

# RYAN S-T TRAINING MONOPLANE

MANUFACTURED BY  
*The Ryan Aeronautical Company*

LINDBERGH FIELD  
SAN DIEGO, CALIFORNIA

1933 - 1942

ELEVATOR TRIM TABS

ELEVATORS & HORIZONTAL STABILIZERS ARE OF ALL-METAL FRAME CONSTRUCTION, FABRIC-COVERED.

WING FLAPS WITH LEVER CONTROL IN COCKPIT

FUEL TANK FILL

N.A.C.A. IN-LINE ENGINE COWLING

OIL TANK FILL

ENGINE INSTALLATION SHOWN - MENASCO B-4

74" WOOD PROPELLER

A

B

A

B

A

B

A

B

A

B

A

B

A

B

## SPECIFICATIONS

ENGINE - MENASCO B-4, 95 H.P.  
WING SPAN - 30 FT.  
LENGTH - 21' 5.375"  
HEIGHT - 6' 11"  
WING AREA - 124 SQ. FT.  
FUEL CAPACITY - 24 GAL.  
FUEL CONSUMPTION - 7 GAL. / HR.  
EMPTY WEIGHT - 1025 LBS.  
USEFUL LOAD - 552 LBS.  
GROSS WEIGHT - 1575 LBS.

## PERFORMANCE

MAXIMUM SPEED - 140 M.P.H. (S.L.)  
CRUISING SPEED - 120 M.P.H.  
RATE OF CLIMB - 850 FT./MIN.  
SERVICE CEILING - 15,500 FT.  
LANDING SPEED - 42 M.P.H. (FLAPS)  
LANDING SPEED - 50 M.P.H. (FLAPS UP)  
TAKE OFF RUN (FULL LOAD) - 190 YDS.  
CRUISING RANGE - 400 MILES

DIHEDRAL - 4° 30'  
INCIDENCE - 3° 0'

NOTE - FIGURES GIVEN ARE FOR THE 1937 SERIES, MODEL S-T.

MODEL S-T-A HAD MENASCO C-4 ENGINE, 125 H.P.

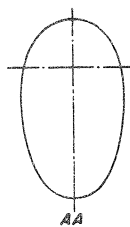
MODEL S-T-A SPECIAL HAD MENASCO C-4-S SUPERCHARGED ENGINE, 150 H.P.

WING CONSTRUCTION - OUTER WING STRUCTURE HAS TWO SOLID SPRUCE SPARS, STAMPED ALUMINUM ALLOY RIBS, STEEL COMPRESSION MEMBERS AND FABRIC COVERING. STUB WINGS ARE OF STEEL-TUBE CONSTRUCTION.

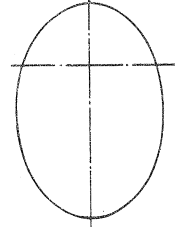
HAND HOLD



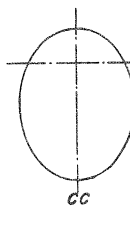
SCALE IN FEET



FUSELAGE SECTIONS



BB



CC

## FUSELAGE CONSTRUCTION

OVAL METAL SEMI-MONOCOQUE STRUCTURE WITH ONE MAIN STEEL BULKHEAD AND SEVEN ALUMINUM ALLOY BULKHEADS, 24 ST ALCLAD COVERING.

RUDDER & FIN, METAL FRAME, FABRIC COVERING

LEATHER COCKPIT EDGES

HEADREST

OIL COOLER

ALL METAL FAIRINGS

ALL METAL WHEEL PANTS

8" GOODYEAR PNEUMATIC TAIL WHEEL

18 X 8.3 GOODYEAR AIR WHEELS

*A. Ligg*

# RYAN S-T TRAINING MONOPLANE

MANUFACTURED BY

*The Ryan Aeronautical Company*

LINDBERGH FIELD  
SAN DIEGO, CALIFORNIA

1933 - 1942

ELEVATOR TRIM TABS

ELEVATORS & HORIZONTAL STABILIZERS ARE OF ALL-METAL FRAME CONSTRUCTION, FABRIC-COVERED.

WING FLAPS WITH LEVER CONTROL IN COCKPIT

FUEL TANK FILL

N.A.C.A. IN-LINE ENGINE COWLING

OIL TANK FILL

ENGINE INSTALLATION SHOWN - MENASCO B-4

74" WOOD PROPELLER

OIL COOLER

18 X 8.3 GOODYEAR AIR WHEELS

## SPECIFICATIONS

ENGINE - MENASCO B-4, 95 H.P.  
WING SPAN - 30 FT.  
LENGTH - 21' 5.375"  
HEIGHT - 6' 11"  
WING AREA - 124 SQ. FT.  
FUEL CAPACITY - 24 GAL.  
FUEL CONSUMPTION - 7 GAL./HR.  
EMPTY WEIGHT - 1025 LBS.  
USEFUL LOAD - 552 LBS.  
GROSS WEIGHT - 1575 LBS.

## PERFORMANCE

MAXIMUM SPEED - 140 M.P.H. (S.L.)  
CRUISING SPEED - 120 M.P.H.  
RATE OF CLIMB - 850 FT./MIN.  
SERVICE CEILING - 15,500 FT.  
LANDING SPEED - 42 M.P.H. (FLAPS)  
LANDING SPEED - 50 M.P.H. (FLAPS UP)  
TAKE OFF RUN (FULL LOAD) - 190 YDS.  
CRUISING RANGE - 400 MILES

DIHEDRAL - 4° 30'  
INCIDENCE - 3° 0'

NOTE - FIGURES GIVEN ARE FOR THE 1937 SERIES, MODEL S-T.

MODEL S-T-A HAD MENASCO C-4 ENGINE, 125 H.P.

MODEL S-T-A SPECIAL HAD MENASCO C-4-S SUPERCHARGED ENGINE, 150 H.P.

WING CONSTRUCTION - OUTER WING STRUCTURE HAS TWO SOLID SPRUCE SPARS, STAMPED ALUMINUM ALLOY RIBS, STEEL COMPRESSION MEMBERS AND FABRIC COVERING. STUB WINGS ARE OF STEEL-TUBE CONSTRUCTION.

HAND HOLD



## FUSELAGE CONSTRUCTION

OVAL METAL SEMI-MONOCOQUE STRUCTURE WITH ONE MAIN STEEL BULKHEAD AND SEVEN ALUMINUM ALLOY BULKHEADS, 24 ST ALCLAD COVERING.

## FUSELAGE SECTIONS

AA

BB

CC

RUDDER & FIN, METAL FRAME, FABRIC COVERING

LEATHER COCKPIT EDGES

HEADREST

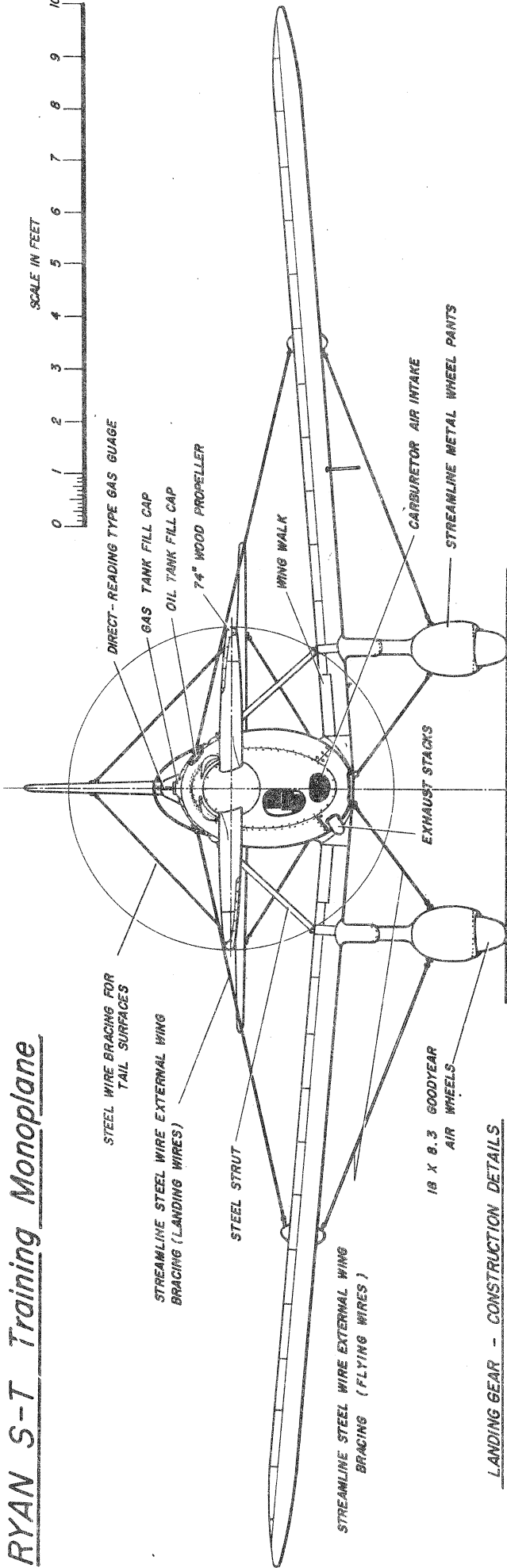
ALL METAL FAIRINGS

ALL METAL WHEEL PANTS

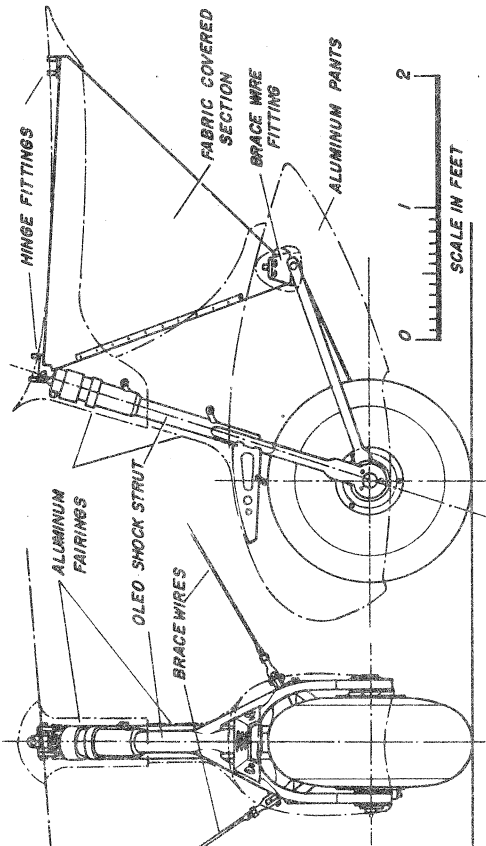
8" GOODYEAR PNEUMATIC TAIL WHEEL

*J. L. Ryan*

# RYAN S-T Training Monoplane



## LANDING GEAR - CONSTRUCTION DETAILS



THE RYAN S-T SERIES LANDING GEAR IS OF THE TREADLE TYPE WITH MECHANICALLY OPERATED MULTIPLE-DISC BRAKES, LONG-STROKE OLEO STRUT AND SPRING SHOCK ABSORBERS. LANDING GEAR MEMBERS ARE BUILT-UP WELDED STEEL TUBE SECTIONS OVER WHICH IS FASTENED A 24ST ALCLAD FAIRING. THE TRIANGULAR STEEL TUBE SECTION BEHIND THE STRUT IS FABRIC COVERED. THE SHOCK STRUT IS FASTENED TO STUB WING THROUGH A HINGE FITTING. GEAR IS BRACED TO WINGS AND FUSELAGE WITH EXTERNAL STREAMLINE STEEL WIRES.

## Chart of Ryan S-T Series

### BASIC COMMERCIAL MODELS

MODEL	ENGINE	H. P.	REMARKS
ST	MENASCO B-4	95	BASIC MODEL
STA	" C-4	125	" ENGINE CHANGE
STA SPECIAL	" C-4S	150	" "
STM-125	" C-4	125	MILITARY EXPORT MODEL
STM-150	" C-4S	150	" "
STMS-2	" "	"	SEAPLANE VERSION OF PT-20
ST-3	KINNER R-440-3/R-540-1	132/160	PT-21, PT-22 (NAVY NR-1)
ST-3S	" "	"	SEAPLANE VERSION, PT-22

NOTE: PRINCIPAL DIFFERENCES BETWEEN EARLY S-T AND PT-16 MODELS AND LATER PT-20, PT-21 AND PT-22 MODELS WERE IN THE VARIOUS ENGINE INSTALLATIONS. PT-20 AND LATER MODELS HAD LARGER COCKPIT OPENINGS, PT-21 AND PT-22 HAD WIDER GEAR AND SWEEP-BACK WINGS.

### MILITARY MODELS

MODEL	№ MFCD.	GROSS WT.	SPAN	LENGTH	ENGINE	H. P.	REMARKS
XPT-16	1	1600	30' 0"	21' 6"	MENASCO L-365-1	125	STA
YPT-16	15	"	"	"	"	"	STARTER ADDED
PT-16A	14	1800	"	"	KINNER R-440-1	132	YPT-16, ENGINE CHANGE
PT-20	30	1635	"	21' 4"	MENASCO L-365-1	125	YPT-16, MIN. JETES
PT-20A	27	1650	"	20' 11"	KINNER R-440-1	132	PT-20, ENGINE CHANGE
PT-20B	3	"	"	21' 3"	MENASCO D-4	125	PT-20, "
PT-21	100	1825	30' 1"	22' 6"	KINNER R-440-3	132	(NAVY MODEL NR-1)
PT-22	1023	1960	30' 0"	"	" R-540-1	160	"
PT-22A	25	1850	"	"	"	"	ST-3 EXPORT MODEL