



Eagle Aviation LLC

EA-100

N700EW

Serial Number 1001

Maintenance Manual

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1.0 PREAMBLE

READ THIS INFORMATION PRIOR TO PROCEEDING WITH ANY PROCEDURES

This manual is prepared for and complies with the ASTM Light Sport Aircraft Maintenance Manual requirements F 2283.

This manual provides the factory recommended procedures for maintaining, repairing and alterations of the EA-100 for general maintenance and the annual conditional inspection.

Prior to performing any maintenance procedures in this manual, Eagle Aviation LLC requires any and all personal that will be performing any of the procedures in this manual to read and understand this manual. Great care was taken in the design of this manual so that the information is presented in a clear and understandable format; however it is not possible to have a procedure written for every possible maintenance, repair or alteration that could occur. If a maintenance, repair or alteration is necessary and there is not a procedure written in this manual or a non-standard part(s) needs replacement, you may proceed with the following:

- Follow procedure guidelines in AC 43-13.
- Make an entry in the Aircraft Logbook describing the repair or alteration. The entry will make a reference to the section of this manual and the section of AC 43-13 that applies to the repair or alternation completed. Note: Do not use the stickers provided for this entry.
- Fill out Form EA-16, Safety of Flight/Repairs or Alterations, (copies are in the back of this manual).
- Place the completed form in this manual.
- Return a copy of the completed form to Eagle Aviation LLC.

Note:

- Engine repairs, maintenance or alterations must be performed in accordance to the Rotax Engine Maintenance Manual. Only engine procedures that are allowed by Rotax for the owner/operator are allowed. For more information see the Rotax Engine Maintenance Manuals.

- Non-standard parts are any specialized, non common part(s). If there is any question concerning non-standard parts, contact Eagle Aviation LLC for part(s) replacement and/or clarification.

Contact information:

Eagle Aviation LLC

Phone: 920-968-7527

Email: info@eaglesportplane.com

Before proceeding with any procedure, it is required to ensure this manual is up to date by checking the record of revisions pages.

Eagle Aviation LLC has established a rating structure which addresses the minimum level of training for completion of a procedure. Note: Any person who has a rating higher than what is required for any given procedure may accomplish the procedure.

- Level 6: IA Certified Mechanic or Factory Authorized Personnel
- Level 5: Certified Rotax Maintenance Mechanics
- Level 4: A&P Mechanic
- Level 3: LSA Repairman Maintenance Certification Level
- Level 2: LSA Repairman Inspection Certification Level
- Level 1: Owner/PIC

All procedures are identified with a number and information shown in the example below:

Procedure Number: 1.1

Certification Level: 3

Frequency: Annual Inspection

Logbook Endorsement: Aircraft Logbook

Tools Required: Basic Tools

Parts Required: As called for in procedure

Only the person who is certified for the completion of a procedure shall make the appropriate entries. Anytime a procedure that requires an endorsement in a logbook, the person that performs the procedure will enter in the appropriate logbook information pages the following entry:

'I have performed and completed procedure XX on this -
DATE - in accordance to the manufactures instructions
and inspection procedures located in the Aircraft
Maintenance Manual. The procedure is complete and
the aircraft is found to be in a safe condition for flight.
NAME – SIGNATURE – CERTIFICATE NO.'

Note: Stickers are provided in the back of this manual for the convenience of the person performing the procedure. The stickers may be reproduced. Do not use these stickers for section 15.0 and 16.0 repairs or alterations. Instructions for those entries are provided in those sections.

Mechanics must follow the instructions in this manual for the proper maintenance of the EA-100. Failure to do so will render the aircraft un-airworthy until the procedure is completed as per this manual.

FAA AC 43-13, Airframe and Power Plants Mechanics Handbook provides general specifications such as but not limited to fastener tightening torque values, metal condition, etc. They will be adhered to for all procedures that require a level 3 or higher. AC 43-13 is not to replace the specific instructions on this manual but are to be used in concurrent with this manual to ensure the aircraft is in a safe operation for flight. AC 43-13 may be used for airframe repairs. Should a discrepancy between a specific procedure occur that deems to be flight critical between this manual and AC 43-13, it is the responsibility of the owner/mechanic to contact Eagle Aviation LLC before signing off the procedure as complete and returning the aircraft to service.

If there is encountered a possible safety of flight concern discovered either in flight or during a maintenance procedure, it is required to fill out the Safety of Flight/Repairs or Alterations, form EA-16 form. Copies of these are located in the back of this manual and also in the customer receiving packet. This form may be reproduced.

End of section 1.0

3.0 GENERAL DESCRIPTION

The EA-100 is an all metal, high wing, tri-gear type airplane. It is built to FAA adopted ASTM standards for the LSA requirements.

Should this aircraft be placed into commercial service such as flight training, it is required to also perform a 100 hour inspection. The annual condition inspection will also serve as the 100 hour inspection.

3.1 AIRCRAFT EQUIPMENT LIST

Basic equipment list:

1. EA-100 aircraft
2. Rotax 912 ULS engine
3. 30 gallons fuel capacity, 1-9 g fuel tank and 1-5 g fuel tank in each wing, 2 g in belly
4. Prince P-Tip propeller
5. Matco Brakes
6. Hydraulic toe brakes, pilot and passenger
7. Flaps
8. Pitch and rudder trim
9. Airspeed indicator
10. VSI
11. Inclinator
12. Altimeter
13. Engine Information System, EIS
14. NAV/Position lights
15. Landing lights
16. Strobe lights
17. ELT
18. Fire Extinguisher

Optional factory installed equipment :

1. Radio
2. Transponder
3. Altitude encoder
4. GPS

3.2 SOURCES TO PURCHASE PARTS

The following list is a guideline only to where to purchase parts for the maintenance of the EA-100.

- Eagle Aviation LLC, 920-968-7527
- Aircraft Spruce and Specialty Company, 877-477-7823
- Matco Manufacturing, 801-355-0582
- RAM Performance LTD, 330-882-6255
- Wicks Aircraft, 800-221-9425
- Batteries Plus - Local
- Local automotive supply companies – Local
- Summit Racing – 800-230-3030

3.3 DISPOSABLE REPLACEMENT PARTS

- Tires: Aircraft duty 5.00 x 5, 6 ply
- Oil: See Rotax engine maintenance manual
- Oil Filter: See Rotax engine maintenance manual
- Brake pads: Matco PH-1A
- Spark plugs: See Rotax engine maintenance manual
- ELT replacement batteries: Instructions in the ELT manual

3.4 ENGINE SPECIFICATIONS

Rotax 912 ULS ASTM approved engine. For complete specifications please see the Rotax maintenance and the Rotax operators manuals.

- Configuration: 4-Stroke, 4-Cylinder horizontally opposed, Overhead Valve
- Power: 100 hp @ 5800 rpm (5 minute limit), 95 hp @ 5500 rpm

3.5 WEIGHT AND BALANCE

Datum is the leading edge of the wing.

Gross weight: 1320 lbs

Empty weight: 812 lbs

Useful load: 508 lbs

Empty CG: 8.64 inches aft of datum

See the POH, section 5.0 – 5.2, for more information pertaining to the weight and balance.

3.6 MISCELLANEOUS INFORMATION

- Tire inflation: main and nose, 22 to 25 PSI

3.7 LIST OF PROCEDURES THAT MAY BE PERFORMED BY LEVEL 1

Procedure Number	Description
4.1	Ground handling
4.2	Cleaning
6.1	Remove/install inspection covers
6.2	Remove/install engine upper and lower cowlings
6.3	Remove/install wheel Pants – Main wheel pants only

End of section 3.0

4.0 AIRCRAFT HANDLING

4.1 GROUND HANDLING

Anytime the aircraft is moved, it is always good practice to use wing walkers/spotters if at all possible when maneuvering the aircraft in tight locations.

Moving the aircraft: To move the aircraft carefully push/pull on the wing struts. The aircraft can also be turned and/or pushed from the tail by standing close to the fuselage and pushing down on the fin to raise the nose wheel off the ground, allowing the aircraft to be turned on the main gear. Do not push or pull on the propeller or the spinner or engine gearbox. This is placarded on the propeller.

Parking and Tie down: Proper securing is the best precaution against damage to the aircraft. To tie down the aircraft, proceed as follows:

- Tie ropes or chains to the wing tie down fittings located at the upper end of each wing strut.
- Secure the opposite ends of the ropes or chains to tie down rings to suitable anchors.
- Use the seat belt to hold the control yoke in the full aft position

4.2 CLEANING

- Windshield and windows: To clean use a soft cotton cloth and a good quality cleaner such as Sparkle. Aircraft window cleaners work well too. If bugs and other dirt are dried on, do not rub to remove but rather soak the area with the cleaner and let soak in before drying. Grease and oil can be removed with kerosene or dishwashing soap such as Dawn. Do not use any gasoline, acetone, or straight alcohol. Once the windows are clean, they can be waxed with a quality wax. Make sure that the wax does not contain any scratch removers or cleaners as they can scratch the windows.
- Aircraft fuselage, wings and tail: The entire aircraft can be washed with water and good quality soap such as Dawn dishwashing detergent. Do not wash the aircraft in the open sun

as the water will dry too quickly and cause spotting. Grease and oil can be removed with kerosene or bug and tar remover. It is best to remove this first before washing as the general soap will remove the kerosene residuals. Dry the aircraft with clean cotton cloths.

A good quality wax can be used on all surfaces to protect the aircraft from UV rays, rain, bugs, etc. Follow the directions from the wax manufacturer for application.

- Interior: The seats can be cleaned with soap and water and also good quality leather cleaner. Carpeting should be vacuumed. Stains can be removed with a spray carpet cleaner.

End of section 4.0

5.0 SCHEDULED AND ANNUAL MAINTENANCE

- Scheduled – Section 5.1
- Annual conditional/100 hour – Section 5.2

5.1 SCHEDULED MAINTENANCE CHART

The following chart for regular scheduled maintenance. Make entries in the appropriate logbooks.

Description	Due Date	Notes
Replacement of ELT batteries	See ELT manual	--
Engine oil and filter change	As required per Rotax	Minimum change every annual condition inspection
Annual Condition Inspection	On or before the prior annual conditional inspection	100 hour as required for commercial activities
Pitot/Static Inspection	N/A	N/A
Transponder/Encoder Inspection	N/A	N/A
Coolant change	As required per Rotax	Minimum change every 3 rd annual condition inspection
Engine Spark Plugs	As required per Rotax	--

Note: It is the responsibility of the Owner/PIC to ensure a Pitot/Static and or transponder/encoder inspection if they are planning on flying in airspace requiring position reporting. If the owner/PIC has this inspection performed, an entry in the aircraft logbook is required.

5.2 ANNUAL CONDITIONAL AND 100 HOUR INSPECTIONS

Preamble:

The following procedure, 5.3, will be used for the annual conditional inspection. The annual conditional inspection will also serve as the 100 hour inspection procedure should the aircraft be used in commercial activities. The chart will be adhered to for the required inspections. Copies of the Annual Conditional/100 hour Inspection Report are located at the back of this manual. The report may be reproduced.

The Annual Conditional/100 hour Report is a grouping of all inspections/check procedures that are required to be completed to fulfill the inspection. The Annual Conditional inspection is broken into two main categories: airframe and engine. The airframe portion may be performed and completed using this manual. The engine portion must be completed by authorized Rotax mechanics using the Rotax Engine Maintenance Manuals and directives that Rotax authorizes. Airframe detailed inspections/checks identified in the chart are located in section 6.0 MAINTENANCE CHECK PROCEDURES in this manual. Section 6.0 details the inspection and has procedures for minor items which require maintenance/adjustments that generally occur during the course of normal operation. Should a problem be discovered during the 5.3, Annual Conditional Inspection which requires repairs beyond what is outlined in section 6.0, proceed to the appropriate section 7.0, GENERAL REPAIRS OR ALTERATION PROCEDURES. Follow the procedure in section 7.0. To complete the Annual Conditional/100 Hour Inspection, follow the 5.3 procedure and make the appropriate logbook entries. Once the Annual Conditional/100 hour Chart is complete, an aircraft logbook entry for the airframe portion and an entry in the engine logbook for the engine portion will be made and the completed chart will be filed with this manual. This chart will become a permanent record with this manual. Discrepancies found during the inspection will be noted on the Chart.

5.3 ANNUAL INSPECTION/100 HOUR CONDITIONAL REPORT

Aircraft Model: _____ Serial No.: _____

Engine Make: _____ Serial No.: _____

Date of Inspection: _____ Total Frame Time: _____

Total Engine Time: _____

Person Performing Inspection: _____

Certificate No.: _____

Signature: _____

Note: Certification level to complete this form is: **Level 4, A & P.**

Instructions to complete this inspection chart: Perform all the tasks below. For detailed procedures see the instructions for the number of the task in this manual. Check either pass or fail upon the initial checking. Correct any fails as per the procedures and notate it in the notes section of this report. It is not necessary to complete the tasks listed in this chart in the order written. Once all tasks have been completed, the inspector will sign and date this form and file it with this manual in the Annual Reports section located in the back of this manual. Procedures that are performed due to a fail of Annual Conditional/100 Hour Inspection report, other than section 6.0 procedures, need to be recorded in the Aircraft, Engine and/or the Propeller Logbooks before this report is completed, logged and filed. Once this has been completed the inspector will fill out the Aircraft Logbook with this entry:

'I certify that this aircraft has been inspected on –DATE
– in accordance with the manufacturer's maintenance
and inspection procedures for the airframe Annual
Conditional/100 Hour inspection and was found to be in
a condition for safe operation. – NAME, SIGNATURE,
CERTIFICATE NO.'

For the engine portion of the Annual Conditional inspection an entry in the engine logbook will be placed stating:

'I certify that this engine has been inspected on –DATE – in accordance with the engine maintenance and inspection procedures for the engines Annual Conditional/100 Hour inspection and was found to be in a condition for safe operation. – NAME, SIGNATURE, CERTIFICATE NO.'

Note: Stickers are provided in the back of this manual for the convenience of the person performing the procedure. The stickers may be reproduced.

5.3 ANNUAL INSPECTION/100 HOUR CONDITIONAL REPORT

Note: It is not required to make an entry for all the procedures listed in the grid below when they are completed for the Annual Conditional/100 Hour Inspection, as the sign off(s) above certifies that all the procedures listed in the grid has been completed.

Pass	Fail	Number	Description
		4.2	Wash aircraft and remove any oil/grease
		6.1	Remove/install inspection covers
		6.2	Remove/install engine upper and lower cowlings
		6.3	Remove/install wheel pants
		6.4	Fuselage, tail and wings checks and riggings
		6.5	Landing gear check
		6.6	Tires, wheels and brakes checks
		6.7	Engine mount checks
		6.8	Engine Annual Conditional Checks
		6.9	Air cleaner cleaning
		6.10	Propeller and spinner checks
		6.11	Instruments/avionics and panel checks
		6.12	Cabin and seat belt checks

Notes pertaining to any corrections, repairs, replaced parts or other procedures in this manual performed.

6.0 ROUTINE MAINTENANCE CHECK PROCEDURES

Section 6.0 contains procedures for general maintenance of the EA-100 and for the completion of the Annual Conditional/100 Hour Inspection.

Section 6.0 is checking procedures. These should be performed anytime there is a question of the integrity of the aircraft due to hard landings, harsh weather conditions such as strong turbulence, improper ground handling, etc. While these procedures are for checking, they do contain simple routine items that may be adjusted, changed or altered. If the procedures are all performed for an Annual Conditional/100 Hour Inspection, it will not be required to make logbook endorsements for individual procedures performed. Procedure endorsements are required anytime that a procedure is performed individually outside the scope of the Annual Inspection/100 Hour Inspection.

The procedures in this section are listed in same order as the Annual Conditional/100 Hour Inspection Report.

6.1 REMOVAL/INSTALLATION OF INSPECTION COVERS

Description: This procedure details the removal and installation of the aircrafts inspection panels.

Procedure Number: 6.1

Certification Level: 1

Frequency: As required

Logbook Endorsement: Not required

Tools Required: Basic tools

Parts Required: N/A

Using a #2 screw driver with a good clean bit unscrew the panel that is to be removed. Make sure not to lose the nylon protector washer. A screw gun may be used for this task but do not screw out/screw in too fast as this might damage the screw head. If this occurs, replace the screw with a stainless steel screw. To replace the panel(s) reverse the procedure.

End of procedure

6.2 REMOVAL/INSTALLATION OF UPPER AND LOWER ENGINE COWLINGS

Description: This procedure details the removal and installation of the aircraft's upper and lower engine cowlings.

Procedure Number: 6.2

Certification Level: 1

Frequency: As required

Logbook Endorsement: Not required

Tools Required: Basic Tools

Parts Required: None

Upper cowl:

Removal: Turn the propeller to the horizontal position. Open the upper cowl removing the dzus fasteners with a screwdriver. Remove the screws holding the upper cowling making sure to account for the nylon protector washers. To remove the cowl, stand in front of the spinner. Place hands mid way back on the left and right side underneath the cowl. Gently lift the rear of the cowl up and then continue lifting the pilot side until the cowl is cleared of the starter and the spinner. Place cowl in a safe non-windy area.

Installation: Place cowl over the starter and rotate on opposite of removal.

End of procedure

Lower cowl:

Removal:

It is best if there are 2 people. If you are alone acquire duct tape. Remove the passenger side screws. Have the helper hold the cowl into position keeping the cowl from falling. If you do not have a helper, use a piece of duct tape to hold the cowl to the fuselage. Leave a 'tag' that you can grab when standing in the front of the aircraft. Remove the pilot side screws keeping your hand on the cowl to keep it from falling. Standing in front of the spinner, support the cowl and remove the tape. Remove the cowl by pulling forward gently about 1/2 inch. Then spread the sides open and push back over the fuselage. Lower the front below

the spinner then pull the cowl straight out until clear. Account for the nylon protector washers.

Installation:

Standing in front of the spinner, support the cowl and spread the edges open to clear the fuselage and push the top of the cowl about 3 inches past the firewall. Lift the front past the spinner. Have a helper support the passenger side or have a piece of duct tape to hold in position. Install the pilot side upper screw only. Then install all the passenger side screws, then the remaining pilot side screws.

End of procedure

6.3 REMOVAL/INSTALLATION OF WHEEL PANTS

Description: This procedure details the procedure for removing/installing the wheel pants. There is no maintenance associated with this procedure other than general overall condition of the pants.

Procedure Number: 6.3

Certification Level: 1 for main wheel pants and 3 for nose wheel

Frequency: Annual Inspection or as required

Logbook Endorsement: Not required

Tools Required: Basic Tools

Parts Required: None

Main wheel pants: remove the 4 screws holding the wheel pants on. Account for the nylon protective washers. Lift the pant off by rotating the rear off first. Reverse procedure for installation.

Nose wheel pant: using the tail tie down and an anchor, secure a rope to pull the tail down enough to raise the nose wheel off the ground. Remove the trailing link hinge screw and the screw directly below the spring. Remove the nose wheel. Remove the 4 screws that hold the pant on. Account for the nylon protective washers. Reverse the procedure for installation.

End of procedure

6.4 FUSELAGE, TAIL AND WINGS CHECKS AND RIGGING

Description: This procedure details the procedure for inspecting the fuselage, tail and wings for an Annual Conditional/100 hour Inspection. Also this procedure contains basic repairs and rigging instructions. For conditions that require complex repairs, see the appropriate section.

Note: Any screw/nut combinations that are loose may be tightened with no entries required.

Procedure Number: 6.4

Certification Level: 4

Frequency: Annual Inspection or as required

Logbook Endorsement: Required for any replaced items or repairs performed under this procedure. Entry is not required if no items are replaced or repaired

Tools Required: Basic Tools

Parts Required: None

Preparation: Remove all inspection covers and the engine cowling.

Fuselage:

- Check over the entire fuselage for dents, cracks, missing or loose rivets. Pay special attention to the area where the landing gear attaches to the fuselage for cracks and areas where metal panels overlay each other for paint cracking/peeling.
- Check over both engine cowlings for cracks and paint peeling.
- Dents that are 1" in diameter and have no creasing are allowed. Dents larger than that or dents with creased metal need to be repaired. Cracks in the surface metal only, smaller than 1/4" are allowed and can be stop drilled. Larger cracks need to be repaired. Any cracking/damage to the mounting areas must be repaired.
- Check the transponder, (on belly), ELT and Communication, (on top behind rear window), antennas for security.
- Check windshield and windows for excessive scratches or surface cracking. This can be removed with a product such as Micro Mesh. Small cracks, no more than 1/2 inch in length may be covered with clear packing tape. This should prevent traveling of further cracking. Windows with cracks larger than

this shall be discussed directly with the manufacture. No entry required unless directed from manufacture.

- Check windows for seals. Any gaps around the perimeter may be sealed with silicone sealant. No entry required.

Tail and rudder:

- Check the entire tail for dents, cracks, missing or loose rivets.
- Dents that are 1" in diameter and have no creasing are allowed. Dents larger than that or dents with creased metal need to be repaired. Cracks in the surface metal only, smaller than 1/4" are allowed and can be stop drilled. Larger cracks need to be repaired. Any cracking/damage to the mounting areas must be repaired.
- Ensure the tail mounting screws and nuts are secure.
- Check rudder mounting screws and nuts.
- Check for hinge pins secured in the:
 - Elevator hinges
 - Pitch trim hinges
- Using a general purpose spray oil such as LPS 2, spray and wipe clean all hinges and rudder mounting screws.
- Check for rudder travel. Using rudder pedals, travel shall be 25° left and right.
- Check for rudder pedals neutral position and rudder to center position. If they are not, remove the rudder cable adjuster safety wires (just aft of the rudder pedals) and adjust to center the rudder and neutral the pedals.
- Check rudder cables for chaffing of broken strands. If any strands are broken, the cables are to be replaced. Remove the cables and replace with new, stainless steel 1/8 inch multi strand cables and crush type cable clamps. Note the aircraft logbook of the cable change under this procedure.
- Cable tension should be taught.
- Check the rudder pedals and connectors/hardware for security.
- Check for full elevator travel. Range is 30° +/-2° up and 25° down +/- 2°, (use control yoke to stops for checks). If the range is out of parameter, adjust the adjuster fittings located in the belly of the aircraft.
- Check the control yoke for free movement from up stop to down stop. Lubricate the control column with LPS 2 or equivalent and wipe clean.

- Check the elevator push/pull control rods from the control yoke to the tail. Lubricate all joints with LPS 2 or equivalent oil.
- Run the pitch trim to full up and down. When the system hits the stops check the trim indicator. The indicator should be at full up or down when the trim system stops.

Wings, aileron and flaps:

- Check over the entire wing, flaps and aileron surface for dents, cracks missing or loose rivets.
- Check the wingtip for cracking.
- Dents that are 1" in diameter and have no creasing are allowed. Dents larger than that or dents with creased metal need to be repaired. Cracks in the surface metal only, smaller than 1/4" are allowed and can be stop drilled. Larger cracks need to be repaired. Any cracking/damage to the mounting areas must be repaired.
- Check the wingtip light for security.
- Check the wingtip NAV/Position and Strobe light for operation. Replace light bulbs as required.
- Check the landing light cover for cracks and scratches. Replace if cracking is excessive.
- Check landing lights for operation. Replace light as required.
- Check Pitot tube for security.
- Check wing strut bolts and mounts both on the fuselage and in the wing.
- Check wing struts for excessive dents. Repair as appropriate.
- Check jury struts and mounting hardware for security and dents or bending. If there are any dents or are bent, replacement is required.
- Check flap mounting bolts for security.
- Run flaps to full down. Check that the indicator matches the flaps as they are traveling. Full travel is 35° down. Should the flaps be fully down and the indicator does not agree, remove the flap motor cover in the ceiling behind the seats and adjust the metal spring link to increase/decrease the position indicator sender to match the flap indicator.
- Check that the flaps are within 1° max differential of each other. Note: there is no adjustment for this measurement as the flaps are pinned together to the flap drive tube. If the flaps are having a differential greater than 1°, there could be possible

damage and/or mis-rigging. Contact Eagle Aviation LLC for procedures.

- Check aileron hinge pins and cotter keys. If the cotter keys are missing, replace.
- Using yoke, check for aileron travel. Full up is 20° and full down is 15°. Center the yoke and check for symmetry. Differential is no more than 1°. There are 4 adjustments for the ailerons. 2 under the dashboard for the cables and 2 right behind the aileron control rods in top of the wing. Adjust as needed to gain symmetry. Cable tension should be taught.
- Check the aileron cable bell cranks attachment hardware at the wing root and near the wing strut. Lubricate the bearings with LPS 2 or equivalent.
- Check wiring in the wing roots for security. Check the strobe power pack for security.
- Check the wing fuel level tube for any leaking/fuel stains.

End of procedure

6.5 LANDING GEAR CHECKS

Description: This procedure details the checks of the main and nose landing gear.

Procedure Number: 6.5

Certification Level: 3

Frequency: Annual Inspection or as required

Logbook Endorsement: Required

Tools Required: Basic Tools

Parts Required: None

Main Gear:

- Check wheels for tracking alignment. This is done by placing a long straight edge flush against the wheel. If it is not straight, there could be a bent gear.
- Check vertical alignment. The wheels should be near vertical or slightly tilted, 1 to 3° top leaning away from the fuselage and the bottom closer to the fuselage.
- There are 3 bolts that attach each the gear to the frame. Check the bolts for condition and security.
- Check the landing gear box area for any cracks or bent metal.
- Check the four wheel mounting bolts for condition and security.

Nose Gear:

- Remove the cowlings.
- Raise the nose wheel by tying the tail tie down to an anchor to raise the nose wheel.
- Push and pull the gear to check for free play. There should be minimum free play.
- Clean and grease the plastic bearing on the firewall.
- Check all mounting hardware for condition and security.
- Check over all welded areas for any cracking.
- Check that the gear is straight and not bent in any directions following the angle of the firewall.
- Check where the gear mounts to the firewall for any bent areas.
- Install cowlings

End of procedure

6.6 TIRES, WHEELS AND BRAKES CHECKS

Description: This procedure details the checks for the tires, wheels and brakes.

Procedure Number: 6.6

Certification Level: 3

Frequency: Annual Inspection or as required

Logbook Endorsement: Required

Tools Required: Basic Tools

Parts Required: None

Preparation: Remove all wheel pants.

Main tires:

- Using a floor jack, support the aircraft under the gear attachment bolts and raise the aircraft tire off the ground.
- Check the tires for tread remaining. If there is no tread showing, replace the tire.
- Check tires for any chords showing. If there are any chords showing, replace the tire.
- Check for proper inflation, 22-25 PSI.
- Remove the wheel. Check the axle bearing. If it is serviceable, clean and repack the bearing with wheel grease. Install the wheel in reverse order. The main axle nut is only slightly tighter than finger tight. Tighten and loosen the nut several times to 'seat' the bearing. Install the cotter key.
- Check for brake pad. If pads are worn to 1/16", replace.
- Check brake lines and connections for leaks.
- Press all brake pedals. Pedals should have a firm feeling and not spongy. If they are spongy, bleed the brake lines.

Nose tire:

- Raise the nose wheel by tying the tail tie down to an anchor to raise the nose wheel.
- Check the tire for tread remaining. If there is no tread showing, replace the tire.

- Check tires for any chords showing. If there are any chords showing, replace the tire.
- Check for proper inflation, 22-25 PSI.
- Remove the axle, then the wheel.
- Check the bearing for serviceability. If it is serviceable, clean and repack the bearing with wheel grease.

End of procedure.

6.7 ENGINE AND ENGINE MOUNT CHECKS

Description: This procedure details the checks and tasks required for the engine mount.

Procedure Number: 6.7

Certification Level: 4

Frequency: Annual Inspection or as required

Logbook Endorsement: Required

Tools Required: Basic Tools

Parts Required: None

- Remove the cowlings.
- Check the engine mount for any bends to the tubes. Check the welds for any cracks. If either of these conditions are present, contact Eagle Aviation LLC.
- Check the engine mount bolts to the firewall and to the engine for proper torque.
- Check the engine mount vibration dampers for damage. Replace as required.

End of procedure

6.8 ENGINE ANNUAL CONDITIONAL INSPECTION

Description: This procedure details the checks and tasks required for the engine annual conditional inspection.

Procedure Number: 6.8

Certification Level: 5

Frequency: Annual Inspection or as required

Logbook Endorsement: Required

Tools Required: Basic Tools

Parts Required: None

- Follow the Rotax Engine Maintenance Manual for procedures

End of procedure

6.9 AIR CLEANER CLEANING

Description: This procedure details the cleaning of the engine air cleaner.

Procedure Number: 6.11

Certification Level: 3

Frequency: Annual Inspection

Logbook Endorsement: Required

Tools Required: Basic Tools

Parts Required: K&N Air Filter Cleaner and Filter Oil

- Remove the upper cowling.
- Remove the air cleaners.
- Tap the air filter gently against a hard surface to dislodge loose dirt. Always tap a filter on its base or side and never tap a filter's edges because this may damage the element. Follow this up by gently brushing the filter with a soft bristle brush. An old toothbrush will work well for this.
- Use K&N Air Filter Cleaner in either spray-on or liquid form. If a spray is used, be sure to coat the entire element and allow it to soak for 10 minutes. Use the liquid form by filling a pan to a level where the filter element is submerged beneath the cleaner. If a large, round element is being cleaned, rotate it through the fluid and remove it. After submerging the filter element in the cleaner, remove the filter and allow it to soak for 10 minutes.
- Rinse the element with low-pressure water such as from a household faucet. Do not use high-pressure spray as this will damage the element. Always flush from the clean side to the dirty side. This works to remove dirt from the filter rather than driving it further into the filter.
- Shake excess water from the filter and allow it to air dry at room temperature. Carefully hanging the filter in the outside air works well. Do not use compressed air or a heat source to dry the filter; these will damage the element, rubber base and end caps.
- Re-oil the filter with K&N Filter Oil. Use only K&N Filter Oil as any other form of oil can degrade the element's filtering ability. A K&N Filter will not function properly without sufficient oil and

will require more frequent re-oiling of the filter's clean side in between cleanings.

- Spray K&N Filter Oil into the element's pleats from a distance of 10 inches. Spray each section of pleats only once until the reddish oil color becomes apparent. Let the filter sit for 10 minutes and re-spray any areas that are still white. You can also apply K&N Oil from a squeeze bottle onto each pleat.
- Install the air cleaner.
- Install the upper cowling.

End of procedure

6.10 PROPELLER AND SPINNER CHECKS

Description: This procedure describes the checks for the propeller and spinner.

Procedure Number: 6.11

Certification Level: 3

Frequency: Annual Inspection or as required

Logbook Endorsement: Required

Tools Required: Basic Tools

Parts Required: None

Propeller and spinner check:

- Remove the upper engine cowling.
- Remove the spinner screws. Account for the nylon protective washers.
- Check the spinner for cracks or damage.
- Small nicks can be sanded with a fine grit sandpaper to smooth out the nick.
- Check the propeller for damage. Should any damage be present, Contact Prince Aircraft Company, 419-877-5557
Address: 6774 Providence Street, Whitehouse, OH 43571
- Check the 6 nuts on the gearbox flange. Torque is 18-22 ft/lbs.
- Check the 6 bolts on the propeller hub. Torque is 18-22 ft/lbs.
- Install the spinner.
- Install the cowling.

End of procedure.

6.11 INSTRUMENT/AVIONICS AND PANEL CHECKS

Description: This procedure details the annual inspection instrument checks.

Note: This is not a procedure for a Pitot/Static or transponder/encoder inspection. These inspections are up to the owner for the aircraft if they require it for the type of flight to be performed and not the responsibility of Eagle Aviation LLC nor are required for the Annual Conditional/100 Hour Inspection Report.

Procedure Number: 6.12

Certification Level: 3

Frequency: Annual Inspection

Logbook Endorsement: Not required

Tools Required: Basic Tools

Parts Required: None

- Check for instruments, avionics and panel items security in the panel. Tighten as required.
- Check for wires and cables underneath the panel that they are secured and not intrusive to the controls for the aircraft.
- Check ELT batteries. Placard the battery due date on the ELT. Replace as per ELT manual instructions.
- Test all systems for operation:
 - Master switches
 - Fuel pumps
 - Radio – operation only
 - Transponder – operation only, not a certification test
 - Intercom
 - EIS and warning red light
 - Flaps
 - Pitch trim
 - Auxiliary outlet
 - ELT – Follow FAA Rules for testing times
 - Interior lights: instrument lights, post lights, radio/transponder lights, fuel gauge lights

End of procedure

6.12 CABIN CHECKS AND SEAT BELTS

Description: This procedure details the cabin general inspection and seat belt inspections.

Procedure Number: 6.13

Certification Level: 3

Frequency: Annual Inspection

Logbook Endorsement: Not required

Tools Required: Basic Tools

Parts Required: None

- Check seats for proper forward back operation. Lubricate seat tracks with LPS 2 or equivalent.
- Check for panel security. Re-attach missing screws are required.
- Check for loose interior fabric. Re-attach with contact glue or 3m Super 77 adhesive.
- Check and clean carpets and seats.
- Check both seat belts mounting hardware.
- Check for smooth operation for the seat belt retractor.
- Check condition of seat belts for cuts and tears. If tears are excessive, seat belt replacement may be required. Contact Eagle Aviation LLC for advisement.
- Check the seat belt buckle connection operation.

End of procedure.

7.0 AIRCRAFT GENERAL DESCRIPTION

The EA-100 is a modern style, 2 person side-by-side seating over wing airplane. It is designed and built to ASTM standards as adopted by the FAA for a Light Sport Aircraft. The goal in the aircraft design and operation was simplicity in operation while combining time tested building standards.

The aircraft is easy to fly and maintain. General features of the EA-100 are:

- All metal construction. Aluminum is 6061-T6 or 2024-T3 and steel used is 4130 chromalloy.
- All welding is performed TIG style.
- All hardware is AN graded.
- Rivets are aircraft graded.
- Wiring is MIL spec Tefzel style.
- Metals are corrosion painted.
- Firewall is 26 gauge galvanized steel.

1. **Fuselage/cabin**
2. **Instrument panel**
3. **Cabin heating**
4. **Battery**
5. **Baggage**
6. **Wings**

1. Fuselage/cabin. The all metal fuselage is designed for +5 g and -3 g forces at gross weight.

There are 2 seats configured side-by-side. Each seat is supported by 2 rails that are attached to the frame. The seats are adjustable forward and aft via lever that slides towards the center that releases a pin which allows the seat to move forward or back. The seat backs also rotate forward to allow easy access to the baggage area.

The seat belts are automotive style lap and shoulder harness with an automatic retracting system. There is a metal Davis style buckle that connects them when seated.

The windshield and windows are polycarbonate lexan. There is a sky light window which adds more light into the cabin. There are 2 fresh air

vents in the windshield. They provide fresh air and can be sealed for cold weather operation.

The doors are supported by two hinges on the top. The door has a gas strut which opens and supports the door while it is opened. The doors are easily removed by removing the gas strut from the frame attachment and the hinge pins. The doors are sealed via gaskets to prevent air leaks during flight. The doors have 2 pins that penetrate the frame to secure them. There is a single lever that is rotated up and down to open and close the door.

2. Instrument panels. The instrument panels are divided into 4 sections referred to as panel 1, 2, 3 and 4. Panel 1 is the furthest left as sitting in the pilot seat. Panel 2 is the center and panel 3 is the right side. Panel 4 refers to the center column panel.

3. Cabin Heating. The cabin is heated using a heat exchanger mounted on the muffler pipe. Fresh air is rammed into the heat exchanger. From there the hot air is directed into the cabin. The pilot can control the amount and direction of the heat and can be directed to the windshield for defrosting of the cabin. The air can be modulated to bi-level by pulling the control half way out.

4. Battery. The battery is mounted on the firewall.

5. Baggage. Located in the baggage are the fire extinguisher and the required aircraft documents. There is an elastic cargo net that can be used for securing cargo.

6. Wings. The NACA profile is 650-18M, which is a high lift low speed style profile. It provides very stable flight characteristics with low stall speeds and gentle stall characteristics. The wing skins are riveted to hydro-formed ribs and spars in normal fashion. The wing is bolted to the fuselage and supported with a single main strut and jury struts.

Level angle of incidence of the wings are 3°

Dihedral angle is .7° total

End

8.0 AILERONS, FLAPS, ELEVATOR AND PITCH TRIM DESCRIPTION

The EA-100 has dual control yokes which operate the ailerons and elevator. Each control yoke is attached to a tube that travels through the panel towards the firewall. Both sides are connected to a center tube that rotates on its axis.

Ailerons:

The ailerons are mounted to the wings via 2 hinges. Each hinge has safety cotter keys to prevent the hinge pin to prevent the pin from creeping.

Mounted on the center tube is a flange that has cables that travel underneath the panel and up the frame to a bell crank at the wing root. Both bell cranks are connected via a metal rod that travels through the cabin. The ailerons are connected to the bell cranks via metal tubes.

Travel for each aileron is 20° up and 15° down. There are 2 cable adjusters under the panel that allow for the ailerons to be corrected for proper rigging and for proper cable tension. Cable tension should be taught.

Elevator:

The elevator is mounted to the horizontal stabilizer via 3 hinges. Each hinge is dimpled to prevent the hinge pins from creeping.

The elevators are connected to the yokes via tubes. There is an adjustable rod end located in the belly although this system should not require any adjustment as the elevator is connected via solid tubes.

Travel for the elevator is 30° up +/- 2° and 25° down +/-2°.

Flaps:

The flaps are connected with bolts and nuts to the wings.

The flaps are electrically driven and controlled through a momentary up/down switch in located on panel 3. The position is displayed on the flap LED in panel 3. The flaps are connected through a common tube that travels through the top on the cabin behind the seats. There is an

electric motor that drives the flaps up or down via a worm drive mechanism.

The flaps have limit switches which prevent raising them too high or too low. The limit switches have a leave spring and are mounted on the frame. There are 2 tabs mounted on the flap control tube. One switch controls the up limit and the other controls that down limit. The tabs can be bent to adjust the upper and lower limits.

Travel is 0° up and 35° down.

There is a plastic position sensor that sends the position information to the flap LED. The position sensor is connected via a steel spring wire that can be adjusted if the flap LED does not agree with the flap position.

Pitch trim:

The elevator can be trimmed for hands free flight. There is a small hinged tab that runs the length of the pilot side elevator. The tab is connected to the elevator with hinges. The hinges are dimpled to prevent the hinge pins from creeping. The tab is controlled via an electric servo, connected to a switch mounted on panel 4. The position is indicated on a LED mounted in panel 3.

End.

9.0 RUDDER DESCRIPTION

The rudder is connected to the vertical stabilizer with 3 screws/nut hinges.

The rudder is directly connected to the pilot's right pedal and the co-pilots left pedal via cables. The cables cross each other mid frame to provide proper control inputs. The left pilot and co-pilot pedals are connected together, and the same for the right side. Cable tension and rigging are controlled via a turnbuckle. Cable tension should be taught.

Rudder travel is 25° left and right.

End.

10.0 LANDING GEAR DESCRIPTION

The EA-100 has a tricycle gear style landing gear. The main gear is made of 7075 tempered aluminum. The gear is mounted to the frame with bolts.

The wheels are manufactured from Matco Mfg. They are mounted to the landing gear with 4 bolts. The wheel pant brackets are on both sides of the wheels. The inner mount is in between the wheel and the mounting spacer. The outer bracket is screwed into the axle.

The wheels are mounted onto the axle via a single king nut. The bearings have a sealed bearing on both sides to prevent water from penetrating the bearings.

The brakes are hydraulic disc style and controlled by the pedals. The brakes are independent. Master cylinders are mounted behind the pedals.

The nose gear is a trailing link style which provides cushioning for landings and taxiing. The nose wheel is connected to the inner rudder pedals providing direct nose wheel steering.

Tires are 5.00x5, 6 ply for the mains and nose. Tire pressure is 22 to 25 psi.

End.

11.0 FUEL DESCRIPTION

There are 5 fuel tanks, 1-9 gallon and a 5 gallon located in each wing and a 2 gallon header tank located in the belly. Total capacity is 30 gallons. The fuel cap is on the top and is vented. Venting is also provided by a vent located under the wing.

There is a drain in the front and the back of the wing tanks, which provides maximum fuel drain in nose up, down and level flight. Even though the fuel will fully drain, the unusable fuel is calculated at 1/2 gallon per tank plus the 2 gallons in the belly making a total un-usable fuel of 3 gallons.

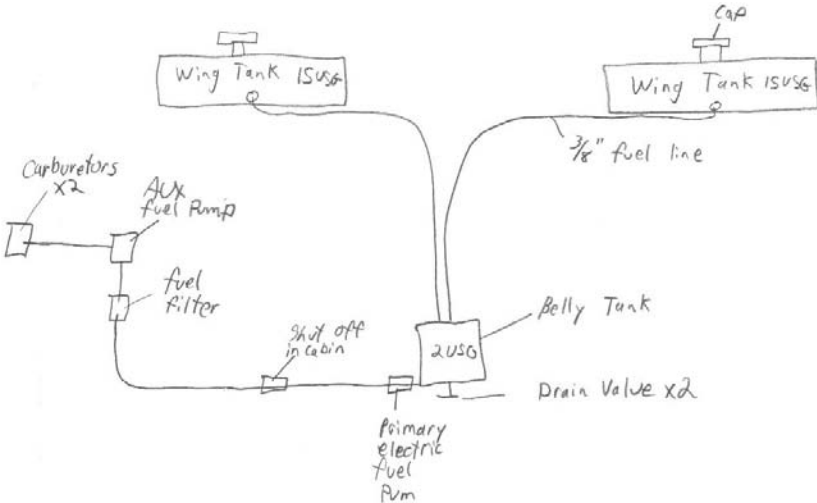
Fuel level is read by a clear tube at the wing root which can be viewed by the pilot during flight. Fuel travels from both tanks and connected together just before the fuel drain located at the belly. From there the fuel travels to the fuel pumps and filter then the engine. The fuel pumps are controlled via switches in panel 1.

Fuel pressure is minimum 2 psi and maximum 4.5 psi.

There are 2 fuel pumps located on the firewall. After the pumps are the fuel filter mounted on the firewall. The filter is serviceable and is cleaned anytime fuel pressure is noted to drop or at annual conditional inspection.

Fuel Distribution Figure

Fuel System Diagram



End.

12.0 ELECTRICAL DESCRIPTION

The EA-100 has 2 electrical sources; battery and engine generated and regulated power. The battery is a series 14 30AH sealed battery. It is mounted on the firewall in a battery tray. Engine driven electrical power is produced by the magneto and regulated to 14.4V. Total power available is 18 amps.

All electrical equipment is protected via resettable circuit breakers on the instrument panel. All power comes from the battery and the engine supplies power to the battery. This provides default redundancy if the engine electrical power becomes in-op, the battery continues to supply electrical power. There is a Hi/Lo voltage indicator installed in the panel. Should the engine electrical power fail, the system power will drop to battery voltage of 12 V. This will illuminate a light on the panel indicating the failure. The battery has enough energy to run all systems for 30 minutes.

There are 2 electric busses for the distribution of electrical power. The start master and the avionics master. They are energized by 2 spring loaded switches located on the panel. Loads that are critical to flight are on the start bus and non-essential loads are on the avionics bus. This will allow for quick load shedding should there be a failure of electrical power.

The flaps and trims are electric systems.

The ignition switch has an off, left, right, both and start positions.

Refer to the electrical schematics for the distribution of power.

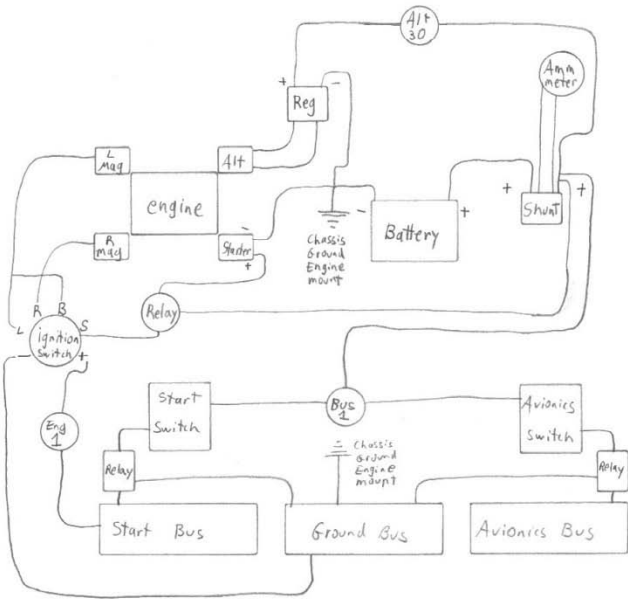
There is an ELT located in the belly. Access is from the door under the fuselage. There is a remote switch located on the instrument panel.

For overall trouble shooting refer to the manuals that accompany the individual system.

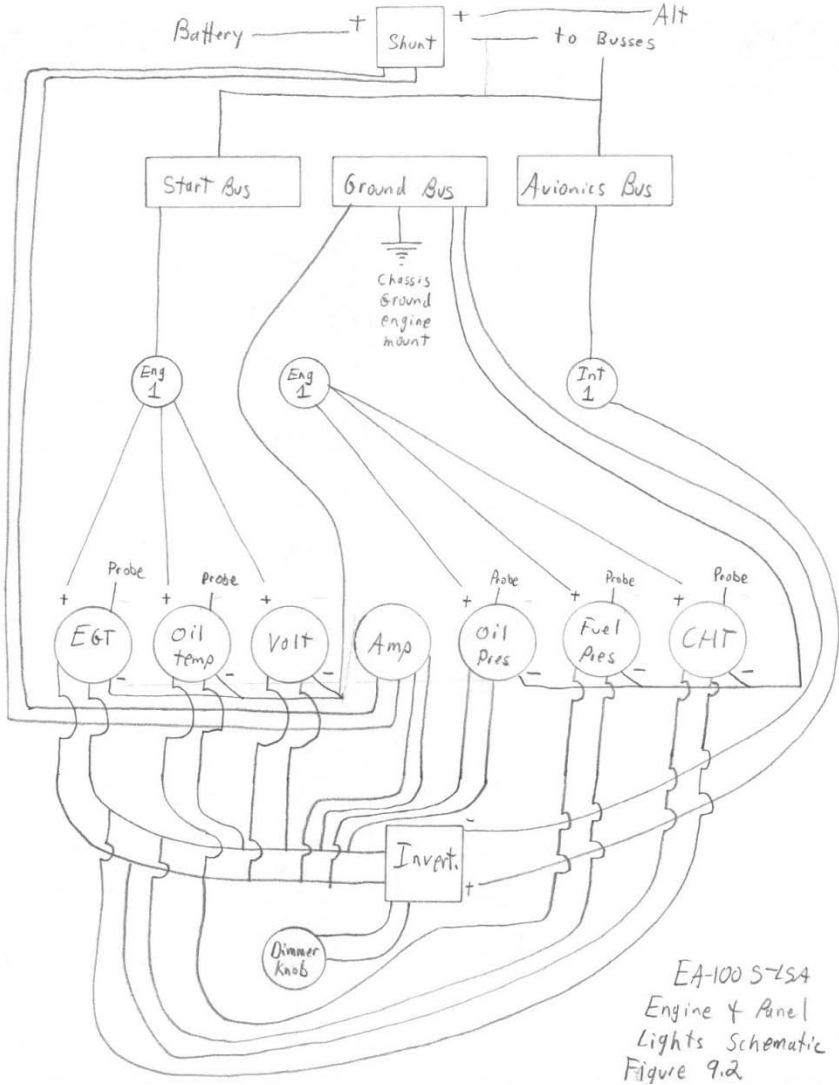
List of electrical equipment:

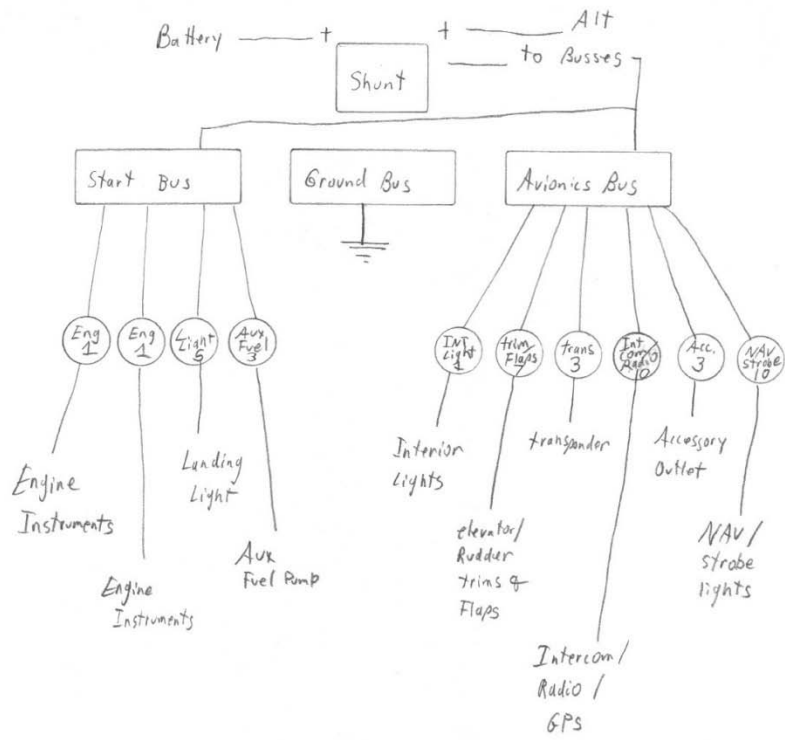
- Engine gauges
- Panel lights
- Radio/GPS
- Transponder
- Encoder
- High/low voltage system sensor
- Low fuel level system
- NAV lights
- Strobe lights

- Landing light
- Accessory outlet
- Trim system
- Flaps
- Intercom
- ELT system



EA-100 S-LSA Main Wiring Diagram





EA-100S-LSA
Power Distribution Network

13.0 ENGINE AND GEARBOX DESCRIPTION

The engine installed on the EA-100 is the Rotax 912 ULS. The engine is constructed in a fashion that allows for low maintenance and trouble free operation.

Please see the Rotax engine maintenance and operations manuals for complete descriptions.

14.0 ENGINE MAINTENANCE

Please see the Rotax engine maintenance manual for required inspections and procedures for repairs, regular and non-routine maintenance repairs.

15.0 AIRCRAFT REPAIRS AND ALTERATIONS

This section addresses general repairs and alterations that may be required to the aircraft. This includes:

- **Surface metal repairs**
- **Structural repairs**
- **Painting and refinishing**
- **Windshield and Windows**

Note: Any damage that occurs to the engine and/or engine mount must be discussed with Eagle Aviation LLC BEFORE proceeding.

The certification level for any repairs in this section is:

- Level 4 - A & P or higher for repairs to the airframe

While the aircraft is designed for trouble free operation, it is impractical to have a procedure for every possible repair required for damage that occurs. Repairs or alterations may be performed using AC 43-13, The Airframe and Power Plant Handbook. Should a repair be made to the aircraft following the guidelines of AC 43-13, use the following procedure is required:

- Follow procedure guidelines in AC 43-13.
- Make an entry in the Aircraft Logbook describing the repair or alteration. The entry will make a reference to this section, 15.0 and the section of AC 43-13 that applies to the repair or alteration completed. Note: Do not use the stickers provided for this entry.
- Fill out Form EA-16, Safety of Flight/Repairs or Alterations, (copies are in the back of this manual).
- Place the completed form in this manual.
- Return a copy of the completed form to Eagle Aviation LLC.

Note: If the aircraft has acquired significant damage due to an accident or the repairs appear to be significant in nature, contact Eagle Aviation LLC for further information.

Surface metal repairs:

Dents and dings that are not creased or punctured and are no larger than 1" in diameter may be pulled out, filled and painted. Dents and dings that are larger than 1" in diameter or are creased or punctured

need replacement metal. Simple panels may be custom made to overlay the damaged area or they can be ordered from Eagle Aviation LLC. Complex panels may require the part(s) ordered from Eagle Aviation LLC. The repairs shall follow AC 43-13 guidelines.

Structural repairs:

Damage to any structural items such as spars, ribs, bulkheads, welded parts, missing rivets, etc may be repaired/replaced as appropriate. The repairs shall follow AC 43-13 guidelines. The repairs must extend past the point of the damaged area. All parts and sub-structure items are available from Eagle Aviation LLC. Complete items such as wings, ailerons, tail components, etc. can be obtained as well.

Damage shall be accessed via visual inspections and/or measurements. If the damaged area is in high stress areas, such as the landing gear attachment areas, pay close attention to joints and welds during the inspection.

The composite items on the aircraft are not structural or load bearing items. This includes the wing tips, horizontal and vertical stabilizer tips, dorsal fin, wheel pants and the upper and lower cowling. Repairs to these items are made with standard fiberglass cloth and epoxy methods. Areas that are attachment points such as screw holes in the cowlings should use layers of fiberglass cloth and carbon fiber.

Painting and refinishing:

Replacement metal should be primed with self etching primer before it is permanently attached. The surface can be painted with normal HVLP spray method using a good quality automotive urethane style paint such as DuPont or PPG products.

Windshield and Windows:

If the windshield or windows need replacement, the following guidelines shall be used:

- Drill out rivets.
- Cut with razor knife sealant around the window.
- Remove window.
- Clean damaged window. This will be used as a template for cutting out the new window.
- Lay the damaged window on top of new 1/8" lexan and trace the outline.
- Cut out the new window.
- Clean all edges with sandpaper and de-burring tools.
- Compare new window with old window. When satisfied with fit, clamp old window to the new window.
- Drill out the mounting holes with a 9/64" drill bit.
- Install new window with clecos, ensure proper fit.
- Place silicone sealant around edge of new window.
- Rivet new window in place.
- Place new silicone sealant around perimeter of window and fuselage.

End of procedure

16.0 AVIONICS AND INSTRUMENTS

This section applies to the avionics and instruments that are permanent to the aircraft and are not portable. Portable items such as handheld radios or GPS units do not require any entries and are up to the owners discretion.

The certification level for any repairs in this section is:

- Certified avionics technician for avionics/instrument alterations

Repairs or alterations may be performed using AC 43-13, The Airframe and Power Plant Handbook. Should a repair be made to the aircraft following the guidelines of AC 43-13, use the following procedure is required:

- Follow procedure guidelines in AC 43-13.
- Make an entry in the Aircraft Logbook describing the repair or alteration. The entry will make a reference to this section, 16.0 and the section of AC 43-13 that applies to the repair or alteration completed. Note: Do not use the stickers provided for this entry.
- Fill out Form EA-16, Safety of Flight/Repairs or Alterations, (copies are in the back of this manual).
- Place the completed form in this manual.
- Return a copy of the completed form to Eagle Aviation LLC.

Avionics and/or instruments may be repaired or replaced as necessary. Instruments and avionics may be changed due to owner preference. Only certified avionics shops/technicians are authorized for repairs or alterations.

Normal wiring and repair practices shall be followed.

End of procedure

17.0 TIRES, BRAKES AND BRAKE FLUID REPLACEMENT

Description: This procedure details how to change tires, brake linings and brake fluid.

Procedure Number: 17.0

Certification Level: 3

Frequency: As required

Logbook Endorsement: Required

Tools Required: Basic hand tools and floor jack

Parts Required: Tires, tubes, brake linings and ATF fluid

- Using floor jack and protection boards, raise the side of the aircraft to be worked on. Place the boards under the area where the landing gear attaches to. Use caution, lift only on structural attachment points.
- See the Matco MFG manual for complete procedures.
- Replace tires and tubes as required using general aviation practices.

End of procedure

18.0 WINGS REMOVAL PROCEDURE

Description: This procedure details how to remove and install the wings.

Procedure Number: 18.0

Certification Level: 3

Frequency: As required

Logbook Endorsement: Required

Tools Required: Basic hand tools

Parts Required: AN6 flare plug, AN5 and AN6 bolts and nuts

- This process is the same for both wings.
- Drain the fuel using the fuel sump. When the fuel stops running, lift the wings up to drain the fuel tanks as much as possible. Be careful to only lift the aircraft underneath a wing rib.
- Remove the wing root covers.
- Remove the interior panels located at the top sides of the windshield.
- Disconnect the aileron tube from the bell crank.
- Disconnect the lighting wires in the forward wing root area.
- Disconnect the pitot tube, pilot side forward wing root area.
- Disconnect the fuel tape lights wire, located near the fuel line disconnect.
- Obtain the AN6 flare plug.
- Wrap the fuel disconnect with clean rags and disconnect the AN flare fitting closest to the wing side. Install the AN6 plug to prevent fuel from dripping out.
- Slide a razor knife under the top panel where the wing slides into the fuselage. This is to cut the silicone sealant.
- Remove the flap screw and nut. This is located in the ceiling just inside the fuselage. If necessary, remove the interior panels in the roof enough to allow room for hands and tools.
- Clamp the flaps to the ailerons with spring clamps and a piece of wood. This prevents the flaps from dropping into the side window.
- Remove the forward and rearward wing attachment nuts.
- Remove the jury strut.
- Clear a suitable area to place the wing down after removal.
- Have 2 assistants support the wing tip and 2 by the fuselage.
- Remove the main strut.

- Remove the wing bolts. Pull the wing straight out until clear of the airplane.
- To install the wing, follow the removal procedure in reverse with the exception: Just prior to installing the wing, place a bead of silicone sealant on the upper edge of the wing.

Note: When installing the wing, do not use excessive force. If the wing is aligned correctly, the flap tube will go into the flap drive tube first, then align the forward wing bolt then the rearward bolt. Tapered punches will help the alignment. It is recommended to replace the wing and strut bolts and nuts when installing the wing.

End of procedure.

19.0 WEIGHT AND BALANCE PROCEDURES

Description: This procedure details how to re-weigh the aircraft.

Procedure Number: 19.0

Certification Level: 3

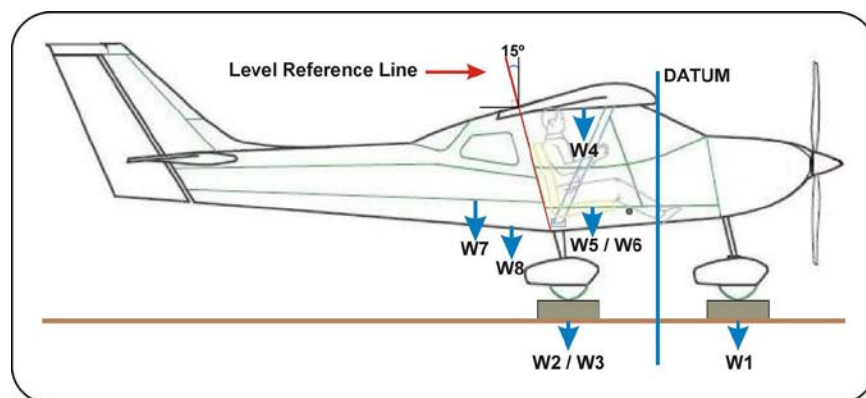
Frequency: Anytime new equipment is added or removed or major airframe repairs are performed

Logbook Endorsement: Required

Tools Required: 4 foot level, 8 foot straight edge and scales having at least 375 lbs rating

Parts Required: None

- Drain all fuel from the aircraft via the drain sump. After the fuel begins to trickle out, lift the wings up one at a time to ensure all the fuel is drained out.
- Remove all items from the aircraft that are not permanent such as coats, headsets, maps, transceivers, etc.
- Check that the aircraft is on a level surface. This is very important. To check the longitudinal axis, use the 4 foot level and place just in front of the seats. If the aircraft is not level, shim with wood or other items to level the aircraft. The longitudinal axis can be checked with the level mated to an 8 foot long straight piece of metal. Shim as required. The reference line should measure 15°, which will aide ensuring that the aircraft is level on the lateral axis.



- Pull the tail down and have a helper put the scale under the nose wheel.
- Lift the wings and place scales under the main wheels. Make sure when lifting that no pressure is applied between the ribs.

- Record the weights on the EA-8 form. Blank forms are located on the back of this manual.
- Remove the scales in the reverse order as they placed under the wheels.
- File the completed form in this manual in the Aircraft Weight and Balance section.

End.