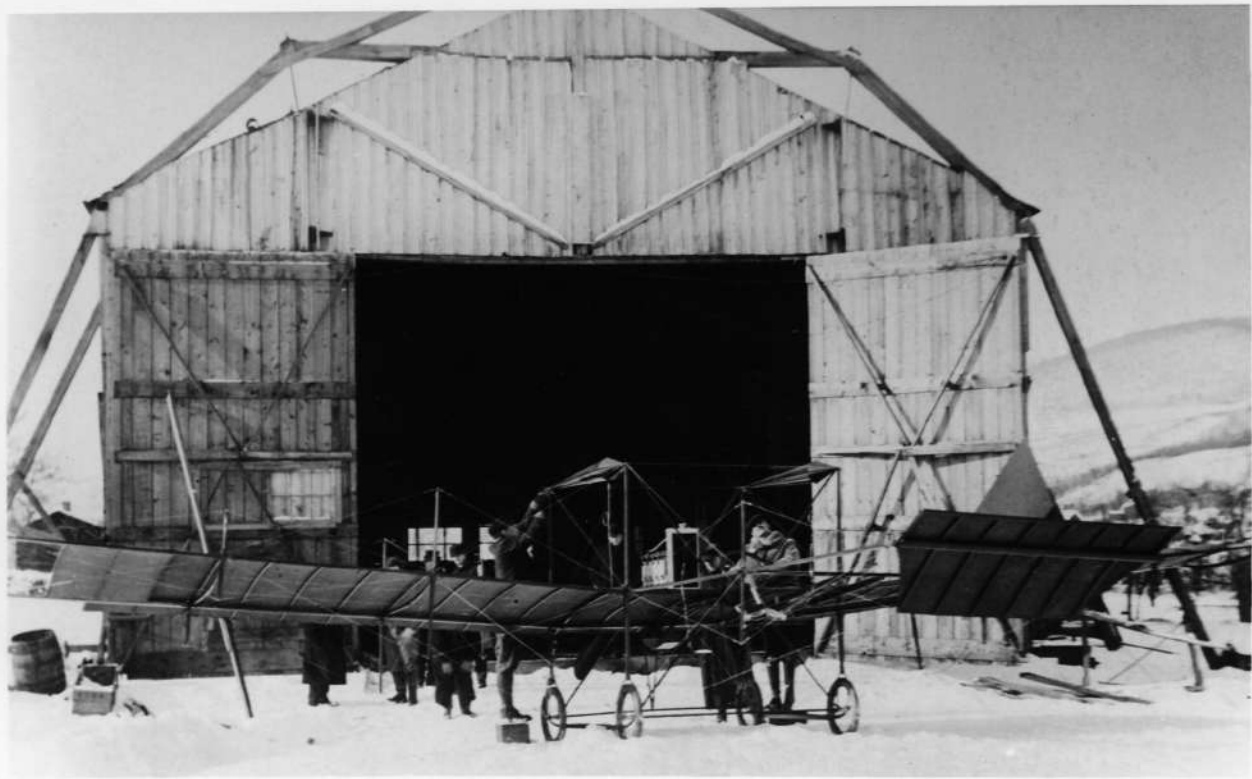




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H.M. BEMMER

A.L. HILZNER  
MONOPLANE  
HAMMONDSPORT, N.Y.





Scout II Photo by Alfred G. ...



Story 4 - The 3<sup>rd</sup> Rainier Machine