V_R – 50 kts
V_{s0} – 40 kts
V_{s1} – 45 kts
V_{FE} – 85 kts
V_X – 65 kts
V_Y – 72 kts
V_A – 91 kts
V_{NO} – 110 kts
V_{NE} – 135 kts
Best Glide – 70 kts
Max X-wind – 15 kts
Ceiling – 12,000 ft

NORMAL PROCEDURES

PREFLIGHT

Cockpit
LANE A/B – Off
Master – On
EFIS BKUP – On
Flaps – Fully Extend
Fuel – Check Quantity
Master/EFIS – Off
Controls – Check
Canopy – Clean
Fire Extinguisher – On board
A.R.O.W – On Board
Left Wing
Flaps – Hinges, Bolts, Rods Secure
Ailerons – Hinges, Bolts, Rods Secure
Wing Tip & Light – Secure
Tie Down – Remove
Pitot Tube – Clear & Secure
Leading Edge – Undamaged
Fairings – Check & Secure
Fuel Cap – Remove, Visually Check Level, Replace & Lock
Fuel – Drain & Check
Main Gear – Check Pressure, Wheel Pant secure, Chock removed, No Leaks
Cowling
Cowling – Check & Secure
Prop & Spinner – Check & Secure

Nose Gear – Check Pressure, Wheel
Pant secure, Chock removed Suspension Test
Air Intakes – Check
Radiators – Check for blockage
Oil & Coolant – Check level
Parachute Housing Cover – Check

Right Wing

Main Gear – Check Pressure, Wheel Pant secure, Chock removed, No Leaks
Fuel – Drain & Check
Fuel Cap – Remove, Visually Check Level, Replace & Lock
Fairings – Check & Secure
Leading Edge – Undamaged
Wing Tip & Light – Secure
Ailerons – Hinges, Bolts, Rods Secure
Flaps – Hinges, Bolts, Rods Secure

Fuselage/Empennage

Right Static Port – Clear
Fairing – Secure
Vertical Stabilizer – Secure
Horizontal Stabilizer – Secure
Elevator – Hinges, Bolts, Rods Secure
Rudder – Hinges, Bolts, Cables Secure
Tie Down – Removed
Left Static port – Clear

INGRESS

To get in lean forward, hold handle and support weight on spar/rib rivet lines
Step onto black wing walk area only
Do not hold on the canopy
Set seat position before getting in
Support weight on front roll bar, seat backrest, canopy sidewalls and center armrest
Step on seat towel covers with both feet, then step to floor

Note: Only 1 person may step on rear step at a time (specially with low fuel). Aircraft will fall on its tail if 2 people step on the rear step at the same time

PASSENGER BRIEFING

Light Sport Aircraft
Seat Belt Use
Motion Sickness
Emergency/Exit Procedures
Fire Extinguisher
PTT Button/Radio Silence during TX
Parachute Operation
Canopy Operation
Rudder Pedals
Lane A/B & Fuel Pumps – Do not touch
Traffic Awareness

ENGINE START

Master – On
EFIS Backup – On
Hobbs Time – Record
Flaps – Up
Trim – Set Neutral
Fuel Selector – Fullest Tank
Main Fuel Pump – On
Batt Bkup – Turn on 5 sec to Prime
LANE A Switch – On
LANE B Switch – On
Throttle Lever – Cracked Slightly
Brakes – Hold and Lock
Propeller Area - Clear of obstructions
Prop – "CLEAR PROP"
Engine – Start
Throttle Lever -- 2000 RPM
Oil Pressure – Check
Lane Lights - Check off in 5 secs
Aux Fuel Pump - On
EFIS 1, EFIS 2 -- On
Avionics Switch – On
Warm Engine – 2000-2500 RPM
Until oil temp 120 deg F
Check Alternator >13.8V – 2500 RPM
Seat Belts – On
Transponder – Set
Radio – Set
ATIS/AWOS – Copy
Altimeter – Set (EFIS & Analog)
Brakes – Test

BEFORE TAKEOFF CHECK

FACE INTO WIND

Brakes – Set & Lock
Trim – Verify Neutral
Pilot Briefing:
Positive Exchange of Controls
Emergency Plan
Controls – Box Check
Engine – 4000 RPM
LANE A Check – Drop 0/180 RPM
LANE A - ON
Wait for lamp off 5 sec
LANE B Check – Drop 0/180 RPM
LANE B - ON
Wait for lamp off 5 sec
Fuel Pumps -- Check Main and Aux
(5 Secs Off each – check FP stable)
Fuel Pumps - Both On
Engine – Idle RPM
Engine Instru. – Check (All Green)
Breakers – Check
Altimeter – Verify (EFIS & Analog)
Flaps – Takeoff Position
Seatbelts – Check
Lights – As Necessary
Transponder – Check
Canopy – Closed & Locked

Note: Avoid prolonged ground runs facing out of wind on hot days. If Coolant temp gets above 210 deg F turn into wind and run engine at 2500 RPM for cooling

Note: If aircraft starts to move with parking brake applied, immediately reduce power to idle, unlock parking brake and re-apply brake

TAKE OFF

Power – Full (max 5800 for 5 mins)
Engine Instruments – Check
Flight Instruments – Check
Start Rotation – 50 kts minimum
Liftoff – 55 kts minimum
Brakes – Stop wheel rotation
Flaps –Retract (500’ AGL)

CLIMB

Power – Max Cont. 5500 RPM
Climb Speed – Vx = 65kts, Vy = 72kts
Cruise Climb – 75 to 90 kts
Trim – Set Pitch Trim
Instrument & Heading – Check

CRUISE

Power – Max Cont. 5500 RPM
Trim – Set
Instruments – Check
Aux Fuel Pump – Off
Fuel Selector – Switch Every Hour
(Aux Pump On During Switch)

DESCENT

Power – Reduce
Pitch – Best Glide = 70 kts
Trim – Set

Note: Select high wing fuel tank if prolonged slips are required

Note: When descending from high altitude avoid prolonged idle RPM since shock cooling of the engine can occur. Maintain RPM of at least 3000 during long descents

BEFORE LANDING

Engine Instruments – Check
Seatbelts – Check
Aux Fuel Pump – On
Fuel Selector – Fullest Tank
Downwind – Pitch for 80 kts
Flaps – Extend (below Vfe)
Base, Final – Pitch for 75 kts

LANDING

Throttle – Idle
Brakes – As Needed

GO AROUND

Power – Full
Pitch for 65 kts
Flaps – Retract in Stages

CLEAR OF RUNWAY

Flaps – Up
Trim – Neutral
Lights – As Required
Transponder - Set

SHUTDOWN

Engine – Idle
Lights - Off
Avionics - Off
EFIS 1, EFIS 2 - Off
Lane B Switch – Off
Lane A Switch - Off
Fuel Pumps – Both Off
Master – Off
EFIS Bkup - Off

EGRESS

Same holding points as ingress
Step backwards and feel for step

EMERGENCY PROCEDURES (Sling 912iS)

Engine Failure During Takeoff Run

1. Throttle - idle.
2. Lane A/B - off.
3. Brakes - apply as needed.
4. Master switch - off.

With airplane under control –

5. Fuel selector valve - off.
6. Main & Aux Fuel pumps - off

Engine Failure after Takeoff

1. Speed - best glide speed of 70 KIAS.
2. Find a suitable place on the ground to land safely. The landing should be planned straight ahead with only small changes in direction not exceeding 45 degrees to either side, unless sufficient altitude exists to turn back to the runway (min 700' AGL)
3. Flaps - as needed (plan to land as slowly as possible).

Before touch down

4. Lane A/B - off.
5. Master - off.
6. Fuel selector valve - off.
7. Main & Aux Fuel pumps - off

Emergency landings

Emergency landings are generally carried out in the case of engine failure during which the engine cannot be re-started. Other reasons for an emergency landing may, however, arise.

Engine-off emergency landing

1. Speed - best glide speed of 70 KIAS.
2. Trim - trim for best glide speed.
3. Landing location - locate most suitable landing location, free of obstacles and preferably into wind.
4. Safety harness - tighten.

5. Engine restart - if time permits and if appropriate attempt to identify reason for engine failure and attempt restart (try engine BKUP BATT On)
6. Flaps - extend as needed.
7. Communications - report your location to third parties if possible.
8. Passenger - brief.

Immediately before touchdown-

9. Fuel selector - shut off.
10. Main & Aux Fuel pumps - off
11. Lane A/B - off.
12. Master switch - off.

Smoke and Fire

Engine fire on ground during engine start

1. Starter - release.
2. Fuel selector - close.
3. Main & Aux Fuel pumps - off
4. Throttle - idle.
5. Lane A/B - off.
6. Master switch - off.
7. Retrieve fire extinguisher if possible.
8. Exit the airplane.
9. Extinguish fire by fire extinguisher or call for fire service if you cannot do it.

Engine fire on ground with engine running

1. Cabin heat - close.
2. Fuel selector - close.
3. Main & Aux Fuel pumps - off
4. Throttle - idle.
5. Lane A/B - off.
6. Master switch - off.
7. Retrieve fire extinguisher if possible.
8. Exit the airplane.
9. Extinguish fire by fire extinguisher or call for fire service if you cannot do it.

Engine fire during take-off run

1. Throttle - idle.
2. Brakes - stop the aircraft.
3. Cabin heat - close.
4. Fuel selector - close.
5. Main & Aux Fuel pumps - off
6. Lane A/B - off.

8. Master switch - off.
9. Retrieve fire extinguisher if possible.
10. Exit the airplane.
11. Extinguish fire by fire extinguisher or call for fire service if you cannot do it.

Engine fire in flight

1. Cabin Heat - close.
2. Fuel selector - close.
3. Throttle - full power.
4. Lane A/B - switch off after engine has shut down.
5. Main & Aux Fuel pumps - off
6. Choose landing area - choose emergency landing area.
7. Emergency landing - perform
8. Retrieve fire extinguisher if possible.
9. Exit the airplane.
10. Extinguish fire by fire extinguisher or call for fire service if you cannot do it.

Electrical fire in flight

An electrical fire is often characterized by white smoke and an acrid smell.

1. Master switch - off (see NOTE below).
2. Cabin heat - close.
3. Use the fire extinguisher (if possible).
4. Ventilate cabin if required / applicable (open air vents on instrument panel).
5. If fire is extinguished consider executing a precautionary landing / land as soon as practical.
6. If fire does not extinguish land immediately.

Cabin fire

1. Cabin heat - close.
2. Use the fire extinguisher (if possible).
3. Ventilate cabin if required / applicable (open air vents on instrument panel).
4. If fire is extinguished consider executing a precautionary landing / land as soon as practical.
5. If fire does not extinguish land immediately.

Recovery from unintentional spin

The aircraft is unlikely to enter an unintentional spin unless extreme control are applied.

Unintentional spin recovery technique:

1. Throttle - idle.
2. Lateral control - ailerons neutral.
3. Rudder pedals - full rudder in direction opposite to spin

4. Rudder pedals - neutralize rudder immediately when rotation stops.
5. Longitudinal control - neutralize control column or push forward if necessary to lower nose, then recover from dive ensuring VNE and load factor limitations are not exceeded.

ABNORMAL PROCEDURES

Irregular Engine RPM

1. Verify Lane A/B Switches - on.
2 Verify throttle position.
3. Verify engine and fuel quantity indicators.
4. Auxiliary electric fuel pump - on

If engine continues to run irregularly

5. Land as soon as possible.

Low fuel pressure

1. Check fuel quantity indicator.
2. Switch auxiliary electric fuel pump - on

If fuel pressure remains low

3. Decrease throttle setting if viable to do so.

If fuel pressure remains low

4. Land as soon as possible.

Low Oil Pressure

1. Check oil temperature.

If oil temperature is high or increasing

2. Set throttle to a setting which gives an aircraft speed of 72 KIAS (most efficient speed).

If oil pressure remains low or temperature remains high or increasing

3. Land as soon as possible and remain vigilant for impending engine failure.

In-Flight Engine Restart

1. Main & Aux Fuel pumps - on
2. Fuel selector - Select Fullest Tank

3. Throttle - set to middle position.
4. Master switch - check on.
5. Lane A/B - check both on.
6. Starter - engage.
7. Auxiliary fuel pump - off (after positive start).

If engine should fail to restart

8. Try steps 3-6 with BKUP BATT On, if not, then:
9. Apply forced landing without engine power procedure

Precautionary landing

A precautionary landing is generally carried out in cases where the pilot may be disorientated, the aircraft has no fuel reserve or possibly in bad weather conditions.

1. Choose landing area, determine wind direction.
2. Report your intention to land and the landing location via radio.
3. Perform a low altitude pass into wind, over the right-hand side of the selected area, with flaps extended as required and thoroughly inspect the landing area.
4. Perform a circuit pattern.
5. Perform approach at increased idle with flaps fully extended.
6. Reduce power to idle when flying over the runway threshold and touch-down at the very beginning of the selected area.
7. After stopping the aircraft switch off all switches, shut off the fuel selector, lock the aircraft and seek assistance.

Landing with a flat tire / damaged wheel

1. If a main landing gear tire is flat or a wheel is damaged, perform touch-down at the lowest practical speed with the aircraft slightly banked towards the serviceable tire / wheel. Maintain directional control during the landing run and keep the flat tire / damaged wheel off the ground, just above or very lightly on the ground, until the lowest speed possible.
2. If the nose wheel is damaged / flat perform touch-down at the lowest practical speed and hold the nose wheel off the ground as long as possible, via elevator control.

Vibration

If any abnormal aircraft vibration occurs:

1. Set engine speed to a setting where the vibration is least, if viable.
2. Land on the nearest airfield or perform a precautionary landing

EFIS System Failure

If the EFIS system freezes, otherwise fails or reacts incorrectly in flight:

1. Maintain straight and level flight utilizing other instruments and ground references.
2. Switch the EFIS back-up battery and the EFIS main switch off (i.e. remove power from the EFIS).
3. Following a 3 second delay, apply power to the EFIS, maintaining straight and level flight at all times.
4. Maintain straight and level for at least another 15 seconds while the system boots up (when the system reboots, the navigation system(s) should remain active and any active routes (preceding the failure) should continue to be shown).

In case the system fails to re-boot properly:

5. Execute a precautionary landing at the first safe opportunity and have the instrument repaired.

Alternator / charge system failure

1. EFIS switch - off.
2. All non-critical electrical equipment - off.
(navigation, strobe, taxi, landing lights etc.).
3. Auxiliary fuel pump - off.
4. Autopilot - off.
5. Set EFIS brightness to minimum.
6. Restrict / avoid the use of the elevator trim control. Restrict radio transmission to minimum / only that which is absolutely necessary.
7. Land as soon as possible.

Main bus power failure

1. The EFIS should automatically switch over to the EFIS back-up battery supply , provided that the EFIS battery back-up switch is on (if not, switch on the EFIS battery back-up switch) and the back-up battery contains adequate charge.
2. Land as soon as possible.