



Tecnam P2010 MKii

**NORMAL
&
EMERGENCY**

CHECKLIST

PRE-FLIGHT INSPECTION

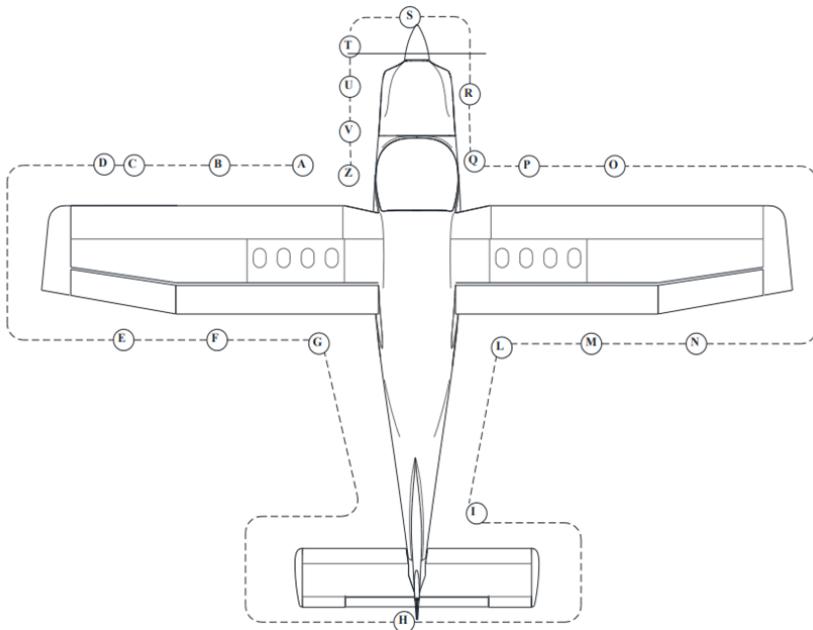
A) CABIN INSPECTION

- | | |
|---------------------------------|----------------------------------|
| 1. Papers..... | On Board |
| 2. Weight & balance..... | Calculate, check within limits |
| 3. Circuit breakers..... | All IN |
| 4. Seatbelts..... | Connected to hard points |
| 5. Ignition key..... | OFF, Removed |
| 6. Master Switch..... | On |
| 7. Volt meter..... | Check within limits |
| 8. Lights..... | All ON, Check for operation |
| 9. Engine instruments..... | Check |
| 10. Fuel quantity..... | Check |
| 11. External lights..... | Check for proper operation |
| 12. Acoustic stall warning..... | Check for operation |
| 13. Master switch..... | Off |
| 14. Foreign objects..... | Check and Remove |
| 15. Baggage..... | Stowed and Secured |
| 16. Windows..... | Check for damage and cleanliness |

NOTE

In absence of RH seat occupant: fasten seat belts around the seat so as to prevent any interference with the aeroplane flight control operation and with rapid egress in an emergency.

B) EXTERIOR CHECK, VISUAL INSPECTION



WARNING

Visual inspection is defined as follows: check for defects, cracks, detachments, excessive play, unsafe or improper installation as well as for general condition. For control surfaces, visual inspection also involves additional check for freedom of movement and security. Red rubber lines on bolts and nuts shall be intact.

WARNING

Fuel level indicated by the fuel quantity indicators must be verified by visual check of actual fuel quantity embarked in the tanks:
graduated dipstick must be used.

WARNING

If ignitions key is in L/R/BOTH position, a propeller movement can cause the engine starting with consequent hazard for people nearby.

WALKAROUND

NOTE

Fuel drainage operation must be carried out with the aircraft parked on a level surface. Set Cockpit Fuel Selector Valve to OFF prior to drain fuel.

- A. Left fuel filler cap..... Check level & Drain
- B. Pitot tube..... Check, remove cover
- C. Left leading edge..... Visual inspection
- D. Left strobe light..... Visual inspection
- E. Left aileron, hinges..... Visual inspection
Copper bonding strips..... Check proper connection
Vent line..... Check for obstruction
- F. Left flap and hinges..... Visual inspection
Copper bonding strips..... Check proper connection
- G. Left main landing gear..... Check tire pressure
Tire slip marking..... Check
Tire, wheel, brake..... Visual inspection
Fuselage..... Visual inspection
- H. Stabilator..... Visual inspection, free of play
Rear strobe light..... Visual inspection
- I. Vertical tail and rudder..... Visual inspection, free of play
- L. Right main landing gear..... Check tire pressure
Tire slip marking..... Check
Tire, wheel, brake..... Visual inspection
Fuselage..... Visual inspection
- M. Right flap and hinges..... Visual inspection
Copper bonding strips..... Check proper connection
- N. Right aileron, hinges..... Visual inspection
Copper bonding strips..... Check proper connection
Vent line..... Check for obstruction
- O. Right strobe light..... Visual inspection
- P. Stall indicator switch..... Check free of play, movement
- Q. Right fuel filler cap..... Check level & drain

Continue on next page

- R. Nose wheel strut and tire..... Visual inspection, check tire pressure
- Tire, tire slip marking..... Visual inspection, Check
- RH static port..... Free of obstructions
- S. Propeller and spinner..... Visual inspection, free of play
- T. Check engine cowling, engine inspection.....

 - a. Check inlets/outlets open
 - b. Check radiator
 - c. Check for Foreign objects
 - e. Check exhaust condition
 - d. Check Brake fluid tank, V-belt, exhaust, engine mount
 - e. At cold engine, check engine oil level and replenish as required.
Prior to long flights oil should be added so that the oil level reaches "max" mark.
 - f. Drain gascolator
 - g. Check drainage hoses free of obstruction
 - h. Inspect for leakages and if all parts are fixed and locked

- U. Engine cowling doors..... Close, check alignment and locked
- V. Landing/taxi light..... Visual inspection
- LH Static port..... Visual inspection
- Right tank vent..... Check for obstructions
- Z. Tow bar and chocks..... Removed

NOTE

Avoid blowing inside Pitot tube and inside airspeed indicator system's
NOTE static ports as this may damage instruments.

BEFORE ENGINE START -UP

Seats and belts.....	Adjusted and <u>Locked</u>
Backrest.....	Adjusted and <u>Locked</u>
Flight controls.....	Check for free movement, and correct control surface deflections
Parking brake.....	Engage
Throttle friction.....	Adjust
Throttle.....	Idle
Propeller lever.....	MAX RPM
Mixture.....	Lean
Circuit breakers.....	Check all in
Master switch.....	ON

Wait PDF ON and check:

- ALT out caution ON
- Low Fuel Pressure warning
- Low Oil Pressure warning

ONLY BEFORE THE FIRST FLIGHT OF THE DAY:

Standby instrument.....	Check no red crosses displayed
a.	Press and hold the control knob (approx. 2 sec)
b.	Rotate the knob selecting "INFO>" page then press it
c.	Select "BATTERY INFO" page then press the knob
d.	Check "CHARGE (%)" to be more than 80%, then exit menu

Avionics master switch.....	ON
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Wait MDF ON and check:

- Voltage on main and essential Bus
- Instruments

Fuel quantity.....	Check
Flaps.....	Cycle fully, then T/O
Pitch trim.....	Cycle fully, then neutral
Rudder trim.....	Cycle fully, then neutral

Continue on next page

WARNING

Pitch trim position other than in neutral position would affect take off performance and take off rotation execution at the correct VR.

Strobe/Nav lights..... ON

Doors..... Closed and locked

NOTE

In absence of RH seat occupant: fasten seat belts around the seat so as to prevent any interference with the aeroplane flight control operation and with rapid egress in an emergency.

ENGINE START-UP COLD ENGINE

Throttle.....	1 cm above idle
Fuel selector valve.....	LESS fullest tank
Electric fuel pump.....	ON
Mixture.....	Full OPEN until <u>positive fuel Flow (3 – 5")</u> , then CUT-OFF
Propeller area.....	Check CLEAR

WARNING

Check to insure no person or object is present in the area close to the propeller. Forward lower sector visibility is not possible from inside the cockpit.

CAUTION

Do not overheat the starter motor. Do not operate it for more than 10 seconds. After operating the starter motor, let it cool off for 20 seconds. After 6 attempts to start the engine, let the starter cool off for half an hour.

Mixture.....	Check cut-off
Ignition switch.....	Both, then Start
<u>When engine start turning and first indication of starting condition exist:</u>	
Mixture.....	Full Rich
Throttle.....	1000 - 1200 RPM
Oil pressure.....	Check rises within 10 sec.
Oil pressure Low indicator.....	Extinguished
Electric fuel pump.....	OFF
Fuel pressure.....	Within limits
Generator switch.....	ON
Voltmeter.....	Increase, check green arc
ALT fail caution.....	Extinguished
G1000.....	NO warnings/cautions
Engine instruments.....	Check within limits

NOTE

Avoid idling operations on the ground for optimum engine operation, maintain 1000 - 1200 RPM, do not exceed 2200 RPM on the ground.

ENGINE START-UP WARM ENGINE

Throttle.....	Idle
Fuel selector valve.....	LESS fullest tank
Electric fuel pump.....	OFF
Propeller area.....	Check CLEAR

WARNING

Check to insure no person or object is present in the area close to the propeller. Forward lower sector visibility is not possible from inside the cockpit.

CAUTION

Do not overheat the starter motor. Do not operate it for more than 10 seconds. After operating the starter motor, let it cool off for 20 seconds. After 6 attempts to start the engine, let the starter cool off for half an hour.

Mixture.....	Check cut-off
Ignition switch.....	Both, then Start

When engine start turning and first indication of starting condition exist:

Mixture.....	Full Rich
Throttle.....	1000 - 1200 RPM
Oil pressure.....	Check rises within 10 sec.
Oil pressure Low indicator.....	Extinguished
Electric fuel pump.....	Check OFF
Fuel pressure.....	Within limits
Generator switch.....	ON
Voltmeter.....	Increase, check green arc
ALT fail caution.....	Extinguished
G1000.....	NO warnings/cautions
Engine instruments.....	Check within limits

NOTE

Avoid idling operations on the ground for optimum engine operation, maintain 1000 - 1200 RPM, do not exceed 2200 RPM on the ground.

BEFORE TAXIING

Flight instruments & avionics.....	Set and TEST
Altimeter.....	Set
Pitot heat.....	ON, test ammeter indication, OFF (only IFR/IMC)
Taxi light.....	ON

CAUTION

When taxiing at close range to other aircraft, or during night flight in clouds, fog or haze, the strobe lights should be switched OFF. The NAV lights must always be switched ON during night procedures.

TAXIING

Parking brake.....	Release
Brakes.....	Check
Flight instruments.....	Check altimeter

NOTE

Avoid prolonged idling during taxi.

NOTE

Vapor lock can be avoided if the engine is run at speeds of 1800 RPM or more.

BEFORE TAKE-OFF

Brakes.....	Press both pedals
Parking brake.....	Set
Engine instruments.....	Check within limits
ALT OUT caution.....	Check OFF
Electrical fuel pump.....	ON
Fuel selector valve.....	Fullest tank
Fuel pressure.....	Check
Mixture.....	Full rich

NOTE

For 5000ft density altitude and above, or high ambient temperatures, a FULL RICH mixture may cause rough running of the engine or a loss of performance.

The mixture may be adjusted to obtain smooth engine operations.

Throttle.....	Set 1500 RPM
Alternate air.....	PULL
	Check: -Drop 50-100 RPM
Alternate air.....	PUSH
Mixture.....	Reduce
	Check: -EGT increase -Fuel flow decrease
Mixture.....	Full rich
Throttle.....	Set 2100 RPM
Propeller control lever.....	Pull back 3 times until drop of MAX. 500 RPM is reached, then high RPM.
Magnetics.....	L-Both, R-both
	Check: -max. drop: 175 RPM -Max. difference: 50 RPM
Throttle.....	IDLE, check slow running
Throttle.....	1000-1200 RPM
Flaps.....	Check T/O
Pitch/rudder trim.....	Check neutral
Flight controls.....	Check free movement
Seat belts.....	Fastened and Tightened
Doors.....	Closed and locked
Parking brake.....	Release

RUNWAY ITEMS

Runway direction.....	Check
Transponder.....	ALT
Landing light.....	ON

TAKE-OFF

Pitot heat.....	ON (if required)
Fuel Pump.....	Check ON
Brakes.....	Apply
Throttle.....	Wide open
Check:	2680 RPM +- 20 RPM

WARNING

Proper engine performance at full throttle shall be checked early in the ground roll
in order to abandon take-off if necessary.

Engine instruments.....	Check within limits
Brakes.....	Release
Rotate speed.....	Vr= 58 KIAS
Landing light.....	OFF

CLIMB

Flaps.....	UP (above 73 KIAS)
Climb speed.....	Vy= 86 KIAS
Electrical fuel pump.....	OFF
Fuel pressure.....	Check within limits
Throttle.....	Full
Mixture.....	Rich (Above 5000ft keep EGT Constant)
Engine instruments.....	Check green arc

NOTE

If the fuel pressure warning light illuminates, or the fuel pressure indication is below green arc, the electrical fuel pump must be switched ON

CRUISE

Throttle.....	Set as required
Propeller lever.....	1800 – 2400 RPM
Fuel Balance.....	Check every 30 Min.

NOTE

To optimize engine life, monitor the cylinder head temperature (CHT) as advised in the last issues of engine manufacturer's publication.

NOTE

Monitor and manually compensate asymmetrical fuel consumption by switching fuel selector valve. Switch ON the electric fuel pump prior to swap the fuel feeding from one tank to another.

DECENT

Mixture.....	<u>Slowly</u> full rich
Propeller lever.....	Set as required
Throttle.....	Reduce as required
Engine instruments.....	Monitor

NOTE

shock cooling reduces engine life

When reducing power, the change in cylinder head temperature should not exceed 10 °C (50°F) per minute. In order to ensure best practice and avoid potential illumination of ALT FAIL (due to low propeller speed), the following best practice should be observed:

- Reducing power to maintain a minimum descent speed of 82 KIAS (best glide) and / or a blade angle to maintain 850 RPM;
- Opening the ALTER AIR command to full open (to avoid ice accretion).

MIXTURE ADJUSTMENT RECOMMENDATION

CAUTION

- The maximum permissible cylinder head temperature must never be exceeded.
- The mixture control lever should always be moved slowly
- Before selecting a higher power setting the mixture control lever should, on each occasion, be moved slowly to fully RICH before throttle adjustment.
- Care should always be taken that the cylinders do not cool down too quickly.
- The cooling rate should not exceed 10 °C (50°F) per minute.
-

NOTE

If not otherwise specified in the last issues of engine manufacturer's publications, CHT should be kept below 244°C (435 °F) (high performance cruise) and below 205°C (400 °F) (economy cruise) for maximum service life.

Best Cruise Economy Mixture

The best economy mixture setting may only be used up to a power setting of 75 %. proceed as follows:

- Slowly pull the mixture control lever back towards LEAN until the engine starts to run roughly.
- Then push the mixture control lever forward just far enough to restore smooth running. At the same time the exhaust gas temperature (EGT) should reach a maximum.

Best Cruise Power Mixture

The mixture can be set for maximum performance at all power settings:

- The mixture should first be set as for best economy.
- The mixture should then be enriched until the exhaust gas temperature is approximately 37.7°C (100°F) lower.

This mixture setting produces the maximum performance for a given manifold pressure and is mainly used for high power settings (approximately 75 %).

APPROACH

Electrical fuel pump.....	ON
Fuel selector valve.....	Fullest tank
Landing light.....	ON
Throttle.....	Set as required
Flaps.....	T/O (below VFE)
Airspeed.....	85 KIAS

FINAL

Mixture.....	Full rich
Propeller lever.....	High RPM
Flaps.....	LAND
Final approach speed.....	75 KIAS
Optimal touchdown speed.....	60 KIAS

CAUTION

In conditions such as (e.g.) strong wind, danger of wind shear or turbulence a higher approach speed shall be selected.

BALKED LANDING/MISSED APPROACH/GO AROUND

Throttle.....	Full
Airspeed.....	Above 73 KIAS
Flaps.....	T/O
Landing light.....	OFF
Climb speed.....	86 KIAS

AFTER LANDING

Throttle.....	Idle
Brakes.....	Apply
Pitot heat.....	OFF (if ON)
Flaps.....	UP
Electrical fuel pump.....	OFF
Transponder.....	STBY
Landing Light.....	OFF
Taxi Light.....	ON

ENGINE SHUT DOWN

Parking brake.....	Set
Throttle.....	1200 RPM

Keep engine running at 1200 propeller RPM for one minute in order to reduce latent heat.

Throttle.....	Idle
Magneton.....	Check OFF-Both (First flight)
Mixture.....	CUT-OFF
Ignition key.....	OFF/Key Extracted
Strobe/NAV lights.....	OFF
Avionics master.....	OFF
Master/generator.....	OFF
Hobbs Time.....	NOTE

WARNING

For safety, verify propeller is fully stopped before any other action.

CAUTION

Instruct passenger to fully open RH door and depart, avoiding contact with wheels and sharp wing control surfaces edges.

POSTFLIGHT

Strobe/NAV lights.....	OFF
Avionics master.....	OFF
Master/generator.....	OFF
Hobbs Time.....	NOTE
Flight controls.....	Lock by means of seat belts
Wheel chocks & wing mooring lines.....	Set
Parking brake.....	Release
Doors.....	Close and lock
Protection plugs.....	Set over: -Pitot tube -Stall warning -Static ports

FAILURE DURING TAKE-OFF RUN

If engine fails before rotation: ABORT TAKE OFF

Throttle..... Idle (fully out and hold)
Mixture..... Cut-off
Brake..... Apply as required

With aircraft stopped:

Ignition key..... OFF
Fuel selector valve..... OFF
Electrical fuel pump..... OFF
Generator & master switch..... OFF
Parking brake..... Set
Aircraft evacuation..... Perform if necessary

ENGINE FAILURE IMMEDIATELY AFTER TAKE-OFF

If engine fails immediately after becoming airborne:

Abort on the runway if possible

In case low altitude precludes a runway stop and / or engine restarts

Establish a glide attitude (84 KIAS)

Find a suitable place on the ground to land safely

CAUTION

The landing should be planned straight ahead with only small changes in directions not exceeding 45° to the left and 45° to the right, any turn would reduce the glide performance.

Throttle..... Idle (fully out and hold)

Mixture..... Cut-off

Brake..... Apply as required

With aircraft stopped:

Fuel selector valve..... OFF

Electrical fuel pump..... OFF

Ignition key..... OFF

Generator & master switch..... OFF

Parking brake..... Set

Aircraft evacuation..... Perform if necessary

PROPELLER OVERSPEED

In case of propeller over speeding in flight, apply following procedure:

Throttle.....	Reduce power
Propeller lever.....	Decrease RPM
Mixture.....	As required
RPM indicator.....	Check

If it is not possible to decrease propeller RPM

Land as soon as possible..... Forced landing para. 36

CAUTION

Maximum propeller rpm exceedance may cause engine components damage.

CAUTION

Monitor engine RPM; overspeed shall be prevented by retarding propeller lever

IRREGULAR RPM

Oil pressure.....	Check
Fuel pressure.....	Check

If oil and fuel pressure stay within limits and a governer failure is suspected.

Land as soon as practical, monitor RPM and propeller lever position

CHT LIMIT EXCEEDANCE

If CHT exceeds maximum limit 260°C (500°F):

- Throttle Lever..... REDUCE power as practical
Mixture Lever..... Rich as required
CHT..... Verify decreasing

If CHT stabilizes in the green arc:

Continue flight

If CHT continue to rise and engine shows roughness:

Land as soon as possible..... Forced landing para.36

OIL TEMPERATURE LIMIT EXCEEDANCE

If oil temperature exceeds maximum limit 118 °C (245°F):

NOTE

Maximum oil temperature limit exceedance can be the final effect of different causes: excessive friction between moving engine components, oil leakage from the circuit (with related pressure reduction) etc.

Throttle Lever..... REDUCE engine power
Mixture lever..... Enrich as required
Oil TEMP..... Check

if oil temperature does not decrease:

Airspeed..... INCREASE
Oil TEMP..... Check

If oil temperature does not come back within limits:

Land as soon as practical with engine set to the minimum necessary power

If engine roughness, vibrations, erratic behavior or high CHT is detected:

Land as soon as possible..... Forced landing para.36

OIL PRESSURE LIMITS EXCEEDANCE

LOW OIL PRESSURE

If oil pressure is under the lower limit (25 psi)

Throttle Lever.....	REDUCE to minimum practical
Mixture Lever.....	As required
OIL TEMP.....	Check within limits
OIL PRESS.....	Check

If oil pressure does not increase and temperature remains within limits

Monitor oil and cylinder head temperatures

Land as soon as practicable

If oil pressure does not increase and temperature exceeds limits

Reduce engine power to minimum required

Land as soon as possible..... Forced landing para.36

Be prepared for engine failure and emergency landing.

If oil pressure tends to zero (combined with vibration, loss of oil, unusual metallic smoke and noise)

Land as soon as possible..... Forced landing para.36

HIGH OIL PRESSURE

If oil pressure exceeds upper limit (115 psi)

Throttle Leve	REDUCE engine power by 10%
Mixture Lever.....	As required
OIL PRESS.....	Check

If oil pressure does not decrease

Land as soon as possible..... Forced landing para.36

NOTE

An excessive oil pressure value can be counteracted by decreasing propeller rpm.

LOW FUEL PRESSURE

If fuel pressure decreases below the lower limit (14 psi)

- | | |
|--------------------------|-------------------------------------------|
| Electric fuel pump..... | ON |
| Fuel selector valve..... | Select opposite fuel tank if
NOT empty |
| Fuel quantity..... | CHECK |

If fuel pressure doesn't build up:

- | | |
|-------------------------------|------------------------|
| Land as soon as possible..... | Forced landing para.36 |
|-------------------------------|------------------------|

HIGH FUEL PRESSURE

If fuel pressure increases above the upper limit (35 psi)

- | | |
|-------------------------------|------------------------|
| Land as soon as possible..... | Forced landing para.36 |
|-------------------------------|------------------------|

ENGINE SECURING

Following procedure is applicable to shut-down the engine in flight:

- | | |
|---------------------------|---------|
| Throttle Lever..... | Idle |
| Mixture..... | Cut-off |
| Ignition key..... | OFF |
| Fuel Selector..... | OFF |
| Electrical fuel pump..... | OFF |
| Generator switch..... | OFF |

AIRCRAFT EVACUATION

With the engine secured and propeller stopped (if practical):

Parking brake.....	ON
Seat belts.....	Unstrap
Headphones.....	Remove
Door.....	OPEN
Master switch.....	OFF

Escape away from flames/hot engine compartment/spilling fuel tanks/hot brakes

DEFECTIVE ENGINE CONTROLS

Defective Mixture Control Cable:

1. Maintain altitude to the nearest airfield
2. During descent, check engine behavior to a higher power setting. A lean mixture can lead to engine roughness and loss of power. Landing approach must be planned accordingly

WARNING

Go-around may then be impossible

Defective Throttle Control Cable:

If power is sufficient to continue flight:

1. Approach nearest airfield, control engine power with propeller lever.
2. Perform landing with shut-down engine applying Forced landing procedure.
..... Forged landing para.36

If power is not sufficient to continue flight:

1. Carry out Forced landing procedure
..... Forged landing para.36

Defective propeller control cable:

If power is sufficient to continue flight;

1. Approach nearest airfield, control engine power with throttle
2. Perform normal landing

3. WARNING

Go-around may then be impossible

If power is not sufficient to continue flight;

1. Carry out forced landing procedure
..... Forged landing para.36

[INFLIGHT ENGINE RESTART]

WARNING

In case of engine shutdown, propeller will keep windmilling and will not stop, preventing the use of ignition key. Engine inflight restart must be performed without using ignition key with propeller windmilling in order to avoid possible engine damages.

Typical indication of a potential engine shutdown, with windmilling propeller, will be low RPM values incompatible with power lever demand, to be confirmed by other engine instruments (OIL pressure. CHT. EGT running down abnormally).

Flight test results suggest windmilling propeller speed as low as 1000 RPM at low speeds in case of an engine flameout.

Inflight engine restart may be performed during 1g flight anywhere within the normal operating envelop of the airplane.

Inflight engine restart may be performed during 1g flight anywhere within the normal operating envelope of the airplane.

Master switch	Check ON
Fuel pump	ON
Fuel quantity indicator	CHECK
Fuel Selector	SWITCH TANK
Throttle Lever	Minimum 1cm above IDLE
Propeller lever.....	Full forward
Mixture	FULL rich
Throttle lever	SET as required

In case of unsuccessful engine restart:

Land as soon as possible applying Forced landing procedure.

..... Forced landing para.36

In case of successful restart:

Land as soon as possible

CAUTION:

After engine restart, if practical, moderate propeller rpm to allow the temperatures for stabilizing in the green arcs.

ENGINE FIRE ON THE GROUND

Mixture	CUT OFF
Cabin heat and defrost	OFF
Fuel Selector	OFF
Ignition key	OFF
Fuel pump.....	OFF
MASTER SWITCH	OFF
Parking Brake	ENGAGED
Aircraft evacuation	PERFORM para.25

ENGINE FIRE DURING TAKEOFF

If engine fails before rotation: ABORT TAKE OFF

Throttle Lever.....	IDLE
Mixture.....	CUT OFF
Brakes.....	As required

With aircraft under control

Fuel Selector.....	OFF
Electrical fuel pump.....	OFF
Ignition key.....	OFF
Cabin Heat.....	OFF
Field & Master Switches.....	OFF
Parking Brake.....	ENGAGED
Aircraft Evacuation	PERFORM para.25

ENGINE FIRE IN FLIGHT

Cabin heat and defrost	BOTH OFF
Mixture	CUTOFF
Fuel Selector	OFF
Throttle Lever	FULL FORWARD
Ignition key	OFF
Electrical fuel pump	OFF
Master Switches	OFF
Cabin ventilation	OPEN

Land as soon as possible applying Forced landing procedure. Para.36

ELECTRICAL SMOKE IN CABIN ON THE GROUND

1. MASTER SWITCH
2. Generator Switch
3. Cabin heat and defrost
4. Throttle Lever
5. Ignition key
6. Fuel Selector

With propeller stopped, evacuate the aircraft

ELECTRICAL SMOKE IN CABIN DURING FLIGHT

Cabin heat OFF

Cabin ventilation..... OPEN

In case of fire, direct the fire extinguisher toward the base of flame

If smoke persists:

Generator switch..... OFF

If smoke persists:

generator switch..... ON

Keep RPM above 1000

Master switch..... OFF

If smoke persists:

Generator switch..... OFF

CAUTION:

If the Generator SWITCH is set to OFF, consider that flaps are supplied by battery.

RECOVERY FROM UNINTENTIONAL SPIN

Throttle Idle

Rudder Fully opposite to the direction of spin

Control Yoke Centralize and hold neutral

When rotation stops:

Rudder Neutral

Attitude Recovery promptly but smoothly, averting speed close to/in excess of VNE

Throttle As required

WARNING:

Keep full rudder against rotation until spin has stopped.

One complete turn and recovery will take about 800 to 1000 feet altitude loss.

LOSS OF ESSENTIAL BUS

In case of loss of essential bus, the following will be lost (related breakers are listed):

PDF	FLAP ACUTUATOR
COM1	PITOT HEAT
GPS1/NAV1	STROBE LIGHT
EIS	LANDING LIGHT
FUEL PUMP	AHRS
FIELD	ADC
STALL WARNING	ANN. PANEL

Electrical power from Alternator is lost, battery will automatically provide energy (duration at least 30 min.).

Pilot will need to make reference to standby instrument for primary flight information and parameters.

Pilot will be able to use the audio panel and COM2/NAV2.
Engine parameters and related warnings/cautions are lost.

Flaps extension and retraction will be lost
apply Flaps control failure procedure..... See Para 34

Strobe and landing lights will be lost, NAV and taxi lights are still available;
taxi light will be the only visual aid for landing in night conditions.

LOSS OF MAIN BUS

In case of loss of main bus, the main bus voltage will drop to zero.

The following will be lost (related breakers are listed)

AUDIO PANEL	START	AVIONIC
RUDDER TRIM ACTUATOR	INSTR.LIGHT	MDF
A.D.I. (running on internal battery)	NAV LIGHT	COM2
28/12 VDC CONVERTER	TAXI LIGHT	GPS2/COM2
12VDC SOCKET	CABIN LIGHT	ADF
INSTRUMENT (clock, pitch trim indic.)	FAN G1000	XPDR
COPILOT SEAT	PILOT SEAT	DME

Fail safe operation of audio panel allows pilot to transmit and use COM1 using headphones only; speakers will not be available.

For night flights, all instrument lights will be lost, but emergency light will still be available.

ELECTRICAL SYSTEM OVERALL FAILURE

In case of electrical system overall failure, apply following procedure:

MASTER SWITCH	OFF
Generator Switch	OFF
MASTER SWITCH	ON
Generator Switch	ON

If failure persists:

Land as soon as possible

NOTE:

Standby instrument is still available, providing the internal battery is in good charge status (>80%) it will provide at least 1 hour of runtime.

WARNING:

An electrical system overall failure prevents flaps operation:
landing distance without flaps increases of about 25% (see also para 34)

STATIC PORT FAILURE

In case failure, the alternate static port in the cabin must be activated.

In this case apply following procedure:

Cabin ventilation OFF (hot and cold air)

ALTERNATE STATIC PORT VALVE OPEN

Continue the mission

UNINTENTIONAL FLIGHT INTO ICING CONDITIONS

Pitot heat ON

Immediately fly away from icing conditions (changing altitude and direction of flight, out and below of clouds, visible moisture, precipitations).

Control surfaces Move continuously to avoid locking

Throttle..... INCREASE to prevent ice build-up on propeller blades

WARNING:

In event of ice build-up in correspondence of wing leading edges, stall speed increases and stall may become asymmetric. In case of stabilator ice accretion, it may lose its efficiency, leading to lack of aircraft pitch control and loss of control.

FLAPS CONTROL FAILURE

DURING TAKEOFF

CAUTION

In case of unintentional flaps retraction, or if the flaps control fails, and if the takeoff cannot be aborted, consider that the distances, without flaps, increase by about 20%.

Flap position..... Check and confirm

Airspeed Below VFE

Land as soon as practical

DURING APPROACH/LANDING

CAUTION

In case of unintentional flaps retraction or if the flaps control fails, consider that the landing distance without flaps increases by about 25%.

Flap position..... Check and confirm

Airspeed Establish no-flap approach speed

Land as soon as practical

ELECTRICAL RUDDER TRIM CONTROL FAILURE

Trim Runaway

In event of trim runaway:

Speed..... adjust to control aircraft
without excessive pedal force
Rudder..... As required
Land aircraft as soon as practical.

Trim Jamming

Should trim control be jammed / inoperative:

Breaker..... Check in
Speed..... Adjust to control aircraft
without excessive pedal force
Rudder..... As required
Land aircraft as soon as practical.

FORCED LANDING WITHOUT ENGINE POWER

Should Preparation:

Flaps.....	UP
Best Glide Speed	Establish Vglide
Radio	Transmit MAYDAY giving location and intentions
Transponder	7700
If off airport, ELT	ON
Find a suitable place to land safely, plan to approach it upwind	
Throttle Lever	IDLE
Mixture	CUTOFF
Fuel Selector	OFF
Ignition key	OFF
Fuel pump	OFF
Seat belts	Tightly fastened

When landing is assured:

Flaps	As required
Generator and Master switches	OFF

NOTE:

Be prepared for aircraft evacuation para. 25

POWER ON FORCED LANDING

Flaps.....	UP
Best Glide Speed	Establish Vglide
Locate the most suitable terrain for emergency landing, plan to approach upwind	
Safety belts.....	Tightly fastened

When landing is assured:

Flaps	As necessary
Fuel selector valve.....	OFF
Electric Fuel Pump.....	OFF
Ignition Key.....	OFF
Generator and Master switches.....	OFF

LANDING WITH NOSE GEAR TIRE DEFLATED

Pre-landing checklist..... Complete
Flaps..... Land
Land and maintain aircraft NOSE HIGH attitude as long as possible.

As aircraft stops:

Engine securing..... Perform see para. 24
Airplane evacuation..... Perform see para. 25

LANDING WITH A MAIN LANDING GEAR TIRE DEFLATED

Pre-landing checklist..... Complete
Flaps..... Land
Land the aeroplane on the side of runway opposite to the defective tire to compensate the change in direction which is to be expected during final rolling (put the drag in the middle)
Touchdown with the GOOD TIRE FIRST and hold aircraft with the flat tire off the ground as long as possible by mean of aileron and rudder control.

As aircraft stops

Engine securing..... Perform see para. 24
Airplane evacuation..... Perform see para. 25

AUTOPILOT HARDOVER OR FAILURE TO HOLD SELECTED HEADING

In case of A/P hardover or failure to hold selected heading, apply procedure:

Accomplish items 1 & 3 simultaneously

1. Airplane control wheel..... GRASP FIRMLEY, and
OVERPOWER if necessary to
regain aircraft control
2. AP DISC/TRIM INTR switch..... PRESS
3. AP MASTER SWITCH..... OFF
4. AP circuit breaker..... PULL

WARNING

Following an A/P or MET system malfunction, do not engage the autopilot
until the cause of the malfunction has been corrected

ALTITUDE LOST DURING A PITCH AXIS AUTOPILOT MALFUNCTION AND RECOVERY

Following table addresses the altitude lost during a pitch axis malfunction and
recovery for each reported flight phase:

<u>FLIGHT FASE</u>	<u>ALTITUDE LOSS</u>
CLIMB	90 FT
CRUISE	200 FT
DESCENT	170 FT
MANEUVERING	210 FT
APPROACH	70 FT

ELECTRIC TRIM MALFUNCTION

In case of electric trim malfunction (either in AP autotrim mode or when manually operated through the manual electric trim switch) apply following procedure:

1. AP DISC/TRIM INTR switch..... **PRESS and HOLD**
2. TRIM MASTER SWITCH..... **OFF**
3. TRIM circuit breaker..... **Pull**
4. AP DISC/TRIM INTR switch..... **Release**

CAUTION

When autopilot is disconnected because of a pitch trim malfunction, hold the control wheel firmly.