



EAC

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BALLOON SAFETY MANAGEMENT SYSTEM

1- Introduction:

- Safety is of paramount importance in all areas of aviation. High safety standards are achieved not only by the imposition of rules and regulations but through the development of a positive safety culture or attitude in the minds of all connected with the operation of balloon. The development of such a culture can be achieved in a number of ways, SMS allows an Operator to assess his approach to safety and assess the risks to which his operation is open.
- The advantage of SMS is that it can be tailored to meet the needs of both large organizations and one person operations and is thus ideal for all AOC(B) holders to ensure safety.
- The approach to SMS developed by the ECAA to meet the specific requirements of the ballooning community, is based on a combination of a prepared checklist and a simple risk assessment matrix. A suggested system is shown at Appendix A .
- The checklist consists of some questions each of which can be answered either 'Yes' or 'No'. An answer, 'Yes' indicates a safe approach, whereas an answer of 'No' requires review and corrective action. The suggested questions are not exhaustive in their coverage. Also, it is considered that all the questions are most probably relevant to large operations, but for a small operation many will not be relevant. Using a checklist allows the Operator to self-analyze his safety management processes and improve them if necessary.
- Alongside the checklist, and to be used in parallel with it, is a simple risk matrix. This is based on a subjective assessment, based on experience and evidence, of the likelihood of each identified hazard occurring coupled with the severity of the outcome. Multiplying likelihood by severity provides an initial risk assessment. Mitigating factors can then be applied to give a final risk assessment.
- The ECAA Inspectors will discuss SMS with operators during inspection. Their discussions will be based around the checklist and validation questions at Appendix A. The 'Validation Questions' provide a suggested indication of how the effectiveness of a company SMS can be assessed.

2 - OCCURRENCE REPORTS

Responsibility for making occurrence reports, must be assigned to a suitably qualified safety manager appointed for the purpose. Reports should be made to the ECAA Where appropriate, the circumstance of an incident should be made generally known within the Operator's organization and, where relevant, the maintenance organization. Particular care is to be taken to ensure that originators of occurrence reports are informed of the outcome of any subsequent investigations. To this end, full use should be made of the facilities provided for the exchange of information on occurrences and accidents by the ECAA's Safety Investigations.

NOTE: Mandatory Occurrence Reporting is required in respect of all public transport aircraft registered in Egypt.

Operators must report to the ECAA any occurrence interpreted as being within the ECAR 39

3 - ACCIDENT REPORTING

An Accident Report is required for balloons operated for any purpose (private, or public transport) when involved in an 'accident' or 'serious incident', as defined in ECAR 801 Provision must be made for all operating staff to have ready access to the prescribed requirements for the reporting and investigation of accidents. In particular, operating staff should be familiar with the definitions used in the legislation, the duty to furnish information and the rules governing the removal of damaged aircraft.

4. SAFETY MANAGEMENT CHECKLIST

The idea of the checklist system is to allow Operators individually to assess whether their organization has a positive safety management culture. Affirmative answers indicate a positive situation. Negative responses always suggest that corrective action is needed.

The ECAA Inspectors will discuss SMS with operators. Their discussions will be based around the checklist and validation questions below. The 'Validation Questions' also provide a suggested method of how the effectiveness of a Safety Management culture can be internally assessed.

(NB: Not all questions will apply to all organizations.)

CHECKLIST

POLICY/CULTURE

-Is the need for a Safety Management System (SMS) accepted as essential by all?

-Is safety accepted as the highest priority by all?

-Is there a safety policy statement, made by an accountable manager, in operating manuals?

-Are safety responsibilities detailed?

-Are all personnel aware of their responsibilities?

-Are safety procedures documented?

-Is it clearly stated that safety issues must be resolved immediately in priority order?

-Is there a procedure for resolving safety issues?

-Is SMS regularly internally audited/checked?

-Is there a robust, mandatory, internal occurrence reporting system? (In addition to MOR System.)

-Are personnel encouraged to contribute safety ideas?

Is safety literature widely available to all?

-Is there a safety training programme for new personnel?

-Are training responsibilities clear?

-Are staff safety training needs regularly reviewed?

SAFETY STANDARDS

Are safety standards clearly defined?

Are safety standards reflected in operating procedures?

Is there a procedure for amending operating

VALIDATION QUESTIONS

POLICY/CULTURE

Ask company personnel.

Ask company personnel.

Statement seen at audit.

Responsibility breakdown seen at audit.

Ask company personnel.

Records seen at audit.

Checked.

Procedure demonstrated & exemplified.

Procedure demonstrated & exemplified.

Procedure demonstrated & exemplified.

Evidence of action.

Evidence seen at audit.

Checked.

Checked.

Check records.

SAFETY STANDARDS

Read definitions.

Check examples.

Procedure demonstrated & exemplified.

procedures to reflect changing safety procedures?

Is there a procedure for ensuring amendments are incorporated?

Procedure demonstrated & exemplified.

Is there a procedure for ensuring amendments are read by personnel?

Ask company personnel.

Are operations and procedures regularly reviewed in relation to risk/hazard?

Review seen at audit.

Is the introduction of change accepted as a risk/hazard?

Ask company personnel.

-Are risk/hazards considered before changes are implemented?

Ask company personnel.

-Is there a process for reviewing the impact of environmental/work-place change on safety?

Procedure demonstrated & exemplified.

- Is risk/hazard management understood?

Ask company personnel.

- Is there a procedure for managing risks/hazards?

Procedure demonstrated & exemplified – risk assessment process.

- Are the limits for safe operation defined?

Seen at audit.

- Are the limits for safe operation accepted by all?

Ask company personnel.

- Are the limits for safe operation adhered to by all?

Ask company personnel.

- Is the safety reporting system used?

Check records

- Are safety reports recorded?

Check records.

- Is there a procedure to ensure action is taken as a result of safety reports?

Procedure demonstrated & exemplified.

- Is the competence and performance of personnel responsible for implementing safety measures checked?

Procedure demonstrated & exemplified.

5. SMS RISK ASSESSMENT MATRIX

This simple procedure should suit the needs of most Operators.

The assessment process must be undertaken by someone who is aware of the risks associated with the activity being assessed and who will use sound judgment in the preparation of the assessment. The assessor should also be aware that, in the event of a subsequent accident or incident, their risk assessment process may be challenged.

Risk = the Severity of the Hazard ‘x’ the Likelihood of Occurrence

Types of Hazard

The following list provides examples Operator hazards. It is not exhaustive merely an example of the types of hazard that should be considered: Wire Strike; Unexpected/Forecast Change in Weather; Fire in the Air; Hard Landing; Landing Resulting in Third Party Casualties or Damage; Landing in Unsuitable Terrain;

Passenger Incapacitation in the Air; Fuel Exhaustion; Passenger Incapacitation on the Ground; Ditching; Lightning Strike; Pilot Incapacitation; Structural Failure; Control Failure; Fire on the Ground; Contaminated Fuel; Loose Articles in Basket; Loss of Control.

ASSESSMENT

Assessment of likelihood and severity of hazard is subjective and is based on personal experience of the activity under assessment or statistical evidence when available.

Severity of Hazard

The severity of a hazard should be assessed under the following headings, depending on the possible outcome should the hazard become a reality, and allocated a score:

Trivial **Minor Injury** / **Serious Injury** / **Single Fatality** / **Multiple Fatality**
1 **2** **3** **4** **5**

Likelihood of Occurrence

The likelihood of the hazard occurring should be assessed against the following headings and again allocated a score:

Highly **Unlikely** **Quite Possible** **Likely** **Highly Likely**
1 **2** **3** **4** **5**

Matrix Production

Once Severity and Likelihood levels have been decided they should be entered in the matrix.

Hazard Rating	Severity	Likelihood	Rating	Mitigation	M/Factor	Final
Wire Strike	3	3	9	Highlight all wires on charts	Likelihood reduced to 2	6
Fire in the Air	4	2	8	Good Engineering Practices	Likelihood reduced to 1	4
Landing in Unsuitable planning	3	4	12	Good weather check & good	Likelihood reduced to 2	6 flight

The content of the above table is for example only and does not imply or infer a risk level.

Risk Rating

The Risk Rating is the figure obtained when the Severity assessment is multiplied by the Likelihood assessment.

A resultant figure of less than 6 indicates a low risk; a figure between 6 and 15 a medium risk; and a figure greater than 15 a high risk.

High risk ratings should generally be deemed unacceptable and mitigation sought to reduce the rating to an acceptable level – medium or better.

Mitigation

Mitigation action should be taken whenever possible to reduce risk ratings even when the risk is low.

Risk Assessment Audit Trail

Organizations should record and retain the details of their risk assessment process.