



EA-100 Pilot Operating Handbook and Flight Training Supplement

700EW

Serial Number 1001

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Changes to any information in this manual will have a '1' symbol on the left column of the page. This will allow for easy identification to the pilot/owner that a change on that page has occurred. It is the responsibility of the pilot/owner that they are fully briefed on this manual and the changes that occur.

2.0 GENERAL INFORMATION

The Pilot Operating Handbook, POH, and Flight Training Supplement are written to satisfy the requirements of ASTM F-2245 Design and Performance of a Light Sport Aircraft for N700EW Serial Number 1001.

NOTE: It is the responsibility of the owner(s) and every pilot who operate this aircraft to fully review the contents of this manual and all limitations before flight.

This aircraft is a Day VFR, VMC only aircraft. The aircraft is NOT APPROVED for night flight as defined by FAR's. It is the responsibility of the PIC to ensure the inspection of the pitot/static system and the transponder/encoder if the aircraft will be operated in airspace that requires position reporting. These inspection reports will be in the aircrafts logbook. If the inspections have not been performed and/or are out of date, the aircraft may not be operated by a PIC in position reporting airspace.

All airspeeds in this manual are noted in KIAS. KIAS = KCAS.

PIC's are encouraged to pay special attention to all information that is in **bold**. **Bolded** information contained in this manual pertains to procedures, limitations or special information.

2.1 MANUFACTURER

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2.2 GENERAL DESCRIPTION OF AIRCRAFT

The EA-100 S-LSA is an all metal overhead wing 2-place side by side seating aircraft. The aircraft is designed and built in accordance to ASTM F-2245 Light Sport Aircraft Standards.

The wings, empennage and fuselage are all metal. The landing gear is a tri-cycle style with hydraulic brakes and a steerable nose wheel. The nose wheel is a trailing link style system. The main gear is tempered aluminum.

The following list is the general features of the EA-100 aircraft.

- All materials are aircraft grade. All Hardware used is AN graded. All wiring and connectors are aviation grade.
- The structure is all aluminum and steel construction.
- Rotax 912 ULS engine.
- Prince P-Tip Propeller.
- Dual control yokes.
- Pilot and passenger hydraulic toe brakes.

- Electric flaps.
- Electric pitch trim system.
- 3 point automotive style seatbelts.
- Heavy duty landing gear.
- Steerable nose wheel.
- Intercom.
- Corrosion proofed frame.

2.3 GENERAL SPECIFICATIONS

Wing Span	29'5"
Wing Area	133 sq ft
Wing Chord	55"
Aspect Ratio	6.2:1
Overall Height	7'1"
Overall Length	22'4"
Horizontal Tail Span	8'2"
Horizontal Tail Chord	22.5 sq ft
Empty Weight	812 lbs
Maximum Weight	1320 lbs
Useful Load	508 lbs
Design Load Factor	+4g's/-2g's
Cabin Width	42"
Cabin Height	46"
Landing Gear Width	6'2"
Seats	2-Side by Side
Fuel Capacity	30 US Gallons
Engine	Rotax 912ULS

3.0 AIRPLANE SYSTEMS AND DESCRIPTIONS

3.1 ENGINE DESCRIPTION AND LIMITATIONS

Engine: Rotax 912 ULS

Specifications:

- 4-stroke, 4 cylinder horizontally opposed configuration
- 100 hp @ 5800 RPM
- Water cooled with overflow tank

The Rotax 912 ULS operation is simple and straight forward. Refer to the Rotax Engine Operators Manual for detailed engine instructions.

Engine safety information:

- Never fly the aircraft equipped with this engine at locations, airspeeds, altitudes, or other circumstances from which a successful no-power landing cannot be made, after sudden engine stoppage.
- Unless correctly equipped to provide enough electrical power for night VFR (according latest requirement as ASTM), the Rotax 912 ULS is restricted to DAY VFR only.
- This engine is not suitable for acrobatics (inverted flight, etc.).
- It shall be clearly understood that the choice, selection and use of this particular engine on any aircraft is at the sole discretion and responsibility of the owner/user.

- Eagle Aviation grants no warranty or representation on the suitability of its engine's use on any particular aircraft. Further, Eagle Aviation grants no warranty or representation of this engine's suitability with any other part, component or system which may be selected by the aircraft manufacturer, assembler or user for aircraft application.
- You should be aware that any engine may seize or stall at any time. This could lead to a forced landing and possible severe injury or death. For this reason, mandatory compliance with the maintenance and operation and any additional information which may be given to by Eagle Aviation LLC.
- Respect all government or local rules pertaining to flight operation in your flying area. Fly only when and where conditions, topography, and air-speeds are safest.
- Before flight, ensure that all engine controls are operative. Make sure all controls can be easily reached in case of an emergency.
- Unless in a proper run up area, never run the engine at high RPM's. Do not operate engine if bystanders are close.
- In the interest of safety, the aircraft must not be left unattended while the engine is running.
- Keep an engine log and respect engine and aircraft maintenance schedules. Keep the engine in correct operating condition at all times. Do not operate any aircraft which is not properly maintained or has engine operating irregularities which have not been corrected.
- To eliminate possible injury or damage, ensure any loose equipment or tools are properly secured before starting the engine.
- When in storage protect the engine and fuel system from contamination and exposure.
- Never operate the engine and gearbox without sufficient quantities of lubricating oil.

Rotax 912 ULS engine operating limitations

The grid below shows the normal engine operation parameters/

Take off maximum RPM:	5800 (5 min)
Maximum continuous RPM:	5500
Minimum Idle RPM:	1400
0 to -.5g engine limit of operation:	5 seconds
Maximum oil pressure:	100 PSI
Minimum oil pressure:	12 PSI
Normal oil pressure range:	29-73 PSI
Maximum oil temperature:	266°F
Normal oil temperature range:	190-230°F
Minimum oil temperature:	120°
Maximum CHT as read on coolant gauge:	284°F
Maximum fuel pressure:	5.8 PSI
Minimum fuel pressure:	2.2 PSI
Maximum EGT	1400°F

More detailed engine data is available in the Rotax operation manual supplied with the aircraft.

3.2 PROPELLER

The propeller on the EA-100 is a Prince P-Tip carbon fiber 2 blade, fixed pitch style.

3.3 FUEL AND FUEL CAPACITY

There are five fuel tanks, two in each wing and one in the belly. Each wing holds 15 US gallons and the belly header tank holds 2, for a total capacity of 30 US gallons. There is 1/2 gallon of unusable fuel per wing tank, for a total of 2 unusable gallons plus the belly tank of 2 gallons making a total unusable fuel of 3-1/2 gallons. The tanks are constructed of aluminum and rectangular in shape. They are permanently mounted and removal is not required. Fuel is filled by removing the screw on cap located on the top of the wing. The fuel caps are replaced by screwing on until a minimum of 3 'clicks' are obtained. There is a clear visible tube that can be read in the cabin by the pilot. The level on each tube is placarded with 1/4, 1/2 and 3/4. Both tanks have vents located under each wing near the strut. There is one drain located on the belly which is used to drain any water or impurities from the tanks prior to flight and after refilling.

Even though there is 16-1/2 usable gallons, it is recommended to flight plan at 15 gallons. The tanks are connected to the header tank, which is where the drain is located. From the header tank, fuel flows into the main and auxiliary fuel pumps, and then fuel filter then to the engine.

The main fuel pumps is energized by the start master switch on the panel. The auxiliary pump is energized via a switch on the panel. For safety and redundancy, both fuel pumps are used for take-off and landing. Anytime during flight a rough running engine due to low fuel pressure, both pumps should immediately be turned on.

The fuel required is 91 minimum octane auto fuel containing up to 10% ethanol or 100LL aviation fuel. Note, the fuels can be mixed at any ratios.

RPM	GPH
5800 (WOT)	7.1
5000 (75%)	5.3
4800 (65%)	4.8

3.4 OIL

The oil is cleaned by a spin on external oil filter.

Approved engine oil is: See Rotax Engine Owners/Operators Manual

Quantity: 4.5 quarts

Oil is checked by a dipstick in the remote oil reservoir tank. To check the oil, pull the propeller through in the direction of flight several times until you audibly hear a gurgle sound. This will be fairly obvious. Once that has occurred, remove the dipstick, wipe off and then check the oil. Level should be between the marks indicated on the dipstick.

3.5 OPERATING WEIGHTS AND LOADING (OCCUPANTS, BAGGAGE, FUEL AND BALLAST)

Maximum weight per seat	260 lbs
Aircraft empty weight	812 lbs
Maximum take-off weight	1320 lbs
Maximum baggage area 1	75 lbs
Maximum baggage area 2	25 lbs
Maximum baggage area 3	10 lbs

3.6 ELECTRICAL

3.6.1 ELECTRICAL SYSTEM DESCRIPTION

The EA-100 has two electrical sources, a battery and the engine generated electrical power. The battery is a series sealed non-vented battery and requires no maintenance. It is mounted on the firewall. All electrical equipment is protected via circuit breakers. All electrical equipment is powered by the battery with the engine electrical power charging the battery. Should the alternator become in-operative, the battery will continuously supply electrical power to the equipment. If this occurs, the system power will drop to battery voltage of 12 volts. This condition will cause Hi/Lo voltage light to illuminate which will indicate to the pilot that there is no engine electrical power. The battery has enough energy to run the aircraft for approximately 30 minutes.

The ELT is located in the belly and the remote switch is located in the cockpit.

List of standard electrical equipment installed on the EA-100:

- Interior lights
- NAV/position lights
- Strobe lights
- Landing lights
- Pitch trim
- Flaps
- Intercom
- Fuel pumps
- ECU (Engine Control Unit)
- ELT 121.5 MHz compliant

Optional electrical equipment (may or may not be installed, check the aircraft logbook and/or the aircraft maintenance manual):

- Radio
- Transponder
- Altitude Encoder
- GPS
- Attitude Indicator
- Directional Indicator

Note: It is the responsibility of the PIC to ensure that if the aircraft will be operated in position reporting airspace and/or the optional equipment listed above is installed as per the aircraft maintenance manual, the aircraft shall have a current inspection sign off in order to use the equipment. The information will be located in the aircrafts logbook and/or the aircraft maintenance manual. If there is no sign off in the logbooks or the sign off is past currency, then the equipment shall not be used and placarded 'IN OP'. Flight into position reporting airspace will not be allowed.

Note: Although this aircraft is equipped with NAV/position lights, strobe lights and landing lights, this aircraft is NOT APPROVED for night flight as defined by FAR's. This equipment is installed for safety purposes only.

3.6.2 CIRCUIT BREAKERS

All electrical equipment is protected via resettable circuit breakers.

The description of the items powered by the circuit breakers are as follows:

Circuit Breaker Number	Amperage	Items Powered
1.	1 Amp	Master Relay A Master Relay B Starter Relay
2.	30 Amp	Coils and Injectors
3.	10 Amp	Main Fuel Pump
4.	10 Amp	Auxiliary Fuel Pump
5.	10 Amp	Alternator
6.	10 Amp	Flaps
7.	1 Amp	ECU and EIS
8.	7 Amp	Aux Power Radio and GPS LED's and Dimmer Pot MP Intercom and ELT

9.	7 Amp	Strobe Lights, AI and DG
10.	10 Amp	Landing Lights Transponder and Encoder Pitch Trim
11.	15 Amp	NAV/Position Lights
12.	7 Amp	Starter
13.	2 Amp	Auxiliary Power Outlet (at outlet)

If a circuit breaker has 'popped', 1 reset attempt in flight is permitted. If the breaker resets and does not 'pop' again, no further action is required. If the breaker cannot be reset, or it resets and 'pops' again, do not attempt any further resets. Depending on the circuit breaker that 'pops', a emergency action may be required.

3.6.3 DEAD BATTERY, BATTERY CHARGING PROCEDURE

The battery is a sealed and maintenance free type battery. If the airplane will be stored and not flown for extended periods of time, the battery should be charged.

Note: If it is discovered that the battery will not start the engine, do not attempt to 'hand prop'. Also, do not jump start the engine. Even though the engine should start during a jump start, the battery may not have enough energy capacity to run the engine and required equipment to properly operate the aircraft during flight if the alternator fails. Battery charging must be performed before flight.

To re-charge or maintain the battery follow the procedure:

- Ensure that there is at least some voltage showing on the voltmeter. (If there is no voltage, the battery may be completely dead or have a broken cell. Replacement may be required. See the Aircraft Maintenance Manual for procedures.)
- Open the right side upper engine cowling access panel.
- Using an automatic only type battery charge with a maximum charge rate of 4 amps, connect the positive lead to the alternator output lug. (Gently pull back the terminal cover).
- Connect the negative lead to the nut at the upper engine mount to firewall.
- Plug in and charge the battery until the charger indicates that the battery is fully charged. The time required to fully charge will depend on how depleted the battery is, but should take no longer than 8 hours.
- When charged, remove the battery charger, re-install the terminal cover and close the cowling.
- Check the for voltage. System voltage should be 12 to 12.5 volts.

3.7 CABIN CLIMATE CONTROL

For cabin climate control, the EA-100 has a cabin heater/window defroster and also fresh air vents.

There are 2 fresh air vents located in the windshield, 1 on the pilot side and 1 on the passenger side. Both can be accessed by the pilot. The operation is very simple. There is a black knob that is twisted to open and shut the vent. The vent is infinitely variable from closed to open. The pilot/passenger can control how much fresh air enters the cabin.

There is a cabin heater provided to warm the cabin and for windshield defrosting. The cabin heater takes ram air and forces it over a exhaust pipe heat exchanger. From the heat exchanger the hot air travels into the cabin either to the windshield or the cabin or bi-level operation.

The operation of the heater system consists of 1 knob located on the center panel. To turn the heater on, pull the left knob out as needed. Max heat is when the knob is fully pulled to the stop. This will direct the warm air to the cabin floor. If defrost is required, push the knob in and open the defrosters on the glare shield. If both defrost and cabin are required, leave the defrosters open and modulate the heater control knob to the desired position.

4.0 OPERATING LIMITATIONS**4.1 STALL SPEEDS**

Note: All speeds are KIAS

Maximum weight : most rearward CG

Flap setting	0° bank	30°bank	45°bank	60°bank
Up	44	48	52	61
15°	36	39	43	51
35°	31	33	37	44

Maximum weight: most forward CG

Flap setting	0° bank	30°bank	45°bank	60°bank
Up	44	48	52	61
15°	40	43	48	57
35°	35	38	43	49

4.2 FLAP EXTENSION SPEEDS VSO TO VFE

0° - 15° flaps, 80KIAS

15° - 35° flaps, 55KIAS

4.3 MAXIMUM MANUEVERING SPEEDS

Va = 80KIAS

Max turbulent speed, Vra = 100KIAS (Vra is the speed at which the aircraft supports a vertical gust of 50 feet/per second without being structurally overloaded).

4.4 NEVER EXCEED SPEED

Vne = 120KIAS

4.5 CROSSWIND COMPONENT

Maximum demonstrated crosswind component: 18 knots

Note: the EA-100 is capable of crosswind components up to 24 knots. Attempting to land at any wind higher than the maximum demonstrated crosswind requires a higher level of training and skill. Exercise extreme caution above 18 knots.

4.6 SERVICE CEILING

Maximum service ceiling is 15,000 feet.

4.7 LOAD FACTORS

The EA-100 is approved and shall be flown in normal category operating limitations.

4.8 PROHIBITED MANUEVERS

The EA-100 is not certified for aerobatics.

Steep turns beyond a 60° bank angle should not be performed.

Intentional spins are not allowed.

4.9 OTHER GENERAL LIMITATIONS

- The EA-100 is a day VFR/VMC aircraft only
- Flight into known icing conditions is prohibited
- Minimum OAT for flight: 10°F

5.0 WEIGHT AND BALANCE INFORMATION

5.1 INSTALLED EQUIPMENT FOR 703EW, SERIAL NUMBER 1004

Airframe:

- EA-100 basic aircraft
- Rotax 912 ULS engine
- Prince P-Tip propeller
- Dual yokes
- Electric flaps
- Electric pitch trim
- 30 US gallons fuel
- Hydraulic toe brakes, pilot and passenger
- Cabin heater
- Wingtip NAV/position/strobe lights and landing lights
- Wheel pants

Panel:

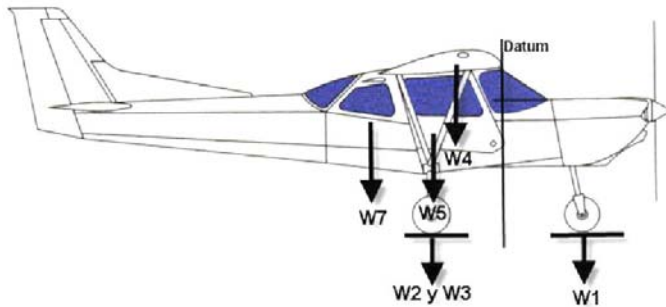
- Airspeed indicator
- Altimeter
- VSI
- Inclinator
- Altitude encoder
- ACK ELT- 121.5 compliant
- PS Engineering intercom
- Cabin lighting
- Garmin GNS 420 Radio
- Garmin GTX 327 Transponder
- Trans-Cal encoder
- Attitude Indicator
- Directional Gyro

5.2 CENTER OF GRAVITY RANGE AND DETERMINATION

The reference for the datum on the EA-100 is the leading edge of the wing. The CG envelop is 20 to 32% MAC or 11 to 17.6 inches aft of the datum.

The CG is located behind the datum. The chart below shows 700EW in the empty condition. It is the responsibility of the PIC to ensure that the loading of the aircraft falls within the CG range. The aircraft is also supplied with a separate weight and balance sheet. The PIC can use the chart below to calculate the weight and balance of the aircraft for flight.

Weight and balance chart



EA-100	700EW	S/N 1001	11/1/07	
Item	Description	Weight (lbs)	Arm (inches)	Moment (lbs*inches)
W1	Nose Wheel	220	-32	-7040
W2	Left Main Wheel	296	24	7104
W3	Right Main Wheel	296	23.5	6956
	Empty Weight	812	Empty Moment	7020
Added Items				
W4	Fuel		29	
W5	Pilot		18 FWD-25 RWD	
W6	Passenger		18 FWD-25 RWD	
W7	Baggage		49 FWD-60 RWD	
W8	Baggage (Shelf)		76	
Total Take Off Weight			Take Off Moment	

Wing Chord	55 inches	
Empty Aircraft CG (inches)	Empty Moment/Empty Weight	8.64inches
Empty Aircraft CG (%)	Empty CG inches/Wing Chord*100	15.7%
Take Off CG (inches)	Total Moment/Total Weight	
Take Off CG (%)	Take Off CG/Wing Chord*100	
Forward Limit	11 inches	20%
Aft Limit	17.6 inches	32%

6.0 PERFORMANCE

6.1 TAKEOFF AND LANDING DISTANCES

Note: all distances are in feet.

Takeoff Conditions:

- Aircraft at gross weight, 1320 lbs
- Full throttle prior to brake release
- Paved, level dry runway
- No wind

Landing conditions:

- Aircraft at gross weight, 1320 lbs
- Throttle at landing, idle
- Paved, level dry runway
- No wind
- Maximum braking applied at touchdown

Notes: Takeoff and Landing

- Decrease distances 10% for each 9 knots of headwind.
- Increase distances 10% for each 2 knots of tailwind up the maximum limitation of 10 knots.
- For operation on a dry, grass runway, increase takeoff distances by 15% and landing distances by 45% of the 'ground roll' figures.

Item	Altitude	OAT					
		32°F	59°F	68°F	77°F	86°F	95°F
Take off, no flaps	SL	315	360	395	400	415	430
Ground Run only	2000 ft	360	400	415	435	450	475
	4000 ft	400	450	475	510	535	565
	6000 ft	450	500	525	565	590	635
	7000 ft	460	530	565	590	620	670
Take off, no flaps	SL	815	860	895	1000	1075	1110
50 ft obstacle	2000 ft	860	950	1015	1085	1150	1225
Vx established	4000 ft	900	1000	1075	1160	1235	1315
	6000 ft	1050	1150	1225	1315	1340	1435
	7000 ft	1060	1180	1365	1390	1470	1520

Takeoff, flaps 15°	SL	260	300	315	340	350	360
Ground Run only	2000 ft	295	325	345	360	375	400
	4000 ft	340	375	400	425	445	470
	6000 ft	375	415	440	470	495	525
	7000 ft	390	445	470	495	510	550
Takeoff, flaps 15°	SL	760	800	815	940	1010	1040
50 ft obstacle	2000 ft	835	875	1000	1075	1140	1150
Vx established	4000 ft	840	925	1000	1075	1145	1220
	6000 ft	975	1065	1140	1220	1245	1335
	7000 ft	990	1095	1270	1295	1360	1400
Landing, flaps 35°	SL	310	360	390	400	410	425
50 ft obstacle	2000 ft	340	390	415	425	435	450
	4000 ft	440	480	495	500	510	525
	6000 ft	560	590	600	625	665	685
	7000 ft	575	595	610	660	675	965

6.2 RATE OF CLIMB

Conditions:

- Flaps up
- Full throttle

Gross Weight 1320 lbs	Pressure Altitude	Climb Speed KIAS	ROC 0°C	ROC 20°C	ROC 30°C	ROC 40°C
	S.L	58	835	765	700	630
	2000	57	735	670	600	535
	4000	57	635	570	505	445
	6000	55	535	475	415	355
	8000	54	440	380	320	265
	10000	53	340	285	230	175

6.3 CRUISE SPEEDS

Vc = 100 KIAS @ 5000 RPM

6.4 RPM

Takeoff: 5100 RPM

Maximum continuous: 5100 RPM

Minimum idle: 1600 RPM

75% Throttle: 5000 RPM

Cruise RPM range: 4800 – 5000 RPM

6.5 FUEL CONSUMPTION

Fuel consumption at takeoff/maximum power (5800 RPM): 7.1 GPH

Fuel consumption at 75% power (5000 RPM): 5.3 GPH

7.0 EMERGENCIES

Note: It is required that the Pilot in Command become very familiar with the emergency procedures outlined below. Failure to comply could result in a serious accident that could result in fatalities.

The PIC, Pilot in Command, needs to understand that the emergency procedures outlined here are designed to deal with the 'standard' emergencies, but are in no means the only solution to a serious problem. In all emergencies, the PIC need to not only rely on checklists and training, but must continue to perform the primary functions of flying the airplane.

7.1 ENGINE FAILURE CHECKLIST

In the case of a engine failure in flight complete the following checklist

1. Airspeed 80 KIAS
2. Master Switches ON
3. AUX Fuel Pump ON
4. Throttle IDLE
5. Starter Attempt to start engine

If engine starts:

6. Throttle Slowly advance throttle to desired RPM and land as soon as possible

If engine does not start:

Immediately locate a suitable landing area. If time permits perform the **SECURE ENGINE/FORCED LANDING CHECKLIST**.

7.2 SECURE ENGINE/FORCED LANDING CHECKLIST

1. Airspeed 80 KIAS
2. Emergency Landing Area Identify

Time Permitting

3. Start Master Switches OFF
4. Aux Fuel Pump OFF
5. Transponder Squawk 7700
6. ELT ON
7. Emergency Declare to ATC
8. Master Switches OFF once the flaps are in landing condition

Make normal approach with airspeed at 60 KIAS and touch down at 50 KIAS. Egress the aircraft upon landing.

7.3 ENGINE FIRE CHECKLIST

Fire on board an airplane is a very serious condition and required immediate action. Pilots are encouraged to execute the following procedure immediately is a engine fire is detected.

1. Airspeed Vne/Maximum Descent
2. Landing Area Identify
3. START Master Switch OFF
4. Aux Fuel Pump OFF

Time Permitting

5. Transponder Squawk 7700
6. ELT ON
7. Emergency Declare to ATC
8. Master Switches OFF once the flaps are in landing configuration

Make normal approach with airspeed at 60 KIAS and touch down at 50 KIAS. Egress the aircraft upon landing.

7.4 ROUGH RUNNING ENGINE CHECKLIST

Typically the cause of a rough running engine is spark plug fouling due to the release of lead deposits from AV gas. Normally this will not occur after the engine is thoroughly warmed and normal cruise/climb power is established. A fuel pressure or electrical fault could also cause the engine to run rough.

1. AUX Fuel Pump ON

If this resolves the rough running engine, land as soon as possible at the most convenient airport. If this does not solve the problem, land as soon as possible at the nearest airport/airstrip. If vibration becomes severe, a forced landing may be warranted.

7.5 OIL, WATER TEMPERATURE OR EGT LIMITS EXCEEDED DURING FLIGHT

The typical cause of the oil, water temperature or EGT limits exceeding during flight is very hot conditions and running the engine at high RPM's during a climb phase. Although this is the typical reason, it could also be an indication of an emending problem.

1. Reduce RPM by a minimum of 500.
2. Check oil and/or water temperature.
3. If the temperatures have lowered below maximums, flight may continue.
4. If temperatures do not lower at or below maximums, reduce RPM another 500.
5. If this does not correct the temperatures, land as soon as practical. Also, prepare for the possibility of an engine shut down.

7.6 CABIN FIRE OR SMOKE CHECKLIST

Cabin fires and/or smoke aboard an airplane are very serious situations and need immediate attention. Once smoke or fire is detected, the primary concern is to extinguish the fire, clear the smoke and land. Where you land will be dictated by the severity of the smoke and/or fire.

1. Smoke/Fire - Identify
2. Fire Extinguisher - Remove (located behind the passenger seat)
3. Smoke/Fire - Aim extinguisher at the base of the fire and extinguish
4. Air Vents - Open

Land as soon as possible even if the fire is extinguished.

If the fire/smoke cannot be contained, perform an immediate **SECURE ENGINE/FORCED LANDING CHECKLIST**.

8.0 NORMAL PROCEDURES

The EA-100 is a conventional designed aircraft. Pre-flight checks and normal flight operations are very similar to any general aviation single engine aircraft. The EA-100 does not require any specialized training. After becoming familiar with the equipment and this POH, the primary concern will be normal aircraft operation. It is the responsibility of the PIC to become familiar with the aircraft, equipment and the POH. It is recommended that the PIC pay special attention to section 7.0, EMERGENCY PROCEDURES.

When approaching the airplane for the first flight of the day, make a visual inspection of the ground underneath the aircraft for any leaking of fuel, oil, brake fluid or coolant. Not moving the aircraft during this inspection will assist in determining the where any leaks, if any, originate from.

Ensure that both master switches and ignition switch are off

It is recommended to perform a conventional walk around inspection of the aircraft prior to flight. Section 8.1 is a guide for the walk around inspection but it is the responsibility of the PIC to always check the overall condition of the aircraft. If you are sure about a check of the inspection seek assistance from an aircraft mechanic or Eagle Aviation assistance. Do not assume that if it looks right that it is right.

Note: Dents smaller than 1" in diameter that do not have any creasing are allowed. Cracks to the surface metal only that are 1/4" or less are allowed but should be stop drilled to prevent the

crack from traveling. See the Aircraft Maintenance Manual. If there are excessive dents/cracking should be investigated before flight.

8.1 PREFLIGHT WALK AROUND CHECKLIST

- Ensure master and ignition switches are off
- Check throttle for smooth operation from idle to full throttle
- Check fuel quantity gauges. Make sure there is enough fuel for the planned trip
- Check controls for free and correct operation
- Check that the circuit breakers are in
- Check for:
 - Airworthiness Certificate
 - Operation Specifications
 - Weight and Balance
 - POH
 - Aircraft Registration
- Turn Avionics Master switch on
- Check NAV/Position, Strobe and Landing Lights
- Lower flaps
- Turn Avionics Master Switch off
- Check fuel caps, make sure they are on with 3 'clicks' past tight
- Drain fuel into fuel cup. Check for water and debris. Drain until fuel is clean
- Check engine oil

- Check overall engine condition, nuts fasteners, mounts, wires, hoses, cables and misc. components
- Check propeller for nicks and any damage
- Check spinner for cracks, missing screws and overall condition
- Check for any debris in the cowling and the heater ram air intakes
- Check for cowling fasteners
- Check the nose tire for proper inflation
- Check the nose wheel, gear and wheel pant condition
- Check left wing leading edge for damage, dents and condition
- Check left wingtip NAV/Position/Strobe lights
- Check left wingtip for any cracks
- Check left aileron hinge pins and safety pins
- Check left aileron condition
- Check left flap and bolts
- Check left jury strut
- Check left main gear, wheel, wheel pant and brake for any damage of leaking
- Check left wheel for inflation
- Check entire left side of fuselage for damage, missing rivets, screws and overall condition
- Check empennage hinges, safety pins and bolts
- Check leading and trailing edges for overall condition
- Check right jury strut
- Check right flap and bolts

- Check right aileron condition
- Check right aileron hinge pins and safety pins
- Check right wingtip for any cracks
- Check right wingtip NAV/Position/Strobe lights
- Check right wing leading edge for damage, dents and condition
- Check right main gear, wheel, wheel pant and brake for any damage or leaking
- Check right wheel for inflation
- Check entire right side of fuselage for damage, missing rivets, screws and overall condition
- Secure baggage
- Ensure weight and balance for planned trip

8.2 ENGINE STARTING CHECKLIST

- Chocks removed
- Adjust seats
- Close doors, check that door handle is secured
- Fasten seatbelts
- Clear area around aircraft
- Start Master switch on
- NAV/Position lights on
- Check fuel pressure
- Throttle idle or slightly open
- Choke knob pull out if engine is cold
- Start engine – adjust RPM TO 2500
- Oil pressure check - Normal operating range within 10 seconds

After engine start

- Avionics Master switch on
- ATIS check

8.3 TAXIING/RUN-UP/BEFORE TAKE OFF CHECKLIST

- Lights as required
- Brakes check

_____RUN-UP_____

- Flight controls free and correct
- Pitch trim set to neutral position
- Engine run-up to 3500 RPM
- Check oil pressure, oil temperature and water temperature
- Engine RPM idle

_____ BEFORE TAKE OFF _____

- Flaps 0° - normal take off
- Aux fuel pump on
- Strobe lights on

8.4 NORMAL TAKE OFF CHECKLIST

- Line up on centerline
- Advance throttle to desired power
- Verify proper RPM
- Rotate at 50 KIAS
- Accelerate to 56 KIAS and continue climb until clear of obstacles
- Accelerate to 80 KIAS and reduce RPM to 5500 or as required

8.5 BEST ANGLE OF CLIMB SPEED – V_x

- $V_x = 56$ KIAS, flaps 0°

8.6 BEST ANGLE OF CLIMB – V_y

- $V_y = 80$ KIAS

8.7 CRUISE CHECKLIST

- Cruise RPM 4800 to 5500
- Airspeed 80 to 100 KIAS
- Aux pump off
- Lights as required

8.8 APPROACH CHECKLIST

- Aux fuel pump on
- Recommended let down RPM from cruise altitude to pattern altitude 3500 RPM
- Airspeed 80 to 105 KIAS
- Upwind and downwind pattern airspeed 80 KIAS
- Reduce airspeed to 75 KIAS abeam the end of runway and lower flaps to 15°
- Reduce airspeed to 70 KIAS on base leg
- Reduce airspeed to 65 KIAS for final approach

Note: Increase airspeed by 1/2 the gust factor up to 10 knots for wind shear

8.9 NORMAL LANDING CHECKLIST

- Upon landing assured reduce engine RPM to idle
- Reduce airspeed to 50 KIAS
- Touchdown airspeed is 50 KIAS
- Flare so that main wheels touchdown first then nose wheel
- Apply brakes as required

8.10 SHORT FIELD TAKE OFF AND LANDING CHECKLIST

_____ Take off _____

- Flaps 15°
- Line up using maximum runway available
- Apply brakes
- Advance throttle to full
- Verify engine RPM to 5800
- Release brakes
- Rotate at 40 KIAS
- Accelerate to V_x
- Maintain V_x until clear of obstacles
- Accelerate to V_y
- Complete cruise checklist

Landing

- Flaps 15° at base
- Airspeed to 60 KIAS
- Flaps to 35° at final
- Airspeed to 45 KIAS
- Maintain 45 KIAS to touchdown
- Upon touchdown, maintain elevator back pressure and apply brakes as firmly without skidding tires

8.11 BALKED LANDING CHECKLIST

- At decision of a go around apply full throttle
- Transition to V_x airspeed
- Once obstacles are cleared accelerate to V_y and retract flaps
- Reduce engine RPM to 5500

8.12 SHUTDOWN CHECKLIST

- Avionics Master switch off
- Aux Fuel pump off
- Start Master switch off
- Lights off
- Ignition switch off
- Secure aircraft

8.13 STALLS/SPIN CHECKLIST

Stalls: For stall speeds, refer to the operation limitation section of this manual. Stall characteristics for the EA-100 are normal and conventional in either the flaps up or down configurations. Slight elevator buffeting may occur just before the stall. Rudder coordination is important to ensure that the stall does not become uncoordinated and turn into a spin. It is recommended not to fly at airspeeds less than 50 KIAS at an altitude less than 1000 AGL.

Stalls:

- During a power on or power off stall, to recover, release the back pressure of the elevator. This action should be enough to break the stall. If it is not, slight down elevator should be applied.
- For power off stalls, increase throttle to resume normal airspeed
- At first indication of climb or VSI reversal, apply throttle and start the climb to the desired altitude

Spins:

Note: the EA-100 is NOT APPROVED for intentional spinning. Recovery from a spin is normal in procedure. If a spin is encountered, follow the procedure below:

- Throttle - idle
- Ailerons - neutral
- Rudder - full opposite the direction of the spin
- Elevator – neutral
- Hold these controls until rotation stops
- Rudder – neutral
- Elevator – recover to straight and level or a climbing attitude
- Throttle – apply power slowly to start a climb to desired altitude

9.0 AIRCRAFT GROUND HANDLING AND SERVICING

9.1 SERVICING FUEL, OIL AND COOLANT

Fuel: There are 2 fuel caps, 1 in each wing tank. It is necessary to use a ladder to reach the fuel cap. Ensure that fuel does not spill onto the wing. Should this occur, use a clean towel to wipe up the spillage and allow the wing to air dry completely before engine start up.

- Remove fuel cap
- Fill tanks to desired level/quantity
- Screw the fuel caps on 3 clicks minimum past first click

Oil level check:

Oil is checked by a dipstick in the remote oil reservoir tank. To check the oil, pull the propeller through in the direction of flight several times until you audibly hear a gurgle sound. This will be fairly obvious. Once that has occurred, remove the dipstick, wipe off and then check the oil. Level should be between the marks indicated on the dipstick.

Oil servicing:

See the Rotax Owners/Operators Manual

Coolant level check and servicing:

- Check the coolant overflow bottle and ensure that the level is between the minimum and maximum. If it is, no further action is required.
- If the level is low continue with the procedure below
- Ensure that the engine is cool
- Remove the coolant pressure can cap
- Check the level of the coolant. If the pressure can is full, replace the cap and add coolant to the overflow bottle by unscrewing the cap and adding coolant to the proper level. If the level is not at the top, continue below.
- Add coolant to fill the pressure can to the top, replace the cap and add coolant to the overflow bottle using the procedure outlined above.
- Start the engine and allow to fully warm up and recheck the levels

Note: Ensure that the engine is cooled before attempting to remove the pressure can cap. Serious burns can occur if the engine is warm or hot.

9.2 TOWING AND SECURING AIRCRAFT

- Do not push/pull the aircraft on the propeller hub.
- To push the aircraft from the tail, stand in front of the horizontal stabilizer and apply even pressure to the fuselage tail section to pick up the nose wheel. Turn the aircraft to the desired position.
- Gently push or pull on the wing struts to move aircraft.
- There are 2 tie downs on the aircraft, 1 on each wing.. Using ropes or chains, tie down to suitable anchors.

10.0 REQUIRED PLACARDS AND MARKINGS

10.1 AIRSPEED INDICATOR RANGE MARKINGS

- White arc – flap operating range: 30 to 70 KIAS
- Green arc – normal operating range: 50 to 105 KIAS
- Yellow arc – smooth air only range: 100 to 120 KIAS
- Red line – never exceed: 120 KIAS FAR, 132 KIAS structural

10.2 LIMITATIONS ON INSTRUMENT PANEL

- Instruments are placarded and marked with the limitations for the operation of the aircraft

10.3 PASSENGER WARNING

- It is the responsibility of the PIC to inform any passengers prior to flight that this aircraft was manufactured in accordance to FAA Light Sport Aircraft standards and that it does not conform to standard aircraft airworthiness requirements.

10.4 SPINS

- There is a 'no intentional spins' placard on the instrument panel

10.5 MISCELLANEOUS PLACARDS AND MARKINGS

- There is a placard near each fuel cap indicating fuel quantity and grade
- Throttle: placard is placed above and below throttle
- Flaps: placard above and below switch
- Music input: placard near the music input
- Fuel gauges: placard indicating 1/4, 1/2 and 3/4 on each fuel gauge
- Baggage compartment: placard located on beam above pilot/passenger heads
- Aileron control tube: placard indicating 'do not pull' located on tube

11.0 SUPPLEMENTARY INFORMATION

11.1 FAMILIARIZATION FLIGHT PROCEDURES

For familiarization of the EA-100, refer to Eagle Aviation LLC or a designated representative for flight training, characteristics and equipment procedures

11.2 PILOT OPERATING ADVISORIES

There are no Pilot Operating Advisories for the original issue of this POH