



Safety Management System

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1.0—INTRODUCTION

1.1—BACKGROUND

Eastern Kentucky University (EKU) Safety Management System has been developed from guidance contained in the following documents:

- [United States State Safety Program \(SSP\) Document](#) (PDF)
- [FAA Order 8000.369 \(as amended\), Safety Management System](#)
- [FAA Order 8040.4, Safety Risk Management Policy](#)
- [FAA \(Federal Aviation Administration\) Order 8040.6, Unmanned Aircraft Systems Safety Risk Management Policy](#)
- [FAA Order VS 8000.370, Aviation Safety \(AVS\) Safety Policy](#)
- [FAA Order VS 8000.367, Aviation Safety \(AVS\) Safety Management System Requirements](#)
- [AC 120-92B — Safety Management Systems for Aviation Service Providers](#)

EKU has implemented a complete Safety Management System (SMS), which encompasses all its aviation operations. The SMS has been modeled after the FAA & ICAO (International Civil Aviation Organization) SMS structure. It follows the four-pillar model of SMS implementation focused on creating a just safety culture. The contents of our SMS manual and the definitions of the four pillars of the SMS are shown in the sections below.



Table 1: The Four Pillars of SMS

1.2—SAFETY CULTURE AND SAFETY MANAGEMENT

One key aspect essential to safety performance is the organization's culture. "Safety culture" is the term that we apply to those aspects of the organization's culture that relate to safety performance. The concept of safety culture underlies safety management and is the basis for the SMS requirements of Title 14 of the Code of Federal Regulations (14 CFR) part 5.2

a. Interdependence. Because an organization's culture includes the deeply ingrained and automatic psychological and behavioral aspects of human performance, there is a strong correlation between safety culture and accident prevention. Therefore, safety culture and SMS are interdependent. Management's constant attention, commitment, and visible leadership are essential to guiding an organization toward a positive safety performance.

b. Safety Culture. Cultures are the product of the values and actions of the organization's leadership and organizational learning results. Cultures are not really "created" or "implemented;" they emerge over time and because of experience. Organizations cannot simply purchase a software program, produce a set of posters filled with buzzwords, require their people to attend an hour of slide presentations, and instantly install an effective SMS. Developing any skill takes time, practice and repetition, the appropriate attitude, a cohesive approach, and constant coaching from involved mentors.

- **Management Framework.** For this reason, a management framework that facilitates decision-making and shapes the environment in which employees work is crucial to organizational performance in all aspects of the organization's business, including safety. A safety culture matures as safety management skills are learned, practiced, and become second nature across the entire organization. Characteristics of organizations that consistently achieve safe results are open reporting and policies and processes that foster honest reporting while stressing the need for continued diligence and professionalism. The organization should encourage disclosure of errors without fear of reprisal, yet it should also demand accountability on the part of employees and management alike.
- **Just Culture.** The organization should identify systemic errors, implement preventative, corrective action, and exhibit intolerance of undesirable behaviors such as recklessness or willful disregard for established procedures. This is often referred to as a "just culture."
- **Personnel Involvement.** The involvement of all students, instructors, maintenance, staff, and all levels of management in functions dealing with aviation safety, including the accountable executive, is critical to effective safety management throughout an organization.
- **Use of Information.** Effective use of all safety information assures informed management decision-making.
- **Commitment to Risk Reduction.** The organization expects direct management involvement in identifying hazards and managing risk.
- **Vigilance.** Processes that provide the attention of ongoing operations and the environment to ensure the effectiveness of risk controls and awareness of emerging hazards.
- **Flexibility.** We are using information effectively to adjust and change to reduce risk and are willing to commit resources to make changes necessary to reduce risk.
- **Learning.** The organization learns from its failures and those of allied and similar businesses. The organization uses acquired data to feed analysis processes, yielding information that can be acted upon to improve safety.

1.3—SMS MANUAL AND SUPPORTING PROGRAMS

This Safety Management System (SMS) Manual has been developed to direct all personnel in the safe operations of the EKU Center for Aviation, and this manual is a policy that supports the

operation of this organization. SMS is a proactive, integrated approach to safety management and is part of an overall management process that ECU Center for Aviation has adopted to ensure that the goals of this organization can be accomplished.

SMS embraces the principle that identifying and managing risk increases the likelihood of accomplishing the mission. Hazards can be identified and dealt with systematically through the Hazard Reporting Program, which facilitates continuous improvement and professionalism. Also, auditing and monitoring processes ensure that aircraft and flight training operations are done to minimize the risks inherent in all flight training.

This SMS Manual sets forth instructions and guidance to all ECU Center for Aviation personnel regarding their responsibilities, authorities, and performance of duties per ECU's Safety Management System.

1.4—SAFETY MANAGEMENT PLAN

Safety is the state in which the risk of harm to people or damage to property is reduced to and maintained at, or below, an acceptable level through a continuing process of hazard identification and risk management. Safety management is key to ECU's objectives and affects every function within the organization. Safety management includes all safety, security, health, and environmental management areas. The primary purpose of this manual is to develop a system at ECU for managing our flight training processes and ensure compliance with guidelines established by the FAA; this SMS Manual identifies the organization's Safety Management Plan as the tool used to define how the SMS supports ECU's flight training, aircraft maintenance, and flight operations. University leadership is committed to providing the necessary support for the SMS and has established leadership for the program, and will continue to demonstrate, through everyday actions, the commitment to safety and its priority in the organization's achievements.

The processes in the Safety Management Plan include the active involvement of **all** ECU Aviation faculty, maintenance employees, staff, flight instructors, and students, who, through planning and review, will drive efforts for continuous improvement in safety and safety performance. The key focus is the safe operations of airworthy aircraft and a safe training environment.

Safety audits and inspections are essential components of the Safety Management Plan. Audits and inspections review systems, identify safety issues, prioritize safety issues, and involve all Center for Aviation flight personnel and students to enhance the safety of operations.

1.5—SCOPE OF SAFETY MANAGEMENT

ECU Center for Aviation has developed an integrated Safety Management System for its entire organization. SMS provides the highest reasonable level of safety by identifying and minimizing risks that could contribute to accidents, incidents, or injury to persons. ECU delivers both safety and quality management training covering the complete scope and life cycle of all systems and operational processes, including:

- Flight Training Operations.
- Operational Control (Dispatch Processes and SOP (Standard Operating Procedures) Compliance).
- Security
- Aircraft ground handling and servicing.
- Training of all personnel.

1.6—SMS FUNDAMENTALS

As described in FAA AC 120-92B and the ICAO Safety Management Manual (SMM) (Document 9859), the defining characteristic of an SMS is that it is a decision-making system. An SMS does not have to be an extensive, expensive, or sophisticated array of techniques to do what it is supposed to do. Instead, an SMS is built by structuring your safety management around four components: safety policy, safety risk management (SRM), safety assurance (SA), and safety promotion.

- **Safety policy.** Safety policy is where you set objectives, assign responsibilities, and set standards. It is also where management conveys its commitment to the organization's safety performance to its employees. As SRM and SA processes are developed, you will return to the safety policy to ensure that the commitments in the policy are being realized and the standards are being upheld.
- **Safety Risk Management.** The SRM component provides a decision-making process for identifying hazards and mitigating risk based on a thorough understanding of the organization's systems and operating environment. SRM includes decision-making regarding management acceptance of risk to operations. The SRM component is the organization's way of fulfilling its commitment to consider risk in its operations and to reduce it to an acceptable level. In that sense, SRM is a design process, a way to incorporate risk controls into processes, products, and services or to redesign rules where existing ones are not meeting the organization's needs.
- **Safety Assurance.** It provides you with the necessary processes to give you confidence that your system is meeting your organization's safety objectives and that your mitigations, or risk controls, developed under SRM are working. In SA, your goal is to watch what is going on and review what has happened to ensure that your objectives are met. Thus, SA requires monitoring and measuring the safety performance of operational processes and continuously improving the safety performance. Robust SA processes will yield information used to maintain the integrity of risk controls. SA processes are thus a means of assuring the organization's safety performance, keeping it on track, correcting it where necessary, and identifying needs for rethinking existing processes.
- **Safety Promotion.** is designed to ensure that your employees have a solid foundation regarding their safety responsibilities, the organization's safety policies and expectations, reporting procedures, and a familiarity with risk controls. Thus, training and communication are the two critical areas of safety promotion.

2.0—SAFETY POLICY

2.1—OVERVIEW

All Aviation faculty, staff, maintenance personnel, flight instructors, and students are accountable for ECU Center for Aviation safety performance. In addition, all are committed to operating in safe, healthy, secure working conditions and promoting safety attitudes to have an accident-free workplace.

EKU's Center for Aviation is committed to making safety excellence a part of all activities in the Aviation Department, as described in the safety policy statement below.

2.2—SAFETY POLICY



DAVID T. MCFADDIN
PRESIDENT

April 6, 2023

Safety Management Professionals,

Safety is one of the university's core aviation functions. We are committed to developing, implementing, maintaining, and consistently improving strategies and processes to ensure that all our aviation activities take place under a balanced allocation of university resources. We shall strive to achieve the highest level of safety performance and to exceed FAA standards while conducting flight training.

All faculty, staff, flight instructors and aviation students are accountable for the highest level of safety performance.

Our commitment is to:

- Support the safety program through the provisions of appropriate resources, that will result in an organizational culture that fosters safe practices, encourages effective safety reporting and communication, and actively manages flight operations with the goal of safely executing the required flight training of our students.
- Clearly define responsibilities for all faculty, staff, flight instructors and aviation students to maximum the organization's safety performance.
- Establish and operate hazard identification and risk management processes, including a hazard reporting system, to eliminate or mitigate the safety risk of the consequences of hazards resulted from our operations or activities to a point which is as low as reasonably practicable.
- Ensure that no action will be taken against any student, flight instructor, or staff member who discloses a safety concern through the hazard reporting system, less such disclosure indicates, beyond any reasonable doubt, and illegal act, gross negligence, or deliberate or willful disregard of regulations or procedures.
- Comply with and whenever possible, exceed, regulatory requirements and standards.
- Ensure that all employees and staff are provided with adequate aviation safety information and training and are assigned only task 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 management processes that ensure relevant safety action is taken and is effective.

Sincerely,

A handwritten signature in red ink that reads "David T. McFaddin".

Dr. David T. McFaddin,
President

2.3—EKU AVIATION SAFETY PERSONNEL

- **EKU Executive Director** at the EKU Center for Aviation has the ultimate responsibility and final authority for the certificated flight school's safety operations within the SMS. Including the items listed below:
 - Ensure that the SMS is implemented correctly and performed in all areas of the school.
 - Ensure human and financial resources essential to implement and maintain safe operations within the SMS.
 - Regularly review the safety performance of the school and direct actions necessary to address substandard safety performance.
 - Establish regular reviews and the safety policy, including the importance of student/employee reporting programs.

- **Safety Manager.** Responsible for the following:
 - Ensure that the SMS is implemented correctly and performed in all areas of the school.
 - Regularly review the safety performance of the school and direct actions necessary to address substandard safety performance.
 - Ensure the process needed for the SMS is established, documented, implemented, and maintained.
 - Ensure the promotion and awareness of safety throughout the school.
 - Report to the Accountable Executive on the performance of the SMS and the need for improvement.
 - Support operating programs in the implementation of SMS.
 - Ensure hazard identification and risk analysis are performed.
 - Ensure the effectiveness of safety risk controls.

- **Safety Committee members.** Carry out the duties listed below, delegated to them by the Executive Director, Center for Aviation / Aviation Safety Manager:
 - Identify hazards in their operation
 - Promote safety in their programs
 - Assess safety risks
 - Ensure the effectiveness of safety risk controls
 - Advise the Program Manager, Aviation Safety, on the performance of the SMS and needs for improvement.

- **Chief Instructor Pilot and Flight Operations Manager.** Responsible for the following safety accountabilities:
 - Ensuring all flight operations personnel understand and comply with applicable regulatory requirements, standards, and safety policies and procedures.
 - Identification and development of resources to achieve safe flight operations.
 - Observing and controlling safety systems by monitoring and supervising flight instructors and pilot students.
 - Measuring flight instructors' and pilot students' safety performance compliance with EKU's goals, objectives, and regulatory requirements.
 - Reviewing standards and the practices of EKU personnel as they affect flight safety.

- **Aircraft Maintenance Manager.** Responsible for:
 - Ensuring all maintenance personnel understands applicable regulatory requirements, standards, and EKU safety policies and procedures.
 - Identification and development of resources to achieve safe maintenance operations.
 - Observing and controlling safety systems by monitoring and supervising maintenance personnel.
 - Measuring maintenance personnel performance compliance with EKU's goals, objectives, and regulatory requirements.
 - Reviewing standards and the practices of maintenance personnel as they affect flight safety.

- **Members of the full-time staff and Certified Flight Instructors.** Have been given the authority by the Executive Director, Center for Aviation / Aviation Safety Manager to implement and continuously improve their SMS processes with the support of and in coordination with Safety Programs. This includes the following duties:
 - Support the Program's Safety Committee members with the development, implementation, maintenance, and improvement of the SMS in relation to their responsibilities within the organization. Ensure SMS procedures are followed in adherence with this and program guidance.
 - Inform the Aviation Safety Manager on the performance of the SMS program and the need for improvements.
 - Identify hazards in the operation.
 - Promote safety in their program.
 - Assess safety risks
 - Ensure the effectiveness of safety risk controls

2.4—COMPLIANCE WITH STANDARDS AND LEGAL REQUIREMENTS

All personnel must comply with approved standards, including

- EKU Aviation policy and procedures
- Aircraft manufacturer's operating procedures and limitations
- FAA regulations.

EKU Aviation leadership is committed to identifying deviations from standards and taking immediate corrective action. Corrective action can include counseling, training, discipline, grounding, or removal. Corrective action must be consistent and fair.

EKU Aviation leadership makes a clear distinction between honest mistakes and intentional noncompliance with standards. Simple mistakes occur, and they are addressed through counseling and training. Research has shown that most accidents involve some form of flawed decision-making. This most often requires noncompliance with known standards. Noncompliance rarely results in an accident; however, it always results in greater risk for the operation. EKU Aviation policy agrees with the following conclusions:

- Compliance with known procedures produces known outcomes.
- Compliance with standards helps guarantee repeatable results.
- Bad rules produce bad results.
- Complacency affects the safe operation of the aircraft and cannot be tolerated.

- Standards are mechanisms for change.
- The hardest thing to do and the right thing to do are often the same.

This organization is committed to the principle that people are rewarded for the standard, upbeat performance of their duties that comply with organization standards. Personnel will not be rewarded for accomplishing the mission by breaking the rules. Reinforced dangerous behavior breeds continued injurious behavior. This is unacceptable.

2.5—EMERGENCY PREPAREDNESS AND RESPONSE

The EKU Aviation Safety Committee identifies potential accidents and incidents through initiative-taking analysis programs. The Safety Committee will always investigate and if necessary, make recommendations in response to EKU Aviation accidents and incidents. The Safety Committee members actively collaborates with applicable University, State, and Local entities to determine appropriate emergency response protocols.

The EKU Aircraft Incident Response Protocol governs most actions to be taken in the event of an aircraft accident, incident, or natural disaster. EKU Aviation's SMS is meant to be used with the EKU Aircraft Incident Response Protocol.

The EKU Aviation Safety Manager is responsible for assuring that all EKU Aviation personnel are trained to manage EKU Aviation emergencies based on their role in the organization. Emergency drills are conducted periodically and in collaboration with EKU Safety.

Confidential reports may be made by email to aviation@eku.edu or online at <https://aviation.eku.edu/safety-reporting-form>. Twenty-four hours per day, seven days per week. The identity of any employee providing safety information will be confidential to the extent permissible by law.

2.6—DOCUMENTATION AND RECORDS

The Safety Manager and EKU Safety Committee check all safety documents. This includes SMS documents, hazard and safety reports, and safety training records. Change control procedures are incorporated into each of these documents.

The Safety Manager is responsible for maintaining and reporting safety-related data, including the minutes of safety meetings, information on hazard and risk analysis, risk management, remedial action, incident and accident investigations, and audit reports.

3.0—SAFETY RISK MANAGEMENT

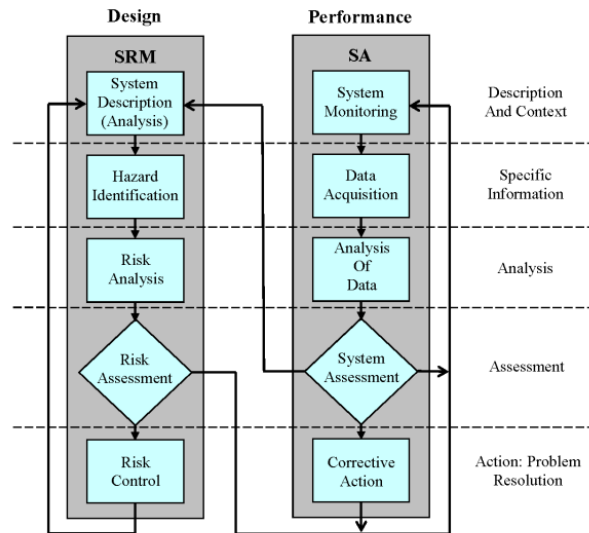


Figure 2
Safety Risk Management and Safety Assurance Processes
Source: FAA AC 120-92B

3.1—SAFETY RISK MANAGEMENT (SRM)

SRM is a formal system for identifying and mitigating risk. There are five processes necessary to control and mitigate risk. These processes are featured in Figure 3-1, Safety Risk Management Processes and Regulatory Requirements, and are discussed in more detail below. These are:

- System description and analysis.
- Hazard identification.
- Safety risk analysis.
- Safety risk assessment.
- Safety risk controls.

An organization must apply safety risk management to the following:

- Implementation of new systems.
- Revision of existing systems.
- Development of operational procedures.
- Identification of hazards or ineffective risk controls through the safety assurance processes.

While Figure 2 depicts those processes as distinctly defined components, they flow from one to the other in practice. For example, hazards will often become evident in a careful discussion of how a system works (System Description (Analysis)). Thus, the hazard identification step has also been at least partially accomplished.

3.2—SYSTEMS ANALYSIS (SA)

Systems analysis is the primary means of proactively identifying and addressing potential problems before the new or revised systems or procedures are put into place. The system analysis should explain the functions and interactions among the hardware, software, people, and environment that make up the system in sufficient detail to identify hazards and perform risk analyses. The process is started by describing the system.

3.3—HAZARD IDENTIFICATION AND ANALYSIS

The systematic identification and control of all major hazards is the fundamental process in this SMS. The success of the organization depends on the effectiveness of managing hazards and risks. Hazards are primarily identified through employee/student reporting, safety meetings, audits, and inspections. When a significant change in operations, equipment, or pilot training is anticipated, the management of the change process includes hazard identification and risk management processes.

Risk management is the identification and control of risk. See Figure 3 as it depicts the process. It is the responsibility of every member of the EKU Center for Aviation. The first goal of risk management is to avoid the hazard. EKU Center for Aviation has established sufficient independent and effective barriers, controls, and recovery measures to manage the risk posed by hazards to a level as low as practicable. These barriers, rules, and recovery measures include equipment, work processes, standard operating procedures, training, and other similar means to prevent hazard development and limit their consequences should they occur.

The EKU Executive Director, Center for Aviation, or designee is responsible for accepting or denying operations and manages risk through the Safety Committee using the Risk Assessment Matrix (Figure 3). The matrix is a graphic portrayal of risk as the product of probability on one axis (exposure, frequency, or likelihood) and Severity (potential consequence or loss from the outcome) on the other axis.

Risk matrices are charts that use "probability" and "severity" to quantify the risk priority of a real or hypothetical safety scenario. The quantification is broken into six categories:

- No Risk (white)
- Minimal Risk (Blue)
- Acceptable risk (Green)
- Medium Risk (Yellow)
- High Risk (Mustard Yellow)
- Unacceptable risk (Red)

The Safety Manager keeps Hazard/Incident Reports to identify trends and keep a list of resolved issues. These risk assessments make up the list of hazards for the organization.

SMS Risk Matrix

RISK - Failure to maintain safe, compliant and reliable operations											
3.29.18	SEVERITY					LIKELIHOOD *					
	Injury or Illness	Aircraft, Facility or Terrorism Event	Operational Compliance, Performance*	Damage, Fine or Loss of Revenue*	Damage to the Environment	EXTREMELY IMPROBABLE	IMPROBABLE	REMOTE	OCCASIONAL	FREQUENT	REPETITIVE
						Once in 10+ years	Once in 2-10 years	Once in < 2 years at	2-11 times per year	1-3 times per month at	4 + times per month
CATASTROPHIC	Multiple fatalities	Total loss of aircraft or facility	Potential threat to Operating Certificate	Damage, fines or loss of revenue >\$10,000	Massive environmental effect	4	4	5	5	5	5
CRITICAL	Single fatality or multiple overnight hospital admissions	NTSB accident or substantial loss of affected property	Regulatory /Company policy and/or procedure deviation with a critical impact on safety	Damage, fines or loss of revenue >\$5,000 - \$10,000	Critical environmental effect	3	3	4	5	5	5
MAJOR	Single overnight hospitalization	NTSB incident or accident, partial loss of a facility or a credible security threat	Regulatory /Company policy and/or procedure deviation with major reduction in safety margin	Damage, fines or loss of revenue >\$1,500 - \$5,000	Contained effect to the environment	2	2	3	3	4	4
MINOR	Medical treatment beyond first aid	NTSB incident or minor property damage	Regulatory/Company policy and/or procedure deviation with minor safety implication	Damage, fines or loss of revenue >\$500- \$1,500	Minor environmental effect	1	1	2	2	3	3
NEGLECTIBLE*	First aid treatment	Negligible incident or damage with extremely limited effect on safety	Regulatory /Company policy and/or procedure deviation with limited safety implication	Damage, fines or loss of revenue ≤\$500	Negligible environmental effect	1	1	1	1	2	2
NO SAFETY IMPLICATION	No safety implication	No safety implication	No safety implication	No safety implication	No safety implication	0	0	0	0	0	0

Actions Required					
Risk Level	Risk	Operational Impact	Minimum Action	Immediate Notification	Risk Acceptance and Mitigation Responsibility
5	Extreme	Stop the operation	Mitigation to level 4 or lower	Positions listed for risk level 4 plus Dean	Head of SATT
4	High	Operation permitted with execution of a high	Immediate mitigation and	Positions listed for risk level 3 plus Head of SATT	Head of SATT
3	Medium	Operation permitted	Mitigation strategy required	Program focal and Program Safety Manager	Director or above in area of risk
2	Low	Operation permitted	Monitor, consider actions to	Process owner in area of risk	Director or above in area of risk
1	Minimal	Operation permitted	N/A	N/A	Program focal
0	None	Operation permitted	N/A	N/A	Program focal

**Mitigation strategy shall be created no later than 30 days after Risk Level 3+ designation.

Figure 3
SMS Risk Matrix

Source: FAA AC 120-92B

3.4—RISK ASSESSMENT AND CONTROL

Hazard and Incident Reporting System Policy

Effective implementation of the ECU Center for Aviation Safety Management System Policy is contingent upon a working system to prevent accidents. Essential to this goal is a program to identify and eliminate or mitigate workplace hazards and prevent unsafe incidents. Under normal circumstances, hazards should be reported and corrected at the lowest operational level utilizing established lines of authority and responsibility. For other situations, the Hazard and Incident Reporting System provides a means for affected personnel to report recognized safety hazards or reportable incidents to The Center for Aviation Staff in concert with the Safety Committee and the Executive Director, Center for Aviation, for appropriate action.

After hazards and associated risk are fully understood, risk controls must be designed for risks that the is deemed unacceptable. This is accomplished using their risk assessment process. Examples of risk controls include new processes, equipment, training, new supervisory controls, new equipment or hardware, new software, changes to staffing arrangements, or any of a number of other system changes. In short, anything that would lessen the likelihood or severity of a potential incident/accident.

The next step is to look at the system with the proposed control in place to determine if the level of risk is now acceptable and the proposed control does not introduce unintended consequences or new hazards. This is commonly referred to as substitute risk. Section 5.55(d) requires you to evaluate whether the risk will be acceptable with the proposed safety risk control applied. The risk that remains is often called residual risk.

EKU CENTER FOR AVIATION SAFETY ORGANIZATIONAL CHART

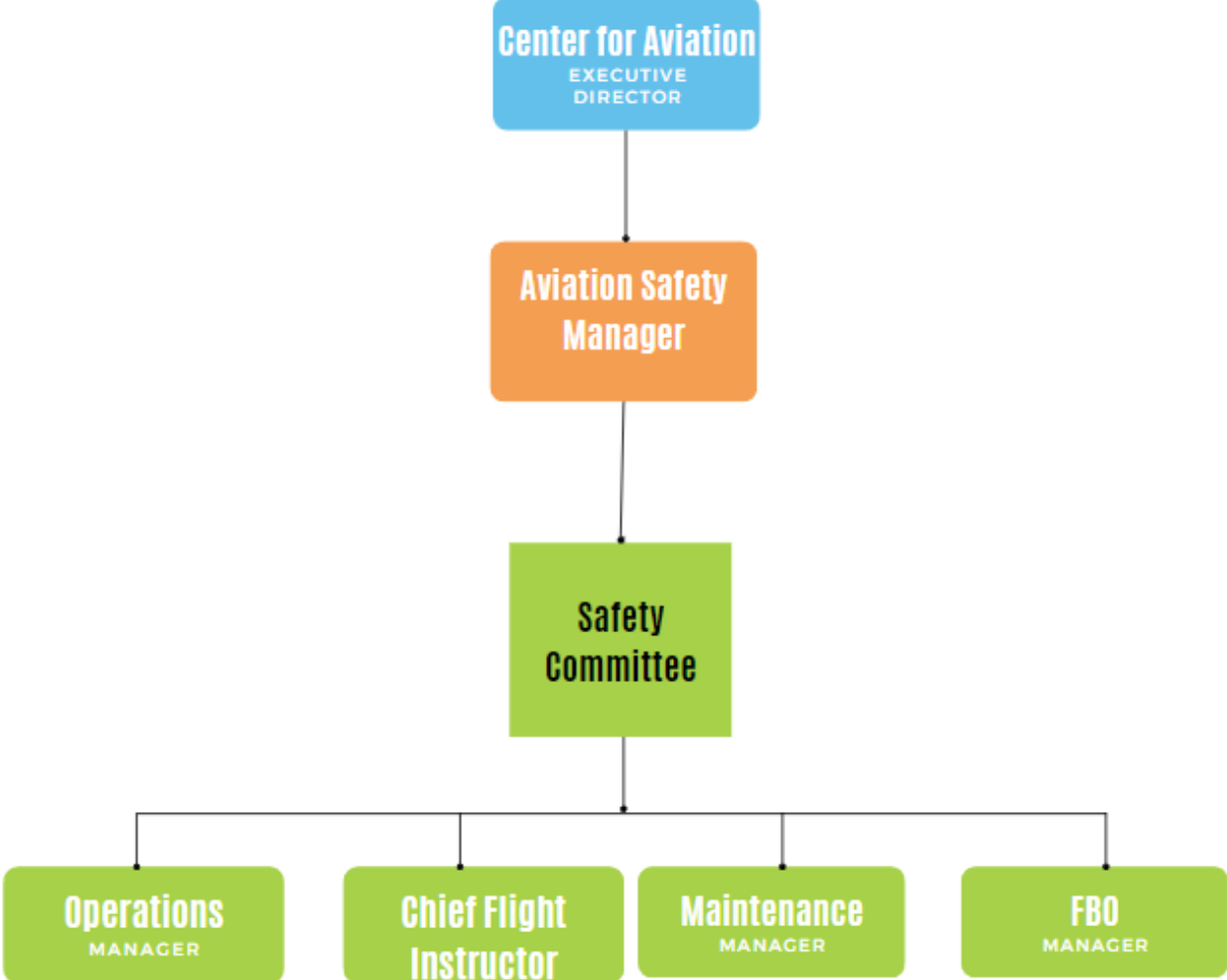


Figure 4
Center for Aviation Safety Organizational Chart

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4.0—SAFETY ASSURANCE

4.1—OVERVIEW

The Center for Aviation monitors, measures, and evaluates performance to:

- Identify new hazards
- Measure the effectiveness of and conformity with described risk controls (including those developed during the SRM process) to ensure they conform to the described requirements and maintain risk at or below acceptable levels.
- Ensure compliance with regulatory requirements.

Safety assurance provides all stakeholders with an indication of the performance of the safety system in place. Assurance is "something that gives confidence." After the controls for risk are made part of the safety system, safety assurance takes over to see that they work as intended.

EKU Center for Aviation will conduct safety audits and inspections as part of the safety assurance process. The Safety Manager directs annual audits of the SMS. Findings and associated corrective actions shall be recorded in the audit. The Safety Manager maintains records of audits and inspections and the resolution of actions needed. Issues identified in the audits and inspections are included on the agenda of the Safety Meeting. Positive findings are also recorded. Conclusions and recommended actions are communicated to all personnel promptly.

4.2—AUDITS AND INSPECTIONS

Definitions:

- **Safety Audit**-an overall assessment of the performance of the safety system.
- **Safety Inspection**: Assesses the reliability of a particular aviation program's section.

The use of audit functions to verify compliance and standardization is an integral part of the quality assurance system. An initial audit will cover all activities within ECU Flight Operations. Records of audit findings, including compliance and noncompliance, corrective actions, and follow-up inspections, will be kept and maintained by the Safety Manager. The results of audits and inspections will be communicated to all appropriate personnel in ECU's Aviation Department. ECU will perform regularly scheduled internal audits of its operational processes to determine the performance and effectiveness of risk controls. Planning the evaluation program will consider the following:

- Safety criticality of the processes being evaluated and the results of previous evaluations.

The Safety Committee will select the evaluators and document the procedures used, which include the responsibilities and requirements for:

- planning evaluations,
- conducting evaluations,
- reporting results
- maintaining records.

ECU's Safety Manager will typically conduct the safety audits; however, auditors outside of the ECU Center for Aviation may be selected. In this way, the quality assurance function remains neutral and is independent of the operational aspects of ECU.

One outcome of safety assurance activities is to ensure the safety performance of established risk controls. Risk controls are created, analyzed, and managed in the safety risk management (SRM) component, which you can

think of as the "design component." Over time, risk controls become obsolete or inadequate through a process called "drift," which can be deadly. Safety assurance continuously monitors operations and determines the need for new and/or modified risk controls.

Another obvious type of safety assurance monitoring is to monitor:

- Safety data to identify substandard SMS performance.
- Compliance.
- Policies.
- Procedures.
- Efficacy of implemented risk management practices.
- Signs of safety culture.
- Safety performance of individual employees; and
- Those safety goals and objectives are being met.

4.3 Audits Checklist

Audit checklists are used to identify all the functions controlled by EKU's Center for Aviation policies and procedures manuals. A copy of the EKU Aviation Audit Checklist is found in Appendix E. The audit checklists are based on FAA guidelines (SMS Assurance Guide). The quality audit of EKU's safety management system will include an account of the following areas:

- Safety policy
- Safety standards
- Safety culture
- Structure of safety accountabilities
- Hazard identification
- Risk Management
- Safety assessment and Safety Monitoring

4.4 Inspections: Internal Evaluation

Safety evaluation is fundamental to the safety management process. EKU Center for Aviation will conduct internal assessments of the SMS and operational procedures at planned intervals to determine that the SMS conforms to its objectives and expectations. Annually, EKU's Safety Manager conducts an internal evaluation of the organization's existing operations, operational changes, and future safety management planning. The functional areas to be evaluated are:

- Flight training operations
- Operational control (dispatch/flight following)
- Maintenance and Inspection, including:
 - Parts/materials
 - Technical data
 - Quality control
 - Records management
 - Contract maintenance
- Security
- Aircraft ground handling and servicing
- Training of EKU Center for Aviation personnel will:

- o Periodically measure performance objectives and design expectations of the Internal Evaluation Process
- o Ensure that procedures are followed for safety-related operations and activities; and
- o Periodically review supervisory and operational controls to ensure the effectiveness of the Internal Evaluation Process

Safety evaluation is fundamental to the safety management process.

This report will be forwarded to the Executive Director Center for Aviation for review and further action.

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5.0—SAFETY PROMOTION

5.1—INTRODUCTION

Management is dedicated to promoting the growth of a positive safety culture. The school encourages and communicates safety information to the members by the following methods.

- Publication of the safety and non-punitive hazard reporting policies is referenced in section 3 of this manual.
- The Safety Policy is communicated and distributed throughout the organization.
- Publications, communications, and safety information distributed to members containing safety-related data, which include incidents, goals, and completion ratios.
- Demonstrate the commitment to the SMS through the distribution and publication of safety and SMS awareness products.
- An effective safety reporting and feedback system.
- A safety data platform that provides an accessible, efficient means to retrieve safety information.
- Resources to implement and maintain the SMS.
- Communicating safety responsibilities for personnel.

5.2—SAFETY TRAINING

System safety training is one of the critical elements of a Safety Management System. In conducting a successful program, participants should be trained in appropriate concepts, duties, and responsibilities associated with each area of activity within the EKU Center for Aviation operation.

Specific training in safety management duties is required for faculty, Safety Committee members, maintenance personnel, aviation students, and flight instructors. The amount of safety training will be appropriate to the individual's responsibility and involvement in the SMS. Required training is also used as an *administrative tool* to eliminate or mitigate risk.

5.3—SAFETY COMMUNICATION

Communications on the SMS and its output are critical to raising knowledge and awareness levels regarding safety across the school for continuous learning. This communication helps share hazards identified for future prevention and explains the 'why' behind many policy and procedure changes. Communication regarding the SMS and its output shows commitment on the part of the Center for Aviation to act in response to reported concerns or Analysis performed using aggregate reports and provides evidence of SMS procedures and objectives. It shows the Center for Aviation's efforts to fix deficiencies that are identified because members report them and builds confidence with members of the school for continued reporting

Ensure that all personnel are fully aware of EKU's SMS.

- Communicate safety-critical information.
- Explain the actions and procedural changes to mitigate or eliminate risk;
 - Utilize the EKU Aviation website for all types of safety communication; and utilize a safety bulletin board in the dispatch area.

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6.0—SAFETY MANAGEMENT PLAN

6.1—GENERAL

The Safety Committee will function as a clearinghouse for all functions of the EKU Aviation SMS. The Committee will continuously evaluate safety policies, procedures, planning, and overall safety performance objectives. The Safety Manager will then organize the Committee's directions into action.

6.2—SAFETY COMMITTEE

The Safety Committee will select the evaluators; and document the procedures used,

Safety Committee Members:

Role
Safety Manager
Faculty Rep
Operations Manager
Airport Manager
Flight Instructor as designated
Outside consultant
Maintenance Manager

Figure 6: The EKU Safety Committee

General Overview

The safety committee aims to promote the safety, health, and welfare of the EKU Center for Aviation students, faculty, employees, staff, and the airport community.

Safety Committee Responsibilities

The Safety Manager will train all Safety Committee members to function within the Safety Management System.

The Safety Committee shall meet quarterly or in special session if warranted. The chairperson will establish procedures and agendas for each meeting and distribute meeting minutes and action items. All members are asked to bring safety concerns to the Committee and give feedback to department employees on the meeting results.

All members will encourage prompt and accurate reporting of incidents and safety issues that have surfaced since the last meeting. Additionally, all members will discuss and recommend solutions to safety issues and hazards in the workplace and flight operations. All recommendations will be documented and communicated to all EKU Aviation personnel.

Any matter deemed urgent by the Safety Manager, or a Safety Committee member shall be brought to the attention of the EKU Executive Director, Center for Aviation **as soon** as practicable. The Director empowers the Committee to protect EKU Aviation, its employees, students, and university assets.

Documentation and Records Management

The Safety Committee is responsible for all EKU aviation safety documentation and records management. The Safety Manager shall record and delegate all actions and deliberations of the Committee (minutes, resolutions, etc.) to ensure its decisions are implemented as needed. In addition, the Safety Manager will maintain an Action Log for review at all Safety Committee meetings. The log will document each hazard, incident, accident, and injury report; then list the actions taken for each safety issue.

The Safety Manager will ensure the decisions of the Committee are within appropriate guidelines and provide follow-through on committee action plans. Minutes will be distributed and maintained for all Safety Committee meetings. Records of each session shall be retained for two calendar years from the date the document was created. In addition, the Safety Manager will publish an annual report of all items brought before the Committee and those with action taken.

6.3—EKU AVIATION REPORTING SYSTEM

Non-Punitive Reporting Policy

It is recognized that humans will make errors, and systems must be developed that are error-tolerant, and behaviors changed to lessen the chance of errors occurring. It is not EKU's goal or policy to seek out the guilty party to administer retribution for the mistake. The goal is not to punish but to ensure it does not happen again. EKU will strive to develop a non-punitive disciplinary policy as part of its safety management system. Employees and students are more likely to report events and cooperate in an investigation when some level of immunity from disciplinary action is offered. When considering the application of our non-punitive disciplinary policy, EKU will consider whether the occurrence involved the willful intent of the individual.

Reporting Responsibilities

All faculty, employees, and students are responsible for reporting what they consider a hazard or unsafe situation, as well as accidents and incidents. Employee and student input are essential for the success of the reporting system. A safety reporting system is worthless if no one uses it.

6.4—HAZARD AND INCIDENT REPORTING CRITERIA

Non-Reprisal Policy

The following statement provides guidance for all employees and students regarding the use of, participation in, and party to EKU's Hazard and Incident Reporting System. "EKU Center for Aviation is committed to the safest operation possible. We must promote uninhibited reporting of all hazards, occurrences, and incidents that affect the safety of our operations, employees, students, facilities, or visitors".

It is, therefore, the policy of EKU to recognize the efforts of individuals who identify and communicate unsafe acts and conditions to promote safety. It is also the responsibility of each employee or student to share any information that could affect the integrity of flight and ground safety. All communications made by employees or students following the SMS reporting process shall be made with the assurance that no retaliation/reprisal shall occur to the employee or student for submitting any information via the Hazard and Incident Reporting System.

The identity of employees and students who provide information through this system shall be protected to the extent permissible by FAA and Part 141 regulatory obligations while disseminating critical flight and ground safety information. This non-reprisal policy shall not apply to information concerning accidents and criminal offenses.

Hazard and Incident Reports

Any individual involved directly or indirectly in the flight and maintenance activities of EKU (i.e., employees, part-time/contract personnel, and aviation students) must report any observed hazard. If an aviation hazard is recognized, the observer shall complete a Hazard/Incident Report and submit it to the Safety Manager.

A Hazard and Incident Reports shall be submitted when any situation, practice, procedure, or process is observed which is either:

- Recognized safety concerns,
- Considered unusual from an operational or procedural standpoint
- Considered deficient from a safety standpoint.

Any safety concern that would interest other aviation students, instructors, or faculty should be reported. A report shall also be submitted if any incident detailed in the Incident Reporting Criteria is found in this document.

NOTE: Always err on caution and submit a Hazard Report.

Incident reports should be submitted using the Hazard and Incident Report form either online or via a paper form (Appendix C). The submitter's identification on the report is optional but is encouraged if further information is required to eliminate the hazard. Reports should be concise and should accurately describe the hazard. When applicable, reports should include the submitter's recommendation(s) for corrective action. In circumstances where the perceived hazard possesses the immediate potential for injury/illness to persons or damage/loss of property, the Safety Manager, Chief Instructor Pilot, Assistant Chief Instructor Pilot, or Flight Operations Manager shall be notified immediately by the most expeditious means possible to determine the appropriate action to prevent such injury, illness, damage, or property loss.

Hazard Reporting Criteria

Hazard Definitions

- Hazard (FAA): "any existing or potential condition that can lead to injury, illness, or death to people; damage to or loss of a system, equipment, or property; or damage to the environment. A hazard is a prerequisite condition to an accident or incident." (FAA, 2009a)

NTSB Reportable Incidents:

Any of the following incidents (Immediate Notification Required):

- Flight control system malfunction or failure
- The inability of a required crewmember to perform normal duties
- Failure of structural components of a turbine engine excluding compressor and turbine blades and vanes
- In-flight fire
- Aircraft collide in flight
- Damage to property, other than the aircraft, estimated to exceed \$25,000 for repair (including materials and labor) or fair market value in the event of total loss, whichever is less
- For large multi-engine aircraft (more than 12,500 pounds maximum certificated takeoff weight):

- Inflight failure of electrical systems which requires the sustained use of an emergency bus powered by a back-up source such as a battery, auxiliary power unit, or air-driven generator to retain flight control or essential instruments.
- Inflight failure of hydraulic systems that results in sustained reliance on the sole remaining hydraulic or mechanical system for movement of flight control surfaces.
- Sustained loss of the power or thrust produced by two or more engines; and
- An evacuation of aircraft in which an emergency egress system is utilized
- An overdue aircraft believed to be involved in an accident

Mandatory Incident Reports

EKU Reportable Incidents

- If evasive action was taken due to loss of aircraft separation and/or collision
- Any instance of inadequate terrain clearance
- The pilot's loss of situational awareness resulted in their loss of position for more than 30 minutes
- Failure of navigation or communication systems
- Electrical failure resulting in a precautionary landing
- Any physical damage to the aircraft, propeller, university property, or people
- Any unintentional exit from a paved surface while landing, taking off, or taxiing
- Critically low fuel quantity or landing with less than the prescribed reserve fuel load
- Any airframe icing encounter
- Severe turbulence
- Any evacuation of an aircraft for emergency purposes
- Engine failure or partial power loss
- Any ditching or controlled landing that is not on an airport runway
- Any intentional or unintentional violation of EKU's Standard Operating Procedures
- Any runway incursion
- Landing on the wrong runway or at the wrong airport
- Any departure or excursion from the runway
- Weather-related injury or damage
- Significant fuel leak
- Takeoff with a significant weight and balance error
- Injury to any person while in or outside the aircraft
- Lighting strike or bird strike
- Damage to aircraft by ground equipment
- Damage to non-university property
- Fire, explosion, smoke, or toxic fumes in or on the aircraft

6.5—Reporting Aircraft Accidents and Injuries Aircraft accidents will be reported in accordance with Federal Aviation Regulations and the National Transportation Safety Board regulations (Title 49 CFR Part 830).

It is the responsibility of the Safety Manager to ensure all relevant comments and agreed actions from other managers are recorded in the Hazard/Incident report using the Hazard and Incident Reporting System. Reports are closed when all steps have been taken. Incidents shall be reviewed by the safety meeting.

Personnel who report are treated fairly and justly, without punitive action from ECU except for known reckless disregard for regulations and standards, or repeated substandard performance. The "Just Culture" process shown on the next page is used when deciding if disciplinary action is appropriate.

Significant occurrences are investigated by the Safety Manager or his designee and shall be reviewed by the Executive Director, Center for Aviation, Chief Pilot, and the Operations Manager. The Safety Manager reviews the database for previous occurrences to identify trends.

6.6--Hazard and Incident Report Processing

Upon receipt of a Hazard/Incident Report, the Safety Manager shall follow the Safety Incident/Accident flow chart as depicted in Figure 5:

1. The Safety Manager, or in place of appropriate management, shall determine the Risk Matrix severity, and likelihood, and determine the actions required.
2. The Safety Organizational Chart personnel shall be notified (Figure 5)
3. The accident/incident will be assigned a control number (mmddyyyy-sequential number), i.e., 01152022-001
4. The Executive Director and management shall determine if the safety report is a serious risk and necessitates a stop to flight operations and a safety stand-down or a lower-level risk.
5. A Safety Investigation will be opened, and a safety investigative team will be formed comprising the Safety Manager and other members assigned by the Executive Director, Safety Manager, and the management team.
6. A determination will be made as to what regulatory reports are required.
7. The team will interview witnesses, investigate the incident/accident chain, and propose corrective action. This report will be forwarded to the Executive Director, Safety Manager, management team, and the safety committee.
8. The Safety Committee will analyze the report, propose corrective action, and submit final recommendations to the Executive Director and Safety Manager.
9. The Executive Director, Safety Manager, and leadership team will take corrective action.
10. The final report and the corrective action will be entered into the ECU SMS database.

6.7—Incidents and Hazards

An incident is defined as any unplanned safety-related event. This event would cause concern for the safety of students, faculty, flight instructors, employees, equipment, property, or the environment.

- Hazard Definitions
 - Hazard (FAA): "any existing or potential condition that can lead to injury, illness, or death to people; damage to or loss of a system, equipment, or property; or damage to the environment.
 - "A hazard is a condition prerequisite to an accident or incident." (FAA AC 120-92A)

6.8--Reporting Aircraft Accidents and Injuries

Aircraft accidents will be reported per Federal Aviation Regulations and the National Transportation Safety Board regulations (Title 49 CFR Part 830).

6.9--Reporting Procedures for Hazards and Incidents

This document defines and describes incidents under Hazard and Incident Reporting Criteria. The Hazard and Incident Report Form may be found in Appendix 1. The report may be submitted to the Safety Manager (paper copy or email attachment) or online. If a name is included in the report, a reply to the submitter will follow via email within five working days.

The Normal Process

- After a hazard or incident has been identified to the Safety Manager or Safety Committee, an Action Log and tracking number are assigned.
- During the next quarterly Safety Committee Meeting, the safety issue is presented.
- The Safety Committee determines if the item warrants further consideration, then assigns the item to the appropriate person for Analysis and action.
- The Safety Committee determines the status of the safety issue and updates the Action Log.

The Immediate Process

- If the Safety Manager, Chief Instructor, Executive Director of Aviation, or Manager of Flight Operations determines that immediate action is required, the appropriate personnel are directed to analyze and act immediately.
- The Safety Manager adds the item to the Action Log, and a detailed review occurs at the next Safety Committee meeting.

Voluntary Disclosure Reporting

EKU is committed to promoting a non-punitive environment where all EKU employees, faculty, staff, and students can voluntarily report safety issues, errors, mistakes, and even violations, without fear of disciplinary action from the university administration or EKU faculty. Therefore, EKU will not initiate punishment against a student, a flight instructor, or other aviation personnel who discloses a safety-related occurrence. This policy cannot apply to criminal or intentional infractions.

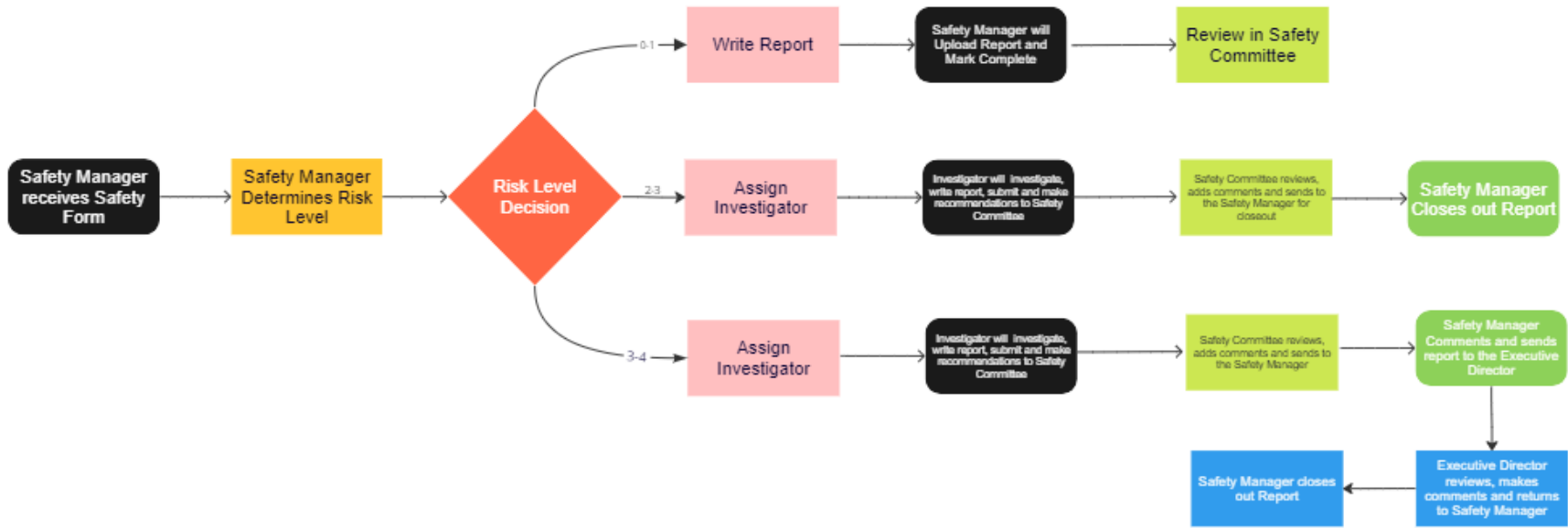


Figure 5
Safety Incident/Accident Flow Chart

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7.0—FLIGHT RISK ASSESSMENT

Preflight Risk Assessment

	1	2	3	4	5	Rating
Flight Type	VFR	IFR				
Dual/ Solo	Dual		Solo			
Day/ Night	Day		Night			
Rating	CFI/ATP	Comm'l	PPL with instrument	PPL	Student	
Rest in 24 hrs.	>8 hrs.	6-7 hrs.		3-5 hrs.	<3 hrs.	
Visibility	10 SM		>6 SM		<6 SM	
Ceiling	> 10,000	5,000-9,000	3,000- 4,000	1,000- 2000	< 1,000	
Crosswind-Departure	0-5 kts	6-10 kts	11-15 kts	16-20 kts	>20 kts	
Crosswind-Destination	0-5 kts	6-10 kts	11-15 kts	16-20 kts	>20 kts	
Weather Stability	Stable		Slow deterioration		Rapid deterioration	
Destination Airport Familiarity	Yes		No			
Hours in aircraft type	>200	151-199	100-150	50-99	<50	
Hours in last 90 days	>20	15-20	10-14	5-9	<5	
Total Hours	>2,000	501- 2,000	251- 500	100-250	<100	
Total Risk Score>>>>						
No unusual hazards. Use normal flight planning and established personal minimums and operating procedures.						14- 30
Riskier than usual. Conduct flight planning with extra care. Review personal minimums and operating procedures to ensure that all standards are being met. Consider alternatives to reduce risk.						31-47
Conditions presents much higher-than-normal risk. Conduct flight planning with extra care and review all elements to identify those that could be modified to reduce risk. If available, consult with more experienced pilot or instructor for guidance before flight. Develop contingency plans before flight to deal with high-risk items. Decide beforehand on						48- 63

alternatives and brief passengers and other crewmembers on special precautions to be taken during the flight. Consider delaying flight until conditions improve and risk is reduced.	
--	--

Before each flight assess each of the following conditions. Add the ratings and put the total in the total risk score row.

Student Signature _____ Date _____

Appendix A

TERMINOLOGY

Accident – an unplanned event or series of events that result in death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment.

Analysis – identifying a question or issue to be addressed, modeling the problem, investigating model results, interpreting the results, and making a recommendation. Research typically involves using scientific or mathematical methods for evaluation.

Assessment – the process of measuring or judging the value or level of something.

Attributes – System Attributes, or the inherent characteristics of a system, are present in any well-defined organization and apply to an effective SMS. While the six system attributes were first used with Air Transportation Oversight System (ATOS) fielding, there are conceptual differences when applied to SMS, as discussed below:

AUTHORITY & RESPONSIBILITY

Authority – who can direct, control, or change the process and make critical decisions such as risk acceptance. This attribute also includes the concept of empowerment.

Interfaces – this aspect includes examining such things as lines of authority between departments, lines of communication between employees, consistency of procedures, and clearly delineating lines of responsibility between organizations, work units, and employees.

Safety Assurance –Monitoring the aviation SMS' systems. Such monitoring comes in many important forms, some of which are obvious and some of which are often overlooked. From a layperson's perspective, safety assurance takes the form of routine auditing and employees submitting safety reports whenever an accident or incident occurs.

Procedures – ISO-9001-2000 defines "procedure" as "a specified way to carry out an activity or a process" – procedures translate the "what" in goals and objectives into "how" in practical activities (things people do). Procedures are simply documented activities to accomplish processes, e.g., a way to perform a process. The organization should specify their own procedures for accomplishing processes in the context of their unique operational environment, organizational structure, and management objectives.

Process Measures – are ways to provide feedback to responsible parties that required actions are taking place, required outputs are being produced, and expected outcomes are being achieved. A basic the principle of safety assurance is that fundamental processes be measured so that management decisions can be data driven. For example, these outputs should be the subjects of continuous monitoring, internal audits, and internal evaluation.

Responsibility – who is accountable for management and overall quality of the process (planning, organizing, directing, controlling) and its ultimate accomplishment.

DEFINITIONS

Audit – scheduled, formal reviews and verifications that evaluate whether an organization has complied with policy, standards, and/or contract requirements. An audit starts with the management and operations of the organization and then moves to the organization's activities and products/services.

Internal audit – an audit conducted by, or on behalf of, the organization being audited, e.g., the flight-training department audits the flight training department.

External audit – an audit conducted by an entity outside of the organization being audited, e.g., the flight operations division audits the flight training department.

Aviation system – the functional operation or production system used by an organization to produce an aviation product or service (see System and Functional below).

Complete – nothing has been omitted and what is stated is essential and appropriate to the level of detail.

Conformity – fulfilling or complying with a requirement [ref. ISO 9001-2000]; this includes but is not limited to complying with Federal regulations. It also includes complying with company requirements, requirements of operator developed risk controls, or operator policies and procedures.

Continuous monitoring – uninterrupted (constant) watchfulness (checks, audits, etc.) over a system.

Corrective action – action to eliminate (remove) or mitigate (lessen) the cause or reduce the effects of a detected nonconformity or other undesirable (unwanted) situation.

Correct – accurate without ambiguity or error in its attributes.

Documentation – information or meaningful data and its supporting medium (e.g., paper, electronic, etc.). In this context, documentation is different from records because documentation is the written description of policies, processes, procedures, objectives, requirements, authorities, responsibilities, or work instructions; whereas Records are the evidence of results achieved or activities performed.

Evaluation – an independent review of company policies, procedures, and systems [ref. AC 120-59A]. If accomplished by the company, the evaluation should be done by a person or organization other than the one performing the function being evaluated. The evaluation process builds on the concepts of auditing and inspection. An evaluation is an anticipatory process designed to identify and correct potential problems before they happen. An evaluation is synonymous with the term "systems audit."

Functional - The term "function" refers to "what" is expected to be incorporated into each process (e.g., human tasks, software, hardware, procedures, etc.) rather than "how" the function is accomplished by the system. This makes for a more performance-based system and allows for a broad range of techniques to be used to accomplish the performance objectives. This, in turn, maximizes scalability while preserving standardization of results across the aviation organization communities.

Hazard – any existing or potential condition that can lead to injury, illness, or death; damage to or loss of a system, equipment, or property; or damage to the environment. A hazard is a condition that might cause (is a prerequisite to) an accident or incident.

Incident – a near-miss episode with minor consequences that could have resulted in greater loss. An incident is an unplanned event that could have resulted in an accident or resulted in minor damage. An incident indicates that a hazard or hazardous condition exists, though it may not identify what that hazard or hazardous condition is.

Lessons learned – knowledge or understanding gained by experience, which may be positive, such as a successful test or mission, or negative, such as a mishap or failure. Lessons learned should be developed from information obtained from inside and outside of the organization and/or industry.

Likelihood – the estimated probability or frequency, in quantitative or qualitative terms, of an occurrence related to the hazard.

Line management – the management structure that operates (controls, supervises, etc.) the operational activities and processes of the aviation system.

Nonconformity – non-fulfillment of a requirement (ref. ISO 9001-2000). This could include noncompliance with Federal regulations, company requirements, requirements of operator developed risk controls or operator-specified policies and procedures.

Objective – the desired state or performance target of a process. Usually, it is the final state of a process and contains the results and outputs used to obtain the desired state or performance target.

Operational life cycle – period from implementation of a product/service until it is no longer in use.

Organization – indicates both certificated and noncertificated aviation organizations, aviation service providers, air carriers, airlines, maintenance repair organizations, air taxi operators, corporate flight departments, repair stations, and collegiate aviation schools.

Outputs – the product or result of an SMS process, which can be recorded, monitored, measured, and analyzed. Outputs are the minimum expectation for the product of each process area and the input for the next process area in succession.

Each of a process's outputs should have a measurement method specified by the organization.

Measures need not be quantitative where this is not practical; however, some method of providing objective evidence of the attainment of the expected output is necessary.

Oversight – a function performed by a regulator (such as the FAA) that ensures that an aviation organization complies with and uses safety-related standards, requirements, regulations, and associated procedures. Safety oversight also ensures that the acceptable level of safety risk is not exceeded in the air transportation system.

Preventive action – preemptive action to eliminate or mitigate the potential cause or reduce the future effects of an identified or anticipated nonconformity or another undesirable situation.

Procedure – a specified way to conduct an activity or a process.

Process – a set of interrelated or interacting activities that transform inputs into outputs.

Process measures – refer to definition for Process Measures under the Attributes definition, above.

Product/service – anything that is offered or can be purchased that might satisfy a want or need in the air transportation system.

Records – evidence of results achieved, or activities performed.

Residual safety risk – the safety risk that exists after all controls have been implemented or exhausted and verified. Only verified controls can be used for assessing residual safety risk.

Risk – the composite of predicted Severity (how bad) and likelihood (how probable) of the potential effect of a hazard in its worst credible (reasonable or believable) system state. The terms risk and safety risk are interchangeable.

Risk control – steps taken to eliminate (remove) hazards or to mitigate (lessen) their effects by reducing the Severity and/or likelihood of risk associated with those hazards.

Safety assurance – a formal management process within the SMS that systematically provides confidence that an organization's products/services meet or exceed safety requirements. A Safety Assurance flow diagram includes the Framework element/process numbers and other notes to help the reader visualize the Framework in terms of a process flow (with interfaces) and understand the component / element / process expectations.

Safety culture – the product of individual and group values, attitudes, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, the organization's management of safety. Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures.

Safety Management System (SMS) – the formal, top-down business-like approach to managing safety risk. It includes systematic procedures, practices, and policies for the management of safety (as described in this document it includes safety risk management, safety policy, safety assurance, and safety promotion).

Product/service provider Safety Management System (SMS-P) – the SMS owned and operated by a product/service provider.

Oversight Safety Management System (SMS-O) – the SMS owned and operated by an oversight entity.

Safety objective – a goal or desirable outcome related to safety. Generally based on the organization's safety policy and specified for relevant functions and levels in the organization. Safety objectives are typically measurable.

Safety planning – part of safety management focused on setting safety objectives and specifying needed operational processes and related resources to fulfill these objectives.

Safety risk – the composite of predicted Severity (how bad) and likelihood (how probable) of the potential effect of a hazard in its worst credible (reasonable or believable) system state. The terms safety risk and risk are interchangeable.

Safety risk control – a characteristic of a system that reduces or mitigates (lessens) the potential undesirable effects of a hazard. Controls may include process design, equipment modification, work procedures, training, or protective devices. Safety risk controls must be written in requirements language, measurable, and monitored to ensure effectiveness.

Safety Risk Management (SRM) – a formal process within the SMS that describes the system, identifies the hazards, assesses the risk, analyzes the risk, and controls the risk. The SRM process is embedded in the processes used to provide the product/ service; it is not a distinct, separate process.

Safety promotion – a combination of safety culture, training, and data sharing activities that support the implementation and operation of an SMS in an organization.

Separate Aviation Maintenance Organizations are independent maintenance organizations such as certificated repair stations, non-certificated repair facilities, and separate maintenance organizations. This does not include an air operator's maintenance organization and is not intended to duplicate 1.0 B) 1) a) 3) of an air operator's organization.

Severity – the degree of loss or harm resulting from a hazard.

Substitute risk is one unintentionally created by safety risk control(s).

System: an integrated set of constituent elements combined in an operational or support environment to accomplish a defined objective. These elements include people, hardware, software, firmware, information, procedures, facilities, services, and other support facets.

System Attributes – refer to definition for Attributes

Appendix B

SMS Incident Reporting Form (paper version)

or if access cannot be gained, the following form can be used as a temporary measure of capturing the details of an incident or hazard.

Hazard and Incident Reporting Form Email to

The information supplied in this form will only be used to promote safety. Your name is optional. If you do provide your name, your identity will be removed before dissemination. An email reply will follow. Under no circumstances will your identity be disclosed to any university personnel, any other organization, agency, or person without your express permission.

Complete only **Part A** of the form, then submit it to the EKU Safety Manager—paper copy or email.

Name: _____ Email: _____

Position: _____ [Only Safety Manager has access to name/position]

Report Number: _____ Date Received: _____

PART

A: Please fully describe the Hazard or Incident.

Incident Type: Airborne _____ Bird strike _____ Ground _____ Line Service _____ Fueling _____ Hangar/Maintenance _____ Aircraft Tugging/Towing _____ Fire _____ Vehicle _____

Date of occurrence: _____ Time: _____ Injuries _____ Vehicle/Aircraft Type & registration: _____ Location: _____

If Aircraft related: Dual/Solo: _____ Day/Night _____ VFR/IFR _____ Taxi _____ Takeoff _____ Landing _____ Cross Country _____ Practice Area _____ Traffic Pattern _____ Weather: Ceilings: _____ ft Visibility _____ nm Wind Direction _____ Wind Speed _____ kts NASA (ASRS (Aviation Safety Reporting System)) Report Filed? _____
--

Description of incident or hazard (*Use other sheet if needed to fully describe the event- include pictures and diagrams*):

Contributing Factors:

Suggested actions to be taken to prevent this in the future:

To be filled out and filed by Safety Manager:

PART B:

Actions & Recommendations of the Safety Manager or Safety Committee

The report has been de-identified, entered the safety database and a response emailed if necessary.

Signature: _____ Date: _____

Probability of the hazard recurring (EKU Risk Matrix)

Frequent	Occasional	Seldom	Remote	Improbable
<i>30 days</i>	<i>6 months</i>	<i>1 year</i>	<i>5 years</i>	<i>> 5 years</i>
P5	P4	P3	P2	P1

Worst-case consequences (EKU Risk Matrix)

Catastrophic	Critical	Concerning	Minor	Negligible
S5	S4	S3	S2	S1

Risk probability	Risk severity				
	Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent 5	5A	5B	5C	5D	5E
Occasional 4	4A	4B	4C	4D	4E
Remote 3	3A	3B	3C	3D	3E
Improbable 2	2A	2B	2C	2D	2E
Extremely improbable 1	1A	1B	1C	1D	1E

Risk Determination Matrix: _____

Assessed Safety Risk: ~~High~~—~~Serious~~—~~Moderate~~—~~Minor~~—~~Low~~

Suggested Action:

Actions taken regarding the incident or hazard:

Responsibility for action (who): _____

Signature: _____ Date: _____

Safety Committee review:

Signed: _____ Date: _____

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Appendix D

Accident and Injury Report Form

EKU Online Injury and Illness Reporting System
<https://universityclaims.eku.edu/report>

If you need assistance with the reporting process please call (859)622-5523