

START-UP

- 1) Pre-flight Complete
- 2) Tie downs and chocks removed
- 3) Note Hobbs time
- 4) Rear seat occupant, remove and stow hat. Check shirt pockets to ensure they are empty.
- 5) Avionics off
- 6) Master (key) on
- 7) Auxiliary fuel pumps off
- 8) Turn **ON** Lane A and Lane B switches (both engines)
- 9) Wait for engine monitor system display (EMS) to boot up
- (10) Advance throttle approximately 1 ¼" (45-50% on EMS which requires start power to view)
- (11) Apply brakes
- (12) Clear props and blast area behind
- (13) Toggle and hold start power momentary switch, left for left engine or right for right engine
- (14) Toggle engine starter momentary switch left or right to crank the desired engine
- (15) Upon engine start-up release starter and start power switches
- (16) Adjust throttle for smooth idle and check oil pressure 29-73 psi. **If min oil pressure is not achieved within 10 sec of start-up, shut down the engine by turning off both lane switches immediately.**
- (17) Check status of warning lights OK
- (18) Increase engine RPM above 2,500 for 5 seconds and check battery voltage. (Triggers Gen B shift to charging airframe main buss.)
- 19) Alternate starting left and right engines first
- 20) Repeat steps 10-18 to start the second engine
- 21) Warm up engines at 1,800 -2,200 RPM
- 22) Avionics master on
- 23) Intercom check
Note: If engine does not start immediately, check Lane A and B switches on, check main fuel pump breakers in and check for correct fuel pressure with momentary switch activated.
- 24) Do not crank more than 10 sec without giving the starter a cool down break

ENGINE RUN-UP

- ✓ Clear behind
- ✓ Point aircraft nose into wind if possible
- ✓ Apply brakes (on land)
- ✓ Auxiliary fuel pumps off
- ✓ Left engine increase throttle to 4,000 RPM
- ✓ Turn off Lane A switch and check for smooth operation with rpm increase or decrease of no more than 250 RPM
- ✓ Turn on Lane A switch
- ✓ Turn off Lane B and perform the same checks as on Lane A
- ✓ Check left engine warning lights are both out.
- ✓ Retard engine throttle to idle and check RPM 1,400 – 1,700
- ✓ Right engine increase throttle to 4,000 RPM and perform lane checks the same as on left engine
- ✓ Retard engine throttles to idle and check RPM 1,400 – 1,700.

Check operation of Aux fuel pumps with the following procedure:

- ✓ Adjust left and right engine speeds to 2,000 RPM
- ✓ Turn on left and right Aux fuel pumps and check left and right fuel pressure within limits
- ✓ Turn off left and right main fuel pumps by pulling the breakers
- ✓ Check for smooth operation and fuel pressure within limits on left and right engines
- ✓ After 5 seconds reactivate both the left and right main fuel pumps by pushing both breakers back in
- ✓ Turn off Aux fuel pumps

PRE TAKEOFF – LAND

- ✓ Seat belts fastened
- ✓ Ensure all phones and loose gear secured
- ✓ Verify both fuel tanks – 1/3 minimum
- ✓ Flaps up for normal takeoff
- ✓ Trim set
- ✓ Auxiliary fuel pumps on, left & right
- ✓ All Lane switches on (forward) for left and right engines
- ✓ No warning lights illuminated.
- ✓ Verify green lights on gear indicator
- ✓ Altimeter set
- ✓ Radio to correct frequency
- ✓ Strobes on
- ✓ Controls free & correct
- ✓ Oil temps min 120F
- ✓ **When canopy is installed:** Check all doors closed and properly latched and canopy closed and latched
- ✓ Lift-off at 43 MPH IAS
- ✓ Normal Climb 60 mph IAS

PRE TAKEOFF – WATER

- ✓ Seat belts fastened
- ✓ Ensure all phones and loose gear secured
- ✓ **Verify both fuel tanks – 1/3 minimum**
- ✓ **Flaps 25 degrees down for water take-off and landing**
- ✓ Water rudders up for takeoff (if so equipped).
- ✓ Trim set
- ✓ Auxiliary fuel pumps on, left & right
- ✓ All engine Lane switches on (forward) for left and right engines.
- ✓ No warning lights illuminated
- ✓ **Gear up for water take off / two blue lights**
- ✓ Altimeter set
- ✓ Radio to current frequency
- ✓ Strobes on
- ✓ Controls free & correct
- ✓ **When Canopy is installed:**
Check all doors closed and properly latched.
- ✓ Lift off at 43mph
- ✓ Normal climb 60 mph IAS

WATER LANDING

- ✓ Check wind and water condition (min 12" depth)
- ✓ Gear Up for water landing – two blue lights – 4 straw gear indicators all up
- ✓ Aux fuel pumps on
- ✓ Flaps 25 degrees down (ASI in white arc below 70 mph)
- ✓ Approach speed 60mph
- ✓ Touch down 40 – 50 mph IAS
- ✓ Reduce power to idle upon touch down
Note: Use full flaps for rough water / confined area landings only. In this case remember to reduce flaps to 25 degrees for takeoff. 25 Degrees of flap is verified when the outer trailing edge of the flap aligns with the wing trailing edge to aft fuselage sweep cable.

LAND LANDING

- ✓ Gear Down for land landing – check two green lights. Hold gear down control switch in the down position for 4 seconds after green lights come on. Check all four straw gear indicators down.
- ✓ Aux fuel pumps on
- ✓ Flaps up for normal land landings. 60 – 65 mph Higher speeds permissible in gusty conditions
- ✓ Use Full flaps for short field landings. 50 – 55 mph.
Note: If left or right fuel quantity indication is 1/8 or less avoid steep descents.

EMERGENCY PROCEDURES

ENGINE FAILS TO SHUT DOWN WITH LANE SWITCHES MOVED TO THE OFF POSITION

- ✓ Reduce throttle to idle
- ✓ Turn off auxiliary fuel pump and pull the circuit breaker on the main fuel pump

LANDING GEAR MALFUNCTION

- ✓ Landing gear fails in the full down position - Make a (Land) runway landing
- ✓ Landing gear fails in the fully up position - Make a water landing (Water)
- ✓ One gear fails in the up position – Raise the gear and make a water landing. (Water) Always make sure the nose wheels are up for the water landing.
- ✓ One gear fails in the down position – Lower the other three gear and make a (Land) Runway landing
Note: in each case if pilot is uncertain gear is locked in the fully up or down position - touch down at the lowest possible speed using full flaps as wind conditions allow. Do not attempt a water landing if one or more gear may be down.

PROP STRIKE IN FLIGHT

- ✓ If a prop strike occurs in flight, causing a high level of vibration, **identify** which prop has been damaged. Bring one engine to idle and the other one to full power. If the prop damage is causing vibration the powered-up engine will see an increase in the intensity and frequency of vibration. If altitude and single engine performance allow, shut down the engine that is vibrating and land as soon as possible. If not, maintain full power on the smooth engine and reduce power on the vibrating engine to the minimum level required to maintain flight. Find a safe place to land as soon as possible.

EMERGENCY IN FLIGHT INSPECTION OF DAMAGED PROPELLER

- ✓ Once identified and shut down - the damaged propeller may be visually inspected in flight to determine the severity of blade damage. When an AirCam engine is shut down in flight the prop will stop and one blade will be below the wing in view. With the lane switches off, on the stopped engine, the pilot may tap the starter on the dead engine turning the prop small amounts allowing the pilot to see each blade one blade at a time. (*Note: pilot must hold the start power switch in the direction of the stopped engine to activate the starter*) Using this technique, the pilot may assess the damage and determine if restarting the engine with the damaged propeller is an option.

ENGINE FAILURE IN FLIGHT

- ✓ Both throttles full forward
- ✓ Maintain 55 - 60mph indicated ASI
- ✓ Rudder as needed
- ✓ Both Aux fuel pumps on
- ✓ **Identify** the bad engine
- ✓ **Verify** – bad engine, point to the tach with low RPM and pull throttle to idle
- ✓ 5 degrees of bank into the good engine
- ✓ Add 5 degrees of flap if additional climb performance is needed
- ✓ Gear up for minimal drag and for water landing
- ✓ The bad engine will produce zero thrust at normal idle at 55 -60 mph IAS. Anything above normal idle will yield some thrust and help climb performance. If engine RPM drops below 2,000 in flight and does not respond to the aux electric fuel pump then shut it down to reduce drag.
- ✓ **Shut Down** – if necessary
- ✓ Land at the nearest safe location
Note: If the bad engine completely shut down on its own, attempt a restart with the Aux fuel pump on once the aircraft is in stable single engine flight.
Vmc 43 mph IAS
Vsse Minimum Single engine speed 50 mph IAS
VYse 55 mph IAS with 5 degrees of flap

PREFLIGHT

- 1) Inspect floats and rigging for damage.
- 2) Verify all float compartments are free of water. Remove water as needed.
- 3) Close and secure all float compartment covers
- 4) Inspect landing gear and tires.
- 5) Sump left and right gascolators and fuel tank drains. (Total of four points)
- 6) Check pitot and static tubes under nose and remove covers if installed.
- 7) Standing on left float, left of the forward cockpit, turn on master and note indicated left and right fuel quantity.
- 8) Check battery voltage greater than 12V. If less than 12V charge battery.
- 9) Turn off master and check all ignition Lane switches are off.
- 10) Move to left of rear seat and check ailerons and elevator for proper function with rear control stick.
- 11) If flying solo latch rear seatbelt harness.
- 12) Check baggage area for loose cargo and secure as needed.
- 13) Remove left fuel cap and verify fuel quantity matches the fuel gauge indication previously observed. Secure the fuel cap.
- 14) Inspect ELT antenna
- 15) Visually inspect left engine radiator, cooling fan, hoses and air filter.
- 16) Inspect the left wing root to wing center section gap-seal to insure it is properly secured.
- 17) Look back at tail section leading edges and upper horizontal stabilizer surfaces.
- 18) Climb down and walk around left wing, visually inspecting the wing leading edge, wing tip. Aileron, flap and wing struts.
- 19) Visually inspect left engine.
 - a) Inspect propeller blades for damage.
 - b) Inspect exhaust system for cracks and leaks and look for all 8 springs in place and safety wired.
 - c) Look for signs of fluid leaks under the engine and on the ground and float below.
- 20) Inspect the aft fuselage and tail section.
- 21) Visually inspect the Elevator trim tab on the left elevator.
- 22) Check rudder for free movement and good stops.
- 23) Inspect right engine.
 - a) Inspect propeller blades for damage.
 - b) Inspect exhaust system for cracks and leaks and look for all 8 springs in place and safety wired.
 - c) Look for signs of fluid leaks under the engine and on the ground and float below.
- 24) Walk around the right wing inspecting the flap, aileron, wing tip, wing leading edge and wing struts.
- 25) Climb up onto the right float and fuselage and make a visual check of the fuel quantity in the right fuel tank. Verify the fuel quantity matches the fuel gauge indication previously observed. Secure the fuel cap.
- 26) Visually inspect right engine radiator, cooling fan, hoses and air filter.
- 27) Inspect the right-wing root to wing center section gap seal to assure it is properly secured.
- 28) Check front and rear seat positions for correct adjustment.
- 29) Note Hobbs time before start up.

BEFORE THE FIRST FLIGHT OF THE DAY

Engines:

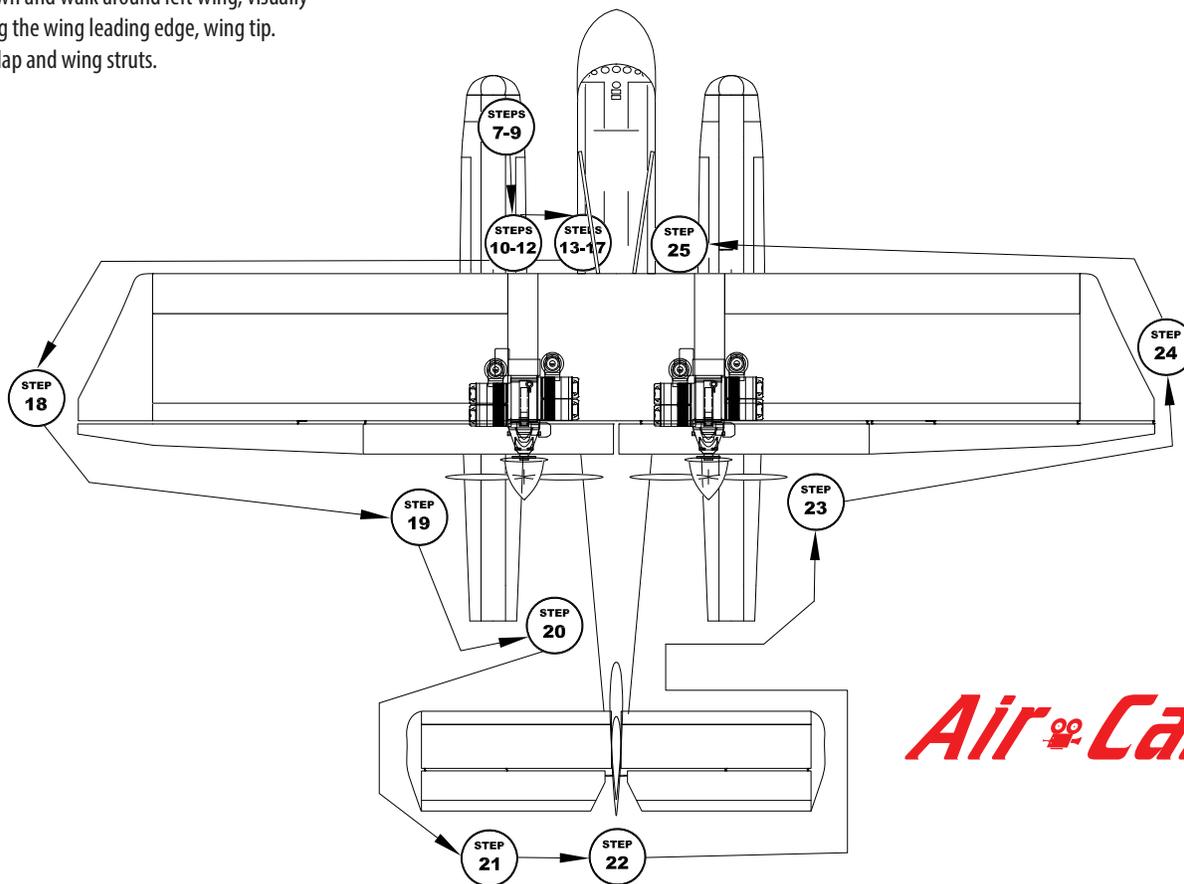
- ✓ Use a ladder to check oil and coolant levels. Oil must be in the flat section of the dip stick. If oil is low burp engine and recheck oil level before adding oil. If oil is needed add Aeroshell SPORT PLUS 4. Do not add more than ½ liter of oil per engine without carefully rechecking the level.
- ✓ If coolant is needed top with a 50/50 mix of Dexcool and distilled water.
- ✓ Make certain oil and coolant caps are properly secured.
- ✓ Look over engine and check for fluid leaks.
- ✓ Check the propeller blades for damage. Pay attention to the leading edges.
- ✓ Check the exhaust for cracks and leaks.
- ✓ Check all 8 exhaust springs to be sure none are broken and all 8 are safety wired in place.

Tail:

- ✓ Inspect elevator trim tab hinges and actuating push rods for play and condition.
- ✓ Inspect horizontal stabilizer cables for tension and condition.

Floats:

- ✓ Check the condition of the tires and if the pressure looks low check it. Mains should be 50 – 55 psi and the nose wheels should be 30 psi. Add air as required.



Air Cam