

## Supplement 51 MK-32 RANGE OF BURNERS WITH OXYGEN-ASSISTED PILOT LIGHT

### 51.1 General Information

This supplement details the instructions and limitations necessary to ensure the safe operation, maintenance and continued airworthiness of the Ultramagic MK-32 range of Burners fitted with Oxygen Assisted Pilot Light(s). This supplement is complementary to the Ultramagic Flight Manual Supplement 50.

The section indexes on this supplement are preceded with the §51.X, and the suffix is kept in line with the Ultramagic Flight Manual. The content of this supplement replaces or appends the information contained on the Flight Manual for the scope to which this supplement is intended.

Whenever the Pilot Light is used with Vapour Fuel only, the requirements and limitations on this supplement do not apply.

### 51.2 Operational Limitations

#### 51.2.4 Safety Equipment (Minimum equipment) (Add the following)

- A suitable oxygen supply for the burner; see sections 51.2.5 and 51.4.5.

**WARNING:** Supplemental oxygen for breathing may be required for the occupants in high altitude flights. Refer to the applicable operational requirements (EASA Part-SPO, FAA 14 CFR part 91, etc.).

#### 51.2.5 Fuel (Add the following)

Observe the need to carry a flow-adjustable Oxygen supply (in vapour phase) whenever the Oxygen-assisted pilot light is likely to be used. This must be in form of portable cylinder(s) with a recommended service pressure of 4 to 6 bar.

#### 51.2.12 Minimum Burner Requirements

##### Maximum Altitude

The use the optional oxygen assisted pilot light extends the maximum altitude for safe burner operation to 23,000 ft (7,000 m).

### 51.3 Emergency Procedures

#### 51.3.2 Pilot light failure

If for any reason the oxygen-assisted pilot light should go out whilst the balloon is above 18,000 ft (5,500 m), perform -if possible- a controlled descent to at least 5,500m using another burner while trying to re-ignite.

In case of failure to re-ignite, or in total absence of operative pilot lights, proceed as follows:

- Close the liquid valve in the fuel cylinder in use.
- Open (squeeze) completely the liquid fire valve handle.
- Open slightly the liquid take-off valve on the cylinder on the same side to allow a small flow of fuel.
- Release the liquid fire valve.
- Prepare/Ignite the auxiliary ignition means (matches, spark torch, etc).
- Open (squeeze) completely the liquid fire valve handle again.
- Approach and insert the auxiliary igniter slowly through one of the can openings and light the whisper/liquid fire. Maintain the whisper/liquid valve open and continue the use of the main burner to perform a controlled descent.
- If the flare fails to light the flame, adjust again the degree of restriction on the cylinder valve and/or repeat the relight process alternating the use of the whisper and the main blast valves.
- Land as soon as possible if you are not able to reignite the pilot lights below 18,000 ft - 5,500m.

#### 51.4 Normal Procedures

51.4.5 Preparing the aerostat for flight (Add the following)

##### Use of the Oxygen Assisted Pilot Light

If the optional Oxygen Assisted Pilot Light is to be used (if fitted), connect the Oxygen hose -blue- to an adjustable suitable oxygen supply, and the Vapour hose -red- to the vapour outlet of the fuel cylinder. Check the circuit for leaks. Beware that the flow of oxygen is controlled only by the valve and regulator at the source.

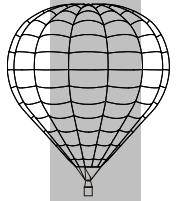
Note that the Oxygen assisted pilot light can be used anytime as a standard Vapour Pilot Light (without Oxygen supply). In that case, the enhanced performance for high altitude is not available -refer to section 51.2 of this Supplement-.

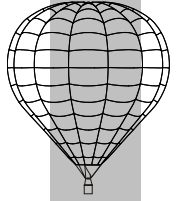
Either commercial or medical Oxygen are valid for the supply to this pilot light. Its flow rate must be adjusted on the oxygen supply to maintain a constant stable flame. Beware that the noise of the flame changes when the oxygen supply is active due to the presence of a secondary flow, which also results in an increase of the temperature of the torch. When Oxygen is used, the top central section of the torch can turn into dull red.

Ensure sufficient Oxygen is on board for the required duration of the flight at high altitude. Contact Ultramagic for further information.

51.4.5.1.5 Other Equipment (Add the following)

The additional cylinder(s) described in 51.2.4 must be carried into the basket meeting the following requirements:





- Cylinders must be individually secured to the basket walls using standard Fuel Cylinder straps. These should be fitted so as not to allow any up and down as well as lateral movement.
- Cylinder and its fittings must not protrude above the basket wall.
- Supply hoses must not be tight nor exposed outside the basket, and must not form tight elbows.
- Oxygen supply control valves and regulators must be accessible to the pilot. The supply must have a contents indicator to allow the pilot to readily determine, during the flight, the quantity of oxygen available in each source of supply.
- Oxygen supply must be identified to allow the crew to determine whether oxygen is being delivered to the burner and/or the occupants.

#### 51.4.10.5 Flight at High Altitude

When it is desired to maintain level flight at high altitude, close monitoring of the Variometer is advised, as visual perception of vertical manoeuvring is diminished at high altitude.

#### 51.5 Loading

No change.

#### 51.6 Balloon and Systems Description

##### 51.6.2.6 Oxygen Supply

All Oxygen cylinders carried on board must be approved and conform to local regulations (i. e. ADR, DOT, etc) and have an individual mass of 10 kg maximum. Either industrial or medical oxygen is valid for the supply to the burner. Cylinder must be fitted with a pressure/flow regulator and an adequate interface with the burner hose.

#### 51.7 Balloon Maintenance, Handling and Care

Local regulations on the maintenance, handling and transportation of oxygen cylinders must be adhered to.

#### 51.8 Other Manufacturers Equipment

No change.

#### 51.C Pre-Flight Checklist . Equipment

- Check the Oxygen circuit for leaks
- Ignite, check and extinguish the oxygen pilot light
- Check that the quantity of Oxygen on board is sufficient for the intended flight
- Make sure that the oxygen supply meets the requirements of 51.4.5.1.5