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3.3.1 ENGINE FIRE/ FAILURE DURING TAKE-OFF RUN

- Aircraft on groundreject take-off
1. Throttleidle
 2. Brakesapply as needed
- With airplane stopped
3. Electric fuel pumps (both)off
 4. Fuel selector valveoff
 5. Magnetos / ignitionoff
 6. Radio communication as required
 7. Master switchesoff
 8. Parking brakeson
- if requiredevacuate aircraft

3.3.2 ENGINE FIRE / FAILURE DURING TAKE-OFF CLIMB

1. Throttle positioncheck Full Power
2. Main and Auxiliary fuel pumpscheck on
3. Fuel selector valvechange to opposite tank
4. Turnkey position.....check both ignition channels on

If engine does not provide enough power, otherwise go to 7

5. Perform emergency landingrefer to 3.3.4 EMERGENCY LANDING WITH ENGINE OFF

If engine continues to run irregularly but able to maintain 65 KIAS level flight

6. Cabin heat - close
7. Land as soon as practical.
8. ELT (optional equipment) - on

3.3.3 ENGINE FAILURE IN FLIGHT

Engine failure or engine stopped:

1. Turnkey position - check both ignition channels are on
2. Throttle position - check position (power as required).
3. Fuel selector valve - change to opposite tank except if already empty
4. Auxiliary fuel pump - on
5. Main fuel pump - check circuit breaker pushed

NOTE

In case of Main fuel pump filter clogging, engine may run irregularly and shut down if Full Power is applied. In this case, reduce power lever to 65%

If engine did not restart –

6. Start gliding descent at flaps UP, 65 KIAS
7. Refer to 3.3.4 EMERGENCY LANDING WITH ENGINE OFF

3.3.4 EMERGENCY LANDING WITH ENGINE OFF

1. during descent glide - locate most suitable landing location free of obstacles and preferably into wind
 - if time and height permit, and if appropriate attempt to identify reason for engine failure correct and attempt a restart (see §3.3.6)
 - tighten harnesses
 - declare emergency on radio and report location

If re-start fails

2. Ignition - off
3. Fuel selector - shut off
4. Aux fuel pumps - off
5. Main fuel pump - pull circuit breaker
6. Navigate - join suitable landing area at or above 1500 ft AGL
7. Speed - V_{BG} 65 KIAS
8. Flaps - T/O setting
9. ELT (optional equipment) - on
10. Align for final approach
11. Flaps - as required (see note below)
12. Master switches - off before landing
13. Canopy - unlock before landing
14. Speed - land at normal flaps setting speed
15. Evacuate aircraft

3.3.5 LOW FUEL PRESSURE

EMS Low fuel pressure indication and RAL flashing and/or engine RPM fluctuation:

1. Throttle setting - decrease to 65% max. (if possible)
2. Auxiliary fuel pump - on
3. Fuel selector - change to opposite (except if already empty)

If fuel pressure remains low

4. Expect Engine Failure in Flight – refer to 3.3.3 ENGINE FAILURE IN FLIGHT

3.3.6 LOW OIL PRESSURE

1. Oil temperature - check

If oil temperature is high or increasing

2. Refer to 3.3.7 - HIGH OIL TEMPERATURE

Otherwise,

3. Throttle - reduce throttle to minimum for level flight
4. Land as soon as practical and remain vigilant for impending engine failure.

3.3.7 HIGH OIL TEMPERATURE

If oil temperature rises above 110°C,

1. Throttle - reduce below Max Continuous Power
2. Airspeed - increase
3. Oil Pressure - check

If Oil Temperature rises above 130°C,

4. Power - idle
5. Prepare for emergency landing – refer to 3.3.4 EMERGENCY LANDING WITH ENGINE OFF

3.3.8 ENGINE RESTART WITH AND WITHOUT WINDMILLING PROPELLER

1. Auxiliary fuel pump - on
2. Fuel selector - switch to unused / fullest tank
3. Throttle - set to middle position.
4. Master switches - check on.
5. Magnetos / ignition - check both on
6. Starter - engage if necessary (if no windmill)
7. Auxiliary fuel pump..... - off (after positive start).

If engine fails to restart or if height is insufficient

8. Proceed with an emergency landing with Power Off (§3.3.4)

3.3.9 DEFECTIVE ENGINE CONTROLS

NOTE

In case of throttle cable detached, the affected carburettor will run on Full Power, causing load imbalance between left and right cylinder banks and high vibrations

• Engine RPM increasing and high vibrations:

1. Throttle - Full Power

If vibrations stops -

2. Keep Full Power, select landing area
3. Once above landing area, go to step 4

If vibrations continue or increase –

4. Throttle - idle
5. Fuel selector - off
6. Main Fuel pumps - pull circuit breaker
7. Aux Fuel pump - off

8. Perform emergency landing – refer to 3.3.4 EMERGENCY LANDING WITH ENGINE OFF

• Throttle lever blocked or engine not responding to power inputs:

1. Throttle - keep current setting
2. Land as soon as practicable
3. Perform emergency landing on selected airfield – refer to 3.3.4 EMERGENCY LANDING WITH ENGINE OFF.

3.3.10 SUDDEN DROP IN ENGINE RPM AND MAP

Possible turbocharger failure, associated or not with TCU CAUTION light flashing:

1. Throttle - reduce to minimum acceptable
2. Oil pressure - monitor
3. Land as soon as practicable.

3.3.11 SUDDEN INCREASE IN ENGINE RPM AND MAP

Possible overboost of turbocharger, associated with TCU CAUTION light flashing:

1. Throttle - reduce immediately down to RPM/MAP limits
2. Land as soon as practicable.

If Throttle is ineffective, refer to 3.3.9 DEFECTIVE ENGINE CONTROLS.

3.3.12 PERIODICAL RISE AND DROP IN ENGINE RPM AND MAP

Possible automatic regulation of the system due to airbox temperature limit

1. Carburettor heater- check pushed
2. Throttle- reduce to 65% or below if practicable to allow quicker cooling

If variations continue after more than 30 seconds,

3. TCU switch- off

4. Continue flight adjusting power regarding OAT conditions and monitor engine parameters

3.3.13 EMS REMOTE ALERT LED INDICATION

The EDM 900 Remote Alert LED (RAL) will flash in orange and red color in case of:

- any primary parameter exceeding the red line
- low fuel, below 20 L total quantity
- any sensor disconnected

3.3.14 TCU CAUTION OR WARNING LIGHT INDICATION

The Rotax TCU caution and warning lights will illuminate in following cases:

		Yellow Caution light	Red Warning light
Blinking	Cause	<ul style="list-style-type: none"> • Indicates a failure of a sensor, sensor wiring, TCU, or leakage in the airbox 	<ul style="list-style-type: none"> • The Full Power time limitation of 5 minutes is exceeded. The blinking disappears if the MAP is reduced below 36.9 in.Hg.
	Remedy	<ul style="list-style-type: none"> • Reduce speed and MAP at least to maximum continuous limit. • Limited flying operation, as boost pressure control may be un-available or insufficient. 	<ul style="list-style-type: none"> • Reduce speed and boost pressure at least to maximum continuous limit.
Permanently on	Cause	N/A	<ul style="list-style-type: none"> • The max. admissible MAP is exceeded. The lamp illumination will be deactivated if the MAP is reduced under 45.7 in.Hg.
	Remedy		<ul style="list-style-type: none"> • Reduce speed and MAP manually to be within the operating limits. • Limited flying operation, as boost pressure control may be unavailable or insufficient.

3.4.1 ENGINE FIRE

- 1. Throttle - full power
- 2. Fuel selector - close
- 3. Auxiliary Fuel pump - off
- 4. Cabin heat - close
- 5. Main Fuel Pump - pull circuit Breaker
- 6. Fresh air venting - open (except if smoke comes in via those vents)
- 7. Ignition - switch off after the fuel in carburettors is consumed and engine has shut down.
- 8. Emergency landing - refer to 3.3.4 EMERGENCY LANDING WITH ENGINE OFF

3.4.2 ELECTRICAL FIRE

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

- 1. Throttle - full power
- 1. Master switches BATT & ALT 2 - off (see NOTE and WARNING below).
- 2. Cabin - heat close.
- 3. Fresh air venting - open
- 4. In level flight you could slightly or totally open the canopy to allow fresh air in (recommended max airspeed 100 KIAS - see note below)

WARNING

The Engine Monitoring System, the radio and the transponder are not operational when the master switch is off.

NOTE

Engine will continue to run with Master switch off, as long as ignition is on, providing power is supplied to Main Fuel pump by the Alternator 1 or the Battery (see electrical system description in section 7.11).

NOTE

Flying with canopy open is forbidden in normal condition. In case of emergency, canopy can be open up to 100 kts. When opening, higher pull force than usual is required to slide backward the first 20 cm. Once open, it can be easily maintained in position and closed afterward.

5. Check Circuit Breaker Panel..... - Look for pulled breaker

WARNING
Never attempt to push an automatic pulled breaker after electrical fire.

NOTE
If conditions and location allows, prefer landing as soon as possible instead of fire source identification.

6. If the source of the electrical fire can be determined and electrical power can be removed from that system by isolating / switching the system off, do so

7. All switches - off

8. ALT 2 switch - On

9. All switches restore one by one, waiting 10 seconds minimum between each. Switch off bad circuit if smoke appears again.

10. BATT switch - On

11. Land as soon as practicable (with canopy closed)

NOTE
Battery power is restored at last to protect this source for final approach and landing.

3.5 LANDING WITH DEFECTIVE TYRE

If aircraft veers off centreline during landing, expect main tyre depletion. 1. Apply rudder and/or brake action on opposite side

2. In case of runway excursion, refer to 3.3.1 ENGINE FIRE / FAILURE DURING TAKE-OFF RUN

3. If possible, vacate runway at low speed and stop the aircraft

If high vibrations at de-rotation, expect nose tyre depletion

1. Relieve weight on nose gear by applying back stick forces

2. If possible, vacate runway at low speed and stop the aircraft

3.6 LANDING WITH DEFECTIVE BRAKES

CAUTION

In case of inconsistent brake check on approach, expect increased landing ground roll distance.

If aircraft veers off when applying brakes,

1. Release brakes and apply rudder control to try to stay on runway

2. Apply smooth brake action on remaining brake as much as possible

3. In case of runway excursion, refer to 3.3.1 ENGINE FIRE / FAILURE DURING TAKE-OFF RUN

3.7 RECOVERY FROM UNINTENTIONAL SPIN

WARNING

Intentional spins are prohibited!

- | | |
|-------------------------|---|
| 1. Throttle | - idle |
| 2. Rudder pedals | - full rudder in direction opposite to spin |
| 3. Longitudinal control | - forward |
| 4. Lateral control | - ailerons neutral |

When rotation stops:

- | | |
|-------------------------|--|
| 5. Rudder pedals | - neutralize rudder immediately |
| 6. Flaps | - UP if applicable |
| 7. Lateral control | - use as required to level wings |
| 8. Longitudinal control | - pull to level off avoiding stall warning |

3.8 PRECAUTIONARY LANDING

A precautionary landing is generally carried out in cases where the pilot may be unable to continue the flight, 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 normal approach and landing following procedures 4.4.12 and 4.4.14.
6. After stopping the aircraft switch off all switches, shut off the fuel selector, lock the aircraft and seek assistance.

3.9 INSTRUMENT INDICATION OUTSIDE OF GREEN RANGE

Exceeding of max. admissible engine speed

- Reduce engine speed.
- Record the stating duration and extend of over speed in the logbook.

Exceeding of max. admissible coolant temperature

- In case of one Coolant or EGT values out of tolerance for a single cylinder, it may be the result of a loose sensor. The aircraft should be serviced.
- In case of several sensors indications in caution range:
- Reduce engine power setting to the minimum necessary to maintain flight.
- Carry out precautionary landing.

Oil temperature below 50°C

- Increase slowly engine power setting and reduce airspeed to reach Oil Temperature above 50°C.

3.10.1 CARBURETTOR ICING

NOTE

Progressive engine power decrease and associated EGT increase is a possible carburettor icing evidence and may occur when flying in visible moisture and below +15°C OAT, especially at reduced power settings

To recover the engine power, the following procedure is recommended:

1. Carburettor heater - on (pull lever slowly to avoid thermal shocks)
2. Throttle - increase

If you fail to recover engine power, land at the nearest airfield (if possible) or, depending on the circumstances, perform a precautionary landing according to paragraph 3.8.

3.10.2 ELECTRICAL EQUIPMENT FAILURES

CAUTION

Do not attempt to reset a tripped circuit breaker to avoid electrical fire

1. Verify if corresponding equipment is switched on and dimmer is appropriate
2. Verify if corresponding circuit breaker is pushed
3. Assess situation and check voltage and amperage
4. Refer to section 7.13 MINIMUM INSTRUMENTS AND EQUIPMENTS FOR FLIGHT for flight continuation

3.10.3 ALT 1 AND/OR 2 WARNING LIGHTS - ALTERNATOR FAILURE

Alternator failure is evidenced by the illumination of the ALT 1 and/or ALT2 charge warning light.

In the case of ALT 1 warning light illuminating:

1. Pitot switch (optional)..... - switch off heated pitot (if weather condition permits)
2. Ammeter on EMS..... - check for positive battery charge
3. Equipment switches - reduce power consumption to ensure positive battery charge if required.

NOTE

Flight can be continued safely with ALT 1 inoperative, however power supply redundancy of Main Fuel Pump is not ensured anymore.

In this case, it is recommended to leave the Auxiliary Fuel Pump on throughout the flight.

In the case of ALT 2 warning light illuminating:

1. ALT 2 switch - off for 10 seconds
2. ALT 2 switch - on

If ALT 2 warning light stays on:

3. Switch off ALT 2 and other equipment to reduce power consumption to maximum 14 A – consult table on next pages for total load calculation
4. Continue flight ensuring power consumption below 14 A in all cases. Ammeter on EMS should show positive charge.

If ALT 1 and ALT 2 warning lights illuminating:

1. Switch off Avionics 2 to reduce power consumption to maximum 14 A – consult table on next page for total load calculation (visible on EMS, should not be below -14A)
2. Restrict radio emission to minimum / only that which is absolutely necessary.
3. Consider switching off Avionics 1 switch and pulling breaker of Backup Instrument Circuit Breaker to reduce current draw
4. Land as soon as practicable.

NOTE

Failure of both alternators / of the charge system will result in the main battery not being charged. The engine will stop running when the battery is depleted (about 30. min for a full battery). The engine will cease running due to fuel starvation when the battery is depleted.

NOTE

Consider applying Max Continuous Power to shorten time to destination

Electrical equipment and their associated current draw are listed in the AFM on page 3-27. In case of emergency, calculate total load and ensure maximum 14 A.

In the event of a **total loss of aircraft electrical power**, the following equipment will cease to operate:

- Engine
- EMS
- G500TXi
- GTN650
- COM2 Radio
- Flaps actuator

In this case, the **Backup flight Instrument can be used** until depletion of its standalone internal battery.

The percentage of remaining energy is indicated on the bottom left corner of the instrument, when on battery mode. The estimated autonomy with battery full vary **between 30 min and 2 hours**, depending on the ambient temperature and screen brightness.

3.10.4 SUSPICION OF CABIN CARBON MONOXIDE CONTAMINATION

1. Cabin heat - close.
2. Fresh air venting - open
3. In level flight you could slightly or totally open the canopy to allow fresh air in (recommended max airspeed 100 kts)
4. Land as soon as practical (with canopy closed).

NOTE

Flying with canopy open is forbidden in normal condition. In case of emergency, canopy can be open up to 100 kts. When opening, higher pull force than usual is required to slide backward the first 20 cm. Once open, it can be easily maintained in position and closed afterward.

3.10.5 FAILURE OF FLAP OPERATING SYSTEM

In the case where flap indicator does not respond to flap lever switch:

1. Confirm flap position visually
2. Set back flap lever to actual position
3. Check Flaps Circuit Breaker but do not reset if pulled
4. Apply speed limitation corresponding to flap setting (see table below)

CAUTION

Cruising with flaps extended will result in increased drag and higher fuel consumption.
Check fuel flow and evaluate remaining flight duration accordingly.

CAUTION

Aircraft speed will increase in descent with flaps retracted. Expect longer final during flaps up landing. Perform landing approach at idle power with flaps at UP or T/O.

CAUTION

Landing distances with flaps retracted are increased as indicated in table below.

Flap setting	UP	T/O	APP	LD
V _{FE} (KIAS)	N/A	105	95	85
Approach speed (KIAS)	65	63	57	55
Landing distance (15m obstacle)	585	560	495	475
Landing run	305	285	245	225

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