PATHFINDER FLYING CLUB (JUN 05)

**Robin DR400/180**

**CHECKLIST**

* + 1. **INITIAL CHECKS**
    2. **EXTERNAL CHECKS**
    3. **PRE-START CHECKS**
    4. **START CHECKS**
    5. **AFTER START CHECKS**
    6. **TAXY CHECKS**
    7. **RUN-UP/POWER CHECKS**
    8. **PRE TAKE-OFF CHECKS VITAL ACTIONS**
    9. **RUNWAY CHECKS**
    10. **CHECKS DURING TAKE-OFF**
    11. **AFTER TAKE-OFF CHECKS**
    12. **AIRFIELD DEPARTURE CHECKS**
    13. **CRUISE & DESCENT/REJOIN CHECKS**
    14. **ENTERING LOW LEVEL CHECKS**
    15. **STALLING CHECKS**
    16. **PRE LANDING CHECKS**
    17. **FINALS CHECKS**
    18. **AFTER LANDING CHECKS**
    19. **SHUTDOWN CHECKS**
    20. **BASIC DATA**

**Max Gross Wt 2425 lbs (1100kg)**

**Max Fuel Wt 299 lbs (137 kg)**

Whilst this flight guide has been produced with reference to the CAA approved aircraft flight manual, it is not subject to amendment and its use does not absolve pilots from operating the aircraft iaw the flight manual.

**1. INITIAL CHECKS**

On approaching the aircraft check:

**General position Safe location to taxy**

**Ground fire extinguisher Available**

**Airframe Free from ice, contamination**

Before commencing the external checks carry out the following in the cockpit:

**Parking brake ON**

**Fire extinguisher Check, secure**

**First aid kit Secure**

**Headsets Available**

**Documents Stowed**

**Baggage area Loose articles secured**

**(max 60 kg)**

**Flaps Check operation**

**Magneto switch OFF, key out**

**Battery Switch ON**

**Pitot heater ON /check/off**

**Landing/taxy lights ON /check/off**

**Navigation lights ON /check/off**

**Strobe lights ON /check/off**

**Stall warning vane Check operation**

**+ audible warning**

**Fuel contents gauge Check contents and confirm with tech log and visual check of wing tanks**

**Battery switch OFF**

**Fuel Cock ON**

**2. EXTERNAL CHECKS**

***Start at left wing inboard edge.***

# Left Wing

**Fuel filler cap secure**

**Flap Condition, play, linkage, hinges**

**Undercarriage Tyre, brake leaks, spat secure**

**Aileron Condition, play, drains, hinges**

**Wing surfaces Condition, drains**

**Inspection Cover Security**

**Wingtip Nav light**

**Leading Edge Condition**

**Landing/taxy Light Undamaged**

**Pitot Head Remove cover/hole clear**

**Undercarriage Condition, extension, tyre condition/creep, inflation. Brakes – damage and leaks, spat secure**

**Flap Underside Condition, drains clear**

**Wing tank fuel drain Check for water contamination**

## Forward Fuselage

**Fuel drain Check for water contamination (fuel selector on)**

**Canopy emergency**

**Release - port Wire tell-tale secure**

**Canopy Runner Secure and undamaged**

**Cowling Port Side Security, 3 fasteners, 1 lug with safety pin, 1 screw, no oil leaks**

**Fresh Air Intake Clear**

**Propeller Condition, spinner secure**

**Nosewheel Condition, extension, tyre-cuts/creep/inflation, spat secure**

**Ram Air Inlet Check clear**

**Cowling Stbd Side Security, 3 fasteners, 1 lug with safety pin, 1 screw, oil leaks**

**Oil Contents-minimum 6 US quarts, panel secure (do not over tighten dipstick)**

**Canopy Runner Secure and undamaged**

**Canopy emergency**

**Release - stbd Wire tell-tale secure**

# Right Wing

**Fuel filler cap secure**

**Wing tank fuel drain Check for water contamination**

**Leading Edge Condition**

**Undercarriage Condition, extension, tyre condition/creep, inflation. Brakes – damage and leaks, spat secure**

**Flap Underside Condition**

**Wing surfaces Condition, drains**

**Inspection Cover Security**

**Wingtip Nav light**

**Aileron Condition, play, drains**

**Wing Drains**

**Undercarriage Tyre, brake leaks, spat secure**

**Flap Condition, play, linkage, hinges**

## Rear Fuselage

**Static Vent - Stbd Clean, unobstructed**

**Fin fairing Secure**

**Elevator Secure, hinge clearance**

**Strobe Light Condition**

**Rudder DO NOT MOVE. Condition, stiff nut, nav lts, hinge clearance.**

**Trim Tab Position, stiff nut, security, play, hinges**

**Static Vent - Port Clean, unobstructed**

**Baggage Door Secured [max 60 kg]**

**3. PRESTART CHECKS**

**Passenger Briefing Stated**

**Harness Secure (3 straps) Solo, secure RH harness, rear seat harnesses**

**Front Seats Adjusted and locked**

**Headset Plugged in, don**

**Master Switch ON, intercom set & check**

**Circuit Breakers All made**

**CO Monitor Normal**

**Ammeter Condition**

**Alternator OFF**

**Throttle Free movement – Set closed**

**Air Vents Closed**

**Flight Instruments Check Condition**

**Warning Lights Test**

**Radios OFF**

**Nav Equipment OFF**

**Transponder OFF**

**Cabin Heat OFF**

**Pitot Heat OFF**

**Instrument Lights OFF (except night flying)**

**External Lights OFF (except nav lights for night flying)**

**Carburettor Heat Full movement and Cold**

**Engine instruments Condition**

**Tacho Time (RPM gauge) Note reading**

**Fuel Boost pump OFF**

**Mixture Full movement and Rich (Up)**

**Fuel Cock ON, Check contents – all tanks,**

**Select left tank**

**Parking Brake Set ON**

**Trim Full free movement and set Neutral**

**Flaps Up**

**Controls Full free movement – correct sense (except rudder) – no play or excessive friction**

**Canopy Closed and locked**

**4. START CHECKS**

**Strobe Light ON**

**Carb Heat OFF**

**Fuel Pump ON - check fuel pressure rises**

**Mixture Full rich**

**Key In Mags off**

**Throttle Prime as required(slowly pump throttle 4 times if cold, none if CHT 🡩 250’F), set 1/4” open**

**Magneto Left**

**Intercom OFF**

**Propeller Clear -call “Clear Prop”**

**Intercom ON**

**Starter Press, release when engine fires (max 30 secs)**

**Starter Engaged Light Out (If not, shutdown and investigate)**

**Magnetos Both**

**Throttle Set 1200 rpm**

**Oil Pressure Rising within 30 seconds**

### Alternator ON

**5. AFTER START CHECKS**

**Fuel Pump OFF**

**Fuel cock Select right tank**

**Alternator Charging**

**Magneto Check for dead magneto**

**Suction Indicating**

**Horizon Erecting, adjust datum**

**DI Synchronise**

**Radios ON, frequencies set**

**Nav Equipment ON, frequencies set**

**Transponder Standby, 7000 set**

**Radio RT check & taxy clearance**

**Landing Light ON (night flying only)**

1. **TAXY CHECKS**

**Brakes Check immediately (dual, both sides)**

**Flight Instruments Check turn co-ordinator, slip ball, compass, DI, AI**

***Right turn: needle right, ball left, numbers increasing, AI steady***

**Left turn: needle left, ball right, numbers decreasing, AI steady**

**Rudder Check full and free movement**

**7. RUN UP/POWER CHECKS**

#### Park aircraft into wind with the nosewheel straight

**Fuel cock select main tank**

**Parking Brake ON**

**Safety Canopy locked, controls central, clear behind**

**Oil Pressure & temp Green range**

**Fuel Pressure Green range**

**Mixture Fully rich**

**Carb heat Cold**

**Throttle Set 2000 rpm - check brakes holding**

**Suction Indicating – Green range**

**Ammeter Positive charge indicating**

**Carburetor Heat Select Hot - Check decrease in rpm then reselect Cold**

**Magnetos Check Left & Right in turn. Max drop 175 rpm, max 50 rpm difference between Left & Right**

**Mixture Lean until RPM reduction then reselect full rich**

**Throttle Close. Check smooth idle 600 – 650. Reset 1200 rpm**

**8. PRE TAKE-OFF CHECKS (VITAL ACTIONS)**

**Pitot Heater As required**

**Suction Check**

**TC Flag Clear**

**Flight Instruments Check and set – AI, DI, TC**

**Engine Ts and Ps Check**

**Transponder Test (check light on) set to ALT**

**Carburetor Heat Cold**

**Mixture Full rich**

**Magnetos Both**

**Fuel Cock ON, contents sufficient (*Note: Main tank is recommended for all circuit flying*)**

**Fuel Pump ON, check pressure increase**

**Flaps Take-off - check lift off speed**

**(- 54 KIAS)**

**Elevator Trim Set at Neutral**

**Seat Belt Tight and secure**

**Controls (Ail/Elev) Full & free movement**

**Canopy Closed & locked**

**TAKE-OFF BRIEF*:***

***The following points must be briefed:***

***i. Operating pilot for the departure***

***ii. Runway length and crosswind***

***iii. Action in the event of an engine failure on the ground***

***iv. Action in the event of an eng fail after take-off***

1. ***Action of non-operating pilot/passenger***

**Radio Call As required**

**9. RUNWAY CHECKS**

**Take-off Time Note**

**Approach & Departure lanes Clear**

**Compass/DI/Rwy Heading Aligned**

**10. CHECKS DURING TAKE-OFF**

**Throttle Full pwr, min 2200 rpm**

**Engine Temps & Pressures Check ASI Increasing**

**Take-off speed (take-off flap) 54 kias**

**11. AFTER TAKE-OFF CHECKS**

**Climb speed (2425 lb)**

Flaps at take-off

**- best rate 81 kias, best angle 70 kias**

**Flaps up**

**- best rate 92 kias, best angle 76 kias**

**Engine Temps & pressures Check**

**Flaps Raise A/R**

**12. AIRFIELD DEPARTURE CHECKS**

**Fuel Pump OFF (at safe height)**

**Landing Light OFF**

**Radio/Nav Equipment Set (obtain FIS/RIS/RAS)**

**Altimeter Set (Note airfield QNH/QFE if returning)**

**13. CRUISE, PERIODIC & DESCENT (REJOIN) CHECKS**

**Fuel Fuel pumps as required**

**Fuel cock as required**

**Throttle set as required**

**Mixture set as required**

**Contents & pressure checked**

**Fuel tank selection**

**Radios/Navaids Set as required**

**Transponder - ALT**

**Ammeter charging**

**Circuit breakers in**

**Engine Ts & Ps checked**

**Carb ice check**

**CO Monitor - Normal**

**Direction Indicator Align with compass**

**Check suction**

**Altimeter Set as required**

**14. ENTERING LOW LEVEL**

**Before descending carry out FREDA checks, then:**

**Harnesses Secure**

**External Lights All ON**

**Lookout Clear entry area**

**15. STALLING CHECKS**

Height Sufficient to recover by briefed height

**Airframe Flaps up – as required**

**No mist/ice on canopy**

**Security Harnesses secure**

**Canopy locked**

**Loose articles stowed**

**Engine Fuel pump ON**

**Fuel cock – Main tank**

**Mixture rich**

**Fuel contents & pressure checked**

**Ts & Ps checked**

**Carb ice check**

**Location Clear of:**

**Active airfields**

**Built up areas**

**Controlled airspace & cloud**

**Danger /Restricted areas**

**Good horizon available**

**Lookout Clear above and below. Min 180° before first stall, then 90°**

***Stalling speeds:***

***- Flaps up 57 kias***

***- Flaps take-off 53 kias***

***- Flaps land 51 kias***

**16. PRE-LANDING CHECKS**

**Brakes OFF**

**Undercarriage Down & Locked.**

**Mixture Fully Rich**

**Fuel cock ON, contents sufficient. (Note: Main tank is recommended for all circuit flying)**

**Fuel pump ON**

**Indicators Ts & Ps checked**

**Carb Heat Hot**

**Hatches Secure**

**Harnesses Secure**

**Flap Take-off (max 92 kias)**

**17. FINALS CHECKS**

**Clearance Obtained**

**Carburetor Heat Cold**

**Flaps As required**

**Brakes Toes Clear**

**18. CROSSWIND/GUSTING LANDING**

**Flaps Take-off**

**App Speed 70 kias + ½ wind gusts**

**Correct for drift**

***Demonstrated crosswind 22 kias***

**19. GO AROUND**

**Carb heat Cold**

**Throttle Open Fully**

**Speed 67 kias**

When safe to do so:

**Flaps Take-off**

**Speed 78 kias**

**20. AFTER LANDING CHECKS**

**Landing time Note**

**Pitot Heat OFF**

**External Lights As required (Strobe light ON)**

**Nav Equipment OFF**

**Transponder OFF**

**Carb Heat Cold**

**Fuel pump OFF**

**Flaps UP**

**Trim Set neutral**

***Fuel required ?***

**21. SHUTDOWN CHECKS**

**Parking Brake On**

**Throttle Set 1200 rpm**

**Radios Off**

**Magnetos Dead Cut check**

**Throttle Set 1000 rpm**

**Mixture Idle Cut Off**

### Alternator Off

When propeller has stopped:

**Magnetos Off, key out**

**Fuel Cock Off**

**External Lights Off**

**Master Switch Off**

**Flaps Down**

**Tacho Time Note reading**

**Headsets Remove**

**Harness Release, loosen & tidy straps**

**Aircraft Vacate - remove personal belongings**

**Chocks?**

# ROBIN DR400-180 – BASIC DATA

**1. GENERAL CONSTRUCTION**

**The Robin DR400-180 Regent is a four-seat, single engine, low-wing monoplane of wooden construction.**

**2. REGISTRATION CATEGORY & PERFOMANCE GROUP**

**Aircraft classified as - Aeroplane (Landplane)**

**Aircraft classified in - Performance Group ‘E’**

**Aircraft certificated in - Public Transport Category**

**3. FLIGHT CONDITION LIMITATIONS**

**Flight in known or**

**forecast icing conditions - Not cleared**

**Flight at night - Cleared\***

**Flight in instrument**

**Meteorological Conditions - Cleared\***

**\* Flight permitted subject to carriage of appropriate equipment**

**4. DIMENSIONS**

**Length : 7.10 m**

**Wingspan : 8.72 m**

**Height : 2.23 m**

**5. ENGINE**

**Engine type : Avco Lycoming 0-360-A3, 4 cylinder, 4 stroke**

##### Engine rating : 180 HP at 2700 RPM

##### Max permitted RPM : 2700

***Avoid cont ops between 2150 & 2350 rpm***

**Cylinder head**

**temp range : 0o to 230o (Green arc)**

**Propeller type : Sensenich76EM8S5-0-64**

**Propeller diameter : 1.93 m**

**Propeller pitch : Fixed (64”)**

**Associated Engine controls / indicators:**

**RPM gauge, throttle, magneto switch, starter button, starter engaged light, oil pressure gauge, oil temperature gauge, cylinder head temperature gauge.**

**6. ENGINE LUBRICATION**

**Oil type (all temps) : SAE 15W-50 or 20W-50**

**Oil capacity (max/min) : 8 US qts (club min 6 )**

**Oil consumption**

**(cruise power) : Approx 4 hrs per US qt**

Oil circulation : Wetsump, Engine-driven pump

**Oil temperature Max 118o C**

**(normal range) : 60o – 118o C (green arc)**

**Oil pressure Min 25 psi (at idle)**

**(normal range) : 55- 95 psi (green arc)**

**Max 115 psi**

***Oil pressure must be in green arc within 30 seconds of engine start.***

**7. FUEL SYSTEM**

**Fuel type : AVGAS 100 LL**

Fuel pump : Engine driven + electric booster

**Fuel capacity (total) : 41.8 Imp Gals (190 Litres)**

**Fuel capacity (usable) : 41.58 Imp Gals (189 Litres)**

**Fuel pressure**

**– normal range : 35-550 mbar (Green arc)**

**Fuel consumption : Approx 6 Imp Gal/Hr @ 2300 RPM**

Fuel drain position : Rear L.H.S of lower cowling + 1 drain for each wing tank and 2 drains for the main tank

**Associated controls / indicators :**

**Fuel cock, mixture control, throttle, fuel contents gauge, fuel pressure gauge, carburettor heat control.**

Low fuel pressure & level

warning light : On annunciator panel

**8. IGNITION SYSTEM**

**Number / type of magnetos - Two x Bendix**

**Magneto switch settings - Off – R – L – Both**

**Impulse & spark retard device - (for engine start) - Left Magneto**

**Dead cut check performed at - 1200 RPM**

**Magneto drop check**

**performed at - 2000 RPM**

**Acceptable magneto**

**drop @ 2000 RPM - 175 RPM**

**Acceptable difference**

**@ 2000 RPM - 50 RPM**

NB: 1. Magnetos are ground to earth when switched off.

*2. Ignition key should only be removable with magnetos switched off.*

**9. ELECTRICAL SYSTEM**

Battery voltage/current : 12 Volts DC / 25 Ampere hours

Battery position : Forward side of firewall, left hand side of engine

**Alternator : 12 Volt / 60 Ampere**

**Associated controls / indicators:**

**Ammeter, circuit breakers, battery master switch, alternator switch, alternator warning light.**

**Electrically driven instruments & systems**

**Turn co-ordinator**

**Stall warning audio**

**Pitot head heater**

**Clock**

**Radios**

**Navigation aids**

**Internal and external lighting & strobe**

**Fuel booster pump and contents gauge**

**Starter motor and warning light**

**Engine instruments**

**Alternator warning light**

**Annunciator panel**

**10. VACUUM SYSTEM**

**Vacuum pump : Engine**

**driven**

**Vacuum pressure (normal range) : Green arc**

**Minimum RPM for green arc : 1500 RPM**

**Vacuum driven gyro instruments : AI & DI**

**Time to reach operating speed : 2 minutes**

**Reliable time after vacuum failure : 1 minute**

**Failure indication on AH and DI : Nil**

**11. PITOT & STATIC PRESSURE SYSTEMS**

Pitot tube location : Under leading edge port wing

**Pitot heating : Electrical**

**Instrument supplied : Airspeed indicator**

**Static source locations : Each side of rear fuselage**

**Instruments supplied : Airspeed indicator, Vertical speed indicator**

**Altimeter**

**12. UNDERCARRIAGE**

Type : Fixed, tricycle with shock absorbers, pneumatic tyres and steerable nosewheel.

**Tyre Pressures**

**- nosewheel : 26 PSI**

**- mainwheels : 29 PSI**

**Oleo extensions : Approx 3 inches**

**Nose wheel steering : Via rudder pedals**

##### Wheel brakes : Hydraulic disc brakes

##### Braking methods : Toe brakes and parking brake

**13. CRITICAL SPEEDS**

**Vne Velocity never exceed 166 Kt**

**Vno Velocity normal operations 140 Kt**

**Va Velocity manoeuvring 116 Kt**

**Vfe Velocity flaps extended 92 Kt**

**Lift-off speed (take-off flap) 50 Kt**

##### Lift-off speed (no flap) 53 Kt

**Best rate Climb speed**

**(take-off flap) 81 Kt**

**(Flap up) 92 Kt**

**Best angle Climb speed**

***(NB: Only when absolutely necessary, due to poor***

***engine cooling)***

**(take-off) flap) 70 Kt**

**(Flap up) 76 Kt**

**Max Turbulence speed (flap up)140 Kt**

**Powered approach**

**(Full flap) 68 Kt**

**Best glide speed (range**

**approx 2nm per 1000 feet) 81 Kt**

**Best endurance speed 70 Kt**

**Threshold speed**

**(flaps extended) 60 Kt**

**Threshold speed**

**(no flap) 65 Kt**

**Vso Velocity stall**

**(take off flap : 18o) 53 Kt**

**Vso Velocity stall**

**(full flap : 40o) 51 Kt**

**Vs1 Velocity stall (no flap) 57 Kt**

**Max cross-wind**

**for take-off & landing 22 Kt**

**14. CRITICAL WEIGHTS**

**Maximum all up weight**

**for take off and landing (Cat N) 1100 Kg**

**Basic empty weight**

**(inc engine oil) 623 Kg**

**Maximum luggage**

**compartment weight 60 Kg**

**Weight of full fuel**

**load (180 litres) 130 Kg**

###### EMERGENCY DRILLS

**1. ENGINE FIRE IN FLIGHT**

**2. ENGINE FIRE DURING START**

**3. ELECTRICAL FIRE**

**4. COCKPIT FIRE**

**5. FUMES IN THE COCKPIT**

**6. OIL PRESSURE FAILURE**

**7. ENGINE MECHANICAL FAILURE**

**8. ENGINE FAILURE - PROPELLER STOPPED**

1. **ENGINE FAILURE - PROPELLER TURNING**
2. **ENGINE FAILURE AFTER TAKE-OFF**

**11. ROUGH RUNNING ENGINE**

**12. ENGINE RESTART PROCEDURE**

**13. FORCED LANDING CHECKS**

**14. DITCHING**

**15. ALTERNATOR FAILURE**

**16. COMMUNICATIONS/RADIO FAILURE**

**1. ENGINE FIRE IN FLIGHT**

**Fuel selector OFF**

**Throttle Fully open until engine stops – then closed**

**Mixture ICO**

**Fuel Pump OFF**

**Alternator OFF**

**Cabin heat/ventilation OFF**

**Max Glide speed 81 Kts**

**Carry out Forced Landing Cx See 13.**

**2. ENGINE FIRE DURING START**

Keep engine turning on starter

**Fuel selector OFF**

**Fuel pump OFF**

**Throttle Fully open**

**Mixture ICO**

***Once fire is out turn off all electrical switches, vacate the aircraft and place it u/s.***

**If fire continues**

**Magnetos OFF**

**Battery OFF**

**Alternator OFF**

***Vacate the aircraft and fight fire with available equipment***

**3. ELECTRICAL FIRE**

**Master Switch OFF**

**Alternator OFF**

**Circuit Breakers Trip All**

**Cockpit Fire Drill Action if necessary**

**Land as soon as possible**

**4. COCKPIT FIRE**

**Fresh Air Vents Open**

**Radio Emergency call**

**Squawk 7700**

**Fire Extinguisher As required\***

For electrical fires

**Cabin ventilation Reduce**

**Alternator OFF**

**Battery OFF**

**Land ASAP if not extinguished.**

**\* Halon fire extinguishers are a toxic hazard**

**5. FUMES IN THE COCKPIT**

**Cockpit Hot Air OFF**

**Fresh Air Vents Open**

**Engine Instruments Check for sign of malfunction**

**If smell is electrical, carry out Electrical Fire checks**

**If smell is petrol, do not make electrical selection**

**Land as soon as possible**

**6. LOW OIL PRESSURE**

**Throttle Use minimum practicable power**

**Monitor Oil temperature**

**Assume engine failure is imminent**

**Land as soon as possible via precautionary forced landing pattern**

***If engine seizes carry out Engine Mechanical Failure (7) and Forced Landing checks (13)***

**7. ENGINE MECHANICAL FAILURE (Propeller stops suddenly perhaps with obvious signs of failure)**

**Adopt glide attitude and choose field for forced landing**

**Fuel Throttle closed**

**Mixture ICO**

**Fuel cock OFF**

Fuel pump OFF

**Ignition Magnetos OFF**

**Radio Emergency call**

**Squawk 7700**

**Electrics Master OFF**

**Alternator OFF**

**Harness Secure**

**Alternator OFF**

**DO NOT ATTEMPT RESTART**

On short final

**Flaps Full**

**Battery OFF**

**Canopy Unlock**

**8. ENGINE FAILURE (no signs of mechanical failure)**

**Select glide attitude and choose field for forced landing**

**If height sufficient (above 1500’ agl) attempt restart**

***Warning: If the engine failed with unusual mechanical noise do not attempt restart.***

**Radio Emergency call**

**Carburetor Heat Change setting**

**Fuel selector Select alternate tank which contains fuel**

**Fuel pump ON**

**Mixture Fully rich**

**Throttle ¼” open**

**Magnetos Both**

**If engine does not start from windmilling operate starter**

**If engine has not started by 1500’ agl carry out Forced Landing checks**

**9. ENGINE FAILURE-PROPELLER TURNING**

**If there is no Oil Pressure or an unusual mechanical noise carry out Engine Mechanical Failure drill, otherwise attempt restart procedure**

**10. ENGINE FAILURE AFTER TAKE-OFF**

Select glide attitude 78 kts

Radio Emergency call

Select landing area within 30° of hdg

Flaps As rqd

#### If time permits

**Mixture ICO**

**Fuel selector OFF**

**Fuel Pump OFF**

**Magnetos OFF**

**Battery OFF**

**Canopy Unlock**

**11. ROUGH RUNNING ENGINE**

**Change carburetor heat setting**

**Fuel pump ON**

**- Fuel Pressure Indicating**

**Fuel contents Sufficient**

**- Fuel selector Change tanks**

**Mixture Fully rich**

**Ignition Select best of L-R-BOTH**

**Electrics Master ON**

**Alternator OFF**

***If engine fails to start, carry out Engine Mechanical Failure and Forced Landing checks.***

**12. ENGINE RESTART PROCEDURE**

**Fuel Fuel pump ON**

**Fuel cock ON**

**Throttle 1/4 open**

**Mixture full rich**

**Pressure checked**

**Contents checked**

**Ignition Both**

**Electrics Alternator OFF**

**Master ON**

**Either operate starter or carry out Air Start. Once the engine is running:**

**Throttle Advance slowly-allow engine to warm**

**Alternator ON**

**13. FORCED LANDING CHECKS**

**Glide at: (a) 65 kias - clean (still air glide range about 2nm/1000’)**

**(b) 60 kias - flap take-off/land**

**Select suitable landing area & plan engine out approach**

***If appropriate and time permitting, carry out:***

**(1) Engine Restart Drill**

**(2) Engine Mechanical Failure Drill**

When committed to Forced Landing

**Harness Secure**

**Passengers Brief**

**Fuel pump OFF**

**Mixture ICO**

**Throttle Close**

**Magnetos OFF**

**Fuel selector OFF**

**Alternator OFF**

On short final

**Flaps Full**

**Battery OFF**

**Canopy Unlock**

**14. DITCHING**

**Warning: Ditching is best carried out whilst engine power is still available to control the rate of descent.**

**Flaps LAND**

**Speed 55 kias**

**Rate of descent 300 fpm**

**Do not round out - continue descent into water**

***In strong wind, land into wind; otherwise land parallel to the swell***

**15. ALTERNATOR FAILURE**

**Electrical Equipment All off**

**Alternator Off**

**Excitation CB Set**

**Alternator CB Set**

**Alternator On**

**If alternator output restored, re-establish only essential electrical loads, land as soon as practicable**

**If alternator output not restored, use minimum electrical services and attain VMC. Battery duration approx 30 minutes.**

**16. COMMUNICATIONS/RADIO FAILURE**

**Radio/Intercom**

**Switches Check**

**Circuit Breakers Check**

**Radio Change frequency**

**Headset Check connections**

**Change headsets**

**Radio Switch Off/On**

**Transponder Squawk 7600**

