BAVirtual Flight Training

BARON BE58

NON-NORMAL CHECKLIST

Engine Failure / Fire In Flight

Maintain directional control

Mixtures (both)..... Full RICH
Pitch Levers (both).....Full FINE
Throttles (both) .....Full OPEN
Flaps .....UP
Landing Gear.....UP

Identify failed engine

Throttle (inop engine)..... CLOSE
Propeller (inop engine) ..... FEATHER
Mixture (inop engine).....Idle Cut-off

When safe to do so:

Fuel Valve (inop engine) ..... OFF
Fuel Boost Pump (inop engine) ..... OFF
Magnetos (inop engine)..... OFF
Alternator (inop engine) ..... OFF

Check for Fire

IF fire:

Cowl Flap (inop engine) ..... OPEN
Airspeed .....Increase to blow out fire
ATC .....Inform

Land at nearest suitable airfield

IF no fire:

Cowl Flap (inop engine) .....CLOSE
Cowl Flap (live engine).....As Rqrd
Prop Sync .....OFF
Electrical load ..... Reduce
Crossfeed .....Consider
ATC..... Inform

Land at nearest suitable airfield

Rejected Take-Off

Throttles (both) ..... CLOSE
Brakes..... MAXIMUM

When stopped:

Park Brake ..... ON

If possible and safe, vacate runway.
If evacuation required, do the EVACUATION checklist.

Engine Fire On Ground

Mixtures (both).....Idle Cut-off
Starter (affected engine)..... Crank
Fuel Valves..... OFF
Magnetos ..... OFF
Alternators ..... OFF
Battery..... OFF
Evacuation ..... CONSIDER

If evacuation required, do the EVACUATION checklist.

Flap Failure

Flap failure is usually noticed when an unintended roll of the aircraft occurs immediately following a flap selection.

A: Flap failure during retraction:
After regaining control of the aircraft:
Flaps to previous selection ..... Select

Do not attempt to move flaps again as further damage could be caused.

B: Flap failure during extension:
After regaining control of the aircraft:
Flaps to previous selection ..... Select

Do not attempt to move flaps again as further damage could be caused.

Note: *Partial flap or flapless landings may be safely made by increasing final approach speed to 105 knots.*

Smoke, Fire or Fumes (In Cabin)

Alternators .....OFF
Battery .....OFF
Heading ..... Use 'wet' compass

Note: Turn co-ordinator, engine instruments except MAP, and stall warning now INOP.

All Electrical Switches..... OFF
Cabin Air and Cabin Heat ..... FULL FWD
Pilot & Copilot Air .....PULL OPEN
Overhead Fresh Air Outlets.....OPEN

IF smoke/fumes/fire ceases, restore electrical equipment slowly, one switch at a time, to isolate defective equipment.

Battery .....ON
Alternators .....ON
Essential Electrics ..... ON, one at a time

Land at nearest suitable airfield

Pilot's Storm Window ..... OPEN if req'd

Evacuation

Park Brake .....ON
Throttles (both).....CLOSE
Fuel Boost Pumps (both)..... OFF
Fuel Valves (both) ..... OFF
Mixtures (both) .....Idle Cut-off
Magnetos (both) ..... OFF
Alternators (both) ..... OFF
Battery ..... OFF
Evacuation.....INITIATE

One Engine Inoperative Missed Approach

Power..... MAX CONTROLLABLE
Use 5° bank towards live engine
Flaps..... UP one stage
Landing Gear.....UP when positive rate
Flaps..... UP

Air Restart

Note: Restart should only be attempted after confirming no engine damage exists.

Fuel Valve .....ON
Throttle..... OPEN ¼
Mixture .....FULL RICH
Fuel Boost Pump..... LOW
Magnetos.....BOTH
Pitch Lever ..... Forward of feathering detent

IF propeller does not unfeather or engine does not turn:

Magneto Start Swich .....START

AFTER engine starts:
Throttle, Propeller and Mixture.....ADJUST
Operate engine at approx 15" MAP and 1500rpm until warm

Fuel Boost Pump.....OFF
Alternator .....ON
Oil Pressure..... CHECK
Temperatures & Pressures ..... CHECK
Power.....As Reqd
Trim.....As Reqd

Alternator Failure

Load-meter (failed side)..... Check
If positive load, then annunciator u/s

Alternator (failed side) ..... Continue Use

IF zero load:
Alternator (failed side) .....Off, then On

IF annunciator light extinguishes and positive load indicated:
Alternator (failed side) .... Continue Use

IF annunciator light still illuminated:
Alternator (failed side) .....Off
Electrical load..... Reduce to Single Alternator Capacity

If other alternator annunciator light ON, repeat for second alternator.

IF both alternators remain inop. then:
Nonessential Electricals .....Off

Avoid icing conditions

Land at nearest suitable airfield

Complete Electrical Failure

Do the **ALTERNATOR FAILURE** checklist.

Magneto Failure

If an engine partially loses power, first check the magnetos on the affected engine:

Magneto switch .....L then BOTH

Power loss suggests Left magneto u/s, but next:

Magneto switch ..... R then BOTH

If No power loss - confirms Left magneto u/s

The converse will confirm right magneto u/s

If both magnetos check operational then possible spark plug(s) failure. This is usually accompanied by rough running.

Land at nearest suitable airfield

Landing Gear Manual Extension

Airspeed..... MAX 152 KT

Note: *Manual extension of the gear can be facilitated by first reducing the airspeed as much as practical.*

Landing Gear Motor CB ..... PULL
Landing Gear Lever ..... DOWN
Handcrank Handle Cover ..... REMOVE
Handcrank..... ENGAGE AND TURN ANTICLOCKWISE AS FAR AS POSSIBLE
Approximately 50 turns required

IF the electrical system is operative:
LDG GR WARN CB ..... Check IN
LDG GR POS LTS CB ..... Check IN
Landing Gear Indicator Lights ..... 3 GREEN

Check that the gear warning horn does not sound when either throttle retarded to idle

Handcrank..... DISENGAGE, then STOW

Do not move the Landing Gear Lever or reset the LANDING GEAR MOTOR Circuit Breaker

The landing gear should be considered UNLOCKED until maintenance action completed.

Gear Up Landing

If unable to extend any of the main gear, then a gear-up landing is necessary.
Choose firm grass runway if available.

Cowl Flaps..... CLOSED
Wing Flaps ..... As Desired
Throttles ..... CLOSED
Fuel Selectors..... OFF
Mixture Controls..... Idle Cut-off
Magnetos..... OFF
Alternators..... OFF
Battery ..... OFF
Wings ..... Level at touchdown
Evacuation ..... As soon as a/c stops

Wheel Brake Failure

Wheel brake failure will not become apparent until brakes are applied on landing.

Keep straight using rudder.

If necessary, release operative brake and steer to opposite side of runway before applying operative brake again.

Repeat as, and if, necessary.

If possible vacate runway and come to a stop.

Inform ATC & request tow to parking area

Fuel Gauge Failure

One fuel gauge stuck:
Fuel flows both sides..... Check normal
Fuel Valves ..... Check set to tank

Use operable fuel gauge as estimate for other gauge, but allow error factor of ¼ tank.

With estimated fuel left, calculate remaining endurance.

Fuel Crossfeed

Fuel Boost Pump (Operating Engine)..... ON
Fuel Valve (Inop Engine) ..... OFF
Fuel Valve (Operating Engine)..... CROSSFEED
Fuel Boost Pump (Operating Engine)..... As Req'd

Fuel Leak

If a fuel leak is suspected and/or confirmed, land at nearest suitable airfield

If flight to nearest airfield requires more than fuel contained in serviceable fuel tank, then carefully use fuel from leaking tank first, using cross-feed as follows:

If Left fuel tank leaking (or use right tank):
Right fuel boost pump ..... On
Left fuel selector ..... Off
Right fuel selector ..... Crossfeed
Right fuel boost pump ..... As req'd

If Right fuel tank leaking (or use left tank): Left fuel boost pump..... On
Right fuel selector ..... Off
Left fuel selector ..... Crossfeed
Left fuel boost pump..... As req'd

Use as much of the fuel from the leaking fuel tank prior to switching back to the serviceable fuel tank for landing. Reverse the checks outlined above.