

# **COMPENDIUM (11.2015)**

## **Overview Items in Several TW Discussion Groups**

### **( index )**

(Tailwind Forum Yahoo and Tailwind List Matronics)

#### **Wings**

**( page 1 )**

- Airfoil
- Rib Construction
- Wing Assembly
- Wingtips on W 10
- Wing and Wingtips venting
- Wingtip Construction
- Root Rib Question
- Rear Spar Warping
- Wingspan
- Scarf Joint
- Skinning the Wings
- Fiberglassing
- Inspection Holes
- Wing Weight
- Surface Finish
- Wet Wing
- Wing Spar Fitting Location
- Wing Incidence
- Correction of Wing Incidence
- One Wing heavy
- Gaps between Rudders
- Aileron Tubing
- Ailerons and Flaps
- Metal Flaps and Ailerons
- Aileron Balancing
- Aileron Differential Movement
- Push Rods
- Rear Spar Detail
- Wing Fittings
- Spar Strut Fittings
- Struts
- Wingtip Nav Lights, Strobes
- Wing Fairing
- Pitot Location

## **Engine**

**( page 23 )**

- Firewall
- Distance Firewall to Spinner Back plate
- Distance Firewall Back of the Engine Case
- Engine Baffling
- Exhaust System
- Tail Pipe Fixation
- Exhaust pipes rectangular
- Carburetor on O-320
- Primer
- Carb Heat
- Noise and Mufflers
- Exhaust Tunnel
- Alternator
- About Lyc 0-235
- Spark Plugs
- Ignition Harness
- Engine Cylinders
- High EGT
- EGT,CHT
- About O-320 and 0-360
- Oil Cooler Hoses
- Fuel Lines
- Fuel System
- Oil Pressure Port
- Oil Filter
- Air Oil Separator
- Alternator Belt Tension

## **Engine Mount**

**( page 38 )**

- Engine Mount Plans**
- Rubber Mounts
- Engine Mount Bolts
- Oil Filter
- Air Oil Separator

## **Cowling**

**( page 42 )**

- Dimensions of Air Inlet on cowling

Distance Cowling- prop  
Weight of the cowling halves  
About epoxy  
Cowling mounting  
Cabin Heating  
Landing lights

## **Tank and Fuel System**

**( page 45 )**

Size  
Aluminum Tank  
Tank Rubber Strapping  
Epoxy Tank  
Fuel Tank Test  
Fuel Cap  
Fuel Line, Fittings  
Fuel Fitting Lube  
Fuel Hose  
Fuel Line Sealer  
Fuel Filler Location  
Tank Vent  
Fuel Flow Test  
Fuel Gauge  
Gascolator yes or no

## **Propeller, Spinner**

**( page 53 )**

Size  
Prop Fixing Torque  
Prop Positioning  
Spinner  
Repitch propeller  
Crush Plate  
Prop Extension  
Prop Clearance

## **Stabilizer and Rudder ( page 57 )**

Building Stab  
Piper channels  
Stabilizer Fixing

Fixing Plate  
Stab Incidence  
Elevator Push Rod  
Rudder Cables  
Cable Guides  
Rudder Horn  
Elevators  
Elevator Balancing  
Elevator Buzz  
Stops on moving Surfaces  
Control Stick Stops  
Trim Friction Pad  
Rudder Trim  
Hinges Spacing  
Fabric Covering  
Fabric Reinforcement Tape  
Drain Holes  
Oiling Holes in Hinges  
Stabilizer Failure  
Flight Testing  
Taping stabilizer-fuselage junction

## **Fuselage**

**( page 63 )**

W-10 plans from Aircraft Spruce  
W10 versus W8  
Fuselage Construction  
Priming Tubular Structures  
Tube treatment  
Repairing small dents in tubings  
Tailpost  
Wing Attachment Fittings  
Wing Strut Fittings Placement  
Wider Fuselage  
Flap Tube Clearance  
Flap Handle versus Stick  
Location of Battery  
Baggage Compartment  
Location of Rudder Assembly Tube  
Tube Sizing  
Covering  
Stitching  
Stringers  
Tubing Splices  
Doors

- Adhesives to fix doorskins
- Seats
- Seatbelts
- Floor Material
- Static Port
- Firewall
- Windshield
- W/S Plexi
- Lexan or Plexi Solvent/ Glue
- W/S Bow
- W/S angle
- Spider webbing on Lexan
- W/S Size
- Front Bow W/S Cowling Intersection
- W/S Support Channels
- W/S Fastening
- Rear Window Frame
- W/S Cleaning
- Weld on Mounting Tabs
- Airvents

## **Gear, wheels and brakes**

**( page 81 )**

- Gear Legs
- Gear Fairings
- Gear Length
- Gear Alignment
- Gear Location
- Wheel Pant Mounts
- Wheel Pant Clearing
- Wheels and Brakes
- Wheels and Brakes Mounting
- Brake Master Cylinders
- Brake Lines and Fluid
- Tires
- Tailwheel
- Tailwheel Assembly

## **Weight and Balance and Performance ( page 92 )**

- Weight
- Building Time
- Jim's number 10 TW
- Weight and Balance practical Hints

Miles per Gallon  
Stress Loading  
Sand Bag Story  
CG Location  
Fuel Efficiency  
Performance  
Flap Actuation Speed  
Take Off Speed  
Flight Speed  
Sideslip Speed  
Noise Levels  
Carburetor  
Dimple Tape  
About Leaning in cruise  
Structural Failures  
Flight Envelope  
Corvair powered TW  
Fuel flow and Take off performance of 0-320

**Instrument Panel ( page 111 )**

Measures  
Throttle Cable Location  
Instruments  
Fuel Neck  
Fuel Gauge Sender  
Compass Location  
EIS, Fuel Flow Options  
EFIS: Dynon  
Electrical Wires  
Battery Cable  
Master Solenoid  
Strobes  
Battery  
Grounding Battery  
Radio and Antennas  
Autopilot

**Various ( page 117 )**

Ice  
Penetrating Oil  
Fiberglass Work  
About Epoxy

Varnishing  
Painting  
Brazing  
Drilling Stainless Steel  
Welding  
Sandblasting  
Cutting Composite Laminates  
Best Airplane to train for transition to TW  
Location of TW's worldwide  
Rudder Arm Failure  
Internet Links

Our Engine ( Lyc 0-320 E3H serial no L- 36911-27A )

Carburator : Marvel Schebler Model MA-4-SPA part No 10-5009N  
serial no BL 20 10361 (14) (21) FAA PMA VMF

Fuel pump : Dry Air Pump, Airborne Modell 211 CC Serial number  
5AF 3653 (Lycoming serial no 41271D 54 ?? )  
not installed

Oil Filter Adaptor: 90° oil filter adaptor by Casper , Jupiter , Florida,  
sold by Wicks USA

Oil Filter: Champion CH 48108-1

Spark Plugs: Champion REM 37 BY- C / Unison UREM 40 E

Engine Compression on 15.04.1994 ( Mecnair )  
Cyl 1 = 72 Cyl 3 = 73  
Cyl 2 = 75 Cyl 4 = 74

Misurazione del 3.11.2007 praticamente identica

Ignition Harness: Champion P/N : CH 12364 E

Magnetos: Bendix model S4LN- 20 ( serial number A 71227  
P/N 10- 51360 - 29 )  
Bendix model S4LN- 21 ( serial number A 64636  
P/N 10 - 51360 - 37 )

Engine Starter: Prestolite MZ 4206 Serial N 80000195 12 V  
Since 2014: Sky Tech Model 149-12XLT

Alternator: made by Pelican Aviation of Costa Meas, CA sold by  
Aircraft & Spruce, 35 amp, 4 ¾" dia , 7 lbs, stressed for  
Aerobatics

Volt regulator: B&C

Battery: Sonnenschein A 512/40 G6 40amp/h  
Since 2014: Aeroakku LiFePo4 LFP 450D  
(12V/450ACCA/86Wh/7Ah (C1))

Propeller : Felix Propellers Inc. 10433 Leisure Drive, Hazelhurst WI  
USA , Experimental, Wood 2 blade  
Fixed pitch, P 68 70 170 , 68x77 reworked by J. Cl. to  
68x74  
Revised by Catto Propellers USA in 2007  
Since 2014: new Felix 68x74

Prop Extension: 4 " long by Saber Inc.USA with F-911 bolts



Prop Clearance: in parked position 33,5 cm (13.2 " )  
In horizontal flight pos. 19 cm ( 7.48 " )

Wheels : Cleveland 500 x 5.00 with 35 pounds press. ( 2,4 Atü )

Brakes : Cleveland  
Matco Mastercylinder MT-MC 5

Brake Fluid: Areoshell Fluid 41

Gear Legs Main: by Harmon Lange ( 6150 steel or today 4350  
spring steel with 110 000 psi tensile strength in  
annealed condition )

Avionics : Dynon D10 with auxillary battery  
Electronic tachometer  
Analogue gauges by Mitchell

Tachometer electronic: Horizon Instruments Inc. Fullerton Ca, USA

Fuel Sender : Wicks

Transponder: TRIG TT22

Radio: Icom A 200 / a partire da febbraio 2015 Bendix / King 97 A

AvMap EKP IV

Elevator Up 30°  
Elevator down 25°  
Rudder right 30°, left 30°  
Ailerons 36° up , 28° down

W/S angle versus bottom longeron 30°