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			Rob Littlewood

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**Magni Gyro Ltd**  
Registered office at Healings Farm, West Bradford Rd Waddington, Clitheroe  
BB7 3JE

**Magni Gyro srl**  
I-21010 BESNATE (VA) Via Volpina Tel. + 39 0331 274816 Fax + 39 0331 274817  
E-mail : [info@magnigyro.it](mailto:info@magnigyro.it)

## RECORD OF AMENDMENTS

This page (0-6) and subsequent amendment page (0-6-1 etc), will be reissued as necessary with each amendment list. A copy of each Amendment List will be sent to the Registered Owner of each Aircraft.

It is the responsibility of the registered owner to insure that the amendments are incorporated in the Pilot Operating Handbook, that the superseded pages are removed and that the receipt form, enclosed with the Amendment List is signed and returned to Magni Gyro UK Ltd.

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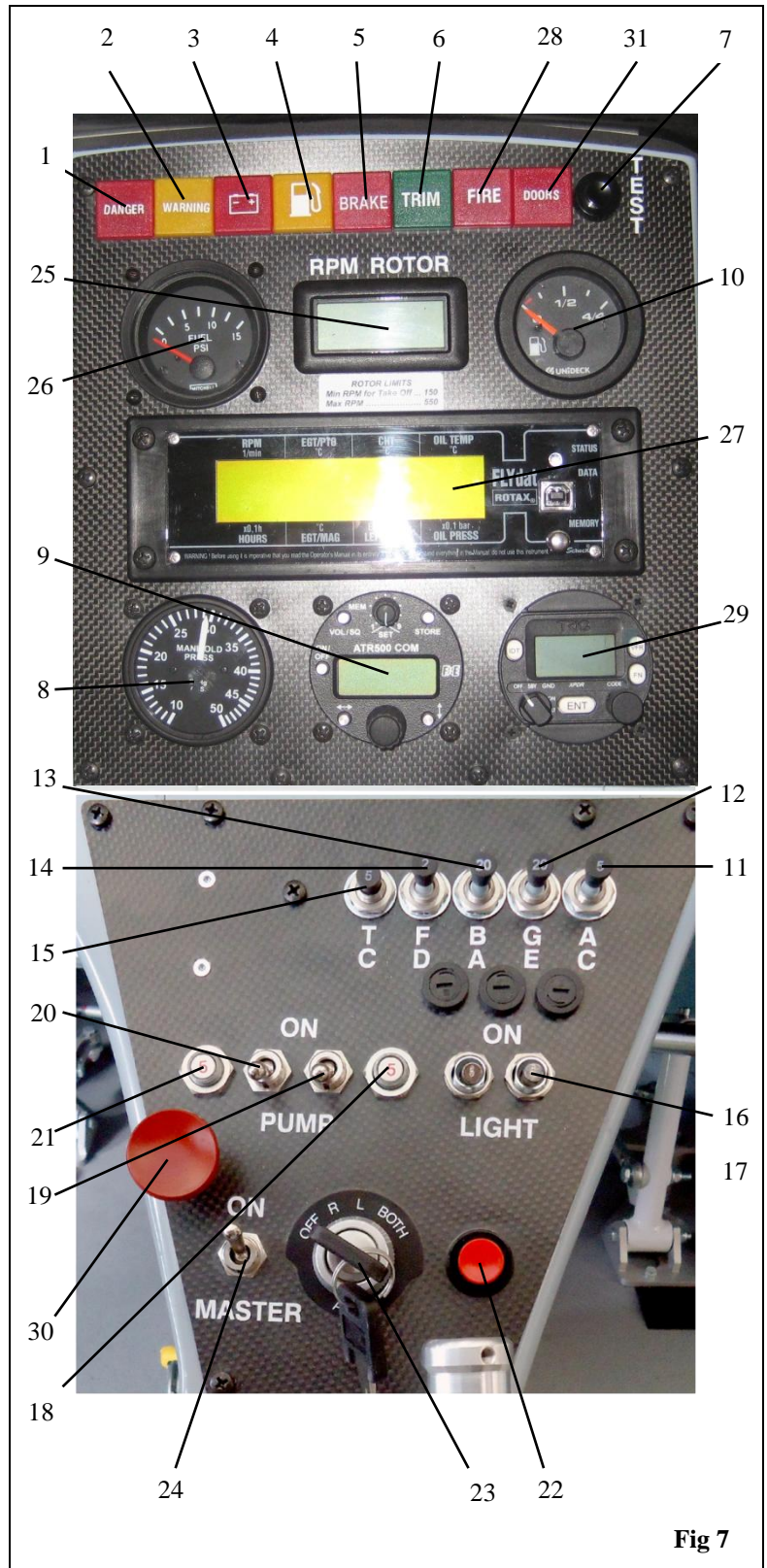
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**2.6.b Instruments – Central Console  
(Fig. 7)**

**Key**

- 1 - Red - DANGER of turbo overpressure
- 2 - Yellow - engine caution or WARNING
- 3 - Red - BATTERY, generator not working
- 4 - Yellow - RESERVER, low fuel level
- 5 - Red - BRAKE, rotor brake (on when engaged)
- 6 - Green - TRIM in end position
- 7 - Reserve warning light test push button
- 8 - MAP - manifold pressure
- 9 - Radio (Optional)
- 10 - Fuel level gauge
- 11 - ACC Circuit breaker 10 A
- 12 - GEN Circuit breaker 20A, generator
- 13 - BATT Circuit breaker 20A, battery
- 14 - FD (Flydat) Circuit breaker 2A
- 15 - TCU (Turbo Control Unit) Circuit Breaker 5A
- 16 - Strobe lights switch (Optional)
- 17 - Landing Light switch
- 18 - BREAKER 5A push button – main fuel pump
- 19 - Main fuel pump switch
- 20 - Auxiliary fuel pump switch
- 21 - BREAKER 5A push button – auxiliary fuel pump
- 22 - Start push button - STARTER
- 23 - Ignition key
- 24 - MASTER switch
- 25 - RPM ROTOR - rotor rpm gauge
- 26 - Fuel pressure gauge
- 27 - FLYDAT engine monitor
- 28 - RED – Fire detection - system light
- 29 - Transponder (Optional)
- 30 - Fuel shut off valve control
- 31 - Door Warning System



**Fig 7**



### 31) RED Light – DOOR

When illuminated one of the sensor switches on the door warning locking system has not been activated. This light will extinguish when both doors have been fully shut and both handles placed in the over-centre locked position. In combination with this light becoming illuminated the rotor RPM gauge will become de-activated.

The FLYDAT instrument is placed on the upper panel of the central console. It allows the monitoring of 9 engine operational parameters:

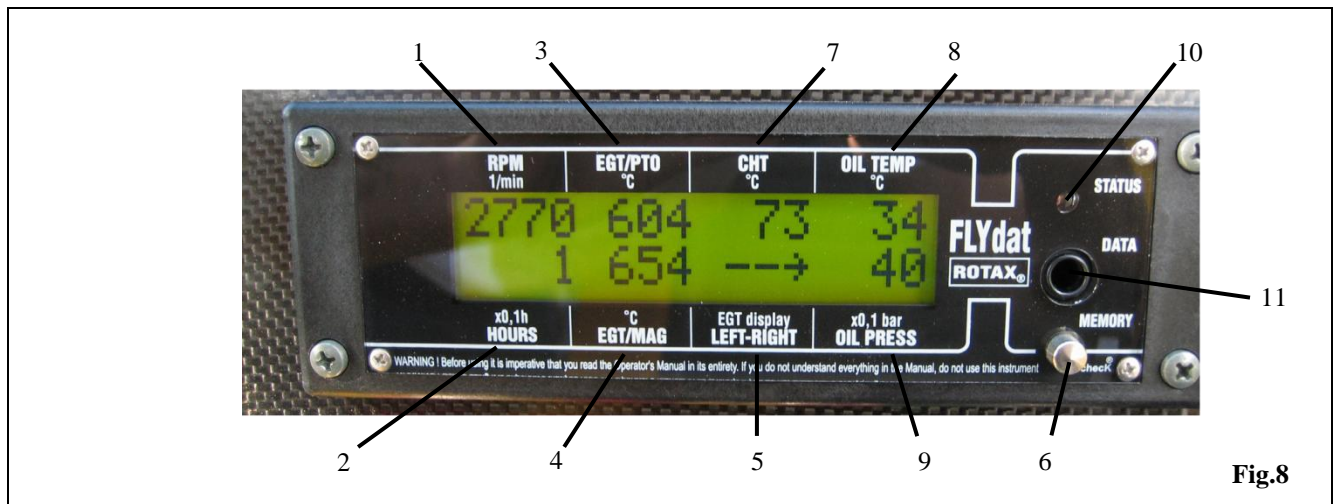


Fig.8

1. engine rpm (revolution per minute)
2. hour counter (0.1 h)
3. exhaust gas temperature EGT/PTO Arrow (5) to the left (LH rear cylinder) arrow (5) to the right (RH rear cylinder)  
The EGT reading changes from right to left bank as indicated by the arrow (5). This variation happens every 9 seconds.  
“PTO” stands for “POWER TAKE OFF”(rear cylinders). “MAG” stands for “MAGNETO” (front cylinders).
4. exhaust gas temperature EGT/MAG Arrow (5) to the left (LH front cylinder) arrow (5) to the right (RH front cylinder)
5. direction arrow (points towards RH or LH)
6. memory push button; press to monitor the maximum values reached
7. cylinder temperature CHT (cylinder no. 2)
8. oil temperature
9. oil pressure (0.1 bar)

In the standard configuration, all the temperatures are expressed in °C.

FLYDAT also shows:

#### 10 - LED

- if the light is green, indicates that the parameters are normal
- if the light is red, indicates that the parameters are out of limits

#### 11 - Input and output data connection

For more information on the functions of this instrument, please see the FLYDAT OPERATOR'S MANUAL supplied with the gyroplane documentation.

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## 2.8. DOOR WARNING SYSTEM

The M24C incorporates a warning system to maximise the awareness of occupants of the fully enclosed M24C gyroplane as to the latching and locking status of the door mechanism.

The visual warning system is manifested by two methods, the activation of a warning light and the de-activation of the rotor rpm gauge.

The red warning light is located on the starboard end of the existing warning light cluster and is marked 'DOOR'. When this light is illuminated it indicates that at least one of the doors has not been latched and locked correctly.



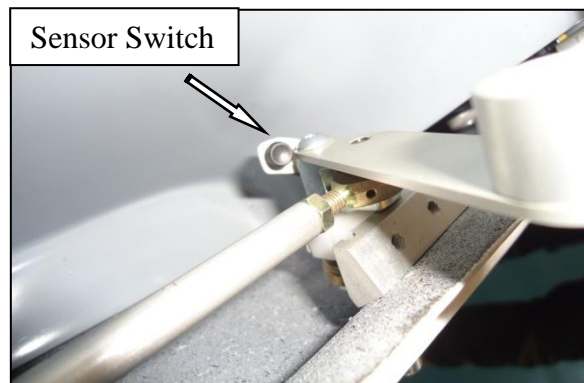
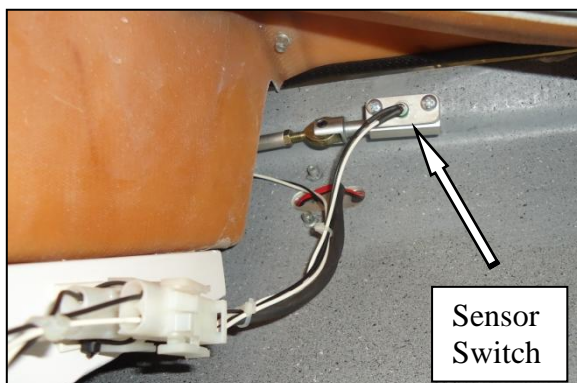
Additionally, if the system registers an incorrectly closed door then the rotor rpm gauge is rendered inactive and will not register a reading until both doors have been correctly latched and locked.

### Sensor Switch Location

The system incorporates four switch sensors, all of which have to be activated in order for the door warning system to be de-activated.

The doors on the M24C are capable of being held closed by the operation of a single pin. As a visual inspection of the aft door pin is difficult, once the occupants harness has been secured, then the warning system aims to detect the location of the aft door pin and the locking position of the handle.

A single switch is incorporated onto each of the aft door latch blocks, behind the seats. This switch detects whether the door pin has been fully drawn into place within the latching receptacle.



A further switch is mounted on a bracket, located below each of the door locking handles. This switch will only be activated once the handle has been fully pushed into the over-centre 'locked' position.

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## LOW ENGINE RPM CONDITION



### WARNING:

In a flight condition with low engine rpm the available electrical power from the engine is reduced such that the electrical warning light may become illuminated. In such an event non essential electrical equipment should be switched off until such time as the engine rpm is increased.



### NOTE:

Prior to commencing the landing phase the strobe/position lights (if fitted) must be turned off before the landing light is turned on

## Emergency Procedures

If the warning light fails to turn off after load shedding activities are complete then this may indicate that failure of the generator may have occurred and standard emergency procedures, as defined in Section 5, must be adhered to.

	ITEM No.	EQUIPMENT	UNITS	TOTAL DEMAND PER UNIT (Amp)	TIME (min)	SIMULTANEOUS DEMAND (Amp)
BASIC AIRCRAFT ELECTRICAL ITEMS	1	FUEL PUMPS	2	8	CONT	8
	2	ENGINE INSTRUMENTS	1		CONT	
	3	WARNING LIGHTS	1		INT	
	4	T.C.U	1		CONT	
	5	LANDING LIGHT	1	2.92	INT	2.92
	6	TRIM	1	2.0	CONT	2.0
		DOOR WARNING	1	0.26	CONT	0.26
		GPS	1		CONT	1.5
		VHF Comm	1		INT	1.8
		TRANSPONDER	1		CONT	0.42
		POWER SOCKET	1		CONT	6
		POSITIONING / STROBE LIGHTS	1		CONT	4.2
				<b>TOTAL</b>		<b>24.18*</b>
<p><i>*Note, total assumes that the landing light and positioning/strobe lights are not activated at the same time.</i></p>						

- 1 - INSTRUMENT PANEL
- 2 - CHECK PEDALS
- 3 - CHECK CONTROL STICK
- 4 - CHECK INSIDE OF COCKPIT
- 5 - CHECK THROTTLE LEVERS
- 6 - CHECK DOORS
- 7 - COCKPIT AND FUSELAGE, RIGHT HAND SIDE
- 8 - UNDERCARRIAGE, RIGHT HAND SIDE
- 9 - WHEEL AND WHEEL SPAT RIGHT HAND SIDE
- 10 - COOLANT LEVEL
- 11 - ENGINE OIL LEVEL
- 12 - ENGINE MOUNT, RIGHT HAND SIDE
- 13 - ENGINE, RIGHT HAND SIDE
- 14 - FREEDOM AND INTEGRITY OF CONTROL RODS
- 15 - TRIM SYSTEM
- 16 - CLOSING OF THE RIGHT HAND SIDE FAIRING
- 17 - ROTOR HEAD, RIGHT HAND SIDE
- 18 - RADIATORS
- 19 - PROPELLER
- 20 - PREROTATION SYSTEM
- 21 - TAILPLANE AND RUDDER
- 22 - ENGINE, LEFT HAND SIDE
- 23 - FUEL SYSTEM
- 24 - CLOSING OF THE LEFT HAND SIDE FAIRING
- 25 - UNDERCARRIAGE LEFT HAND SIDE
- 26 - WHEEL AND WHEEL SPAT LEFT HAND SIDE
- 27 - FUEL LEVEL
- 28 - ROTOR HEAD, LEFT HAND SIDE CONTROLS
- 29 - COCKPIT AND FUSELAGE, LEFT HAND SIDE
- 30 - NOSE WHEEL
- 31 - DYNAMIC HEAD
- 32 - ROTOR BLADES
- 33 - LIGHTING SYSTEM
- 34 - DOOR WARNING SYSTEM

**WARNING:**

INITIALLY THE DAILY/PREFLIGHT CHECKS MAY SEEM A LONG PROCEDURE, BUT WITH EXPERIENCE, THE PILOT WILL SOON BECOME FAMILIAR WITH ALL THE ASPECTS OF THE AIRCRAFT AND WHAT IS CORRECT OR NOT. THE CHECK IS ORGANIZED INTO A LOGICAL PATTERN THAT MAKES ONE COMPLETE CIRCUIT OF THE GYROPLANE AND BECOMES SECOND NATURE WITH PRACTICE. THIS PATTERN STARTS WITH THE INSPECTION OF THE INSTRUMENT PANEL AND CONTINUES CLOCKWISE AROUND THE GYROPLANE.

**WARNING:**

A well-executed daily/preflight check is one of the greatest contributing factors to good flight safety.

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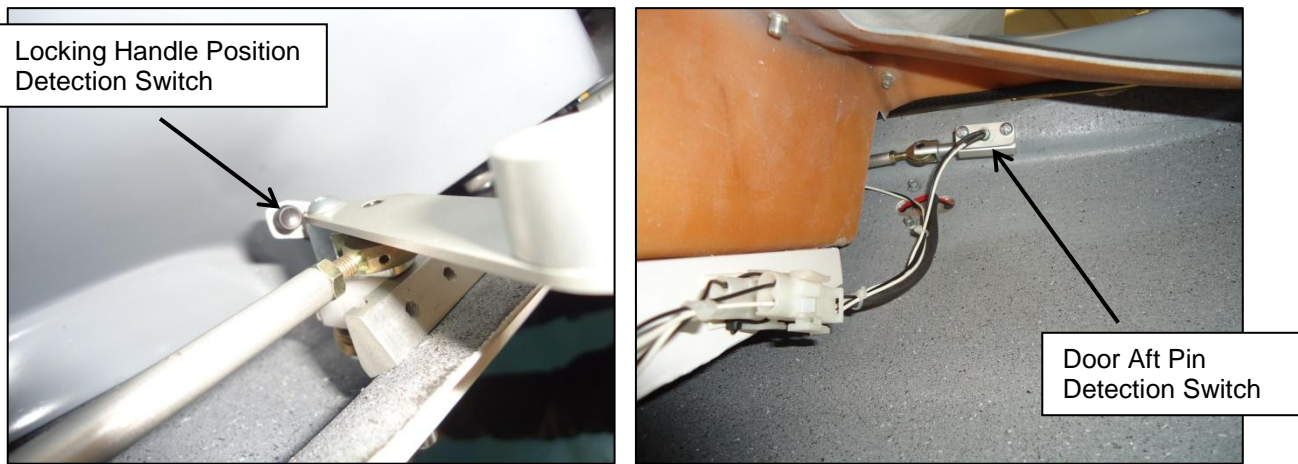
## 4.6.5 DOOR WARNING SYSTEM

### 34. DOOR WARNING SYSTEM (Fig. 18b)

Check the function of the door warning system.

The door warning system is designed to warn the pilot if either of the doors are not correctly latched and locked. The system incorporates four push-button switches (two on each door) which detect the location of the aft door pins and the position of the locking handles.

The daily check is designed to confirm correct functionality of the system and detect whether an open circuit situation has occurred (e.g. a wire has become detached from one of the switches).



**Fig. 18b**

Prior to engine start on the first flight of the day the functioning of the door locking system should be confirmed by the following tests.

- With both doors in the 'OPEN' position and the MASTER switch 'ON' close the pilot's door and then move the pilot's handle to the locked position. Then move the co-pilot's handle to the locked position. The warning light should remain illuminated and the rotor rpm gauge should remain inactive because the co-pilot's door is open.
- Move the co-pilot's handle to the open position; move the pilot's handle to the open position and open the pilot's door. Close the co-pilot's door and move the co-pilot's handle to the locked position; then move the pilot's handle to the locked position. Again the warning light should remain illuminated and the rotor rpm gauge should remain inactive because the pilot's door is open.
- Move the pilot's handle to the open position; close the pilot's door and move the pilot's handle into the locked position. The warning light should extinguish and the rotor rpm gauge becomes active as all doors and handles are now closed and locked. **Open the co-pilot's handle to confirm that the light becomes illuminated once more and the rotor rpm gauge de-activates.**



#### **WARNING DANGER:**

**It is essential that the checks on the door warning system are performed as described and in this exact order. This will enable each of the four switches functionality to be determined in turn and a single fault with any of the switches will be able to be detected.**

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## 4.9 PRE-TAKEOFF CHECKS (Fig. 23)



### NOTE:

Before entering the runway and while at the holding point, execute the pre-takeoff checks as diligently as possible.

- 1 - CHOKE - OFF lever (1) lowered
- 2 - IGNITION TEST - set engine at 2.500 - 3.000 r.p.m.  
Use key (2) to select the ignition.  
Verify that r.p.m. drop is within 300 r.p.m. and that it does not exceed 150 r.p.m. between one ignition and the next one.
- 3 - Key (2) - in BOTH position
- 4 - Switch (3) lights - ON
- 5 - FUEL RESERVE - press test push button (4) and check functionality of reserve warning light (5).
- 6 - MINIMUM TEMPERATURES - reaching minimum parameters (50° OIL and CHT)
- 7 - ENGINE INSTRUMENTS - check within limits
- 8 - TRIM FULLY FORWARD - move trim switch forward, check that green warning light (7) is ON
- 9 - FLIGHT INSTRUMENTS - check (set altimeter (8))
- 10 - DOORS CORRECTLY CLOSED – Door pins engaged, handles in over-centre 'locked' positions. Warning light extinguished.(12)



### WARNING: DANGER

It is imperative that the security of the door latching is checked prior to take-off as the door may come open on take-off, if incorrectly latched. After engaging the latching lever both the pilot's and passengers doors should be pushed from inside the cabin to ensure both forward and aft catches are secure. Should the door come open in flight it is unlikely to become detached or adversely affect the aircraft's handling. However should a door open in flight it is recommended that the airspeed be limited to around 50-60 MPH and the aircraft landed in an unhurried and controlled fashion as soon as is possible.

- 11 - ROTOR BRAKE - OFF, lever (9) lowered, BRAKE OFF warning light (10)
- 12 - CONTROL LOCK- release and check freedom of control
- 13 - CONTROL STICK - keep at front limit stop
- 14 - AIRPORT TRAFFIC CHECK

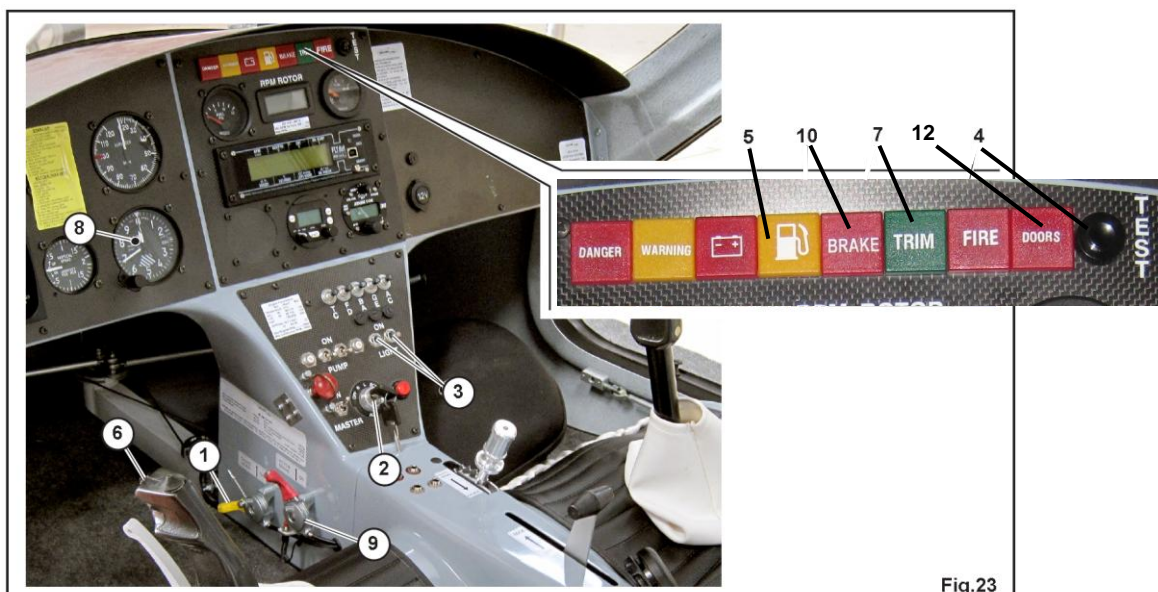


Fig.23

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## 4.10 ROTOR PREROTATION (Fig. 24)

**NOTE:**

The rotor rpm gauge will remain inactive until both doors are securely closed and both handles placed in the over-centre 'LOCKED' position.

**CAUTION:**

Keep the control stick fully forward until reaching 130 r.p.m. rotor speed.

- 1 - ALIGNMENT - runway alignment
- 2 - ENGINE SPEED - set at 1.800 r.p.m.

**CAUTION:**

A lower or higher engine speed may worsen the prerotation procedure performances.

- 3 - PREROTATION ENGAGING - gently operate the prerotation lever (1).  
Keep engine speed at 1.800 r.p.m.

**CAUTION:**

The prerotator must be engaged in a gentle manner, without sudden movements of the lever (1), so as not to stress the system and avoid stopping the engine.

**At 130 r.p.m. ROTOR**

- 4 - CONTROL STICK - Place the control stick (2) in takeoff position (rear limit stop).
- 5 - PREROTATION LEVER - Gently reach the limit stop while keeping a constant engine speed.

**WARNING DANGER:**

In windy conditions, or if the payload is light, it is possible that the gyroplane will lift up onto the tail wheel. If this occurs, the prerotator should be released and the stick moved forward to balance the gyroplane on the main wheels, some engine power should be applied to prevent the gyroplane from moving backward. The rotor rpm will continue to increase. When the rotor speed is equal or greater to 200 rpm, proceed as for take off. This should be practiced with an instructor before proceeding in these conditions

**AT LIMIT STOP OF PREROTATION LEVER**

- 6 - ENGINE r.p.m. - Gently increase the engine speed until reaching 200 r.p.m. of the rotor (standard prerotation).

**WARNING DANGER:**

The minimum rotor prerotation speed is 150 r.p.m. It is strictly forbidden to proceed with takeoff operations if the rotor r.p.m. is lower than the minimum value.

**NOTE:**

Under identical conditions, the length of the takeoff run depends on the rotor r.p.m. reached during prerotation.

The maximum speed of the prerotation system is 280 r.p.m.

The life of the prerotation system and its inspection frequency depend on the average rotor r.p.m. applied during the prerotation operation.

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## 5.9 ENGINE FAILURE

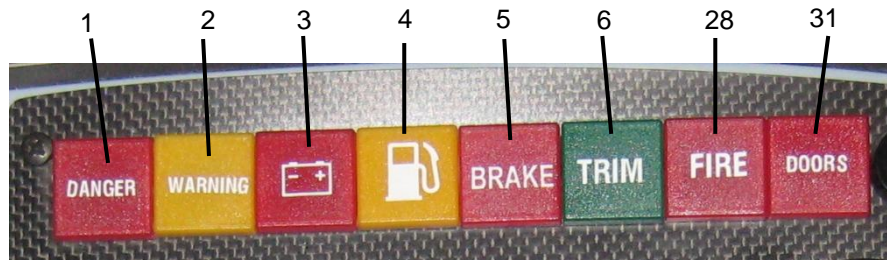
### EXAMPLE OF TEACHING PROCEDURE FOR ENGINE FAILURE

- Preparation     **Altitude** 400 ft  
                   **Speed** 65 mph  
                   **Direction** across used runway end  
                   (Theoretical runway available for landing: 300m)
- Execution       **(Intervention of instructor with reduction of throttle to idle)**  
                   **Check** the attitude to maintain speed of 65 mph  
                   **Locate** landing area  
                   Wind **evaluation**
- Master** and fuel pumps OFF  
                   **(VERBAL INDICATION OF EXECUTION)**
- Land** within preset constraints

## 5.10 LIGHTS

- **BATTERY LIGHT**  
 Turn off all optional and non-essential equipment  
 (strobe lights, landing light, radio, GPS)  
 Land as soon as possible applying the emergency landing procedure.
- **RED LIGHT - DANGER**  
 Turbocharger pressure parameter exceeded. Land as soon as practicable.  
 Contact an authorized service centre to address the problem.
- **ORANGE LIGHT - WARNING**  
 One of the sensors turbocharger system sensors is indicating a problem or has failed.  
 Land as soon as possible and proceed to the nearest authorized service centre to address the problem.
- **LOW FUEL LIGHT**  
 The fuel level is low.  
 Land within 5 minutes to avoid engine shut down due to lack of fuel.
- **BRAKE LIGHT**  
 The rotor brake lever is "on" and consequently the rotor brake is engaged. Keep the rotor brake engaged during the taxiing and parking operations.  
 Disengage the rotor brake before entering the runway and preparing to fly.
- **GREEN LIGHT - TRIM**  
 Trim disengaged. Trim in fully nose-down position.
- **RED LIGHT – FIRE**  
 Fire detected in engine bay.  
 Follow emergency procedures defined in the event of a fire detection warning
- **RED LIGHT – DOOR**  
 Door incorrectly latched and locked.  
 Follow procedures appropriate for specific ground or flight regime at time of indication defined in Section 5.11.

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ID	LIGHT TYPE	WARNING when the light is "on"	DESCRIPTION	ACTION TO BE TAKEN
1	RED	DANGER	Turbocharger supply	Reduce power to ensure engine is within normal operating limits. Land as soon as practicable. Contact an authorized service centre to eliminate the problem.
2	ORANGE	WARNING	One of the sensors gives a wrong reading or is not functioning	Land as soon as possible and proceed to the nearest authorized service centre to solve the problem
3	BATTERY	Generator overload or failed	The battery charging system is not functioning	If "on" during the normal motor functioning then non flight essential equipment must immediately be de-activated to reduce load on the alternator with the resulting effect of the warning light turning off. If the warning light fails to turn off after load shedding activities are complete then this may indicate that failure of the generator may have occurred, land as soon as possible and stop flying. Get in touch with an authorized service centre to eliminate the problem
4	LOW FUEL	Low Fuel Level	The fuel level is low	Land in 5 minutes to avoid the shut down of the engine because of lack of fuel
5	BRAKE	Rotor Brake Engaged	The lever of the brake rotor is in "on" position and consequently the rotor parking brake is engaged	Keep the rotor brake engaged during the taxing and parking operations. Disengage the rotor brake before driving the strip and the beginning of the operations
6	GREEN TRIM	Trim Disengaged	Trim nose down end stroke	
28	RED	DANGER	Fire in engine Bay	Follow Emergency procedures for fire in engine bay.
31	RED	WARNING	Door Incorrectly latched and locked	Follow procedures for door warning (Section 5.11)

**WARNING DANGER:**

A continuously illuminated red danger light indicates that the maximum admissible boost pressure has been exceeded. Engine speed and boost pressure should be reduced manually to be within normal operating limits. Flying should be ended as soon as possible as boost pressure control will either be limited or non-existent.

A blinking red danger light indicates that the maximum 'take-off' time limitation has been exceeded. Engine speed and boost pressure should be reduced to at least maximum continuous limits.

A blinking orange light indicates a failure of a sensor, sensor wiring, TCU or leakage in the airbox. Engine speed and boost pressure should be reduced manually to be within normal operating limits. Flying should be ended as soon as possible as boost pressure control will either be limited or non-existent.

## 5.11 DOOR WARNING

### - DOOR WARNING ON GROUND

The door warning system indicates an incorrectly latched and locked door. The doors should be checked as being pulled fully closed and the locking handles pushed fully forward into the over-centre locked position. If the fault cannot be identified then maintenance of the system should be carried out by a qualified engineer prior to flight.

### - DOOR WARNING DURING TAKE-OFF

If the door warning system becomes active during the pre-rotate the take-off should be aborted.

If the door warning system activates during the take-off and it is safe to land ahead the take-off should be aborted

If there is any doubt that there is sufficient clear distance to abort a landing the flight should be continued and the procedures for 'IN FLIGHT' followed as defined below.

Investigation of the activation should then be carried out before further flight.

### - DOOR WARNING DURING FLIGHT

If the door warning system becomes active during flight the pilot should establish trimmed safe and level flight, with the airspeed limited to around 50-60 mph. If safe to do so the door locking handles should be checked to ensure they have not inadvertently been moved from the over-centre locked position. If the warning system remains activated the aircraft should be landed at the nearest available safe airfield and the fault investigated before further flight is undertaken.

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