

EHEST SAFETY MANAGEMENT TOOLKIT

GUIDANCE DOCUMENT

Version for Non-Complex Operators
2nd Edition, 2014



European Helicopter Safety Team

***Safety Management Toolkit
For Non-Complex Operators***

Guidance

**Edition 2
October 2014**

ABOUT THE MANUAL

This is the Guidance Material to the EHEST Safety Management Manual (SMM).

The EHEST SMM has been created by the Specialist Team Operations & SMS of the European Helicopter Safety Team (EHEST). The EHEST is the European component of the International Helicopter Safety Team (IHST) and the helicopter branch of the European Strategic Safety Initiative (ESSI).

The SMM for Non-Complex Operators has been developed with consideration of Annex III of the EU regulation on Air Operations, Part ORO Subpart GEN Section II 'Management System' and the relevant AMC's and GM published in October 2012.

It will be particularly useful for Non-Complex operators with limited experience of running a Safety Management System (SMS).

To give orientation on how to define the nature and complexity of your Company, the criteria defining a Complex Operator is provided here and set out in AMC1 ORO.GEN.200(b) Management System as follows.

Size, Nature and Complexity of the Activity:

- (a) *An operator should be considered as complex when it has a workforce of more than 20 full time equivalents (FTEs) involved in the activity subject to Regulation (EC) No 216/2008 and its Implementing Rules.*
- (b) *Operators with up to 20 FTEs involved in the activity subject to Regulation (EC) No 216/2008 and its Implementing Rules may also be considered complex based on an assessment of the following factors:*
 - (1) *in terms of complexity, the extent and scope of contracted activities subject to the approval;*
 - (2) *in terms of risk criteria, whether any of the following are present:*
 - (i) *Operations requiring the following specific approvals: performance-based navigation (PBN), low visibility operation (LVO), extended range operations with two-engined aeroplanes (ETOPS), helicopter hoist operation (HHO), helicopter emergency medical service (HEMS), night vision imaging system (NVIS) and dangerous goods (DG);*
 - (ii) *Different types of aircraft used;*
 - (iii) *The environment (offshore, mountainous area, etc.). The Safety Management Manual (SMM) is the key instrument for communicating the approach to managing safety within the Company. The SMM documents all aspects of safety management, including the safety policy, procedures and individual safety responsibilities.*

The SMM may be contained in (one of) the manual(s) of the operator. GM1 ORO.GEN.200(a) (5) Management System – Management System Documentation – General mentions the following:

- (a) *It is not required to duplicate information in other manuals. The information may be contained in any of the operator manuals (e.g. operations manual, training manual), which may also be combined.*

(b) The operator may also choose to include some of the information required to be documented in separate documents (e.g. procedures). In this case it should be ensured that manuals contain adequate references to any document(s) kept separately. Any such documents are then to be considered an integral part of the operator's management system documentation.

The SMM has been created by a team of professionals within the EHEST whose experience covers a variety of different backgrounds including: EASA, National Aviation Authorities, manufacturers, operators, helicopter associations, operator and pilot associations, etc.

This is a sample manual designed to assist an operator in creating their own manual. It contains explanatory notes and instructions marked in blue and italic.

The SMM must be adapted to appropriately reflect the operator's needs and organisation, and should not be applied 'just as it is'.

The non-complex manual is derived from the more comprehensive SMM for complex operators. Please refer to the complex operators SMM manual for a step-up approach to the SMS organisation.

The user must also understand that having a compliant SMM does not mean that they have an SMS in place. The SMM is solely a reference document that describes and documents the SMS. The SMS must then be created through an adequate implementation plan that requires commitment from the management and the personnel within the company.

The plan includes an assessment of the Company's organisation and method of managing safety prior to implementing the SMS (gap analysis), the creation, implementation and revision of relevant procedures and documentation, and safety training. It should also include the initial identification of hazards and an assessment of the safety risks faced by the operator in its various operations.

To assist with this task, the EHEST Safety Management Toolkit provides example registers of some of the typical helicopter hazards and risks developed by the Safety Department of Airbus Helicopters. These registers of hazards and risks are a unique feature made available by the EHEST to the helicopter community. It must however be considered that hazards and risks will differ depending on the operator, nature of operations and any existing barriers in place.

ACCEPTABLE MEANS OF COMPLIANCE AND GUIDANCE MATERIAL

The link to the Acceptable Means of Compliance (AMC) and Guidance Material (GM) to Part-ORO is provided here:

[http://easa.europa.eu/system/files/dfu/04%20Part-ORO%20\(AMC-GM\)_Amdt2-Supplementary%20document%20to%20ED%20Decision%202013-019-R.pdf](http://easa.europa.eu/system/files/dfu/04%20Part-ORO%20(AMC-GM)_Amdt2-Supplementary%20document%20to%20ED%20Decision%202013-019-R.pdf)

Note: Having a separate SMS in place and identified as such in the company's organisation is only one way to comply with ORO.GEN.200. The other approach consists of addressing safety in the Company Management System (integrated approach). This second approach might be more appropriate for small and very small operators. Whatever the approach, ORO.GEN.200 requirements have to be complied with.

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Chapter 1 – Definitions

Add any other definitions you may find useful, for instance:

Prevention Barrier

Risk control aimed at preventing Undesirable Events and Undesirable Operational States.

Recovery Barrier

Risk control aimed at preventing that Undesirable Operational States result in an accident or, in other words, that an incident scenario escalate into an accident.

Mitigation Barrier

Risk control mitigating the outcome (severity) of an incident or of an accident.

Safety Performance Indicator (SPI)

A data-based safety parameter used for monitoring and assessing performance (ICAO Doc 9859 AN/474 Safety Management Manual, Third Edition).

Safety Performance Objective (SPO) or Target (SPT)

The planned or intended objective for Safety Performance Indicator(s) over a given period. Objectives and targets are considered synonymous in this SMM.

Undesirable Event (UE)

Event leading to a stage in the escalation of an accident scenario (Undesirable Operational State) where the accident can be avoided only through successful recovery measure(s) or by chance.

Undesirable Operational State (UOS)

The stage where the scenario has escalated so far that the accident can be avoided only through successful recovery measure(s) or by chance.

Chapter 2 - Acronyms

Add any other acronym you may find useful, for instance:

SPI	Safety Performance Indicator
SPO/SPT	Safety Performance Objective/Target (synonymous terms)

Chapter 3 – Scope of the Safety Management Manual

Cf. ORO.GEN.200(a)(5) and related AMCs/GM

Chapter 4 – Safety Policy and Objectives

Cf. ORO.GEN.200(a)(2) and related AMCs/GM and AMC1 ORO.GEN.200(a)(1):(2):(3):(5)

The Company Safety Policy should include a commitment to: improve towards the highest safety standards, comply with all applicable legal requirements, meet all applicable standards, consider best practices and provide appropriate resources.

The safety policy should clearly state that the purpose of safety reporting and internal investigations is to improve safety, not to apportion blame to individuals.

An example of a Safety Policy adapted from the ICAO Doc 9859 AN/474 Safety Management Manual, Third Edition is provided below:

Safety Policy

Safety is one of our core business functions. We are committed to developing, implementing, maintaining and constantly improving strategies and processes to ensure that all our aviation activities take place under an appropriate allocation of organisational resources, aimed at achieving the highest level of safety performance and meeting regulatory requirements, while delivering our services.

All levels of management and all employees are accountable for the delivery of this highest level of safety performance, starting with the Accountable Manager [Chief Executive Officer (CEO), Executive Director (ED) or Managing Director (MD), as appropriate to the organisation].

We are committed to:

- Support the management of safety through the provision of all appropriate resources, that will result in an organisational culture that fosters safe practices, encourages effective safety reporting and communication, and actively manages safety with the same attention to results as the attention to the results of the other management systems of the organisation;
- Ensure the management of safety is a primary responsibility of all managers and employees;
- Clearly define for all staff, managers and employees alike, their accountabilities and responsibilities for the delivery of the organisation's safety performance and the performance of our safety management system;
- Establish and operate hazard identification and risk management processes, including a hazard reporting system, in order to eliminate or mitigate the safety risks of the consequences of hazards resulting from our operations or activities to achieve continuous improvement in our safety performance;
- Ensure that no action will be taken against any employee who discloses a safety concern through the hazard reporting system, unless such disclosure indicates, beyond any reasonable doubt, gross negligence or a deliberate or wilful disregard of regulations or procedures;
- Comply with and, wherever possible, exceed, legislative and regulatory requirements and standards;
- Ensure that sufficient skilled and trained human resources are available to implement safety strategies and processes;
- Ensure that all staff are provided with adequate and appropriate aviation safety information and training, are competent in safety matters, and are allocated only tasks commensurate with their skills;
- Establish and measure our safety performance against realistic safety performance indicators and safety performance targets;
- Continually improve our safety performance through continuous monitoring and measurement, and regular review and adjustment of safety objectives and targets, and diligent achievement of these; and

- Ensure externally supplied systems and services to support our operations are delivered meeting our safety performance standards.

(Signed and dated)

Accountable Manager

The Safety Policy states that the purpose of safety reporting and internal investigations is to improve safety, not to apportion blame to individuals. To this purpose, the last bullet of the Safety Policy can be expanded in a separate statement, called Protection of the Reporters – Just Culture. An example is provided below:

Protection of the Reporters – Just Culture¹

The Company is committed to operate according to the highest safety standards.

To achieve this goal, it is imperative to have uninhibited reporting of all accidents, incidents, events, hazards, risks and other information that may compromise the safe conduct of our operations. To this end, every staff member is warmly encouraged to, and responsible for, reporting any safety-related information.

Reporting is free of any form of reprisal. The main purpose of reporting is risk control and accident and incident prevention, not the attribution of blame. No action will be taken against any staff member who discloses a safety concern through the reporting system, unless such disclosure reveals, beyond any reasonable doubt, an illegal act, gross negligence, or a deliberate or wilful disregard of regulations or procedures.

Our method for collecting, recording and disseminating safety information guarantees the protection to the extent permissible by law, of the identity of those who report safety information.

(Signed and dated)

Accountable Manager

1

Just culture is a culture in which front line operators or other members of staff are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but where gross negligence, wilful violations and destructive acts are not tolerated. A just culture facilitates reporting, as staff do not fear being blamed for the facts they report.

Acceptable and non-acceptable behaviour?

The EHEST recommends² that clear descriptions of behaviour considered by the company as acceptable (for instance genuine unintentional errors) and non-acceptable (for instance wilful disregard of procedures, falsification of documentation, sabotage) and of their consequences (disciplinary policy) are set out such that the differentiation between these two types of behaviour are perfectly known and understood by everyone.

It is then of primary importance to apply this distinction in a consistent manner, so that decisions are always interpreted as 'just' and that no feeling of injustice could be perceived by personnel, which could seriously hamper the continued reporting of safety information.

Chapter 5 – Safety Accountability and Responsibilities

5.1 Safety Accountability of the Accountable Manager

Cf. ORO.GEN.210(a)

The Accountable Manager has the authority for ensuring that all activities can be financed and carried out in accordance with the applicable requirements.

The Accountable Manager is often the Company's Chief Executive Officer (CEO) or Executive Director (ED) or Managing Director (MD).

The Accountable Manager is responsible for establishing and maintaining an effective management system and/or for managing safety in the Company.

5.2 Safety Manager

AMC1 ORO.GEN.200(a)(1):(2):(3):(5) and GM1 ORO.GEN.200(a)(1)

The operator should identify a person who fulfils the role of Safety Manager.

The Safety Manager is responsible for coordinating the safety management system.

This person may be the Accountable Manager or a person with an operational role in the Company.

Depending on the size of the operator and the nature and complexity of its activities, the Safety Manager can be assisted by additional safety personnel for the performance of all safety management related tasks. State which members of staff have been designated to assist the Safety Manager, if applicable.

Regardless of the organisational set-up it is important that the Safety Manager remains the unique focal point as regards the development, administration and maintenance of the SMS.

2

Not in the EASA AMC.

Note: It is intended that hazard identification, risk assessment, evaluation and control become an integral part of day-to-day business. Day-to-day supervision of the operations and therefore safety is the responsibility of the managers and all the personnel. The Safety Manager is responsible for the supervision and facilitation of the processes to support managers in developing processes, procedures and work instructions for the staff under their supervision to perform their activities in a safe manner.

5.3 Manager(s) (Delete if not applicable)

Cf. ORO.GEN.210(b)

The term 'manager(s)', also called 'head(s) of operational areas', is used as per ORO.GEN.210 Personnel Requirements (b), which states that a person or group of persons shall be nominated by the organisation, with the responsibility of ensuring that the organisation remains in compliance with the applicable requirements (regulations, standards, Company's procedures, etc.). These person(s) shall be ultimately responsible to the Accountable Manager.

The manager(s) are responsible for ensuring compliance with all applicable requirements, including those regarding the management of safety.

Note: Managers are an important driving force of effective safety management. They make sure that safety aspects are considered and properly dealt with in all activities they manage..

5.4 Personnel

Cf. ORO.GEN.210(c), (d) and (e)

In order for each staff member to easily understand their roles and responsibilities within the SMS, it is recommended that roles and responsibilities be defined within the job descriptions.

5.5 Compliance Monitoring Manager

Cf. ORO.GEN.200(a)(6) and related AMCs and GM

The Compliance Monitoring Manager is responsible for ensuring that the compliance monitoring programme is properly implemented, maintained and continually reviewed and improved.

The Compliance Monitoring Manager should have direct access to the Accountable Manager.

For a Non-Complex operator, the tasks of the Compliance Monitoring Manager may be exercised by the Accountable Manager, provided that he/she has the necessary competences. He or she must demonstrate relevant knowledge, background and appropriate experience related to the company activities; including knowledge and experience in compliance monitoring, and also have access to all parts of the operator, and as necessary, any contracted operator.

In the case the same person acts as Compliance Monitoring Manager and as Safety Manager, the Accountable Manager, with regards to his/her direct accountability for safety, should ensure that sufficient resources are allocated to both functions. The company should indicate whether the Compliance Monitoring Manager also acts as the Safety Manager.

The independence of the compliance monitoring function should be established by ensuring that audits and inspections are carried out by personnel not responsible for the function, procedures or products being audited.

Chapter 6 – Compliance Monitoring Organisation and Programme

Cf. ORO.GEN.200(a)(6) and related AMCs and GM

The implementation and use of a compliance monitoring function allows an operator to monitor compliance with all relevant requirements, including those of the SMS. In doing so, they should as a minimum, and where appropriate, monitor compliance with the company procedures that were designed to ensure safe operating activity.

The compliance monitoring programme covers, as a minimum and where appropriate, the scope of approved operations; manuals, logs, and records, training standards, management system procedures and manuals.

The Compliance Monitoring Programme may be described in a separate document or in another manual.

6.1 Audits and Inspections

Cf. GM3 ORO.GEN.200(a)(6)

Compliance monitoring audits and inspections may be documented on a 'Compliance Monitoring Checklist', and any findings recorded in a 'Non-Compliance Report'.

Cf. GM1 ORO.GEN.200(a)(6)(a)

Auditors (either internal or external) shall have the relevant knowledge, background and appropriate experience related to the activities of the operator, including knowledge and experience in compliance monitoring.

The Company Auditor(s) demonstrate diplomacy, independence, ethics, and possess good verbal and written communication skills.

6.2 Organisational Set-Up (Delete if not applicable)

The Compliance Monitoring Manager may be assisted by dedicated personnel and/or an external organisation. Describe the company Compliance Monitoring organisation and how independence is assured, how audits are planned and how consideration is given to past compliance monitoring activity and results.

6.3 Compliance Monitoring Documentation

It shall also include the training syllabus and document control.

Please provide information relating to the Compliance Monitoring Documentation or insert a reference as to where this information is recorded and documented.

6.4 Compliance Monitoring Training

Cf. AMC1 ORO.GEN.200(a)(6)(e)(1)

The Company shall ensure that all personnel engaged in managing the compliance monitoring function understand the objectives as laid down in the company management system documentation.

Cf. AMC1 ORO.GEN.200(a)(6)(e)(2)

The company shall ensure that those personnel responsible for managing the compliance monitoring function, i.e. the Compliance Monitoring Manager and his/her team, receive appropriate training for this task. This training shall cover the requirements of compliance monitoring, manuals and procedures related to the task, audit techniques, reporting and recording.

Please provide information relating to Compliance Monitoring Training or insert a reference as to where this information is recorded and documented.

Chapter 7 – Documentation Control Procedure

7.1 General

Cf. ORO.GEN.200(a)(5) and related AMCs and GM

The operator's management system documentation may be included in a separate manual or in one of the manual(s) as required by the applicable implementing rule(s), and where appropriate cross references should be included. The company management system documentation should at least include the following information:

- a statement signed by the Accountable Manager to confirm that the operator will continuously work in accordance with the applicable requirements and the operator's documentation;
- the operator's scope of activities;
- the names and functions of the Accountable Manager and his or her management team (ref. ORO.GEN.210 (a) and (b));
- an organisation chart showing the lines of responsibility between the persons referred to in ORO.GEN.210;
- a general description and location of the facilities referred to in ORO.GEN.215;
- procedures specifying how the operator ensures compliance with the applicable requirements;
- the amendment procedure for the operator's management system documentation.

7.2 Control and Revision of the Safety Management Manual

The SMM should describe how this manual is controlled and revised over time, and how revisions are disseminated within the organisation.

7.3 Record-Keeping

Cf. ORO.GEN.220(b) and related AMC1 and GM1

An effective system of record-keeping ensures that all records are accessible whenever needed and within a reasonable time. These records should be organised in such a way that ensures traceability and accessibility throughout the required retention period.

In order to ensure easy and fast access to information, including access by national authorities, the company records should:

- be adequately referenced (author, title, issue date, revision number and date, list of effective pages),
- archived/kept as records during a determined period of time,
- and disposed of in a controlled manner after this defined period of retention.

Records are to be kept in paper format, in electronic format or a combination of both. Records stored on microfilm or optical disc format are also acceptable; however, no matter which format is employed records must remain legible throughout the required retention period. *Define the retention methods used in the Company.*

Microfilming or the optical storage of records may be carried out at any time. The records should be as legible as the original record and remain so for the required retention period. The retention period starts when the record has been created or last amended.

Paper systems should be on a robust material which can withstand normal handling and filing. Computer based systems should have at least one backup system which should be updated within 24 hours of any new entry. Computer based systems must include appropriate safeguards against the possibility of access by unauthorised personnel to prevent tampering with the data.

All computer hardware used for data backup must be located in a different location from that containing the original working data, and in an environment that ensures they remain in good condition. When hardware or software-changes take place, special care is to be taken to ensure that all necessary data continues to be accessible throughout at least the full period specified in the relevant implementing rule(s). In the absence of such indication, all records should be kept for a minimum period of 5 years.

Chapter 8 – Safety Risk Management

Cf. ORO.GEN.200(a)(3)

Safety Risk Management combines the following processes and components:

- Hazard identification, risk assessment and mitigation processes
- Internal safety investigation
- Safety performance monitoring and measurement
- The management of change
- Continuous improvement
- The Emergency Response Plan (ERP)

For Non-Complex operators, safety risk management may be performed using hazard checklists or similar risk management tools or processes, which are integrated into the activities of the operator.

Note: EHEST suggests using the Risk Assessment, Description, Evaluation and Control (RADEC) form (see the example in Appendix 1) for the assessment and management of safety risks.

Elements that influence Risk Management:

COMMUNICATION AND CONSULTATION

Good communication within the organisation and, where relevant, with external parties (such as customers, partners, or contractors) should help ensure access to all relevant information, and assist in ensuring buy-in from all those that may be affected by the risk management activities or the actions taken. Communication and consultation should take place at all relevant stages of the process.

REGULATORY REQUIREMENTS – RISKS ADDRESSED BY REGULATIONS

Regulations are generally developed to control common safety risks that stem from specific or general hazards through prescriptive rules, technical standards in the areas of technology, training, or task performance. Such hazards controlled by regulations do not need to be further addressed in the operator's risk assessment, unless evidence exists that the regulatory provision is not sufficient. If the regulation is not specific, has several options, or directly calls for a risk assessment; the hazards obviously should be assessed, and the appropriate provisions implemented.

Note on Industry Standards and Best Practices:

When a company develops Standard Operating Procedures (SOPs) based on industry standard/best practice, it should still perform its own risk assessment to ensure that the SOPs are appropriate and customised to its own activities.

ORGANISATION'S RESOURCES

Available resources are relevant with respect to both capacity and competence:

- (i) for the risk assessment process itself (see next page); and
- (ii) for the activity being assessed, (aircraft, equipment, personnel, finances, etc.).

The organisation's current resources in terms of equipment and personnel are normally considered in the risk assessment. One outcome of a risk assessment may be that the operator does not possess the right equipment or personnel for the activity.

8.1 Scope of Safety Risk Management

The safety risk management process addresses **aviation safety risks**.

The risk assessment process considers technical, human and organisational, and environmental aspects, as well as financial, legal, or economic aspects and all significant influences that may adversely impact aviation safety risks.

Risk management can also be expanded other types of risks, such as Health and Safety risks.

The organisation should be able to identify all significant influences that may impact aviation safety and/or Health & Safety. However, Health and Safety aspects are not addressed in the EU regulation on Air Operations. Check with your Competent Authority for possible SMS requirements regarding Health and Safety.

8.2 Safety Risk Management Concepts

Preparation

PLANNING

The Safety Risk Assessment will be initiated in time for the results to be available before any decisions regarding the activity concerned have to be made.

SYSTEM DESCRIPTION

The activity to be analysed will be described in terms of systems and processes.

WORKING GROUP

The Safety Manager will determine the need for a dedicated working group comprised of suitable subject matter experts and personnel that are to be involved in the activity.

SELECTION OF METHOD AND DATA BASIS

The following methods and databases can be used for a risk assessment:

- The methodology described in Chapter 8 of this manual.
- The Safety Manager will decide whether, and what other methods and sources will be used to identify hazards and hazard consequences and assess risks.

- Company databases containing:
 - information resulting from the investigation of internal occurrences and accidents; and/or
 - reported deviations and proposals for improvement; and/or
 - experience collected from the monitoring of normal operations.
- Company databases may be augmented with similar data exchanged with other operators.
- The Safety Manager will decide whether to use additional data sources.
- Whenever possible, the process of risk assessment will be built upon experience derived from risk assessments carried out previously.

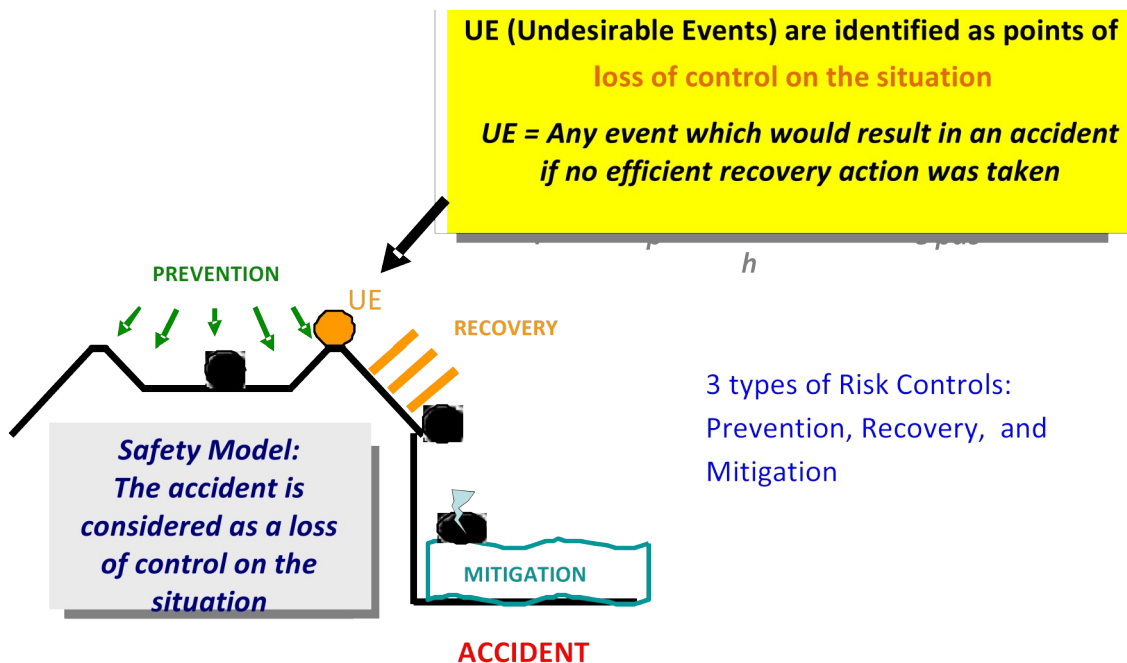
The 'Safety Bowl' described below is a good, practical safety risk and risk control model.

The purpose of this approach is to consider Undesirable Events (UEs) as an intermediate step between hazards and risks, and incidents and accidents.

Hazards can, in isolation or in combination, lead to UEs.

UEs trigger a stage in the escalation of an accident scenario, called the Undesirable Operational State (UOS), where the scenario has escalated to the point that the accident can only be avoided through successful recovery measure(s) or by chance.

Risk Controls aimed at preventing UEs and UOSs are prevention barriers. Controls that prevent a UOS resulting in an accident are identified as recovery barriers, while controls that mitigate the effect of an incident or accident are called mitigation barriers.



**Figure 1 – The 'Safety Bowl' Safety Risk Control Model
(Source Dédale and Air France)**

The Safety Bowl model is an intuitive illustration of accidents seen as 'loss of control' on the situation. The bowl represents the safe envelope within which operations should be kept, while the position of the UEs represent the departure into either accident or incident scenarios.

Recovery comes after control is lost to prevent consequences from developing and can as well restore balance (bringing the ball back into the Safety Bowl). The model also illustrates the importance of monitoring and managing the risk controls in place and the need to introduce or adapt risk controls when necessary.

8.2.1 Hazard Identification

A good point to start with is to answer the following question:

What am I the most afraid of in my activity?³ For instance:

- Controlled Flight Into Terrain (CFIT), Controlled Flight Into Wires (CFIW), antenna/wire strikes, main or tail rotor obstacle strike, etc.?
- Non-stabilised approach?
- Loss of control, inadvertent entry into IMC?
- Ground collision?
- Mid-air collision?
- Loss of Tail Rotor Effectiveness (LTE)?
- ...

Make a list of the 10 most risky activities/situations that came up, and then study them in detail.

Hazards are elements that, in isolation or in combination, may have contributed or could contribute to an incident or accident. They can be identified from different internal and external source.

During the hazard identification process, do not confuse 'Hazards' with 'Consequences of hazards'. 'Hazards' are situations, conditions, elements, environments that naturally exist, or which we normally work with, that are a source of danger but do not necessarily result in incidents or accidents. They can nevertheless lead to negative outcomes called 'Hazard Consequences'.

Consider the following example (source Airbus Helicopters):

Examples of Hazards and Their Effects		
Workplace Hazard	Example of Hazard	Example of Hazard Consequence (Harm)

3

The EHEST Safety Leaflets provide suggestions and best practises on how to address these subjects.

		Caused)
Tool	Knife	Cut
Substance	Benzene	Leukaemia
Material	Asbestos	Mesothelioma
Source of Energy	Electricity	Shock, electrocution
Condition	Wet Floor	Slip, falls

The hazard identification process may combine different approaches:

The **reactive approach** (reactive scheme) consists of analysing accidents and incidents that have occurred and trying to understand why. Based on the analysis of reported accidents and incidents, the following questions should be asked:

- What accidents or incidents did happen to us and why?
- For what reasons did these occur? What were the causal factors?
- What barriers or risk controls failed and what barriers worked? Should existing barriers be reinforced or additional barriers be introduced?

The **proactive approach** (proactive scheme) consists of analysing the conduct of operations to identify potential hazards and assess and mitigate the associated risks before they result in an accident or incident. This approach should trigger the following questions:

- What accidents or incidents could happen to us and why?
- For what reasons could these occur?
- Do we feel sufficiently protected? Are there any actions we should take now to prevent these from occurring?

The proactive scheme also feature a predictive component. It consists of conducting a predictive analysis using, for example, data extrapolation (such as estimating the future risk level based on the data collected over the past 3 or 5 years) or statistical modelling (a more complex way). This predictive approach aims to identify and mitigate risks before they become evident (addressing today the risks of tomorrow). This approach poses the following questions:

- What accidents or incidents could happen to us in the future and why?
- Do we feel sufficiently protected? Are there any actions we should take now to prevent these from occurring (addressing today the risks of tomorrow)?

The predictive and proactive approaches are very effective tools for the management of safety, they should build upon solid reactive processes.

8.2.2 Hazard Consequences

Hazards are different from hazard consequences. For instance, a cumulonimbus constitutes a hazard⁴ for a helicopter flying in its vicinity (less than 5NM). The consequences of this hazard can include: heavy turbulence that could induce total loss of the aircraft; lightning that could result in technical damage and/or injury; hail that can damage the structure and the blades; heavy rain that can result in an engine flame out; icing that increases the helicopter mass, affects the aero-dynamical profile, alters the rotor blades profile and may block the cyclic swash-plate; etc.

The consequences can be identified based on the information about the hazards and their context.

It is also worth noting that the absence of past incidents/accidents does not mean absence of risk! It is therefore important to identify the underlying hazards and their consequences and to assess the risks, even when no incidents or accidents have happened.

8.2.3 Risks Controls

Information on risk controls can be found in various sources such as technical publications, safety magazines, websites such as www.IHST.org, www.EHEST.org, www.skybrary.aero, etc.

8.3 Safety Risk Management Steps

8.3.1 Initial Safety Risk Level Evaluation

The initial step consists of answering the two following questions:

- What is the severity of the consequences of the hazards we are dealing with?
- And how likely or probable are these hazard consequences?

A Risk Matrix is a good tool to describe, assess and evaluate the risks. EHEST therefore proposes to use the Risk Matrix described in this Section. However, using a Risk Matrix is **not mandatory for Non-Complex Operators**.

8.3.1.1 Analysis of Likelihood or Probability

4

And a 'threat' in the sense of the Threat and Error Management (TEM) model. See for example:

[http://www.skybrary.aero/index.php/Threat_and_Error_Management_\(TEM\)](http://www.skybrary.aero/index.php/Threat_and_Error_Management_(TEM)).

Likelihood or probability values (how likely or probable are the various hazard consequences) are estimated through expert judgement, or on the basis of frequencies observed within the Company or provided for the sector, type of operations, type of machine(s), etc.

Likelihood or probability may be expressed using terminology such as 'very low, low, medium, high and very high'.

The following table is an example of what a Company may use for determining likelihood:

RISK LIKELIHOOD	MEANING	VALUE
FREQUENT	Likely to occur many times. Has already occurred in the Company (Freq. > 3 times per year – indicative*). Has occurred frequently in the history of the aviation industry.	5
OCCASIONAL	Likely to occur sometimes. Has already occurred in the Company (Freq. < 3 times per year – indicative*). Has occurred infrequently in the history of the aviation industry.	4
REMOTE	Unlikely to occur, but possible. Has already occurred in the Company at least once or. Has seldom occurred in the history of the aviation industry.	3
IMPROBABLE	Very unlikely to occur. Not known to have occurred in the Company but has already occurred at least once in the history of the aviation industry.	2
EXTREMELY IMPROBABLE	Almost inconceivable that the event will occur. It has never occurred in the history of the aviation industry. ⁵	1

* Indicative: depends on the size of the Company and volume of activity. Use figures adapted to your Company.

Below are examples of methods⁶ that the Company may use for causal and likelihood analysis (**not mandatory for Non-Complex operators**):

- Fault tree analysis;
- FMECA (Failure Mode, Effects and Critical Analysis);

5

Note however that even extremely improbable events may occur.

6

Consult for instance Skybrary or Wikipedia for a description of these methods.

- Influence diagrams;
- Bow-Tie diagrams;
- Brain storming.

As the risk assessment progresses, an iterative process may help to identify new factors and barriers. These can then be included in the analysis.

Considering human and organisational factors and their possible contributing effect in incident and accident scenarios may help assessing the likelihood of hazard consequences. Direct causes ('unsafe acts'), workplace factors and organisational factors ('latent conditions') may be considered.

The effects of existing risk controls that influence the chain of events are also considered and documented, taking into account the following elements:

- Certification requirements;
- Maintenance procedures;
- Existing normal and abnormal procedures;
- Technical measures/equipment;
- Training;
- Other human and organisational factors.

Causal analysis, supported for instance by Bow-tie type diagrams, can be performed to the level of detail necessary to establish relevant likelihood or probability values.

8.3.1.2 Analysis of Severity

Severity values (how severe are the various hazard consequences) are estimated through expert judgement, or on the basis of severities observed within the Company or provided for the sector, type of operations, type of machine(s), etc.

Severity can be expressed using terminology like 'very small, small, medium, large and very large'. The meaning of each term is then expressed in words and/or numbers or ranges.

Below is an example table that the Company may use for determining severity:

SEVERITY OF OCCURRENCE	MEANING				VALUE
	PERSONNEL	ENVIRONMENT	MATERIAL VALUES & ASSETS	REPUTATION	
CATASTROPHIC	Multiple fatalities	Massive effects (pollution, destruction, etc.)	Catastrophic financial loss Damage > 1 M€ (*)	International impact	E

HAZARDOUS	Fatality	Effects difficult to repair	Severe financial loss with long term effects Damage < 1 M€ (*)	National impact	D
MAJOR	Serious injuries	Noteworthy local effects	Substantial financial loss Damage < 250K€ (*)	Considerable impact	C
MINOR	Light injuries	Little impact	Financial loss with little impact Damage < 50K€	Limited impact	B
NEGLIGIBLE	Superficial or no injuries	Negligible or no effects	Financial loss with negligible impact Damage < 10K€ (*)	Light or no impact	A

* Indicative: depends on the size of the Company and volume of business. Use figures adapted to your Company.

8.3.1.3 Risk Description and Evaluation

Risk description consists of combining Risk Likelihood or Probability and the Risk Severity, and risk evaluation consists of determining risk acceptability or tolerability (whether the risks are acceptable or not).

This risk description and evaluation can be performed using a colour-coded Risk Tolerability Matrix.

An example is provided below:

RISK LIKELIHOOD	RISK SEVERITY				
	NEGLIGIBLE (A)	MINOR (B)	MAJOR (C)	HAZARDOUS (D)	CATASTROPHIC (E)
FREQUENT (5)	5 A	5 B	5 C	5 D	5 E
OCCASIONAL (4)	4 A	4 B	4 C	4 D	4 E
REMOTE (3)	3 A	3 B	3 C	3 D	3 E
IMPROBABLE (2)	2 A	2 B	2 C	2 D	2 E

EXTREMELY IMPROBABLE (1)	1 A	1 B	1 C	1 D	1 E
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Note: Completing the matrix without genuine safety reasoning based on facts and relations between facts, is of limited use. A team analysis among specialists of different domains (Working Groups) relevant to the operation(s) being examined helps in assessing the risk in a realistic manner. The evaluation of risk should be based on a systematic analysis of the operation concerned.

Unacceptable Risk Level - the **red** zone in the matrix: risk is too high to continue operating.

Action required: Prohibit/suspend the operation. Operation may be resumed only when risk level is returned to tolerable or acceptable.

Tolerable Risk Level - the **yellow** zone in the matrix: the risk level can be tolerated for the operation, providing that appropriate mitigation measures are in place.

Action required: Introduce appropriate mitigation measures.

- For the risk evaluation validation: The assumptions made for the determination of the risk level and its tolerability are to be validated by the Safety Manager.
- For the authorisation of operations: Management who have the authority to authorise operations at this level of risk: the Accountable Manager.

Acceptable Risk Level - the **green** zone in the matrix: risk is tolerable and can be accepted for the operation.

Action required: Monitor. Risk is considered sufficiently controlled and no additional risk mitigation measures are required. However, actions may still be taken to further reduce the risk level if feasible and reasonable. Additionally, any assumptions used to make an assessment must be monitored to ensure they remain valid.

The red, yellow and green zones are also used in the RADEC form with the same meaning.

8.3.2 Identification of Additional Controls

Identification of Risk Controls

The risk evaluation forms the basis for deciding on risk controls, also called mitigation measures, and in assessing the effectiveness of the risk controls already in place.

Risk Control Priorities

(Additional) risk control measures are selected based on the following priorities:

1. Eliminate the consequences of the hazard;

2. Reduce the likelihood or probability of occurrence;
3. Reduce the severity.

Risk Control Types

Examples of risk controls include:

- Passive technical controls (e.g. system redundancy, firewall);
- Active technical controls (e.g. automatic fire extinguishing system).

Risk controls can address technical, human, organisational and environmental factors.

All personnel may contribute to the definition of risk control measures in particular where they concern personal equipment (goggles, helmets and other flight equipment), by their acceptance and use.

8.3.3 Final Safety Risk Level Evaluation

Risk Control Effect Assessment

The risk mitigating effect of the new controls envisaged are assessed with respect to:

- Functionality: Does the measure influence the ability to perform the activity?
- Robustness: Will the measure be effective under varying conditions and over time?
- Possible other effects such as the introduction of new hazards, of new hazard consequences and related risks.

Risk Transfer or Substitution Risks

When identifying risk control measures, any new hazard, or hazard consequence that may arise from the implementation of such measures should be identified.

Risk is re-assessed considering the effects of the proposed risk control effects, as illustrated in the table below:

Hazard Consequence Assessed	Initial Risk Level	Risk Control	Resulting Risk Level
Hazard Cons. 1			
Hazard Cons. 2			
Hazard Cons. n			

The measures are not necessarily sufficient to bring the risk level back to an acceptable or tolerable level in a first round: if the risk acceptance criteria require further risk reduction, the comparison (iterative process) describes the optimisation process: existing risk controls are improved or new risk controls are considered until the risk is considered acceptable.

The risk analysis should focus on flight safety. In addition, EHEST encourages to address the safety of personnel and of third parties⁷. The analysis can also be expanded to address material, the environment, and the company's reputation⁸.

Cost Benefit Analysis

The t alternative risk controls should be subjected to a Cost Benefit Analysis⁹, which helps determine the most appropriate measures. The mitigation considered appropriate should achieve the safety benefits desired and should be economically acceptable.

An example of a Cost Benefit Matrix is provided below:

	BENEFITS			
		High	Average	Low
COSTS	Low	1	2	3
	Average	2	3	4
	High	3	4	5

Figure 2 – A Simple Cost Benefit Analysis Matrix

Source: D. Huntzinger, formerly with Airbus Helicopters

Acceptance criteria with regards to the costs of implementing risk controls and the expected benefits should be endorsed by the Accountable Manager.

Mention in a separate document the acceptance criteria used within your company.

EHEST suggests using a single Risk Assessment, Description, Evaluation and Control

7

Not in the EU regulation on Air Operations. Check with your National Authorities for possible SMS requirements regarding Health and Safety.

8

Annex III to the EU regulation on Air Operations, Part ORO.GEN(a) (1);(2);(3);(5) Management System only addresses aviation safety.

9

Not mentioned in the EASA AMC.

(RADEC) form for any application requiring to assess and manage risks, such as SOP preparation, management of change, etc.

The RADEC form can also support the analysis of **safety reports**.

An occurrence can be understood as the realisation of one or several hazards or hazards consequences:

- The list of hazards (situations) related to the occurrence are reported in the Hazard section of the RADEC form;
- The list of actual negative events or possible negative events related to the occurrence are analysed and reported in the Hazard Consequences section.
- Suggested additional controls are reported in the Additional Controls section and implementation status are also reported.

RADEC forms and associated documentation are kept as **records**.

An example of application of the RADEC form to is provided in the Appendix 1.

8.3.4 Implementation of Risk Controls

Implementation of the risk control (mitigation) measures may, depending on the nature of these measures, give rise to an implementation plan identifying who is in charge, the resources needed, the deadline, and the stages of implementation.

The implementation plan is periodically reviewed until it is completed or revised.

8.3.5 Evaluation of Risk Control Efficacy

The final steps consists of checking the efficacy of the safety risk control measures implemented. This aspect is addressed in the section Safety Performance Monitoring and Measurement on the SMM.

8.4 Occurrence Reporting and Internal Safety Investigations

Cf. AMC1 ORO.GEN.160 and related AMC

Mention the procedure, legal deadline, and forms by which the company reports the reportable occurrences, serious incidents and accidents to your National Aviation Authority and Accident Investigation Board, in compliance with applicable regulations.

The scope of the occurrence reporting scheme can also be expanded to include occurrences not reportable to the authorities.

8.4.1 Occurrence Reporting Scheme

Cf. GM1 ORO.GEN.200(a)(3)

The overall purpose of the occurrence reporting scheme is to make best use of reported information to improve the level of safety performance but not to attribute blame.

The objectives of the occurrence reporting scheme are to:

- Enable an assessment to be made of the safety implications of each relevant incident and accident, including previous occurrences of a similar nature, so that any necessary action can be initiated, and
- Ensure that knowledge of relevant incidents and accidents is disseminated, so that other persons and other operators may learn from them.

The scheme is an essential part of the overall monitoring function and it is complementary to the normal day-to-day procedures and 'control' systems and is not intended to duplicate or supersede any of them. The scheme is a tool to identify and analyse those instances where procedures appear to have failed or where there was a failure to apply the procedures.

All occurrence reports judged reportable by the person submitting the report will be retained as the significance of such reports may only become obvious at a later date.

Every occurrence identified through occurrence reports, voluntary reports or other sources provides the opportunity to draw safety lessons. Learning from experience is only possible if events are reported and analysed and their causes and factors (technical, operational, or environmental) are determined and analysed.

On a daily basis, occurrences (down to simple malfunctions) may affect any process. Some of these occurrences are defined as accident precursors. Accident precursors are occurrences which, without appropriate mitigation, can result in Undesirable Events or accidents.

The Safety Manager is to record, analyse and monitor these occurrences.

The **RADEC form** supports the analysis of safety reports: occurrences are reported in the RADEC forms for analysis, risk management and recording purposes.

In addition, several **occurrence reporting forms and tools** are provided in the EHEST SMM for Complex Operators. You may also consider using the file "[Database Incidents.xls](#)" provided there.

Occurrences may also be reported verbally, by email or on a simple sheet of paper to the Safety Manager.

Reports will be treated as confidential and/or anonymous at the reporter's request.

Reporting occurrences is essential for improving safety and is strongly encouraged. In return, the Company guarantees that the reporter(s) will not be punished for reporting safety concerns except in the case of illegal act, gross negligence, or a deliberate disregard for regulations and applicable procedures. See the Section Safety Policy and Objectives of the SMM.

8.4.2 Internal Safety Investigations (Not binding for non-complex operators)

Investigation procedure:

Stage	Remarks
-------	---------

Decision to launch an investigation	<ul style="list-style-type: none"> Put together an investigating team.
Activity planning	<ul style="list-style-type: none"> Define and breakdown the activities. Define the investigation needs.
Data collection	<ul style="list-style-type: none"> Collect evidence about the event. The following relevant sources can be used: <ul style="list-style-type: none"> Physical examination; Documentation and files; Interviews with the persons involved; Observation of actions; Simulations; Expert consultancy; Safety database.
Scenario identification	<ul style="list-style-type: none"> Identify/reconstruct the scenario.
Scenario analysis	<ul style="list-style-type: none"> Analyse the facts, determine the causes and identify the associated hazards. Integrate all investigation elements.
Risk assessment	<ul style="list-style-type: none"> Determine risk level and assess risk acceptability.
Risk control/mitigation analysis	<ul style="list-style-type: none"> Identify and assess risk controls/mitigations.
Correction/prevention	<ul style="list-style-type: none"> Determine corrective/preventive action.
Safety communication	<ul style="list-style-type: none"> Communicate the investigation results to all those concerned.
Completion of the investigation	<ul style="list-style-type: none"> Close and archive the file.

8.5 Safety Performance Monitoring and Measurement (Not binding for non-complex operators)

See the example form in in Appendix 2.

If you use SPIs and SPOs, please list them in a document separate from the SMM. It is also useful to be display their evolution over time.

The process for determining quantitative Safety Performance Objectives for a given period consists of:

1. Measuring the baseline against which safety improvements are to be assessed,
2. Fixing reasonable, yet ambitious targets, and
3. Monitoring target achievement over time and reviewing targets as necessary.

The Safety Manager shall ensure that both the SPOs and the SPIs are pertinent and documented.

In the annual **safety review** with the Accountable Manager, the objectives of the year will be reviewed and new objectives will be defined for the year to come.

STEPWISE APPROACH TO SAFETY PERFORMANCE MEASUREMENT (Optional)

At different levels of maturity of the SMS, the amount of safety data available and the issues and actions that are most important for improving safety performance will differ. The company can therefore adopt a step-wise approach to safety performance measurement¹⁰, based on three levels of SMS maturity:

LEVEL 1 OF SMS IMPLEMENTATION: PRESENT AND SUITABLE

At the first level, the SMS will have achieved compliance with the applicable requirements. SPIs should focus on the activities required to maintain basic compliance with the SMS regulatory framework. These can be of a quantitative (numerical) or qualitative (non-numerical) nature.

Quantitative indicators (examples):

- the number of safety reviews performed;
- the number of staff who received training on SMS;
- the number of internal audits performed versus number of audits planned;
- etc.

Qualitative indicators (examples):

- feedback received from staff on the safety policy;
- feedback received on the safety actions, safety meetings, safety campaigns that the Company may have organised;
- feedback received from staff on new procedures implemented in the area of internal occurrence reporting or hazard identification;
- etc.

Once the SMS is in place and compliance with requirements has been achieved, new level 2 indicators can be introduced to address safety performance (are we getting safer?).

10

Not in the EASA AMC.

LEVEL 2 OF SMS IMPLEMENTATION: OPERATING AND EFFECTIVE

At this level, the company will start to define more specific SPIs on the basis of safety data collected through the hazard identification and internal occurrence reporting processes (see the relevant sections of this guidance document).

More specific, objective and reliable 'leading' or 'forward looking' performance indicators are introduced such as:

- the number of risk assessments performed following organisational changes;
- the percentage of SOPs that have been subject to hazard identification;
- average lead time for completing corrective actions following internal audit;
- number of additional procedural controls implemented;
- etc.

At this level of SMS maturity, the Company will be getting a better picture of the risks affecting the operations and the solidity of the risk controls in place.

LEVEL 3 OF SMS IMPLEMENTATION: BEST PRACTICE

Level 3 is the level where the company will have achieved continuous learning and improvement for all parts of the SMS.

At this maturity level, effective hazard identification and risk assessment processes are established that will allow it to derive or to use a more sophisticated mix of SPIs.

SPIs focus on the risks specific to the company revealed by operating the SMS and from additional safety information identified within the industry sector or by the authorities¹¹.

SPIs should address risk levels and the solidity of the risk controls.

Risk mitigation actions focus on those issues that present the greatest risks or offer the greatest potential for improvement.

Quantitative indicators (examples):

- Number of high risk occurrences (coded amber and red),
- Mean value of risk ratings (over a reference period, e.g. 1 year),
- Solidity of risk controls (rated from 0 to 5 over a reference period, e.g. 1 year).

The effectiveness of any new risk control introduced should also be assessed.

8.6 Emergency Response Planning

11

Data collected within the company may not be sufficient or representative enough to perform realistic risk assessment. Relevant industry safety data can therefore also be taken into account to assess the risks.

Cf. AMC1 ORO.GEN.200(a)(1):(2):(3):(5) point (f)

An example of an Emergency Response Plan developed by the EHEST is provided in a separate document

8.7 The Management of Change

AMC1 ORO.GEN.200(a)(1):(2):(3):(5)

Change Impact Assessment Procedure

1. Identify the nature and scope of the change(s).
2. Identify key personnel who will assist in implementing the change and the mitigation measures required, and involve them in the change management process.
3. Perform an initial Impact Assessment covering:
 - The Company's operational procedures (Operations Manual, Standardisation Manual, Maintenance Training Organisation Exposition (MTOE), etc.),
 - Work organisation (staffing, composition of the teams, scheduling, additional training, etc.),
 - Infrastructure (relocation, parking base, etc.),
 - Maintenance of equipment or of the aircraft.
4. Perform a Safety Risk Analysis (See the Risk Management section):
 - Identify hazards related to implementing the proposed change and their possible consequences,
 - Identify existing risk controls and define, as appropriate, additional mitigation measures.
5. Define an implementation plan.
6. Assess related financial costs.
7. Communicate the proposed change to the staff and involve them in the project in an effort to garner their support.
8. Implement the actions as defined in the plan.
9. Check the overall effects through the established Safety Performance Monitoring and Measurement process.

8.8 Continuous Improvement (not binding for non-complex operators)

The Company will continuously improve its SMS¹² and safety performance.

The Safety Manager performs a review of the SMS (how effectively goals and objectives were met) and he/she provides a report¹³ on the SMS (how effectively the SMS works, the stage of implementation, results of audits and review of actions, any issues/challenges and proposals for improvement) annually to the Accountable Manager.

Improvement of the SMS¹⁴

Continuous improvement of the SMS is achieved through:

- Assessment of how the SMS is functioning;
- Identification and analysis of possible issues/challenges associated with the running of the SMS;
- Implementing changes aimed at improving the SMS;
- Monitoring and reviewing the effects of any changes.

Continuous improvement can also be achieved when the SMS is already functioning well.

Measures that can improve the SMS include:

- Simplified procedures;
- Improved safety reviews, studies and audits;
- Improved reporting and analysis tools;
- Improved hazard identification and risk assessment processes, and improved awareness of risks in the Company;
- Improved relations with the subcontractors, suppliers and customers regarding safety;
- Improved communication processes, including feedback from the personnel.

Continuous improvement of the SMS may target any component of the SMS, in other words any subject addressed in this SMM with the objective of increasing the effectiveness of the system over time.

12

The AMC only mentions continuous improvement of the safety performance (the output of the SMS), not improvement of the SMS.

13

Not in the EASA AMC.

14

Not in the Implementing Rules and the EASA AMC.

Chapter 9 – Contracted Activities

Cf. ORO.GEN.205 and related AMC1 and GM1

Insert a separate document or table with your contracted activities and the contracted organisations.

Chapter 10 – Safety Promotion

Safety Promotion is a process aimed at promoting a culture of safety. All personnel are made aware of the safety risks, and understand how they are key safety actors and that they all contribute to an effective SMS.

Managers are important actors in the Company's SMS. In all the activities they manage, they demonstrate commitment to safety and take care of safety aspects. They lead by example and have an essential role to play for safety promotion.

Training and effective communication on safety are two important processes supporting safety promotion.

Chapter 11 – Training and Communication on Safety

Cf. ORO.GEN.200(a)(4) and related AMCs/GM

11.1 Training

There is a link between training and safety risk management, as training and competence development is one of the means by which safety risks can be reduced. Other types of risk controls concern equipment or organisational factors (e.g. procedures), which in turn can also be addressed in training.

The safety training programme may consist of a mix of self-study using various sources of training material, class-room training, e-learning or other training types.

Note: As the SMS matures, and unless otherwise prescribed by implementing rules, training contents and frequency should be linked to the safety risk management and safety performance monitoring and measurement (dynamic process). The highest risks and those risks where control particularly depends on personnel competence should attract more training resources (longer duration, higher frequency, etc.).

The following table is an example of SMS training that can be conducted for new staff members (induction training) and provided as recurrent training:

Contents	Training Objectives	Method/Provider	Duration/Validity
Safety Policy	Understand the main elements of the Safety Policy.		
Organisation, roles and responsibilities	Understand the organisation, roles and responsibilities concerning the SMS. Everyone to know his or her own role in the SMS.		
Safety Objectives	Understand the Company's safety objectives.		
Emergency Response Planning (ERP) (reinforced through practical simulations)	Understand the various roles and responsibilities in the Company's ERP. Everyone to know his or her own role in the ERP.		
Occurrence and hazard reporting	Know the means and procedures for reporting hazards and occurrences.		
Safety Risk Management (SRM) process including roles and responsibilities	Understand the Safety Risk Management process. Everyone to know his or her own role in the SRM.		
Continuous improvement of safety performance	Understand the principles of continuous improvement of safety performance.		
Compliance Monitoring	Understand the basic principles of Compliance Monitoring.		

Contents	Training Objectives	Method/Provider	Duration/Validity
Responsibility when contracting activities	Understand the Company's responsibilities when contracting activities. Everyone should know his or her own roles and responsibilities regarding this subject.		

11.2 Communication

Cf. ORO.GEN.200(a)(4) and related AMCs/GM

Examples of information and communication means are provided below:

- Safety meetings,
- Safety briefings,
- E-mail, postal mail, suggestion boxes,
- Safety information from the OEMs, the authorities, Helicopter Associations and from national and international Safety Initiatives,
- Safety campaigns, safety posters,
- Newsletters, Company journal,
- Flight safety digests, digest of accidents and incidents (appropriately de-identified), from within and outside the Company,
- Digest of safety studies, audit reports, survey reports, and safety reviews,
- Company forum(s) or professional networks (e.g. LinkedIn, Facebook, Twitter, etc.),
- Subscription to publications and journals.

Appendix 1 – Risk Assessment, Description, Evaluation And Control (RADEC) – EXAMPLE

RISK ASSESSMENT, DESCRIPTION, EVALUATION AND CONTROL (RADEC) FORM		
RA No.: H001	Definition: Confined area landing	
Ref.: Sling load Standard Operating Procedures		
Operation Description: Sling load operations in mountainous areas		
<p>Hazards - What were or could be the sources of potential damage, harm or adverse health effects in the studied environment?_</p> <p>H 1. Trees and vegetation H 2. Wires, power lines H 3. Meteorological conditions H 4. Wind, turbulence, downdrafts H 5. Confined landing sites</p>		
<p>Possible Hazard Consequences - What were or could be the hazard consequences?</p> <p>HC 1. Main rotor strikes ground obstacles HC 2. Tail rotor strikes ground obstacles HC 3. In flight contact with wires, power lines HC 4. Ground personnel injuries due to lifted loads or helicopter downdraft HC 5. Inadvertent or accidental cargo release HC 6. Damage on ground HC 7. Power loss in flight HC 8. Power settling HC 9. Uncontrolled cargo swing</p>		
<p>Controls in place - What risk controls are already in place to address these?</p> <p>C 1. Minimum size of the landing area (25 m x 25 m) C 2. Pilot experience: minimum 500 flight hours in aerial work. C 3. Area must be inspected by Company personnel before landing C 4. High and low recognition before the first landing C 5. Sling load operating procedures C 6. Wire, power lines area mapped before sling load operations</p>		
INITIAL Safety Risk - Refer to the Safety Risk Matrix (if you use one)		
ACCEPTABLE	TOLERABLE	UNACCEPTABLE

<p>Additional Controls - What more should be done to further reduce the initial safety risks to an acceptable level?</p> <p>C 7. Personnel on ground to be in radio contact with the pilot</p> <p>C 8. Personnel on ground to wear helmets and personal safety equipment</p> <p>C 9. Minimum cable length = length of higher obstacle + 15 feet</p> <p>C 10. Maximum take-off weight with cargo reduced by 5%</p>		<p>Implemented ?</p> <p>YES</p> <p>YES</p> <p>YES</p> <p>NO</p> <p>(on-going)</p>
<p>FINAL Safety Risk (see Safety Risk Matrix)</p>		
<p>ACCEPTABLE</p>	<p>TOLERABLE</p>	<p>UNACCEPTABLE</p>
<p>Is the residual risk acceptable: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (if NO go back to previous section)</p>		
<p>RISK ASSESSMENT CLOSED <input checked="" type="checkbox"/></p>		

