



Risk Management Program

Revision: Original

15 August 2009

Serial Number: _____

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Revision	Description of Change	Revision Effective Date	Revision Inserted By
Original	Original Issuance	15 August 2009	N/A
1			
2			
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9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

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List of Effective Pages

Revision No. Original

Effective Date: 15 August 2009

<u>PAGE.</u>	<u>REV. NO.</u>	<u>EFFECTIVE DATE.</u>
RECORD OF REVISIONS		
1	ORIG	15 August 2009
2	ORIG	15 August 2009

LIST OF EFFECTIVE PAGES		
3	ORIG	15 August 2009
4	ORIG	15 August 2009

TABLE OF CONTENTS		
5	ORIG	15 August 2009
6	ORIG	15 August 2009

<u>PAGE.</u>	<u>REV. NO.</u>	<u>EFFECTIVE DATE.</u>
24	ORIG	15 August 2009
25	ORIG	15 August 2009
26	ORIG	15 August 2009
27	ORIG	15 August 2009
28	ORIG	15 August 2009
29	ORIG	15 August 2009
30	ORIG	15 August 2009
27	ORIG	15 August 2009
28	ORIG	15 August 2009
29	ORIG	15 August 2009
30	ORIG	15 August 2009

RISK MANAGEMENT		
7	ORIG	15 August 2009
8	ORIG	15 August 2009
9	ORIG	15 August 2009
10	ORIG	15 August 2009
11	ORIG	15 August 2009
12	ORIG	15 August 2009
13	ORIG	15 August 2009
14	ORIG	15 August 2009
15	ORIG	15 August 2009
16	ORIG	15 August 2009
17	ORIG	15 August 2009
18	ORIG	15 August 2009
19	ORIG	15 August 2009
20	ORIG	15 August 2009
21	ORIG	15 August 2009
22	ORIG	15 August 2009
23	ORIG	15 August 2009

Your Company Acceptance:

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Your Company Acceptance:

FAA Acceptance:

Risk Management Program

Table of Contents

RECORD OF REVISIONS	1
LIST OF EFFECTIVE PAGES	3
TABLE OF CONTENTS	5
1. OVERVIEW	7
A. THE ICAO SMS MODEL	7
2. SOURCES OF DATA	8
A. INTERNAL DATA	8
B. EXTERNAL DATA	8
C. PROACTIVE RISK MANAGEMENT	8
D. REACTIVE RISK MANAGEMENT	8
E. PREDICTIVE RISK MANAGEMENT	8
3. POLICY	9
A. ELIMINATING HAZARDS	9
B. RISK ACCEPTANCE	9
C. MITIGATING RISK	9
D. ACCEPTING RISK FOR SHORT-TERM HAZARDS	9
E. MANAGING DAILY RISKS	9
4. RESPONSIBILITIES	10
A. SENIOR MANAGEMENT	10
B. DIRECTOR OF SAFETY	10
C. MANAGERS	10
D. SAFETY COMMITTEE	11
5. AUTHORITY	11
A. SENIOR MANAGEMENT	11
B. DIRECTOR OF SAFETY	11
C. MANAGERS	11
D. PERSONNEL	12
6. THE SAFETY RISK PROFILE	12
A. PURPOSE	12
B. PERIODIC UPDATES	13
C. OBJECTIVES, GOALS & MEASUREMENTS	13
D. PROFILE REVISION PROCEDURES	13
7. OPERATIONAL RISK MANAGEMENT	14
8. ORM PHILOSOPHY	15
A. BENEFITS	15
B. FOCUS	15
9. ORM TERMINOLOGY	15
10. ORM CONCEPTS	15
A. TIME-CRITICAL	16
B. DELIBERATE	16
C. STRATEGIC	16

11. ORM PRINCIPLES	17
A. ACCEPT NO UNNECESSARY RISK.....	17
B. MAKE RISK DECISIONS AT THE APPROPRIATE LEVEL	17
C. ACCEPT RISK WHEN BENEFITS OUTWEIGH THE COSTS	17
D. INTEGRATE ORM INTO PLANNING, EXECUTING AND PROBLEM-SOLVING.....	17
12. ORM PROCESS OVERVIEW.....	17
A. ORM PROCESS CHART	18
13. OPERATIONAL RISK MANAGEMENT PROCEDURES	19
A. SYSTEM & TASK ANALYSIS	19
B. FURTHER DEFINE THE OPERATION OR TASK.....	19
C. DEFINE THE PROBLEM, IRREGULARITY OR EVENT	20
14. IDENTIFY THE HAZARDS: STEP 1	20
A. HAZARD ID & RISK STATEMENT DEVELOPMENT TOOLS	20
B. ROOT CAUSE ANALYSIS	21
15. ANALYZE AND ASSESS THE RISKS: STEP 2.....	21
A. TRIGGERING MECHANISMS	21
B. DEVELOPING RISK STATEMENTS.....	22
C. RISK ANALYSIS AND RISK FACTORS	22
D. LIKELIHOOD	22
E. SEVERITY	22
F. EXPOSURE	23
G. RISK ASSESSMENT MATRIX.....	23
H. OVERALL RISK LEVELS.....	24
16. ANALYZE RISK CONTROL MEASURES: STEP 3	24
A. MACRO OPTIONS	24
B. REDUCE OPTIONS	25
C. PREFERRED ORDER OF CONTROLS	25
D. CORRECTIVE ACTION PLAN PROCEDURES	25
17. MAKE CONTROL DECISIONS: STEP 4	26
A. MAKE RISK DECISIONS AT THE APPROPRIATE LEVEL	27
18. IMPLEMENT RISK CONTROLS: STEP 5	27
19. MONITOR AND FOLLOW-UP: STEP 6.....	27
A. MONITORING OF RC/CAS.....	28
B. FOLLOW-UP AUDITS & SURVEILLANCE	28
20. PROCEDURES FOR MANAGING EMPLOYEE REPORTS	29
21. “OFFICIAL TIME-OUT” RISK MITIGATION TOOL	30
A. BACKGROUND.....	30
B. POLICY.....	30
C. EVENTS SUBJECT TO AWARD OF AN OFFICIAL TIME OUT.....	30

Risk Management Program

1. OVERVIEW

A. THE ICAO SMS MODEL

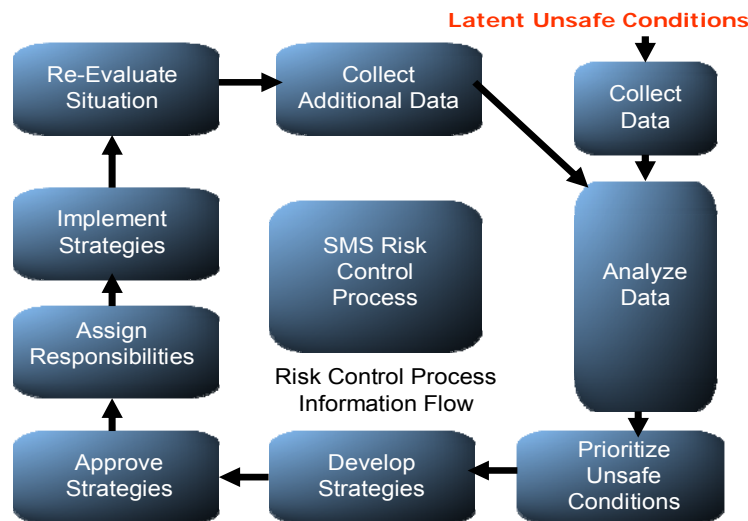
Your Company's **Risk Management Program** is based on an ICAO model called the **SMS Risk Control Process**. In this process, data is collected from system & task analysis, employee reports, audit findings and other safety assurance sources. This data is used to identify **Latent (unrecognized) Unsafe Conditions**. Appropriate managers promptly analyze this data for sufficient information, as well as validity and applicability.

If the information is sufficient and the data is valid, members of management then identify hazards and determine root causes. Managers further evaluate exposure, likelihood and potential severity of the hazard or safety concern, in order to establish a quantified level of risk. If a hazard or safety concern can be eliminated, the record is closed. If the level of risk is low, the risk is normally accepted. Moderate or high-level risks require that risk mitigating strategies be implemented. All identified hazards are prioritized and managed within the YCO Incident Reporter (IR) database.

Your Company utilizes the following methods to document and track each identified area of concern, or "safety risk":

- **The Incident Reporter™ database** is used to document safety risks identified from system / task analysis, employee reports, audit findings, management reviews, and data from other sources;
- **The Safety risk Profile** (within the IR database) is used to document the company's ten or twelve highest-risk activities that require contingency plans and/or continued monitoring, to ensure that all risks associated with the activity are controlled and maintained at acceptable levels;
- **Form SP007: Risk Control Worksheet** is used for change management and to document safety risks identified during strategic planning meetings and the development stages of projects, activities, growth, acquisitions and other changes.

For safety risks that cannot be eliminated and which are classified as moderate or high, Corrective Action Plans (which consist of risk controls and / or corrective actions) are developed by those department managers with the required knowledge and background. These CAPs are recorded, accepted by the appropriate level of authority, and managed in the Incident Reporter database.



ICAO SMS RISK CONTROL PROCESS MODEL

2. SOURCES OF DATA

A. INTERNAL DATA

This program's data-driven approach to effective risk management requires internal data generated through system & task analysis, and data generated by various Safety Assurance processes. These processes include employee reports, vendor audits of contract fueling, maintenance, deicing, and training providers, and other vendors. The company's **Internal Evaluation Program** also generates data from three sources:

- **Departmental Audits** whereby each department (e.g., operations & maintenance) performs its own internal audit for regulatory compliance and of operational processes (including those performed by contractors), to determine the performance and effectiveness of risk controls;
- **Internal Evaluations** which evaluate performance of various operational processes and confirm conformance / effectiveness of risk controls and the YCO SMS;
- **Management Reviews** which sample SMS process outputs to determine whether any improvements are needed to SMS processes, and/or to operational processes within the organization.

B. EXTERNAL DATA

External data is also applied from safety reports, external audits, FAA inspection & surveillance findings, industry safety reports, manufacturers' service bulletins, airworthiness directives and other sources. Aircraft Accident / Incident Reports generated by other operators of similar equipment also provide important safety information for risk assessment and management.

When utilized, **External Evaluation** audit findings are provided to senior management for the development of risk-mitigating strategies. These objective and "outside-the-box" inspections often reveal deficiencies or areas requiring improvement that would otherwise remain undetected. When external audits (such as third-party audits requested by management or those performed by FAA) reveal operational process or SMS deficiencies, audit findings are entered into the IR database for development of Corrective Action Plans.

C. PROACTIVE RISK MANAGEMENT

Proactive risk management occurs through the use of **Operational Risk Management** during planning and system design, and through the collection of data from continuous monitoring, departmental audits, internal evaluations and management reviews.

D. REACTIVE RISK MANAGEMENT

Although emphasis is placed on a forward-thinking, proactive approach to risk management, Your Company's overall risk management process is also reactive, by nature. **Reactive** risk management occurs out of necessity when an employee report or external data (such as an Airworthiness Directive or SAFO) indicates an area of high risk, or when an incident occurs that requires immediate risk controls or corrective actions.

E. PREDICTIVE RISK MANAGEMENT

Predictive risk management is possible through the collection and proper management of data, over time, that may indicate a systemic problem or developing trend. This may include repeated reports of problems with a vendor or an individual, an aircraft, vehicle, item of equipment, or procedures, etc. Evaluation of flight and maintenance records may indicate a deteriorating trend with an engine or other system (trend monitoring). Reports from other operators of common difficulties or hazards encountered may also be predictive, and utilized to develop risk-mitigating strategies before an incident or accident occurs.

3. POLICY

A. ELIMINATING HAZARDS

Whenever possible, management should attempt to eliminate hazards or hazardous activities, rather than mitigate associated risks. One example of such a strategy would be to conduct flight training and checkrides in a simulator as opposed to the actual aircraft. This simple policy change eliminates many of the hazards associated with flight training in an actual aircraft.

B. RISK ACCEPTANCE

Risk is accepted by applying Operational Risk Management Principles. Risk acceptance procedures include acceptance criteria and designation of authority and accountability for risk management decision-making. Acceptability of risk is determined using a **Risk Assessment Matrix** or relative calculated risk equation in order to determine a quantifiable level of risk. It is the policy of this company that all risks, other than those classified as **Acceptable/Green/Low**, be mitigated and, when necessary, documented utilizing the forms, instructions and procedures set forth herein.

C. MITIGATING RISK

When risks are classified as **Unacceptable/Red/High** or **Acceptable With Mitigation/Yellow/Moderate**, managers must take immediate action and/or implement risk controls or corrective actions to address root causes and reduce the likelihood of an accident or incident. Whenever possible, it is the policy of YCO to not rely on one single approach to risk mitigation, instead striving to build defenses in depth. This may include development of engineered systems, procedural controls, behavioral fixes, the distribution and wearing of personal protective equipment, posting of safety notices and revisions to written guidance. Where the results of risk assessment fall between acceptance and required mitigation, or when external factors could tip the scales towards an unacceptable level of risk, risk controls may require continuous monitoring to prevent the onset of an undesirable outcome.

D. ACCEPTING RISK FOR SHORT-TERM HAZARDS

Circumstances may arise whereby hazards exist in the short-term while a Corrective Action Plan and safety risk controls are being developed and implemented. In this case, appropriate YCO managers shall determine acceptability of the risks associated with these hazards, and if necessary, take interim measures to mitigate such risks in the short-term. These actions are recorded in the IR database.

E. MANAGING DAILY RISKS

To achieve the highest degree of safety, **Operational Risk Management** must be applied on a daily basis by every person within the company. Proper risk management requires an assessment of risk by each individual, **each time a decision is made**. For example, a Captain's decision to permit a first officer to land the aircraft on a wet runway in gusty crosswind conditions is a decision that must be made in the field and without the benefit of documented data on which to base the decision. Similarly, maintenance technicians must make safety assessments each time a maintenance item is deferred or work is interrupted; it may be best for a technician to complete the installation of a component, even at the expense of overtime. Operational Risk Management provides the tools and techniques for all personnel, at all levels within the company, to assess risks when making time-critical decisions and during routine job planning, as well as for the management of change and strategic long-term planning.

NOTE:

It is essential for all personnel and vendors to recognize the potential safety impact of each and every decision that is made. Applied Operational Risk Management improves the decision-making process, resulting in fewer work interruptions, smoother operations and reduced injuries and incidents.

4. RESPONSIBILITIES

A. SENIOR MANAGEMENT

The President, as YCO's accountable executive, is responsible and accountable for continued quality assurance of this Risk Management Program. The President is responsible for the continued performance of the Director of Safety and all Safety Committee members in their duties with regard to this Risk Management Program.

B. DIRECTOR OF SAFETY

With regard to the risk management process, the Director of Safety is responsible and accountable for:

- Performing risk assessment activities jointly with appropriate managers when requested;
- Administering the Incident Reporter database and assisting department managers with their creation of Risk Management Records and Corrective Action Plans;
- Performing follow-up audits for assurance of risk controls and corrective actions recorded in IR;
- Maintaining a current and applicable Safety risk Profile, including risk-mitigating strategies;
- Maintenance and security of the company's Risk Management Files and IR database.

C. MANAGERS

Each manager is responsible and accountable for identifying areas of **potential moderate or high risk** for operational processes within their respective departments, and for promptly eliminating or mitigating such risks whenever possible. Managers are also responsible for communicating risk controls, corrective actions and lessons learned to appropriate department personnel.

All managers are further responsible and accountable for the prompt validation and risk assessment of reports received under the company's **Employee Reporting System**. In addition, each manager is responsible for bringing to the attention of the Director of Safety any and all incidents, violations, near-accidents or other safety concerns, regarding any operational processes, of which that manager is aware.

Risk assessment of maintenance-related safety concerns may be performed by the DOM or jointly by the Director of Maintenance and one or more additional managers. Risk assessment of flight training-related safety concerns may be performed individually by the Chief Pilot / Director of Training or jointly by including one or more additional managers in the process. Risk assessment of dispatch or other operations-related safety concerns may be performed by the Director of Operations, or jointly by including the input of one or more additional managers.

In each case, appropriate manager(s) should possess the necessary training, knowledge, experience and expertise to identify and validate hazards, assess risk, and develop risk controls and corrective actions (strategies) to mitigate risk. These strategies are recorded in the Incident Reporter database and accepted by the appropriate risk-decision authority. The risk-decision authority could be a department manager or higher level of authority, depending on the nature of the safety concern. See **Operational Risk Management** below for more information.

NOTE:

When using the IR database to manage risk, open one Risk Management Record for each specific hazard and set up individual RC/CAs for each manager as part of the Corrective Action Plan (CAP). Managers should develop their own CAPs for the processes they own, and may further specify the details of risk controls and corrective actions under the RC/CAs tab in the Incident Reporter database.

D. SAFETY COMMITTEE

Hazards are identified through system / task analyses and safety assurance activities of continuous monitoring, internal audits and evaluations, external audits, event investigation, employee reports and management review. For each identified hazard as a result of these activities that is brought before the Safety Committee for resolve, the Safety Committee is responsible and accountable for:

- Validation of the data;
- Determination of root cause(s);
- Assessment of risk.

For each hazard with associated moderate or high risk, the Safety Committee then assigns responsibilities to specific managers for development and implementation of risk controls and corrective actions. The Safety committee is also responsible for:

- Assessing the performance and effectiveness of risk controls, and conformance of risk controls to SMS expectations and safety policy objectives;
- Assessing the performance of safety-related functions of operational processes against their objectives and expectations;
- Assessing the performance of the SMS against its objectives and expectations.

The Safety Committee is further responsible and accountable for applying **Deliberate and/or Strategic Operational Risk Management** processes to all company plans for growth, acquisitions, new aircraft, facilities and types of operations. Utilizing these change management techniques, the Safety Committee effectively controls risk and manages changes in organizational structure, staff, procedures, regulations and contractual requirements. The Safety Committee is also responsible for evaluating other areas of potential moderate or high risk, including risks associated with products and services received from vendors.

5. AUTHORITY

A. SENIOR MANAGEMENT

As an authorized representative of senior management, the President may take whatever steps are necessary to eliminate identified hazards and/or mitigate associated risks. The President is authorized by senior management to reject each Corrective Action Plan (CAP) that, in the President's opinion, will not effectively address root causes or deficiencies in systems or processes. The President is authorized to direct further corrective actions and follow-up audits in the interest of safety.

B. DIRECTOR OF SAFETY

The Director of Safety is authorized to OPEN a Risk Management Record in the IR database for each identified and validated hazard or safety concern requiring risk mitigation. The Director of Safety is authorized to CLOSE those Risk Management Records for which risk controls and/or corrective actions have been implemented, hazards communicated to personnel, and whose follow-up audit results have indicated that risk mitigation strategies were effective.

C. MANAGERS

All managers, including the Director of Safety, are authorized to eliminate any hazard that could cause injury to personnel or damage to property. They are further authorized to take whatever actions are necessary to eliminate or mitigate risk, including interruption, diversion or cessation of flight operations, interruption of ground or maintenance operations, or evacuation of personnel in the interest of safety.

D. PERSONNEL

All company personnel are authorized to eliminate any hazard that could cause injury to personnel or damage to property (all hazards must be brought to the attention of the Director of Safety or a department manager). All personnel are authorized to take whatever actions are necessary to eliminate or mitigate risk, including interruption, diversion or cessation of flight operations, interruption of ground or maintenance operations, or evacuation of personnel, if the person taking such action believes a life-threatening situation or other threat of serious injury or property damage exists, in the interest of safety.

6. THE SAFETY RISK PROFILE

A. PURPOSE

Your Company's Safety risk Profile is a documented listing of high priority safety issues. Also known as a **Significant Safety Issue List**, or SIL, the profile lists the top ten or twelve high-risk activities or situations in maintenance, ground and flight operations that require risk controls and monitoring in order to ensure the highest level of safety. To be effective, the Safety risk Profile should be limited to the top 10-12 highest risks to flight and personnel safety. This methodology allows management to effectively allocate resources where they are required the most. When developing a Safety risk Profile or considering adding an activity or situation, the following factors should be considered:

- **Operational factors** such as VFR / IFR operations, radar coverage, airport facilities and approaches, weather information, terrain, and type of mission;
- **Technical factors** such as condition and age of equipment, type and number of powerplants, onboard equipment, MEL items, recent maintenance, and servicing facilities;
- **Human factors** such as experience and training of flight and maintenance personnel, number of crewed positions, currency, and physical, psychological, psycho-social and environmental factors that affect human error;
- **Environmental factors** of weather, wind, turbulence, precipitation, visibility, temperature, available light, etc.

As examples, the following activities or situations may be listed on the YCO Safety risk Profile:

- Off-airport scene calls conducted at night;
- Operations in mountainous terrain with low ceilings and poor visibility;
- Runway incursions;
- Near-misses at high traffic airports;
- Search and rescue operations;
- Unstabilized approaches;
- Operations that require a high degree of piloting skill;
- High altitude operations;
- Test flights upon completion of major maintenance;
- Entry and maintenance of aircraft fuel tanks;
- Actuation of landing gear, electrical or hydraulic systems during maintenance.

Each area of potential moderate or high risk requires continued monitoring and proactive risk management to reduce potential risk. This could include the development of risk controls that include changes to policies and procedures, additional training, hazard communication and increased surveillance.

B. PERIODIC UPDATES

The Safety risk Profile is a “living document” that must be periodically updated, particularly during times of operational change. At a minimum, the profile should be revised annually, or whenever substantial changes in operations occur. Substantial changes may include:

- Operation of a new aircraft type;
- Use of new equipment;
- A new geographic area of operations;
- A new maintenance base;
- Other significant changes, including changes in fueling and/or maintenance vendors.

Periodic review and revision of the Safety risk Profile is performed during routine meetings of the Safety Committee, and during the Committee’s annual **SMS Management Review**. High-risk activities (as identified and listed in the Safety risk Profile) are evaluated. Based on these evaluations, risk controls may be modified, levels of oversight adjusted, and enhanced safety management activities carried out.

C. OBJECTIVES, GOALS & MEASUREMENTS

The Safety risk Profile should be linked to the objectives and goals of YCO. This means that for each profile element, safety objectives and goals should be established, and risk-mitigating strategies implemented that will facilitate reaching those goals. For example, high risk of an accident and loss of life may exist when conducting circling approaches with large or high-speed aircraft at certain airports. Objectives might include prohibiting circling approaches as a standard operating procedure, and a goal might include a quantified reduction in the number of circling approaches conducted each winter season.

D. PROFILE REVISION PROCEDURES

The company’s **Safety risk Profile** is presented by the Director of Safety at each regularly scheduled meeting of the Safety Committee for review of profile elements and to control and validate risk control strategies. When a department manager or other Safety Committee member has identified an area of moderate or high risk that requires risk controls to keep that risk “in check”, or at an acceptable level, the issue is brought before the committee for discussion.

The committee first determines if the risk is valid. By developing one or more risk statements and performing risk assessment, the committee confirms the overall risk level (without risk controls) as moderate or high. The committee then determines which departments will be required to implement risk controls. Depending on the urgency of the situation, immediate action may be needed by one or more department managers to mitigate risk.

Next, by opening a Risk Management Record in the IR database and developing a Corrective Action Plan (CAP), department managers are tasked with developing and documenting risk controls and corrective actions (RC/CAs within IR for their respective departments. Implementation dates, methods, monitoring, communication and accountabilities are agreed upon and documented as a part of the CAP.

The Director of Safety is responsible for maintaining the YCO Safety risk Profile in the Incident Reporter™ electronic database. If vendors are involved, appropriate department managers are responsible for working with their respective vendor POCs to ensure that vendors develop their own acceptable risk controls or effect necessary communications to vendor employees. The IR database provides a necessary interface between accountable managers and vendor personnel for the proper and timely completion of risk controls, monitoring, communications and other responsibilities associated with the CAP.

NOTE:

**Vendors and their managers may also be assigned risk controls or corrective actions.
“POC” denotes a vendor’s Point-of-Contact.**

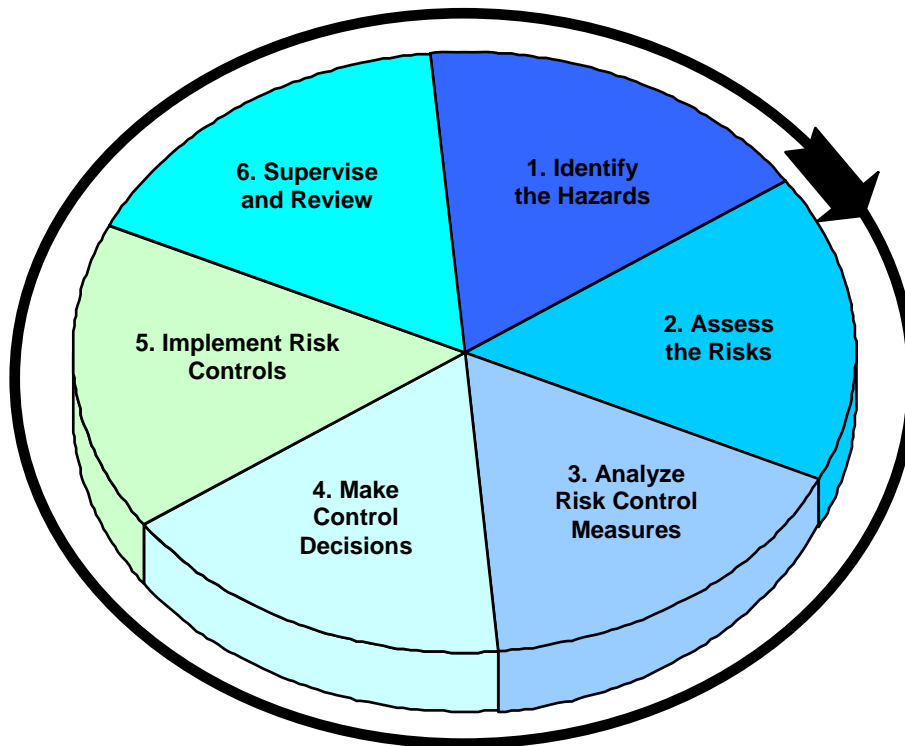
7. OPERATIONAL RISK MANAGEMENT

Operational Risk Management consists of policies, instructions and procedures for both department managers and all personnel to manage risk by making good decisions based on risk assessment during the normal course of daily ground, maintenance and flight operations. Operational Risk Management (ORM) is also applied by managers at all levels within the company when performing system / task analysis, and to plan for growth, acquisitions, new aircraft, and facilities. ORM is further applied to manage changes in organizational structure, staff, hiring / training procedures, regulations and contractual requirements.

Certain elements of Operational Risk Management (ORM) should be applied by scheduling when selecting crewmembers; by flight crews during preflight planning; by maintenance personnel each time maintenance is performed; and by ground crews at all times on the ramp. In many ways, we already intuitively apply ORM principles each time we pair crews based on experience, assess suitability of weather forecasts, choose not to stand on the top rung of a ladder, or wait for a wing-walker before towing an aircraft. ORM principles are clear and straight-forward:

- Accept no unnecessary risk;
- Make risk decisions at appropriate levels;
- Accept risk only when benefits outweigh the costs;
- Integrate ORM into planning and policy at all levels.

Applied Operational Risk Management will at times reveal hazards and systemic deficiencies that managers integrate into the more in-depth and quantitative Risk Control Process. It is therefore essential that all personnel assertively report these hazards or deficiencies to their supervisor, manager or the Director of Safety for corrective action.



Operational Risk Management Model

8. ORM PHILOSOPHY

Traditional risk management practices assert that risk is “bad.” In reality, taking calculated risks is a necessary part of aviation, and is essential for an organization to grow and capitalize on its capabilities. Your Company’s objective is to complete all ground, maintenance and flight operations successfully while reducing risk to personnel, resources, and the environment to a level acceptable for the particular operation or task in a given situation. To accomplish this, all personnel should identify hazards and mitigate risk using the same disciplined, organized, logical thought processes that govern other aspects of aviation maintenance and flight operations.

A. BENEFITS

Operational Risk Management (ORM) provides the framework to minimize risk, show concern for co-workers and maximize the successful completion of all ground, maintenance and flight operations. Additional benefits include safeguarding employees’ health and welfare, and the protection and conservation of aircraft, support equipment and other vital resources. Beyond reducing losses, Operational Risk Management provides a logical process to identify and exploit opportunities for producing the greatest return on our investment of time, dollars, and personnel.

B. FOCUS

To accomplish these objectives, all personnel must change their focus from a compliance-based to a risk-based philosophy. With ***compliance as a minimum standard***, ORM focuses on each task or operation, the risks involved, and the safeguards in place to ensure success of the operation. Each person involved with a task, operation or process should apply ORM principles to ensure the highest level of safety and success.

9. ORM TERMINOLOGY

Use of the ORM process requires all personnel to understand ORM terminology clearly and communicate hazards and risks effectively. Understandably, each department will differ in how it interprets risk assessment and risk management results based on the task, activity or operation to which ORM is being applied and its members’ varying degrees of knowledge, skill, experience, and maturity. For correct terminology, refer to the definitions paragraph in the **SMS Manual Section 1: Introduction**.

10. ORM CONCEPTS

The Operational Risk Management (ORM) process is a decision-making tool used by personnel at all levels to increase operational effectiveness by anticipating hazards and reducing the potential for loss. Application of ORM thereby increases the probability of a successful outcome for all tasks and operations. The ORM process exists on three levels:

- Time-critical (“I only have minutes or seconds to act!”);
- Deliberate (“I have a few hours or days to plan this activity”);
- Strategic (“I have several weeks or months to plan this operation”).

Higher levels of the ORM process advocate harnessing feedback and input from all organizational levels to make the most informed decisions possible.

NOTE:

Risk decisions must be made at levels of responsibility that correspond to the degree of risk, considering the significance of the task or operation and the timeliness of the required decision. The three levels of risk management application are discussed in more detail below.

A. TIME-CRITICAL

Time-critical risk management is an “on the run” mental or verbal review of a situation using the basic risk management process without recording the information. Personnel employ the time-critical process to consider risk when making decisions in time-compressed situations. This level of risk management is used during all ground, maintenance and flight operations and training, and when executing crisis responses. It is particularly helpful in choosing the appropriate course of action when an unplanned event occurs while performing a routine task. Use the following technique to apply time-critical risk management:

- **Simple Risk Assessment Questions Technique:** This technique employs five simple questions that anyone, anywhere, can ask. It requires no documentation and can be applied very quickly and easily, with very little training. It is an exceptional tool for all employees to effectively address common, everyday risk situations. Some individuals may dismiss this process as overly simple and purely “common sense,” yet the unfortunate truth is, common sense is an uncommon virtue. The natural human tendency is to just do it, rather than stop for a moment to think about the risks associated with a certain activity or task. These questions are:
 - Why am I doing this task?
 - What could go wrong?
 - How could it affect me or others?
 - How likely is it to happen?
 - What can I do about it?

B. DELIBERATE

Deliberate risk management applies the complete ORM process. Each step is documented in some manner, at the discretion and for the benefit of the process owner. It primarily uses experience and brainstorming to identify hazards and develop controls and therefore is most effective when performed in a group. Examples of deliberate applications include flight planning and maintenance planning; reviewing standard operating, maintenance, or training procedures.

Job Planning Process Technique: When the simple risk assessment question technique requires a more structured environment, the job-planning process offers a suitable alternative. Work teams can use this method when assigned to complete unusual or infrequent tasks or common tasks that must be completed in unusual circumstances, e.g., foul weather, crisis response, etc. The primary difference between this and the five simple questions technique is that the job planning process requires documentation of risk levels (low, moderate, or high) in the IR database. Hazards are identified and risks are analyzed and assessed by considering all people, equipment, materials, and environmental issues involved in the specific task. Hazards for which risk assessment reveals moderate or high risk require risk controls or corrective actions, and consideration of substitute risk. Residual risk is also assessed, based on expected outcomes of the Corrective Action Plan.

C. STRATEGIC

The strategic ORM process identifies hazards and assesses risk more thoroughly than the deliberative process by determining acceptable safety risk for changes within the organization which may affect established processes and services. Strategic ORM is also applied to new system designs, changes to existing system designs, new operations/procedures, and modified operations/procedures. This includes complex operational planning and introductions of new aircraft, equipment, routes, facilities and areas of operations. Again, hazards, risk assessments, and risk mitigating strategies are recorded in the IR database, including substitute and residual risk assessments.

NOTE:

Strategic ORM may require expertise and input from persons with experience in the proposed equipment, mission, operation, environment, and operational processes where undiscovered hazards and latent conditions reside.