B.2102-NF

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Flight Manual Supplement

Night Flying

(Applicable for balloons of serial number 640 and higher.)

This Manual is EASA approved under Approval Number: **10044278**
Date of initial approval: **02 Apr 2013**

This balloon is to be operated in compliance with information and limitations contained herein.
The Flight Manual has to be placed in the basket during flight.

0.1 RECORD OF REVISIONS

Any revision of the present Supplement, must be recorded in the following table. The new or amended text in the revised page will be indicated by a black vertical line in the margin, and the Revision No. and the date will be shown on the bottom of the page.

All changes to this Flight Manual Supplement which were made before the date of the issue stated on the title page have been incorporated into this Manual.

Revision Number	Affected Section	Affected Pages	Date of Issue	Approval	Date of Approval
1	0 2 3 4 6 7	NF-2 NF-3 NF-3 NF-4 NF-5 NF-5 NF-6 NF-7	12 Oct 2015	DOA approved	12 Oct 2015

0.3 LIST OF EFFECTIVE PAGES

Section	Page	Date of Issue
0	NF-2	12 Oct 2015
1	NF-3	02 Apr 2013
2 (Appr)	NF-3	12 Oct 2015
3 (Appr)	NF-3	12 Oct 2015
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4	NF-5	12 Oct 2015
4	NF-6	12 Oct 2015
5	NF-6	12 Oct 2015
6	NF-6	12 Oct 2015
6	NF-7	12 Oct 2015
7	NF-7	12 Oct 2015
8	NF-7	02 Apr 2013

NOTE:
The sections or specific pages identified with "Appr." have been approved by EASA.

SECTION 1 - GENERAL

1.1 INTRODUCTION

This Supplement introduces information, limitations and procedures applicable for night flying. All limitations stated in the Flight Manual remain effective. If any chapter is influenced by this Supplement, only the respective additional information is stated in this Supplement, all other are without any change.

National rules for balloon night flying differ from country to country. The requirements additional of different from those stated in this supplement may apply.

1.2 APPLICABILITY

This Supplement is applicable for night flying of BB and BB-S type balloons.

SECTION 2 - OPERATIONAL LIMITATIONS

2.5 MINIMUM EQUIPMENT

Additional compulsory equipment for night flights:
- Kubicek Balloons KL1 position light set
- Two independent, not hand-held, portable lights for illumination of instruments and equipment (e.g. headlamp) with a minimum lighting distance 60 m.

2.20 TEMPERATURE RANGE

Maximum permissible ambient temperature for operation of KL1 position light: +40°C.

SECTION 3 - EMERGENCY PROCERURES

3.13 ENTANGLEMENT OF LIGHT

If the light entangle firmly in a tree or another obstacle on the ground try to rip-off by heating the balloon of cut the light cable with a sharp object.

3.14 POSITION LIGHT MALFUNCTION

If the red flashing light is not working, take the following steps:

1. Check the connector is correctly plugged. If failure remains, then:
2. Remove the accumulator from the bag, unplug the connector and check the fuse placed in a housing near the accumulator is not broken. If yes, replace it with spare fuse. Plug the connector again and check the light is working and place the accumulator back into the back. If failure remains, keep the accumulator stored in the bag and:
3. Use irregular short bursts of whisper burner to iluminate the envelope. When in controlled airspace inform the ATC about the failure.

SECTION 4 - NORMAL PROCERURES

4.2 FLIGHT PLANNING AND WEATHER

Make a careful flight planning including weather and fuel consideration and maximum operation time of the position lights. Ensure adequate quantity of fuel is carried to permit a reserve for at least 30 minutes of flight after sunrise.

Before departure to a takeoff site:

- make sure the accumulator is fully charged
- check the the position lights work correctly

CAUTION:

At night the fuel consumption is substantially higher due to the absence of solar heating.

WARNING:

Landing at night is dangerous and needs to be avoided.

4.5 TAKE-OFF

Carry on the standard procedures, use the portable light when necassary.

4.6 IN-FLIGHT CHECKS

Carry on the standard procedures, use the portable light when necassary.

4.8 SMART VENT

Carry on the standard procedures, use the portable light when necassary.

4.9 LITE VENT

Carry on the standard procedures, use the portable light when necassary.

4.15 ADDTIONAL ACTIONS FOR THE USE OF KL1 POSITION LIGHT SYSTEM

4.15.1 Installation into the Basket

Install the bag into the basket before or during pre-flight assembly. The bag is to be hanged in all four corners by metal carabiners attached to cord loops threaded through basket wall wicker according to the picture below. Place the loops as far apart as possible so that the carabiners can be attached using a reasonable force but free movement of the bag minimized.

Approved store bag location:

- Inner side of the basket wall, within pilot's reach
- Outer side of the basket wall, within pilot's reach on a side other than landing one - only if the envelope is fitted with the RV

Store the accumulator in the bag, and put the light with the cable on top. Attach the cable loop carabiner to a nearby rope handle. The cable must be free of knots and entanglement so that the lights can be easily dropped down from the basket.

Installation of Storage Bag to Basket Wall

Cord Loop Detail

4.15.2 Preflight Inspection

When preparing to a night flight make an inspection of the light. Verify is works correctly.

Check conditon of the light, cover lens and inspect the electric cables along the entire length - they must not be broken. Check all joints are secure and the connectors are clean and free of corrosion.

WARNING:

TAKE-OFF IS PROHIBITTED with position light malfunctioning!

4.15.3 During Flight

After takeoff when clear of obstacles let the light down from the basket and switch it on by plugging the connectors. The light must be switched on during the entire night period of flight.

Regularly check the light is working.

Before landing pull the light aboard the basket and store it in the bag again. The storage bag top cover is to be closed well to prevent light and accumulator to drop out during landing.

WARNING:

Flying low with the light beneath the basket is not permitted! There is a risk of contact with power lines or other objects.

4.15.4 Accumulator Charging

A modified AL 800 Compact charger is used to charge the accumulator.

1. Make sure the sliding voltage selector is set to 12 V.
2. Connect the connector of the charger to that of the accumulator.
3. Plug the charger socket to the corresponding 230 V socket. The charging starts immediately. A greed and yellow LED will illuminate.
4. Keep charging until the yellow LED turns off – this means the accumulator is fully charged.
5. Unplug the 230 V plug and then disconnect accumulator to charger connector.
6. When needed the charger can be kept connected to the plugged charger for a long period of time (i.e. for the

entire winter). The charger will automatically monitor the accumulator voltage and and re-charge it occasionally in case the voltage drops.

NOTE:

The charging time depends on the actual accumulator voltage and its age. For example the charge of a fully discharged 12 Ah accumulator may take 12 - 15 hours.

CAUTIONS:

- *Check condition of the accumulator before every charging – no cracks, deformation, leakage or any other mechanical damage of accumulator body and terminals are acceptable.*
- *Do not place the charger onto the accumulator when charging.*
- *Do not use the accumulator in a damp environment.*
- *Do not expose the accumulator to a direct sunlight, rain or snow.*
- *Do not cover the ventilation openings.*
- *Prevent any small objects (coins, paper clips etc.) from penetrating into the charger through ventilation openings.*
- *In case the charger was brought from a cold environment into a warm environment allow the it to warm before use to prevent damage due to condensed water.*
- *Prevent excessive mechanical load to the cables and their damage with sharp object.*
- *Do not place flammable materials near the charger while charging.*
- *Never attempt to charge accumulators of other type with the charger (zinc-carbon cells, alkaline cells, NiCd, NiMH, Li-Ion, Li-Pol accumulators).*

SECTION 5 - WEIGHT

No change

SECTION 6 - BALLOON AND SYSTEMS DESCRIPTION

6.10. KL1 POSITION LIGHT

The KL1 system works with 12V voltage and provides flashing red light. The light is powered by an accumulator. (Vipow LP 10-12, lead-acid, nonspillable type, 10 Ah capacity).

The accumulator and light are stored in the bag attached on the basket wall. The accumulator is fitted with a top cover that protects its terminals from short circuit. This cover is to be removed for charging only.

When in operation the light is hinged beneath the basket on the cable.

Main parts of the system:

- Storage bag + 4 cord loops + 4 bag karabiners
- Accumulator, capacity 10 Ah
- Accumulator top cover
- Inner cable attached to accumulator
- Outer cable with lights
- Light karabiner
- Red flashing light
- Connector, male and female part
- Spare 8A fuse
- Accumulator charger with cable and female terminal

NOTE:

The demonstrated operation time is 24 hourse which provides a great margin for the flight during entire night.

SECTION 7 - BALLOON HANDLING, CARE AND MAINTENANCE

7.5 CLEANING AND CARE

7.5.6 Accumulator Care

Before the first use turn the lights on for 24 hours to discharge the accumulator and then charge the accumulator completely.

Recharge the accumulator completely after each use.

NOTE:

Pay attention to the the male connector of the charger cable - 12 V voltage is present at terminals when power cable is plugged to a socket.

SECTION 8 - EQUIPMENT LIST AND APPENDICES

No change

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