

# **Southern Illinois Airport**



## **Safety Management System (SMS) Manual**

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## **Southern Illinois Airport Safety Culture**

Southern Illinois Airport (SIA) defines its safety culture as the intrinsic adoption of safety conscious behavior and practices by all members of the organization. SIA recognizes the dynamic relationship that exists between employees and their working environment at SIA. SIA proactively seeks to reduce the level of risk associated with all activities on the airport.

The purpose of a safety management system is to lay out a systems approach to the development of safety policies, procedures, and practices that will achieve the SIA safety objectives. As with any management system, this involves planning, organizing, leading, and controlling the safety practices of the airport.

The essential goal of an SMS is to broaden and strengthen the part of the airport culture that deals with safe operations. This is commonly referred to as the safety culture of an organization. Southern Illinois Airport (SIA) defines its safety culture as the intrinsic adoption of safety conscious behavior and practices by all members of the organization.

A shared safety-mindset is crucial toward establishing a safety culture. A shared safety-mindset places emphasis on safety education, safety situational awareness, communication, participation by all members of the SIA team, and responsibility for safety is assumed by all members of the organization. It is this assembly of characteristics and attitudes that define the safety culture at the Southern Illinois Airport.

### **Management Commitment**

The management of SIA is committed to the establishment of a safety culture. The safety of personnel is of unrivaled, paramount importance. SIA management pledges to monitor safety performance as keenly as financial performance and encourages all airport personnel to report safety concerns without fear of reprisal. Our objective is to facilitate the development of a safety culture that permeates throughout every component of the organization.

### **Safety Culture Development**

A safety culture will be attained through the adoption of four major tenets and their respective activities:

1. Safety Policy and Objectives
2. Safety Promotion
3. Safety Risk Management
4. Safety Assurance

## COMPONENT 1: SAFETY POLICY

### **Element 1.1: Safety Policy**

1.1.1. The safety of personnel associated with the Southern Illinois Airport is of unrivaled importance to the Southern Illinois Airport Authority. Safety is an activity that requires deliberate effort and personal commitment from every member of the Southern Illinois Airport community. Our commitment is to work alongside each of you in proactively ensuring the safest environment we can collectively achieve. The result is a non-punitive working environment that encourages the identification, reporting, and correction of safety issues by all airport employees.

1.1.2. In collaboration with Southern Illinois University Carbondale, the Southern Illinois Airport Authority is spearheading the adoption and promotion of a safety culture based on trust, participation and shared ownership. Airport employees, tenants and visitors are highly encouraged to share information regarding any safety issue or concern.

1.1.3. The Southern Illinois Airport Authority pledges that disciplinary action will not be taken against any person reporting a safety hazard or safety concern. We encourage you to play an active role in creating an atmosphere where safety permeates the fabric of our organization.

### **Element 1.2: SMS Management Review**

1.2.1 In order to comply with SMS guidelines the management team of SIA shall:

- Keep the SMS document current by updating its contents with new developments on FAA, TSA and other federal, state and local regulations. The SIA manager or the airport safety coordinator shall review the accuracy of the SMS manual annually. Annual reviews shall be conducted and documented no later than June of each year.
- The SIA manager and the airport safety coordinator will keep in direct communication with SIA personnel, tenants and other occupants and users to measure concerns surfacing relevant to the SMS review process by having an annual meeting with all parties of interest.
- Maintain a current copy of the approved SMS documentation for inspection by the FAA. This copy will be maintained in the airport manager's office.
- Provide the FAA Regional Airports Division with a copy of the most current SMS documentation including any amendments.
- Shall notify airport personnel and all airport tenants when an immediate change to SMS policy is required.

1.2.2 Because of its' dynamic nature, certain exceptions will require immediate attention to determine potential amendments to SMS documentation:

- The SMS documentation shall be immediately placed under review and updated where necessary when amendments are made to the Airport Certification Manual (ACM) in order to maintain congruency between the two documents.
- In the event of immediate safety concerns brought to the attention of the SIA Manager or the airport safety coordinator arising from- but not limited to; hazardous situations leading to capital loss and/or personal injury and/or loss of life due such conditions as
  - incidents/accidents resulting from human error or otherwise
  - adverse weather conditions
  - construction activity
  - mechanical or electronic failure
  - other unusual conditions on the airport

### **Element 1.3: Non-Punitive Reporting Policy**

1.3.1. SIA embraces a non-punitive safety reporting policy. **Therefore, the Southern Illinois Airport Authority and the Airport Manager guarantee that punitive-action will not be taken against any employee of the airport for identifying, reporting, and correcting hazards on or associated with the Southern Illinois Airport.** Personnel and tenants involved in the accidental/unintentional destruction of airport property are encouraged to report the extent of the damage to their immediate supervisors or airport official without fear of punitive action. The SIA Authority is concerned with the accident being reported and identifying a potential hazard – not punishing the individual.

1.3.2. However, personnel who participate in negligent, reckless, or illegal behavior will be held accountable. **The airport manager will take appropriate action against an employee who knowingly disguises or hides a known hazard from airport management and supervisors.** Such employee actions will be considered a violation of the responsibility each member of the SIA team has for the safety of other team members, tenants of the airport, and other users of airport facilities. This policy will go into effect 90 days after every employee receives initial safety training in accordance with this SMS.

### **Element 1.4: Roles, Responsibilities and Employee Involvement**

1.4.1. All SIA employees and tenants have a shared responsibility to ensure the safety of personnel and airport resources. These responsibilities include, but are not limited to, ensuring the safety of their immediate work environment, reporting safety hazards and safety concerns as quickly as possible, complying with safety regulations and policies, etc. All airport employees are highly encouraged to become active participants in airport safety. However, key airport personnel have specific responsibilities; those responsibilities are discussed in this section.

## **AIRPORT MANAGER**

The Airport Manager is under the general supervision of the Southern Illinois Airport Authority.

### General Description

The Authority appoints an airport manager to administer the affairs of the airport. The airport manager is responsible to the Authority for the application of their policies including issues relating to safety and the prudent use of fiscal resources authorized in the annual budget. This is accomplished by the airport manager providing the supervision and ensuring performance of the planning, development, construction, enlargement, improvement, maintenance and equipping, administration, operation, regulation, protection, and policing of the airport for the airport authority. This ensures that the day to day operation of the airport and its assets are safe and secure.

### Specific Description

#### **PERSONNEL RESPONSIBILITIES:**

The airport manager is responsible for, but not limited to, supervising the selection, assignment, development, evaluation and termination of subordinate personnel; overseeing personnel needs such as recruitment, qualification, and training; overseeing and maintaining adequate control of personnel engaged in the various activities of the airport including, flight line, customer service, safety and security, maintenance, ARFF, and office functions to ensure operational efficiency and safety; directing personnel in the investigation and resolution of violations of airport rules and regulations by employees, tenants, contractors, or the public; conducting and monitoring personnel in the proper inspection, assessment, and notification of airport conditions affecting safety; reviewing records and performance of all employees to ensure the adequacy and currency of each employee in filling the requirements of the position; monitoring the adequacy of all contractual personnel services and ensuring the fulfillment of contractual obligations; and performing other related duties as needed. The airport rules and regulations document provides all personnel operating on SIA including tenant organizations with rules and regulations including those pertaining to safety, and is applicable to and for all aircraft, vehicles, pilots, operators, companies, business organizations, government agencies and all persons coming upon SIA for any purpose.

#### **IMPROVEMENT, PLANNING, OPERATING, MAINTENANCE, AND CONSTRUCTION RESPONSIBILITIES PERTAINING TO SAFETY:**

The airport manager is responsible for the improvement, planning, operating, maintenance, and construction of the airport including, but not limited to, supervising, directing, negotiating terms and recommending the approval to the Board of contracts for the safe use of the airport's runways, taxiways, ramps, aprons, hangars, shops, buildings, and grounds; conferring with and advising the Board on aviation safety issues affecting the short term and long term plans for maintaining the status of the airport and improving the future status of the airport; participating in airport planning and development by researching, evaluating, and recommending development and operational plans affecting the safety on the airport; consulting with city, state, federal and

other officials on airport operating and planning matters; directing and coordinating a comprehensive airport maintenance program and overseeing maintenance, renovation, and construction activities for buildings, pavements, and grounds that may affect safety; supervising the preparation of maintenance schedules; preparing and/or supervising the preparation of plans, specifications, and cost estimates of proposed modifications to airport premises to maintain safety including consulting with architects and engineers and referring any discrepancies to the attention of consulting architects and engineers; preparing and administering the airport's safety and security procedures including operations to ensure compliance with federal regulations; ensuring prompt and accurate corrective action is taken to eliminate unsafe conditions on airport premises; monitoring the conduct of the construction activities of the airport to ensure strict safety compliance with appropriate safety measures; supervising the various types of contractual services provided to the airport; and performing other related duties as needed.

#### ADDITIONAL RESPONSIBILITIES:

The airport manager must perform other duties that are necessary for the safe and efficient operation of the airport including, but not limited to, ensuring and directing adequate responses to airport emergencies; supervising the safe and orderly operation of landings, taking-off, taxiing, or parking of aircraft and the circulation and control of vehicles and pedestrian traffic in and upon the airport premises; reporting and disseminating information regarding the airport and facility conditions and safety hazards; receiving tenant complaints pertaining to safety and ensuring corrective action is taken; increasing awareness of the airport safety issues and ensuring that this safety culture is followed strictly; maintaining currency with respect to all local, state, and federal laws and regulations that affect the airport operations including safety and advising the Board of the same; safeguarding all airport records; ensuring the compliance of all parties with the airport ordinances and recommending changes in the ordinances to the Board as necessary; and performing other related duties as needed.

## **OPERATIONS/ADMINISTRATIVE ASSISTANT**

The Operations/Administrative Assistant works under the direct supervision and general direction of the airport manager. The operations/administrative assistant also functions as the airport safety coordinator. The administrative assistant assists the manager in the compliance and observance of all safety ordinances and regulations.

### General Description

The operations/administrative assistant performs a variety of secretarial, clerical, and bookkeeping functions. The administrative assistant is under the supervision of the airport manager and will consult with the manager on all safety issues.

## **AIRPORT SAFETY COORDINATOR**

The airport safety coordinator position shall be appointed by the SIA manager. The position is normally held by the SIA operations/administrative assistant. The airport safety coordinator shall be under the supervision of the SIA manager. The airport safety coordinator is responsible for, but not limited to, the following safety-related activities:

1. In conjunction with the SIA manager, the airport safety coordinator addresses all airport safety related concerns
2. Oversight of the SMS program
3. The currency and accuracy of SMS documents
4. The promotion of the SMS program
5. Training activities outlined in the SMS and SIA Airport Certification Manuals (ACM)
6. The SIA Safety Risk management (SRM) program, including investigation, documentation, and follow-up activities
7. Airport safety inspections - as outlined in the SMS and SIA ACM
8. Oversight of the Driver Training Program for airfield drivers.
9. A record-keeping function that triggers/identifies personnel training requirements

## **AIRPORT MAINTENANCE FOREMAN/ AIRCRAFT RESCUE & FIREFIGHTING (ARFF) OFFICER**

The Airport Maintenance Foreman/ARFF Officer performs under the general supervision of the airport manager.

### General Description

An employee under this classification is assigned the responsibilities of both an Airport Maintenance Foreman and an ARFF Officer. These duties include a combination of airport crash and rescue functions, and the planning, coordination, monitoring, and performance of maintenance and repair activities on airport properties including those affecting safety. This employee must possess the ability to react quickly and calmly in emergency situations, perform prolonged arduous work under adverse weather conditions, and possess skills in the safe operation of motorized vehicles and light equipment. The maintenance foreman, in conjunction with, the maintenance specialist manages the airport's maintenance component.

### Specific Description

#### **RESPONSIBILITIES OF THE MAINTENANCE FOREMAN:**

This employee is responsible for the maintenance of airport property and all safety issues relating to the airport, including, but not limited to, directing and performing the maintenance and repair of airfield grounds, airport buildings, and their mechanical, electrical, plumbing, heating and air conditioning systems for smooth and safe operation on and off the field; monitoring the maintenance of records; requisitioning supplies, tools, materials, and equipment to ensure safe maintenance practices ; monitoring and reporting on the progress of construction projects and maintenance work in a safe manner; advising the airport manager on safety requirements of the airport pavements, grounds, lighting systems, buildings, vehicles, and shop; coordinating and performing the prompt repair, cleaning, and snow removal of all pavements to maintain safe conditions on and off the airfield; diagnosing failures in equipment and vehicles and effecting repairs to same, keeping time records; training maintenance staff on safety issues; assisting the airport manager in establishing safety priorities; developing preventative maintenance standards; operating tractors, trucks and other maintenance equipment in a safe manner including the operation of construction equipment on an occasional basis; and performing other related duties as needed to maintain safety at the airport. This employee is also responsible for maintaining a safe, clean and sanitary condition the office, shop, all equipment, and vehicles.

**RESPONSIBILITIES OF AN AIRCRAFT RESCUE & FIREFIGHTING  
(ARFF) OFFICER:**

This employee shall respond to alarms and emergencies; provide efficient airport safety protection; assist in the suppression of aircraft fires; participate in on-the-job training programs provided or assigned by the airport manager; complete all airport safety training requirements; operate communication equipment; inspect airport premises for presence of fire hazards and fire safety violations; and perform other related duties and functions as needed.

In addition, this employee shall operate fire-fighting vehicles. This employee is also responsible for maintaining fire-fighting vehicles by inspecting pumping equipment, ignition, batteries, brakes, and other equipment daily, and cleaning, including, both the interior and exterior of each vehicle.

## **MAINTENANCE TECHNICIAN 1/ARFF OFFICER**

The Maintenance Technician 1/ARFF Officer is under the direct supervision of the Airport Maintenance Foreman.

### General Description

An employee under this classification holds responsibilities and duties of both a maintenance technician and an ARFF Officer. These duties include a combination of airport crash and rescue functions, and maintenance and repairing of airport property including those affecting safety. This employee must possess the ability to react quickly and calmly in emergency situations, perform prolonged arduous work under adverse weather conditions, possess skills in the safe operation of motorized vehicles and light equipment, and have the ability to lift heavy articles when necessary. This employee must endeavor to maintain a safe environment at their immediate work area as well as the airport in general.

### Specific Description

#### **RESPONSIBILITIES OF A MAINTENANCE TECHNICIAN 1:**

This employee shall maintain a safe environment and condition by performing the maintenance and repair of airfield grounds, airport buildings, and their mechanical and electrical equipment, plumbing, heating and air conditioning systems; prepare simple reports; repair, clean, and remove snow on all pavement areas; diagnose failures in equipment and vehicles and effect repairs to same; keep records of maintenance work and receipts; safely operate power mowers, chain saws, brush cutters, edger's, clippers, and other equipment used in landscaping and maintenance; safely operate construction equipment on an occasional basis; and perform other related duties as needed. Each employee is responsible for maintaining a safe, clean and sanitary condition the office, shop, all equipment, and vehicles.

## **MAINTENANCE TECHNICIAN 2/ARFF OFFICER**

The Maintenance Technician 2/ARFF Officer is under the direct supervision of the Airport Maintenance Foreman and is subordinate to the Maintenance Technician 1.

### General Description

An employee under this classification holds responsibilities and duties of both a Maintenance Technician and an ARFF Officer. These duties include a combination of airport crash and rescue functions, and maintenance and repairing of airport property including those affecting safety. This employee must possess the ability to react quickly and calmly in emergency situations, perform prolonged arduous work under adverse weather conditions, possess skills in the safe operation of motorized vehicles and light equipment, and have the ability to lift heavy articles when necessary. This employee must endeavor to maintain a safe environment at their immediate work area as well as the airport in general.

### Specific Description

#### **RESPONSIBILITIES OF A MAINTENANCE TECHNICIAN 2:**

This employee shall maintain a safe environment and condition by performing the maintenance and repair of airfield grounds, airport buildings, and their mechanical and electrical equipment, plumbing, heating and air conditioning systems; prepare simple reports; repair, clean, and remove snow on all pavement areas; diagnose failures in equipment and vehicles and effect repairs to same; keep records of maintenance work and receipts; safely operate power mowers, chain saws, brush cutters, edgers, clippers, and other equipment used in landscaping and maintenance; safely operate construction equipment on an occasional basis; and perform other related duties as needed. Each employee is responsible for maintaining a safe, clean and sanitary condition the office, shop, all equipment, and vehicles.

## **MAINTENANCE SPECIALIST**

The Maintenance Specialist performs under the general direction of the airport manager and works in conjunction with the maintenance foreman.

### General Description

The maintenance specialist is a knowledgeable and skilled individual who provides advice and suggestions to maintain safety standards at the airport. In consultation with the maintenance foreman, the maintenance specialist assists in determining and planning the maintenance needs and activities of the airport that affect safety. Work in this position may be prolonged and arduous and under adverse temperature and weather conditions. This employee must endeavor to maintain a safe environment at their immediate work area as well as the airport in general.

### Specific Description

The maintenance specialist assists in the maintenance of airport facilities and equipment through hands-on involvement and by providing advice and suggestions. This ensures that the facilities, as well as, equipment function as intended, and do not pose as a safety hazard during operation. Through diagnosis, he recommends and performs work required to repair and safely maintain vehicles, equipment and building structures and components. He operates a full range of tools, equipment and vehicles in the performance of his job.

This position may be filled by either an airport employee or an independent contractor.

## **AIRPORT POLICE CHIEF**

The Airport Police Chief is under the general supervision of the airport manager.

### General Description

The airport police chief is responsible for organizing and directing all airport security activities. The airport police chief is responsible for enforcing airport rules and regulations, supervising the airport security officers in the performance of their duties, reacting quickly and calmly in an emergency condition, and to deal courteously and effectively with the public. This position is specifically designed for the security and safety of the airport. This employee is responsible for directing the inspection of all airport premises for security, as well as safety, and recommend corrective action.

### Specific Description

The airport police chief is primarily responsible for the security of the airport. However, the airport police chief is encouraged to advise on safety issues in and around the airport; attending safety and security meetings; organizing an effective response to all airport emergencies; enforcing established airport rules and regulations and those laws permitted by state statute; apprehending violators of any rules, regulations, or laws governing the airport property; directing traffic; enforcing traffic and parking regulations to ensure safety on the roads leading to and from the airport; investigating accidents on airport property; assisting other law enforcement agencies as requested; operating security vehicles and equipment in a safe manner; participating in on-the-job training programs provided or assigned by the airport manager, and performing other related duties and functions as needed.

### **Element 1.5: SMS Integration**

1.5.1. The organizational integration of a SMS will involve several activities, including:

1. Employee awareness of the SMS via initial and annual recurrent training.
2. The development of safety related promotional materials.
3. The development of a safety webpage on the airport website.
4. The creation of a formal safety committee.
5. Incorporation of SMS practices in employee evaluations

### **Element 1.6: Safety Goals and Objectives**

The SIA Safety Coordinator will: 1) ensure the communication, training, and continuous improvement programs are in place; 2) track key targets, generate reports, analyze data and make recommendations to the airport manager for policy guidance; and 3) bring safety issues to the attention of the airport manager. The SIA Authority's objective is continuous improvement in safety through a proactive safety-first culture. The Airport Authority will accomplish this by the following objectives:

- Provide clear guidance for responsibilities and accountability for safety.
- Provide the tools necessary for success of the SMS.
- Meet or exceed all applicable regulations.
- Encourage the participation of all employees. This includes Airport Authority staff, tenants, and business partners.
- Provide clear communication channels for all SIA employees.
- Promote safety as the airport's number one priority.
- Monitor and measure progress towards specific safety targets. Manage those results, always striving for continuous improvement.

Safety objectives and goals shall be communicated to all employees during initial and recurrent SMS training. In addition, safety promotional items will also be utilized for the purpose of communicating safety goals and objectives. (See Section 4.1)

### **Element 1.7: Records Management**

1.7.1 SIA Management is responsible for correct and current record keeping of all SMS related training and incident reporting files.

1.7.2. All SIA personnel will be asked to review and comply with SMS documentation. All personnel will be given copies of the SMS document for review. The airport safety coordinator will administer a computer-based exam to test knowledge of the subject. Upon satisfactory completion of the exam the subject will be asked to complete a short paper-based form indicating agreement and compliance with SIA SMS guidelines.

1.7.3. Records of both the test score and form of compliance will become the sole property of SIA and will be saved electronically and paper-based in individual SIA personnel files for liability purposes.

### **Element 1.8: Organizational Chart**

The organizational chart is located in Appendix A.

## **COMPONENT 2: RISK MANAGEMENT**

### **Element 2.1: Safety Risk Management (SRM)**

2.1.1. SRM is a systematic, explicit, and comprehensive approach for managing safety risk at all levels throughout the airport. A comprehensive SMS using SRM will develop layers of safety built upon the measures taken to mitigate risk. An unsafe event can occur when gaps occur in the system's protective layers. These gaps are not static and may appear unexpectedly. In order for an incident or accident to take place there is normally a succession of gaps in a system that will line up and enable an event to occur. A daily safety inspection is conducted by qualified airport personnel, including the airport manager and airport safety coordinator, as outlined in Section 327 of the SIA Airport Certification Manual. Personnel conducting daily safety inspections shall consider the five phases of SRM, outlined below, during the course of the safety inspection. The five phases of SRM shall also be employed during "additional" safety inspections outlined in Section 327 of the SIA Airport Certification Manual.

#### **The Five Phases of SRM**

There are five phases to the SRM Process include:

Phase 1. Describe the system

Phase 2. Identify the hazards

Phase 3. Determine the risk

Phase 4. Assess and analyze the risk

**Phase 5.** Treat the risk (i.e., mitigate, monitor and track)

**Phase 1: Describe the system.** When considering the environment of the airport system, consider all of the safety-related functions already outlined in the ACM. The existing safety functions should steer the focus of the risk management analysis and will assist in determining potential mitigation strategies.

**Phase 2: Identify Hazards.** In this phase, hazards to the system (i.e., operation, equipment, people, and procedures) are identified in a systematic, disciplined way. There are many ways to do this, but all require at least four elements:

- Operational expertise
- Training in SMS, and if possible, hazard analysis techniques
- A simple, but well-defined, hazard analysis tool
- Adequate documentation of the process

The hazard identification stage considers all the possible sources of system failure. Depending on the nature and size of the system under consideration, these should include:

- The equipment (example: construction equipment on a movement surface)
- Operating environment (example: cold, night, low visibility)
- Human element (example: shift work)
- Operational procedures (example: staffing levels)
- Maintenance procedures (example: nightly movement area inspections by airport electricians)
- External services (example: ramp traffic by Fixed-Base Operator (FBO) or law enforcement vehicles)

**Phase 3: Determine the risk.** In this phase, each hazard in its system context is identified to determine what risks exist, if any, that may be related to the hazard. In this phase, there is no determination of the severity or potential of the risk occurring. First, all potential hazards are identified and documented on an SRM worksheet (Appendix B). Information derived from the SRM Worksheet shall be input into the SIA Safety Matrix (Figure 2-1) to determine the level of risk associated with an operation/activity.

**Phase 4: Assess and Analyze the Risk.** In this Phase, the airport personnel estimate the level of risk associated with an operation or condition by using the SIA predictive risk matrix (Figure 2-3). In order to assess the risk of an accident or incident occurring, severity and likelihood are first determined.

Severity is determined by the worst, credible potential outcome. Less severe effects may be considered in addition to this, but at a minimum, the most severe effects are considered (Figure 2-1). Determination of severity is independent of likelihood, and likelihood should not be considered when determining severity.

**Figure 2-1 Severity Classification**

Criteria	Severity Classification				
	No Safety Effect A	Minor B	Major C	Hazardous D	Catastrophic E
Effect on aircraft operations	No effect on safety	Slight reduction in safety margin or functional capabilities	Significant reduction in safety margin or functional capability	Large reduction in safety margin or functional capabilities	Hull loss
Effect on people	Inconvenience	Physical discomfort	Physical distress possibly including injuries	Serious or fatal injury to small number of people	At least one fatality
Loss of confidence in airport	Slight to moderate impact on airport reputation	Moderate impact to reputation at community level	Significant impact to reputation at regional level	Significant impact to reputation at state level	Severe impact to reputation at national level
Environmental Impact	Non-Reportable	Reportable without fine	Physical damage and fine	Considerable damage to people/facilities/equipment Significant fine and cost	Loss of people, facilities or equipment Highest fine and cost
Financial loss	Slight damage is less than \$5,000	Noticeable damage between \$5,000 and \$25,000	Large damage between \$25,000 and \$100,000	Major damage between \$100,000 and \$1,000,000	Severe damage exceeds \$1,000,000

Determine the probability that the hazard will cause an accident or incident of the severity assessed previously (Figure 2-2). Probability may be determined quantitatively when historical information is available.

**Figure 2-2 Likelihood of Occurrence**

Qualitative Definition	Meaning	Value
<b>Frequent</b>	Likely to occur many times (at least once per month)	<b>1</b>
<b>Probable</b>	Likely to occur some times (more than once per year)	<b>2</b>
<b>Remote</b>	Unlikely, but possible to occur (once per year)	<b>3</b>
<b>Extremely Remote</b>	Very unlikely to occur (once every five years)	<b>4</b>
<b>Extremely Improbable</b>	Almost inconceivable that the event will occur (once every ten years)	<b>5</b>

Hazards are ranked according to the severity and the likelihood of their risk, which is illustrated by where they fall on the risk matrix (Figure 2-3). Hazards with high risk receive higher priority for treatment and mitigation.

**Figure 2-3 SIA Risk Matrix**

		Severity					
		No Safety Effect A	Minor B	Major C	Hazardous D	Catastrophic E	
Likelihood	Frequent 1	Low	Medium	High	High	High	
	Probable 2	Low	Medium	High	High	High	
	Remote 3	Low	Low	Medium	High	High	
	Extremely Remote 4	Low	Low	Low	Medium	High	
	Extremely Improbable 5	Low	Low	Low	Low	Medium	High

High Risk = Red

Medium Risk = Yellow

Low Risk = Green

Figure 2-4

## Risk Assessment Criteria

<b>High Risk – Requires Risk Control/Management Decision</b>
<b>Medium Risk – Requires Operational Review Before Activity is Performed</b>
<b>Low Risk – Proceed with Operation/Activity</b>

Prioritized risk levels used in the SIA risk matrix (Figure 2-3) can be defined as (Figure 2-4):

- **High Risk:** The proposal cannot be implemented or the activity continued unless hazards are further mitigated so that risk is reduced to medium or low level. For example, a risk code of 1D (1=Severity and D=Likelihood) identifies the outcome associated with the proposed operation as possibly Catastrophic, but the likelihood is Remote. Risk must be reduced to medium or low levels before conducting the operation. The airport manager or airport safety coordinator must approve any proposed mitigating controls.
- **Medium Risk** – Acceptable level of risk: Minimum acceptable safety objective; the proposal may be implemented or the activity can continue, but tracking and management by the airport manager or the airport safety coordinator are required.
- **Low Risk** – Target level of risk: Acceptable without restriction or limitation; the identified hazards are not required to be actively managed, but are documented.

**Phase 5: Treat the risk.** In this phase, the airport manager or the airport safety coordinator consider what strategy or action should be employed to address the risk associated with the operation. It should be noted that the majority of risk management strategies address medium and high-risk hazards. Low-risk hazards may be accepted after considering risk.

The risk management activity should identify feasible options to control or mitigate risk. Some options could include:

- Modifying the system
- Physical guards or barriers
- Warning or alert signal
- Procedural or training modification

- Advising airport personnel

2.1.2. When risk is determined to be unacceptable, it is necessary for the airport manager or airport safety coordinator to identify and evaluate risk mitigation measures by which the probability of occurrence and/or the severity of the hazard could be reduced.

**2.1.3** Awareness is the key to risk management program integration. As such, all personnel will receive initial and recurrent SMS training. Training will include a discussion on the specifics of the SRM program and how to apply SRM principles to daily operations.

Appendix C provides an FAA example of SRM application.

### **Element 2.2: Corrective and Preventative Actions**

The airport safety coordinator will document and evaluate the effectiveness of corrective and preventive measures that result in response to a verbal or written hazard report/concern. Corrective actions will be documented and monitored using the airport's Incident Reporter Version 2.0 software program. The program has the ability to document and track corrective actions. The safety coordinator will provide a monthly update to the airport manager advising him/her of the status of mitigation strategies currently in use.

### **Element 2.3: Lessons Learned**

The airport safety coordinator will document and disseminate "lessons learned" resulting from incident/accident investigations. Incident Reporter Version 2.0 software will be used as the mechanism for documenting and disseminating "lessons learned" to airport personnel. All "lessons learned" will also be posted on the airport safety webpage.

### **Element 2.4: SRM Trend Analysis**

Incident Reporter Version 2.0 software will be used in the development of SRM trend analysis. The software has the ability to document and perform trend analysis by event, equipment type, time frame, etc. The airport safety coordinator shall provide the SIA manager with an annual trend analysis written/software-generated report and briefing.

### **Element 2.5: SRM Documentation**

SRM documentation shall be maintained by the airport safety coordinator and stored electronically on Incident Reporter Version 2.0 software. However, if necessary, hard copies of the documentation can and/or will be provided.

## **Element 2.6: Competency and Continuous Improvement Processes**

Several activities shall be conducted to ensure personnel competence and continuous SMS improvement.

- Annual SMS review
- Safety Committee Meetings
- Employee Feedback
- Professional Development Opportunities for the Safety Coordinator and other airport employees
- Annual Comprehensive Safety Audits
- Incorporation of SMS practices in employee evaluation

## **Element 2.7: Reporting Systems**

### **2.7.1. Purpose**

2.7.1.1. This describes the Southern Illinois Airport (SIA) Safety Reporting Program (SRP). This program utilizes an airport safety coordinator appointed by the SIA manager. This individual functions as a third party to receive Airport Safety Reports submitted by the various stakeholders of the Southern Illinois Airport. This cooperative safety reporting program invites SIA personnel, airport tenants, operators and other users of the Southern Illinois Airport, or any other person, to report to the airport safety coordinator actual or potential discrepancies and deficiencies involving the safety of airfield operations.

2.7.1.2. The operations and structures covered by the program include airport facilities, pavement areas, unpaved areas, safety areas, public access areas, fueling facilities, markings, signs, lighting, navigational aids, obstructions, snow and ice removal, maintenance, construction, public and tenant safety, wildlife hazards, ground support vehicles, hazardous materials, and airport condition reporting (including NOTAMS).

2.7.1.3. The effectiveness of this program in improving safety depends on the free, unrestricted flow of information from the operators and users of the Southern Illinois Airport. Based on information obtained from this program, the SIA manager and the airport safety coordinator will take corrective action as necessary to remedy defects or deficiencies in the airfield or its associated operations. The reports may also provide data for improving the current system and planning for a future system.

### 2.7.2. Background

2.7.2.1. The Southern Illinois Airport Authority (SIAA) is aware that many safety related events, likely occur that have relevance to its role as the Authority for the Southern Illinois Airport and for which it will have some degree of responsibility. Many of these events are certain to go unreported with SIAA having no knowledge of the circumstances and consequently no opportunity to respond or to correct the condition. As such, SIAA realizes that it is critical that a non-punitive SRP is essential to the success of its overall Safety Management System (SMS).

### 2.7.3. Mission

2.7.3.1. While many reasons exist for loss of crucial, safety information and safety related events, it is clear that a non-punitive SRP is essential to quality reporting and that all interested parties be aware of that anonymity (if desired) as a foundation for this program to be successful. To do this, the SIA SRP effectiveness will be greatly enhanced if the receipt, processing, and analysis of raw data are accomplished by the safety coordinator. This will enhance the anonymity of the reporter and of all parties involved in a reported occurrence or incident and consequently increase the flow of information necessary for the effective evaluation of safety at the Southern Illinois Airport.

### 2.7.4. Airport Safety Coordinator Responsibilities

2.7.4.1. The SIA SRP provides for the receipt, processing and analysis of airport safety reports. In addition, periodic reports of findings obtained through the reporting program will be disseminated to SIA employees through via quarterly meetings and will be published annually under the oversight of the airport safety coordinator and circulated to the Southern Illinois Airport community.

### 2.7.5. Use of Reports for Enforcement Purposes

2.7.5.1. It will be the policy of the SIAA to prohibit the use of any SRP report submitted under this program (or information derived therefrom) to be used in any disciplinary action, except information concerning negligence/recklessness or criminal offenses.

2.7.5.2. If there is a violation of an FAR and it comes to the attention of the FAA from a source other than through this report, FAA has the authority to take appropriate action.

2.7.5.3. If there is a violation of a Federal, State or Local statute and it comes to the attention of the responsible enforcement agency from a source other than through this report, that agency has the authority to take appropriate action.

2.7.5.4. The SIA SRP system is designed by the SIAA to maintain confidentiality and seeks to preserve the anonymity of the reporter and all other parties involved in a reported occurrence or incident. Therefore, reporters are highly encouraged to submit their name and contact information, but are not required to do so.

### 2.7.6. Reporting Procedures

2.7.6.1 Forms have been prepared specifically for intended reporters. Forms are available in the SIAA offices in the Main Terminal Building. Completed forms should be delivered or mailed to the SIA Safety Coordinator, Main Terminal Building, Southern Illinois Airport, 665 North Airport Road, Carbondale, IL 62901. They are also available to complete and submit electronically via the SIA Safety Reporting Program link on the SIA website.

### 2.7.7. Processing of Reports

2.7.7.1. SIA procedures for processing Airport Safety Reports ensure that the reports are initially screened for:

1. Information concerning criminal offenses, which will be referred promptly to the appropriate law enforcement agency and the FAA;
2. Information concerning accidents, which will be referred promptly to the National Transportation Safety Board (NTSB) and the FAA; and
3. In both of the above cases, time-critical information which will be promptly referred to the FAA and other interested parties.

2.7.7.2. While not required, reporters are strongly encouraged to include their name and contact information on the report so the airport safety coordinator may follow up for clarification and/or additional information. The safety coordinator will make every effort to ensure the anonymity of the reporter.

### 2.7.8. Other Reports

2.7.8.1. This program does not eliminate the responsibility for reports, narratives, or forms presently mandated by other regulatory requirements.

### 2.7.9. Prohibition Against Use of Report for Enforcement Purposes

2.7.9.1. SIAA will **not** use reports submitted to the SIA safety coordinator (or information derived there-from) in any punitive action. Reports pertaining to accidents or criminal offenses are exempt from this policy. Any report concerning an accident or criminal offense will be forwarded to the proper enforcement agency.

1. Develop/modify the safety reporting system to reflect SMS principles.
2. Develop a safety reporting process that is simple, accessible and commensurate with the size of SIA.
3. Develop a formal, simple, accessible safety reporting process that ensures management review and ensures feedback from management.

4. Develop a formal, simple and accessible safety reporting process that ensures corrective and preventive actions are generated in response to reported hazards and hazard analysis.

### **COMPONENT: 3 SAFETY ASSURANCE**

#### **Element 3.1: Internal Safety Audits**

##### 3.1.1. Internal Safety Audit (Inspection) Program

3.1.1.1. The Southern Illinois Airport (SIA) Safety Audit Program was developed around the idea that waiting for an accident to happen and then working to keep it from happening again is nonproductive. It is nonproductive because damage or injury has occurred that may have been avoidable. It is better to find hazards before they hurt someone and then fix the hazard. The mechanism for doing this is to look for, find, and fix things that can result in an accident. This mechanism is called a safety audit program.

3.1.1.2. Safety audit programs may be conducted internally by the airport staff or externally by hired or government agents. This section deals with the internal approach to accomplishing this major element of the safety management system. According to Wells (2004, (p.344-345)), safety audit programs are of three types:

Comprehensive audits are extensive inspections involving external and internal inspectors and cover the entire organization. These audits produce a formal written report.

Self-audits are informal periodic inspections accomplished by the airport staff. These inspections result in no report but a simple checklist that is accomplished and filed.

Status-audits are sometimes called spot inspections and are directed at determining compliance with safety rules for a specific area such as fueling operations.

3.1.1.3. The SIA Safety Audit Program incorporates all of these audit types according to a schedule that is discussed later in this section. These audits evaluate SIA's safety processes, procedures, analysis, and training as well as compliance throughout the airport with SIA safety policies, rules, and other guidance.

##### 3.1.1.4. Annual (Comprehensive) Safety Audits.

3.1.1.4.1. The Annual Safety Audits are accomplished during the spring of each calendar year, commencing on/about April 1<sup>st</sup>.

3.1.1.4.2. These Annual Safety Audits will be led by the SIA Safety Manager, and include the SIU Aviation Flight Department Safety officer, a safety instructor from the Aviation Management Department, and representatives from the SIU Center for Environmental Health and Safety.

3.1.1.4.3. The Annual Safety Audit team will use the checklist guide provided at Appendix D – as a basis for development of an audit guide for the inspection. This guide will be revised, as required, for each subsequent annual audit.

3.1.1.4.4. The Annual Safety Audit will produce a formal written report which will be presented to SIA Manager who will present the findings and recommendations of the report to the SIA Authority board members.

#### 3.1.1.5. Self-audits.

Self-audits are discussed in detail in AC 150/5200-18C. Excerpts of that guidance are outlined and expanded below.

3.1.1.5.1. Self-audits are accomplished as indicated in description of the inspection discussed under Para. 3.1.1.5.2. below:

3.1.1.5.2. These Self-audit will be conducted by the SIA Safety Manager or an SIA line manager.

3.1.1.5.3. The Self-audit inspector will use an inspection checklist guide provided at Appendix D – or develop a special checklist using the AC 150/5200-18C as a basis for it

**3.1.1.5.4.** Self-audits will document findings on the inspection checklist used or as an informal report in letter or memo format. Completed checklists, letters, or memos will be presented to SIA safety coordinator who will present the inspection findings (including analysis of those findings) and recommendations in the written report to the SIA Manager. The airport manager will advise the SIAA board of the corrective actions as he/she determines is required.

3.1.1.5.5. The SIA self-audits are accomplish on the general basis as shown below:

3.1.1.5.5.1. Regularly scheduled inspection. The airport should be inspected at least daily during times when aircraft activity is minimal in order to create the least impact on airport operations. Part of this inspection should be done during the hours of darkness at those airports that serve air carriers after dark.

3.1.1.5.5.2. Continuous surveillance inspection. Those activities and facilities that have been identified to require continuous surveillance should be inspected any time personnel are in the air operations area. Hazardous conditions can occur at any time and in a short period of time.

3.1.1.5.5.3. Periodic condition inspection. Periodic condition inspection of activities and facilities can be conducted on a regularly scheduled basis but less frequently than daily. The time interval could be weekly, monthly, or quarterly, depending on the activity or facility.

3.1.1.5.5.4. Special inspection.

Special inspections of activities and facilities should be conducted after receipt of a complaint or when an unusual condition or unusual event occurs on the airport, such as a significant

meteorological event or an accident or incident. Special inspections should also be conducted at the end of construction activity to ensure that there are no unsafe conditions present related to the construction activity. A special inspection should be conducted prior to construction personnel leaving the airport in the event that corrective actions are necessary. Special inspections should be documented on the appropriate portions of the regularly scheduled inspection checklist.

#### 3.1.1.5.2. Regularly Scheduled Inspections.

3.1.1.5.2.1. Pavement Areas. Pavement inspection should be conducted daily before flight operations commence to ensure pavement surfaces are clear. As a minimum, a daily inspection should be performed of all paved areas that are the responsibility of the airport operator or as specified in the FAA-approved Airport Certification Manual.

3.1.1.5.2.2. Safety Areas. Safety areas should be conduct on a weekly basis. The inspector should know the dimensions of the runway and taxiway safety areas at the airport. The dimensions of the safety areas should be documented in the airport certification manual.

3.1.1.5.2.3. Markings. Markings should be inspected monthly. Airport markings provide important information to pilots during takeoff, landing, and taxiing. To avoid confusion and disorientation, airport markings should be in compliance with FAA marking standards specified in AC 150/5340-1, Standards for Airport Markings. (Compliance with these standards is mandatory for operators of airports certificated under Part 139 and for airport operators that have accepted Federal funds for runway and taxiway construction/rehabilitation.) The inspector should know the appropriate markings required at the airport.

3.1.1.5.2.4. Signs. Signs provide important information to pilots while taxiing. To avoid pilot confusion and disorientation, airport signs should be in accordance with FAA sign standards specified in AC 150/5340-18, Standards for Airport Sign Systems. (Compliance with these standards is mandatory for operators of airports certificated under Part 139 and for airport operators that have accepted Federal funds for runway and taxiway construction/rehabilitation.)

3.1.1.5.2.5. Lighting. At night and during periods of low visibility, lighting is important for safe airport operations. Lights come in different shapes, sizes, colors, and configurations and can be located either in the pavement or along its edges. Inspection of lighting is best accomplished during periods of darkness in order to evaluate lighting systems when they provide the primary visual aid for pilots. The inspection should concentrate on the lighting owned by the airport operator. However, the inspector should observe any lighting owned or operated by others and report any observed problems immediately to the appropriate responsible owner.

3.1.1.5.2.6. Navigational Aids (NAVAIDs). The inspection of NAVAIDs should concentrate on the visual navigational aids owned by the airport operator. However, the inspector should observe any navigational aids owned or operated by others, such as the FAA, and report any observed problems immediately to the NAVAID owner.

3.1.1.5.2.7. Obstructions. The inspection of obstructions should concentrate on a visual check of construction underway on or near the airport that could affect aircraft operations. This also includes checking for any vegetation, especially, trees, that may penetrate the Part 77 surfaces.

3.1.1.5.2.8. Fueling Operations. The daily inspection on aircraft fueling operations should concentrate on a quick inspection for the most common problems concerning compliance with local fire safety codes at fuel storage areas and with mobile fuelers. The inspection should also

include security, fire protection, general housekeeping, and fuel dispensing facilities and procedures. A more detailed fueling operation inspection should be scheduled quarterly (see Quarterly Fueling Operations under Periodic Condition Inspection)

3.1.1.5.2.9. Snow and Ice. The inspector should be familiar with the airport's snow and ice removal procedures and guidance provided in AC 150/5200-30, Airport Winter Safety and Operations. At Part 139 certificated airports, the inspector should be familiar with the airport's FAA-approved Snow and Ice Control Plan.

3.1.1.5.2.10. Construction. The inspector should be familiar with the airport's construction safety procedures and guidance provided in AC 150/5370-2, Operational Safety on Airports During Construction. At Part 139 certificated airports, the inspector should be familiar with the airport's FAA-approved Construction Safety Plan.

3.1.1.5.2.11. Aircraft Rescue and Fire Fighting. During the inspection of aircraft rescue and fire fighting (ARFF) capabilities, the inspector should:

3.1.1.5.2.11.1. Check the status of ARFF response, including the availability of equipment, fire fighters and extinguishing agent. Ensure that such ARFF capabilities comply with the FAA-approved Airport Certification Manual and that the airport's ARFF Index is still appropriate for any air carrier aircraft served.

3.1.1.5.2.11.2. Ensure alarm and emergency notification communication systems are operable.

3.1.1.5.2.11.3. Determine the adequacy of available fire extinguishing agents.

3.1.1.5.2.11.4. Check for construction or maintenance activity on the movement area that could affect ARFF response routes. Ensure that the ARFF Department has been notified if construction or maintenance activity could affect emergency response routes.

3.1.1.5.2.11.5. Report and monitor any ARFF vehicle, equipment or extinguishing agent that is not available or inoperative; any ARFF personnel that are not available; and any changes to aircraft that may require a change to ARFF capabilities. Notify the FAA if ARFF vehicles is inoperative and cannot be replaced immediately, as specified under § 139.319(g) and issue a NOTAM regarding non-availability of any rescue and firefighting capability, as specified under § 139.339

3.1.1.5.2.12. Public Protection. During the public protection inspection, check gates, fencing, locks, and other safeguards are in place and functioning properly to prevent inadvertent entry to movement areas by unauthorized persons and vehicles and offer protection from jet blast. Report and monitor any safeguards that are damaged or missing. In accordance with the airport's security plan, report unauthorized persons or vehicles in the movement area (airports regulated by the Transportation Security Administration may have additional requirements for reporting and responding to unauthorized persons and vehicles).

3.1.1.5.2.13. Wildlife Hazard Management. During the wildlife hazard inspection, the inspector should check for evidence of birds or animals on the runways, taxiways, aprons, and ramps or other signs that wildlife problems may have developed - such as large flocks of birds on or adjacent to the airport. Wildlife hazards found during the daily self-inspection should be properly documented. All dead wildlife found and all wildlife aircraft strikes should be reported to the FAA on the FAA Form 5200-7, Bird/Other Wildlife Strike Report. This form may be obtained from the FAA Internet site, at [www.faa.gov](http://www.faa.gov). Additionally, the inspector should check fencing

and gates for wildlife accessibility and should ensure that wildlife control equipment is available and operational.

3.1.1.5.2.13. **Foreign Object Debris (FOD).** The inspector should continuously check for, and remove any FOD in movement areas, aircraft parking areas and loading ramps.

3.1.1.5.2.14. **Continuous Surveillance Inspections.**

Continuous surveillance inspection consists of general observation of activities for compliance with regulations, procedures, etc., as well as abnormalities with physical facilities that are readily apparent. This is performed any time inspection personnel are on the air operations area.

Continuous surveillance of airport physical facilities and activities should cover at least the areas described in this section, which are also included in Appendix D.

3.1.1.5.2.14.1. Ground Vehicles.

3.1.1.5.2.14.2. Fueling Operations.

3.1.1.5.2.14.3. Snow and Ice.

3.1.1.5.2.14.4. Construction.

3.1.1.5.2.14.5. Public Protection. Pay special attention to public protection during construction and special events. During the continuous surveillance inspection of safeguards used to protect the public.

3.1.1.5.2.14.6. Wildlife Hazard Management.

3.1.1.5.2.14.7. Foreign Object Debris (FOD). The inspector should continuously check for, and remove any FOD in movement areas, aircraft parking areas and loading ramps.

3.1.1.5.3. Periodic Condition Inspection. Periodic condition inspections consist of specific checks of physical facilities on a regularly scheduled basis (but less frequently than daily). Checks may require use of equipment (e.g., Walker Bar to measure VASI glide slope angles or transit to survey approach slopes, or continuous friction measurement equipment) or checking specific features of physical facilities. Periodic inspection of airport physical facilities and activities should cover at least the areas described in this section, which are also included in Appendix D.

3.1.1.5.3.1. Pavement Areas. The inspector should check pavement surfaces for rubber buildup, polishing, or other items affecting friction.

3.1.1.5.3.2. Markings. Check pavement markings to ensure they are correct and clearly visible day and night.

3.1.1.5.3.3. Signs. The inspector should check signs faces for peeling and for fading or faded colors.

3.1.1.5.3.4. Quarterly Fueling Inspections. Airports certificated under Part 139 are required to establish fire safety standards for safe fueling operations and conduct quarterly inspections of the fueling facilities. The inspection procedures in this section are based on the NFPA 407 fire code for airport fueling operations, which is one of the more common fire codes in effect at certificated airports. The fire safety standards for fueling operations should be listed in the

Airport Certification Manual (ACM) and the quarterly inspections should be conducted for compliance to the fueling fire safety standards listed in the ACM.

3.1.1.5.3.5. Navigational Aids. Periodically check the aiming of REILs and Visual Glide Slope Indicators owned by the airport.

3.1.1.5.3.6. Obstructions. Annually survey trees and other structures near the airport that could affect glide path angles, approach light lanes, or be an obstruction to Part 77 surfaces.

3.1.1.5.3.7. Aircraft Rescue and Fire Fighting. Periodically determine if the aircraft rescue and fire fighting equipment is capable of meeting response times, if it is required under Part 139.

3.1.1.5.4. Special Condition Inspections. Special condition inspections occur after receipt of a complaint or as triggered by an unusual condition or event. A special inspection should be conducted after an accident or incident. Depending upon circumstances, special condition inspections may include the inspection of any of the specific facilities or activities under the other three components. A special condition inspection of airport physical facilities and activities should cover at least the areas described in this section.

3.1.1.5.4.1. Pavement Areas. After a rain or thunderstorm, check the pavement areas for ponding and edge damming.

3.1.1.5.4.2. Markings and Signs. Check that markings are visible at night especially when the pavement is wet following a rain. After construction or maintenance operations, ensure that pavement markings are correct.

3.1.1.5.4.3. Safety Areas. Check the storm sewer system is working properly and free of debris. Note any standing water. Check runways and safety areas before opening after inspections or any time an aircraft has left the pavement and entered a safety area,

3.1.1.5.4.4. Snow and Ice. Several special inspections may be needed during a winter storm until the airport is back to a normal operation. Ensure that all foreign objects have been picked up after snow and ice removal operations. Conduct a special sign inspection after snowstorms for signs that may have been damaged by plows or by snow thrown by blowers.

3.1.1.5.4.5. Construction. Ensure that construction areas are barricaded and lighted properly, construction equipment is parked within the pre-arranged areas, construction FOD is removed, and movement areas around construction sites are clearly marked and not confusing to pilot at night.

3.1.1. 6. Status-audits. Status-audits are sometimes called spot inspections. According to Richard Wood (2003, p. 131), These inspections are subject-oriented and are frequently reactive to a known or perceived problem. Since these audits are unique in nature, there are no recommended topics.

3.1.1.6.1. The Safety Status Audits are accomplished as required by the SIA safety officer, SIA manager, a line manager in the SIA system, or tenant safety managers.

3.1.1.6.3. The Safety Status Audit inspectors will use a checklist created for the subject of the inspection by the inspector. Items for the checklist may be gleaned from the checklists used for self inspections or annual inspections.

3.1.1.6.4. The Annual Safety Audit will produce a formal written report which will be presented to SIA Manager who will present the findings and recommendations of the report to the SIA Authority board members.

3.1.1.7. Processes, Procedures, Analysis, and Training Audits. This audit area is directed to the management of the safety program outlined in the SMS. This program includes such things as the hazard reporting, internal audits, safety education and training programs, management decision making, etc.

3.1.1.7.1. These audits should be accomplished every two years.

3.1.1.7.2. Inspectors will use a checklist created for the audit by the inspectors. These checklists should determine if the process, procedure, analysis system, or training program is (1) used, (2) documented, (3) useful, and (4) effective.

3.1.1.7.3. These audits are accomplished by the SIA Safety Manager, a Department of Aviation safety instructor, and a safety officer from the SIU Environment and Safety Office.

3.1.1.7.4. A formal report will be generated. This report will be reviewed by the SIA Manager and the SIAA.

3.1.2. Corrective And Preventive Actions Resulting from an Audit.

3.1.2.1. Normal Discrepancies. After any of the above audits are completed, a list of findings and recommendations should result. After the executive reviews required for each type of audit in Paragraph 3.1.1, corrective actions called for by the report or reviewing officials will be accomplished within 30 days of the last review.

3.1.2.1. Critical Discrepancies. Should the audit identify problems which require immediate correction, the affected area will be closed, appropriately marked to indicate closure and, depending on the nature of the area, NOTAMed out of service until the discrepancy is corrected.

3.1.3. Monitoring and Tracking Corrective Actions to Audit Findings.

3.1.3.1. When a corrective action is identified and approved by the appropriate authority outlined in 3.1.1, it will be entered into a Corrective Actions Report log. This log will be reviewed and initialed daily by the SIA Safety Manager and weekly by the SIA Manager.

3.1.3.2. Corrective actions should be completed in 30 days from approval by the approval authority. Should a correction be complicated and/or requires multiple actions or phases to complete. A correction plan will be developed by the airport safety coordinator and approved by the approval authority. Each step of the plan will be entered in the Corrective Actions Report log and reviewed per Paragraph 3.1.3.1 above. Where possible, multiple steps should be accomplished simultaneously to close the actions as soon as possible.

### **Element 3.2: Emergency Preparedness and Response (EPR) Managerial Review**

3.2.1. The SIA Airport Safety Coordinator will direct the review of SIA's Emergency Preparedness and Response (EPR). This review should incorporate an assessment in each of the following areas:

- Direction and Control.
- Communications.
- Alert & Warning.
- Emergency Public Information.
- Protective Actions.
- Law Enforcement.
- Fire & Rescue.
- Health & Medical.
- Resource Management.
- Operations & Maintenance
- Tenants
- Standard Operating Procedures (SOP)
- Checklists

This review should be conducted quarterly or sooner when necessitated by key SIA personnel changes, SIA organizational changes or changes external to SIA that will affect the Airport Emergency Plan (AEP). Upon completion of the review, recommended changes should be implemented as soon as possible.

### **Element 3.3: Emergency Notification**

3.3.1. The following section contains emergency notification telephone lists for a variety of emergency situations that could occur on the airport property. These phone lists are based on the emergency scenarios addressed in the current SIA Certification Manual: Section 325-Airport Emergency Plan and reprinted here. The following appendices may be referenced.

Appendix E: Emergency Notification Telephone Numbers –A directory of important numbers that may be accessed in addition to those listed in a specific phone list.

Appendix F: Record of Calls –Call log to be used by the Airport Manager’s Office. This may be used to ensure that certain phone contacts have been made or attempted.

Appendix G: Bomb Threat Information Sheet –This may be used to gain important information if a bomb threat is received by the Airport Manager’s Office.

### 3.3.1.1. Aircraft Accidents

3.3.1.1.1. Response during ATCT hours of operation. Per the June 09, 2005, Letter of Agreement between the Carbondale Tower and the Southern Illinois Airport Authority, follows.

3.3.1.1.1.1. Between 8 a.m. and 4:30 p.m., Monday through Friday, except holidays, ATCT personnel will notify the Airport Emergency Equipment of an aircraft accident via a dedicated crash phone or radio frequency, as appropriate. The Airport Manager’s Office will then contact Jackson County Emergency Services **911**

3.3.1.1.1.2. During weekends, holidays, or after 4:30 p.m., Monday through Friday, ATCT personnel will notify the Carbondale Fire Department of an emergency via telephone, then attempt to notify representatives of the Airport Authority.

3.3.1.1.2. Response when ATCT is not in operation. Anyone witnessing an aircraft accident will immediately contact Jackson County Emergency Services **911**.

### 3.3.1.2. Bomb Incidents

3.3.1.2.1. When a bomb threat is received, the person receiving the threat will try to obtain as much information as possible regarding the location, aircraft, and the time of detonation. See Bomb Threat Information, Appendix G. The recipient of this information will immediately:

#### Bomb threat for buildings:

- (1) Contact Jackson County Emergency Services: **911**.
- (2) Contact appropriate building personnel to evacuate buildings to a distance of at least 500 ft. All employees and visitors will remain outside of the danger area until cleared to return by the appropriate authority.
  - a. Terminal
    - i. SIUC Aviation Flight (618) 453-9254
    - ii. JCBDC (618) 549-0807
    - iii. Advantage Aviation Insurance (618) 457-1609
  - b. Air Traffic Control Tower (618) 529-1311
  - c. Hangar 1/Tate Aviation (618) 529-2359
  - d. Aviation Technologies (618) 536-3371
  - e. OB Young/SIUC AF (618) 453-9264
  - f. Hangar 6/SIUC AF

- |                                 |                  |
|---------------------------------|------------------|
| i. Simulator room               | (618) 453-9268   |
| ii. Line Service                | (618) 453-9223   |
| g. Hangar 7/SIUC AF Maintenance | (618) 453-9230   |
| h. Hangar 8/Helicopter Lab      | (618) 453-9284/5 |

(3) Contact TSA Security: **1-866-GA-SECURE**

Bomb threat on aircraft:

- (1) Contact Jackson County Emergency Services: **911**.
- (2) Contact Air Traffic Control **618-529-1311** to direct or relocate suspected aircraft to Taxiway A-2 for parking and immediate evacuation.
- (3) Contact TSA Security: **1-866-GA-SECURE**

3.3.1.2.2. The Jackson County Sheriff's Department will alert the Scott Air Force Base Bomb Disposal Unit for assistance and disposal.

3.3.1.3. Structural Fires

3.3.1.3.1. When a structural fire is observed, witnesses will immediately notify the following:

- |   |  |
|---|--|
| (1) Jackson County Emergency Services:  | <b>911</b>   |
| (2) Southern Illinois Airport Manager : | <b>618-529-1721</b> (Office)<br><b>618-534-3123</b> (Cell) |

3.3.1.3.2. The Incident Commander will:

- (1) If necessary, direct the evacuation of buildings and alert personnel in adjacent buildings. See Appendix E.
- (2) Direct removal of aircraft in the immediate area.
- (3) Close the affected area of the airport to aircraft, non-essential motor vehicles, and personnel.

3.3.1.3.3. The Airport Manager will direct the clean-up operations.

#### 3.3.1.4. Natural Disaster

3.3.1.4.1. Prior to a storm, the Airport Manager will:

- (1) Attempt to notify all airport tenants. See Appendix E.
- (2) Notify the appropriate personnel to assure that all aircraft parked on the airfield are securely tied down.

Tate Aviation:	<b>1-618-529-2359</b>
SIUC Aviation Flight:	<b>1-618-453-9254</b>

- (3) Ensure that all movable equipment is placed under cover or secured.
- (4) If situation dictates, direct individuals to shelter.

3.3.1.4.2. After the event, the Airport Manager will:

- (1) Assist with rescue operations after the storm.
- (2) Direct clean-up and restoration.
- (3) Contact respective owners.

#### 3.3.1.5. Radiological/Biohazard Incidents

3.3.1.5.1. When notified of such an event, Jackson County Emergency Management will put into effect its comprehensive plan to properly respond to events of a biohazard or radiological nature. These may occur on or off the airport property.

3.3.1.5.2. When the Airport Manager's Office is notified of an event within the boundaries of the Southern Illinois Airport, the Airport Manager will:

- (1) Ensure immediate notification of Jackson County Emergency Services: **911**.
- (2) Establish a security zone around the site with a radius of 500 ft., and prohibit entrance into or exit from the area except for required emergency crews.
- (3) Provide all available information to Emergency Management Director upon their arrival.
- (4) Depending on the severity of the incident, make judgment as to airfield closure to allow for safe and proper emergency response.

3.3.1.5.3. When notified of an off-airport event that may affect airport operations, the Airport Manager will determine, with the assistance of Jackson County Emergency Services, whether to evacuate the airport or direct airport occupants to shelter in place.

### 3.3.1.6. Sabotage, Hijack Incidents, and Other Unlawful Interference of Operations

3.3.1.6.1. Upon notification, the Airport Manager will immediately contact:

- |  |                        |
|--|------------------------|
| (1) Jackson County Sheriff's Department:               | <b>911</b>             |
| (2) Illinois State Police:                             | <b>911</b>             |
| (3) Federal Bureau of Investigation:                   | <b>1-217-522-9675</b>  |
| (4) FAA Flight Standards District Office:              | <b>1-217-744-1910</b>  |
| (5) National Transportation Safety Board:              | <b>1-630-377-8177</b>  |
| (6) TSA Security:                                      | <b>1-866-GA-SECURE</b> |
| (7) ATCT (if possible to park aircraft at taxiway A2): | <b>1-618-529-1311</b>  |

3.3.1.6.2. JCSD shall maintain authority until the arrival of Illinois State Police, FBI, or FAA.

3.3.1.6.3. The Federal Aviation Administration maintains jurisdiction over aircraft in the air.

3.3.1.6.4. The FBI maintains jurisdiction over aircraft on the ground. 3.3.2. It should be noted that the Southern Illinois University Aviation programs have specific Building Emergency Response Plans that they will implement when advised of an emergency.

3.3.3. The current phone trees assume that an employee will be dedicated to making the calls to the various entities when an emergency occurs. As more development on the airfield occurs, SIAA may wish to consider implementing an emergency call system in order to more expeditiously inform airport tenants of emergency situations. Information on such systems is available at a variety of websites, including:

<http://www.callingcare.com/emergency-notification-systems.htm>

<http://www.emergency-broadcasting.com/>

<http://www.voiceshot.com/public/emergencyalerts.asp?ref=uaemergency>

3.3.4. This section shall be reviewed for updates on an annual basis, or any time there is a change in important personnel/airport tenants/regulatory requirements/etc.

### **Element 3.4: Ground Evacuation Plan**

3.4.1. The following section contains emergency evacuation plans for specific buildings and the airport in general.

3.4.2. Some emergency situations--certain chemical spills, inclement weather, etc.--will require sheltering in place in order to protect building occupants from hazards outdoors. Others will require that airport employees and visitors evacuate buildings and even the airport property.

3.4.2.1. Sheltering in place. When directed, occupants of affected buildings will proceed to an interior room on the building ground level. Follow the directions of emergency responders and be prepared to leave when so directed.

3.4.2.2. Building Evacuation. When directed, occupants of affected buildings will leave through the nearest safe exit and proceed to the designated meeting area. The designated meeting area for each building is indicated in the Evacuation Plan for the building. Follow the directions of emergency responders. Do not re-enter a building until cleared to do so by the appropriate authority. Be prepared to evacuate the airport property if necessary.

3.4.2.3. Airport Evacuation. Depending on the nature of the incident, various routes may be used to evacuate the airport property. Following are three possible evacuation scenarios. These may be modified as a specific situation requires. In all cases, evacuees will follow the instructions of emergency responders.

3.4.2.3.1. Airport Evacuation Scenario 1. Airport occupants will depart the airport via North Airport Road, then southbound on Airport Road to IL Route 13. Flightline Road will be reserved for emergency vehicles entering and exiting the airport property. At least one officer will be stationed at the intersection of Airport Road and North Airport Road to facilitate the flow of traffic.

3.4.2.3.2. Airport Evacuation Scenario 2. In the event of a disaster that requires the use of Hangar 9 as a triage center, airport occupants will depart the airport via Flightline Road, then southbound on Airport Road to IL Route 13. North Airport Road will be reserved for emergency vehicles entering and exiting the airport property. At least one officer will be stationed at the intersection of Airport Road and North Airport Road to facilitate the flow of traffic.

3.4.2.3.3. Airport Evacuation Scenario 3. In the event of a disaster that renders the intersection of Airport Road and North Airport Road unusable, alternate plans will be implemented for evacuating the airport property via other routes.

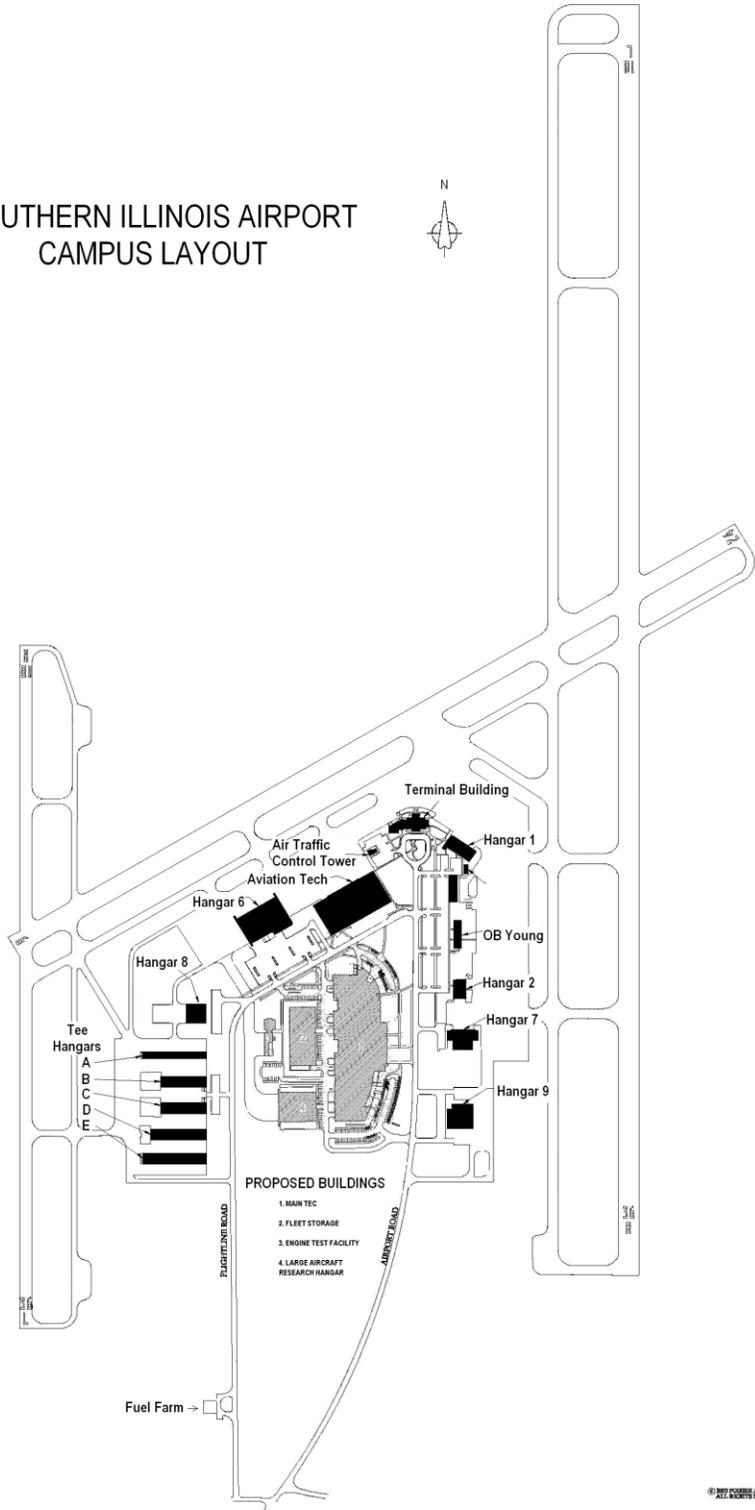
3.4.2.4. Notification of evacuation plans to building occupants. Building evacuation floor plans will be posted prominently in each building. All persons employed on the airport will be advised to review the plan for the building(s) in which they operate. Other persons with a long term association with the airport (students, contractors, tenants, etc.) will also be advised of the plans for the building(s) in which they will operate.

3.4.3. Evacuation plans for buildings on the airport property follow, including:

- 3.4.3.1. Southern Illinois Airport Campus
- 3.4.3.2. Terminal Building Lower Level
- 3.4.3.3. Terminal Building Upper Level
- 3.4.3.4. Hangar 1: Tate Aviation
- 3.4.3.5. Hangar 2: Airport Security/Dr. Kenny
- 3.4.3.6. Hangar 5: Airport Maintenance
- 3.4.3.7. Hangar 6: SIUC Aviation Flight Aircraft and Flight Simulation
- 3.4.3.8. Hangar 7: SIUC Aviation Flight Maintenance Shop
- 3.4.3.9. Hangar 8: SIUC Aviation Technologies Helicopter Lab
- 3.4.3.10. Hangar 9: Tate Aviation
- 3.4.3.11. SIUC Aviation Technologies
- 3.4.3.12. OB Young: SIUC Aviation Flight Instructional Staff
- 3.4.3.13. Tee Hangars

3.4.3.1. Southern Illinois Airport

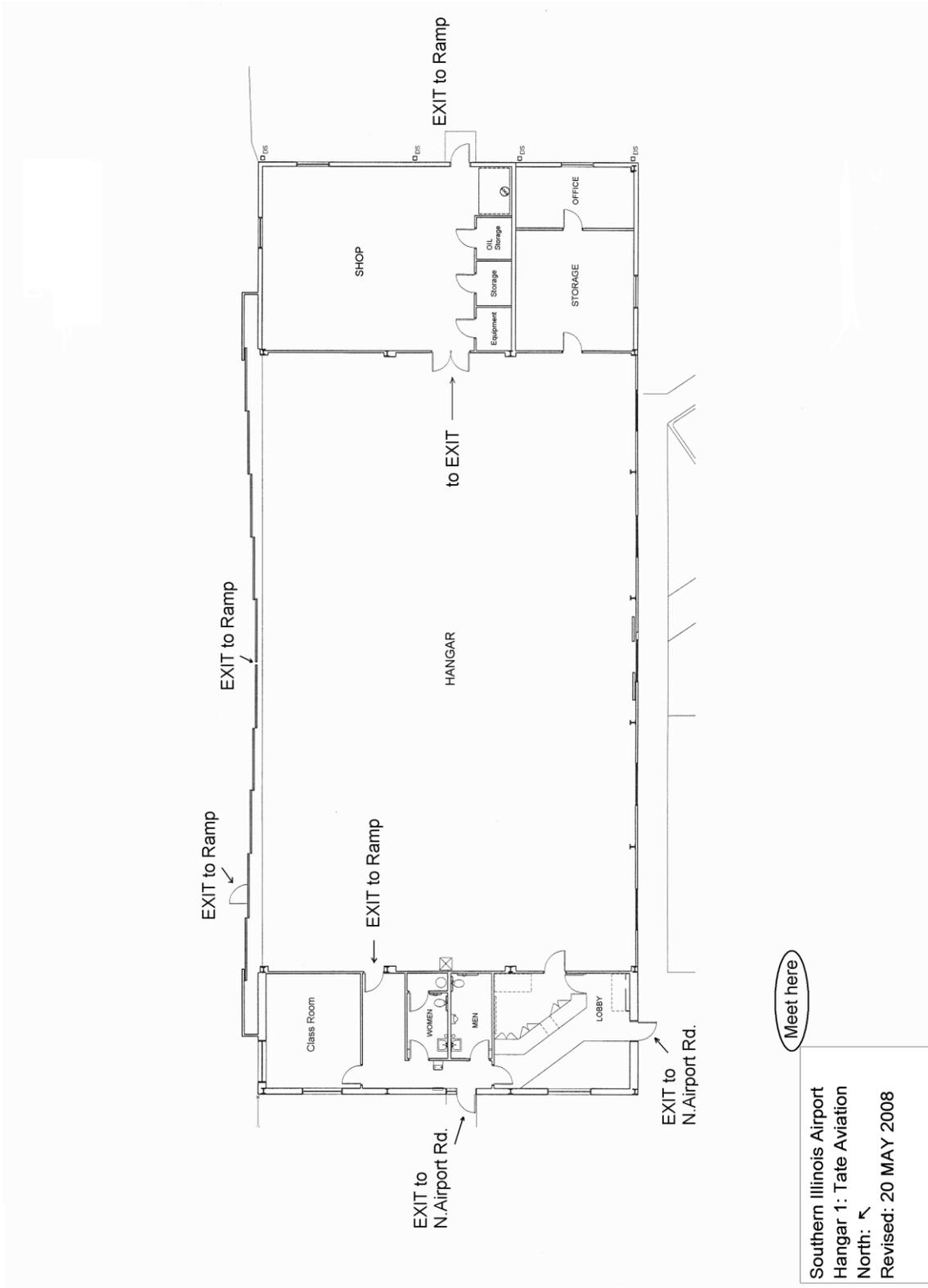
SOUTHERN ILLINOIS AIRPORT  
CAMPUS LAYOUT





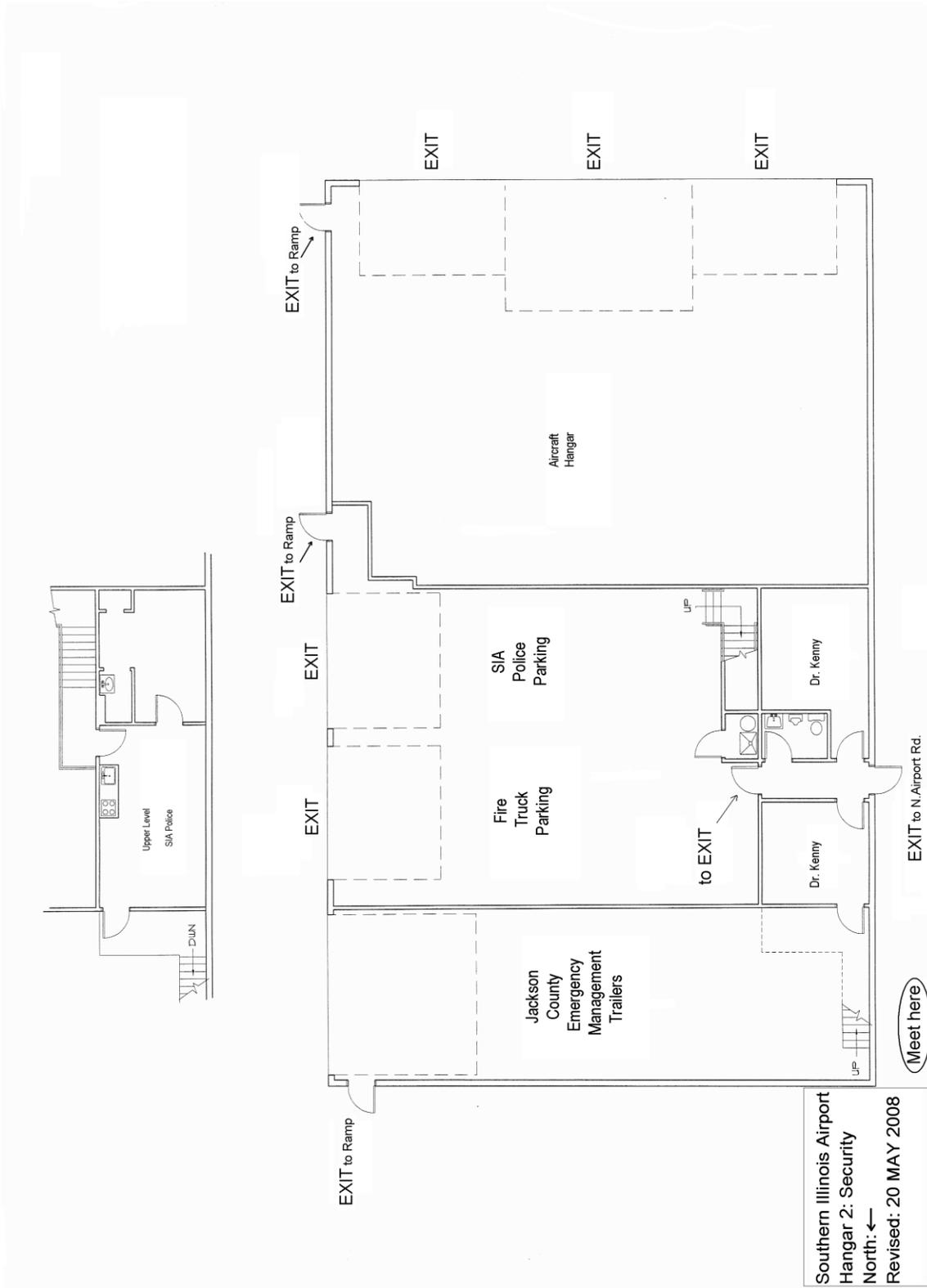


3.4.3.4. Hangar 1: Tate Aviation

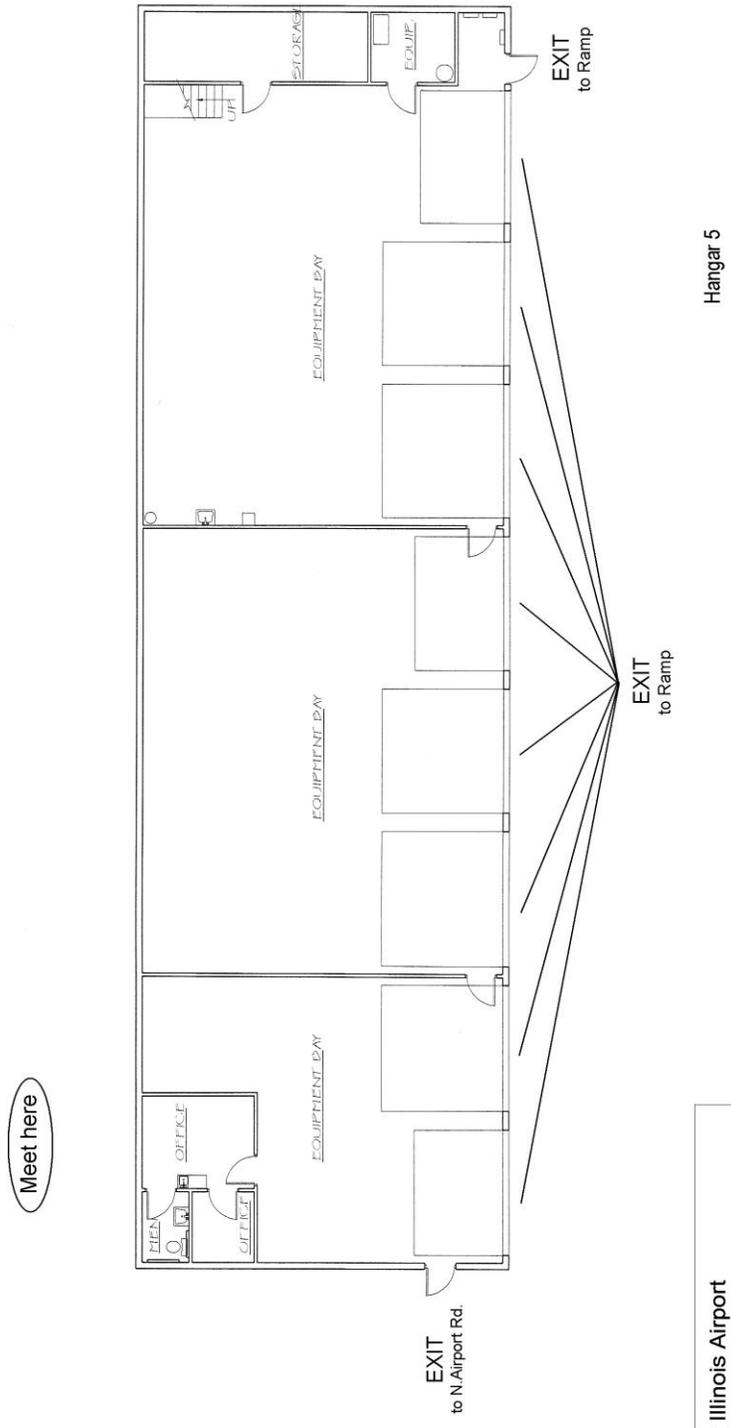


Southern Illinois Airport  
Hangar 1: Tate Aviation  
North: ↖  
Revised: 20 MAY 2008

3.4.3.5. Hangar 2: Airport Security/Dr. Kenny



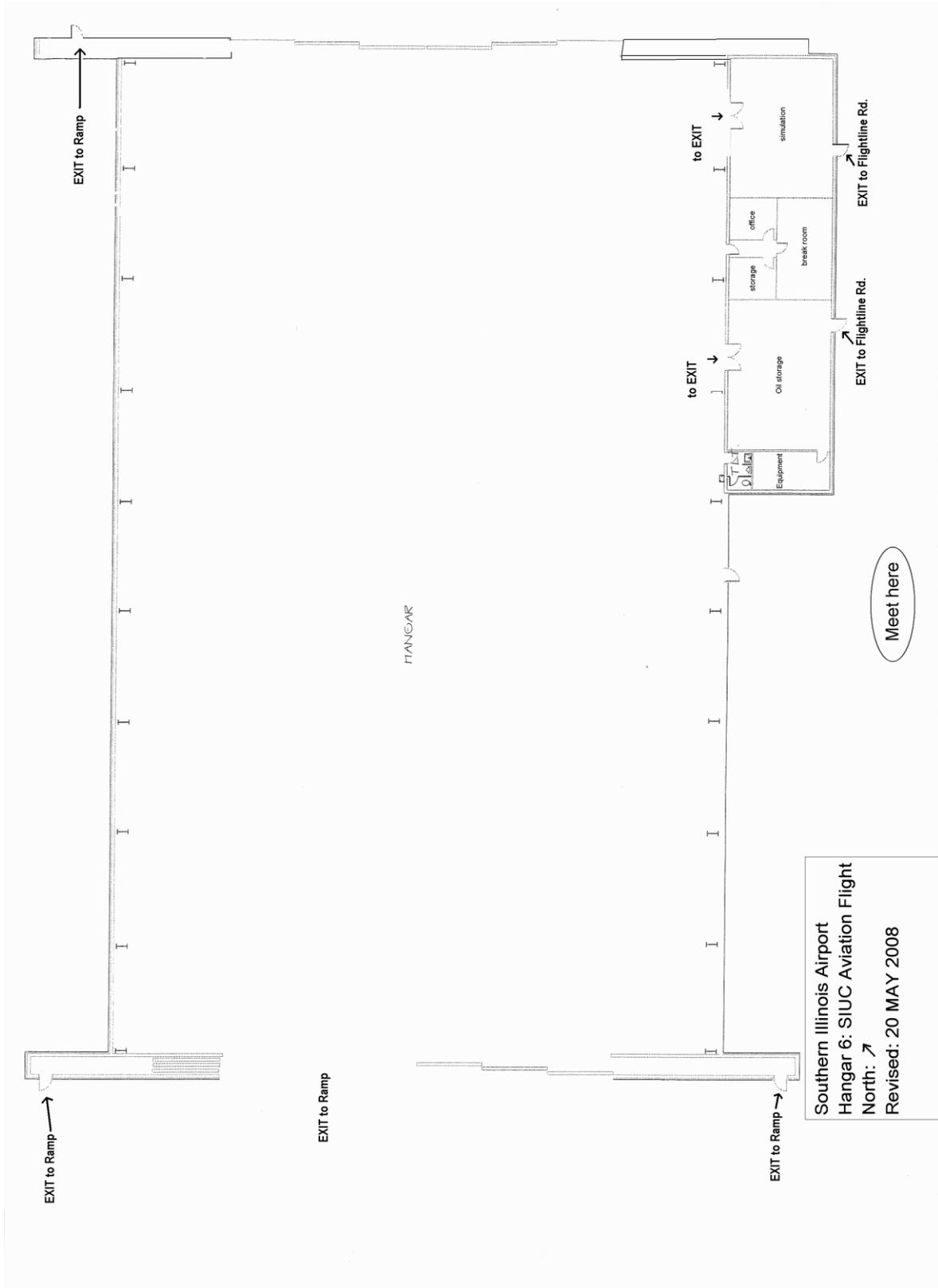
3.4.3.6. Hangar 5: Airport Maintenance



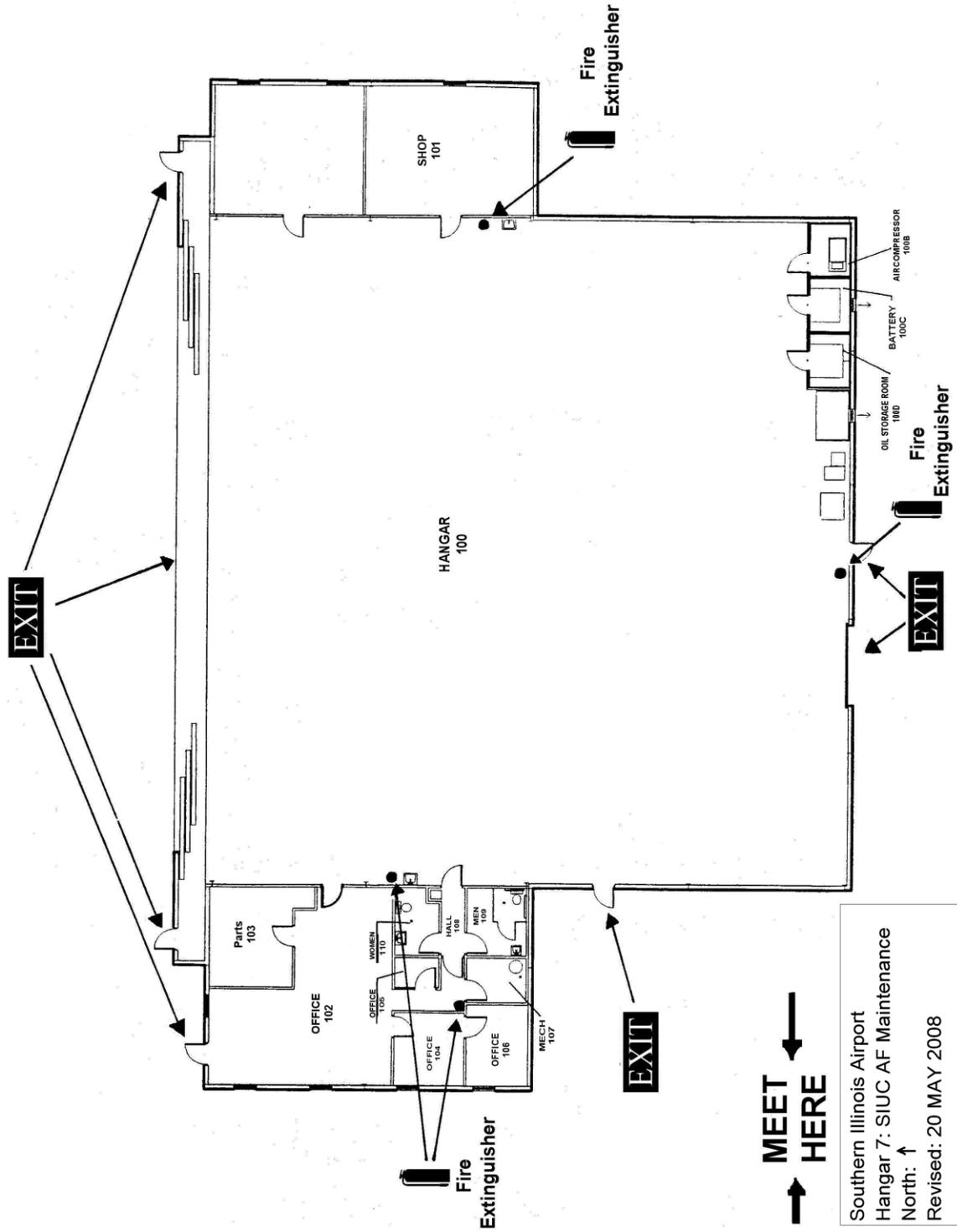
Southern Illinois Airport  
Hangar 5: Airport Maintenance  
North: →  
Revised: 20 MAY 2008

Hangar 5

3.4.3.7. Hangar 6: SIUC Aviation Flight Aircraft and Flight Simulation

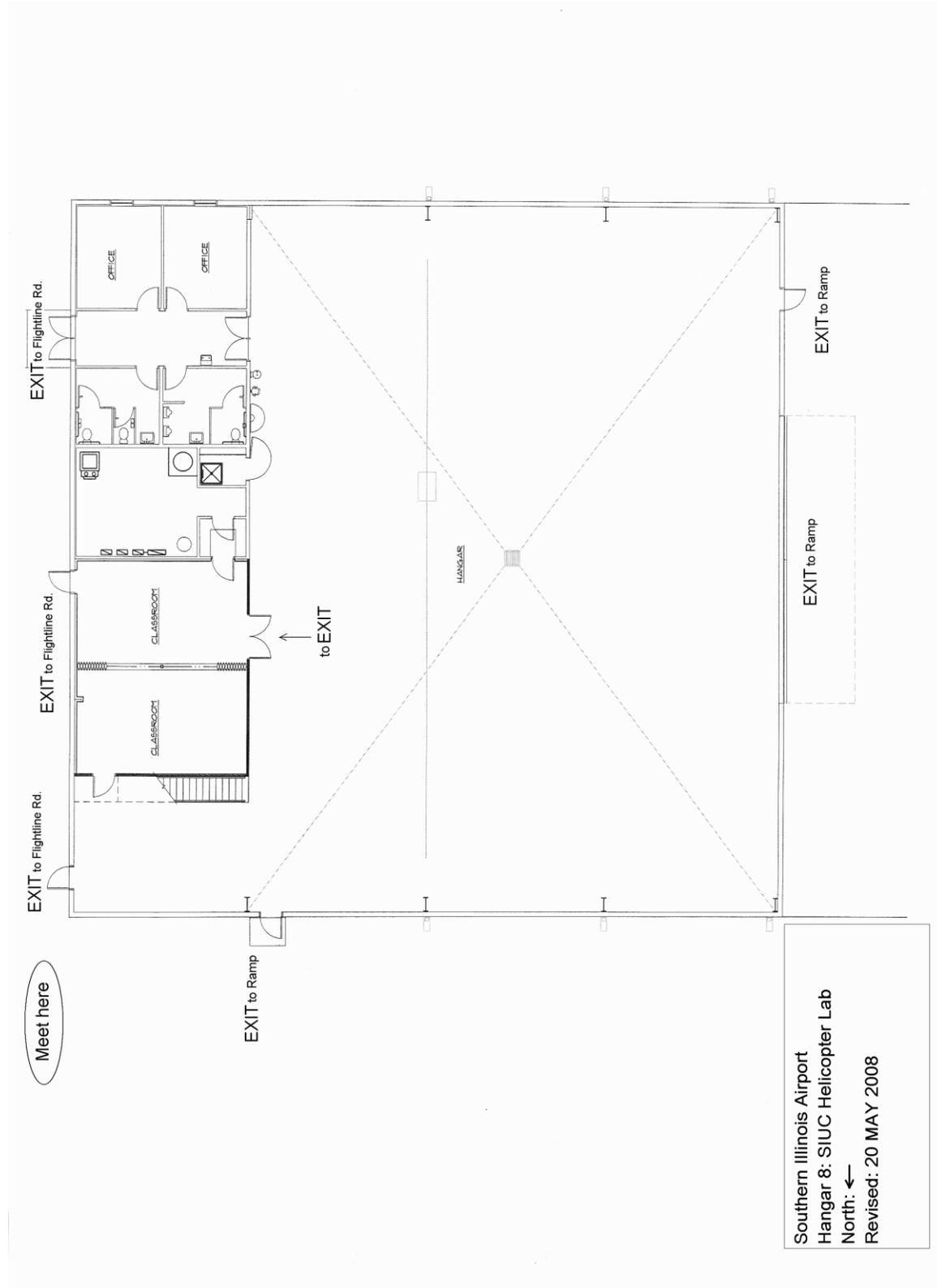


3.4.3.8. Hangar 7: SIUC Aviation Flight Maintenance

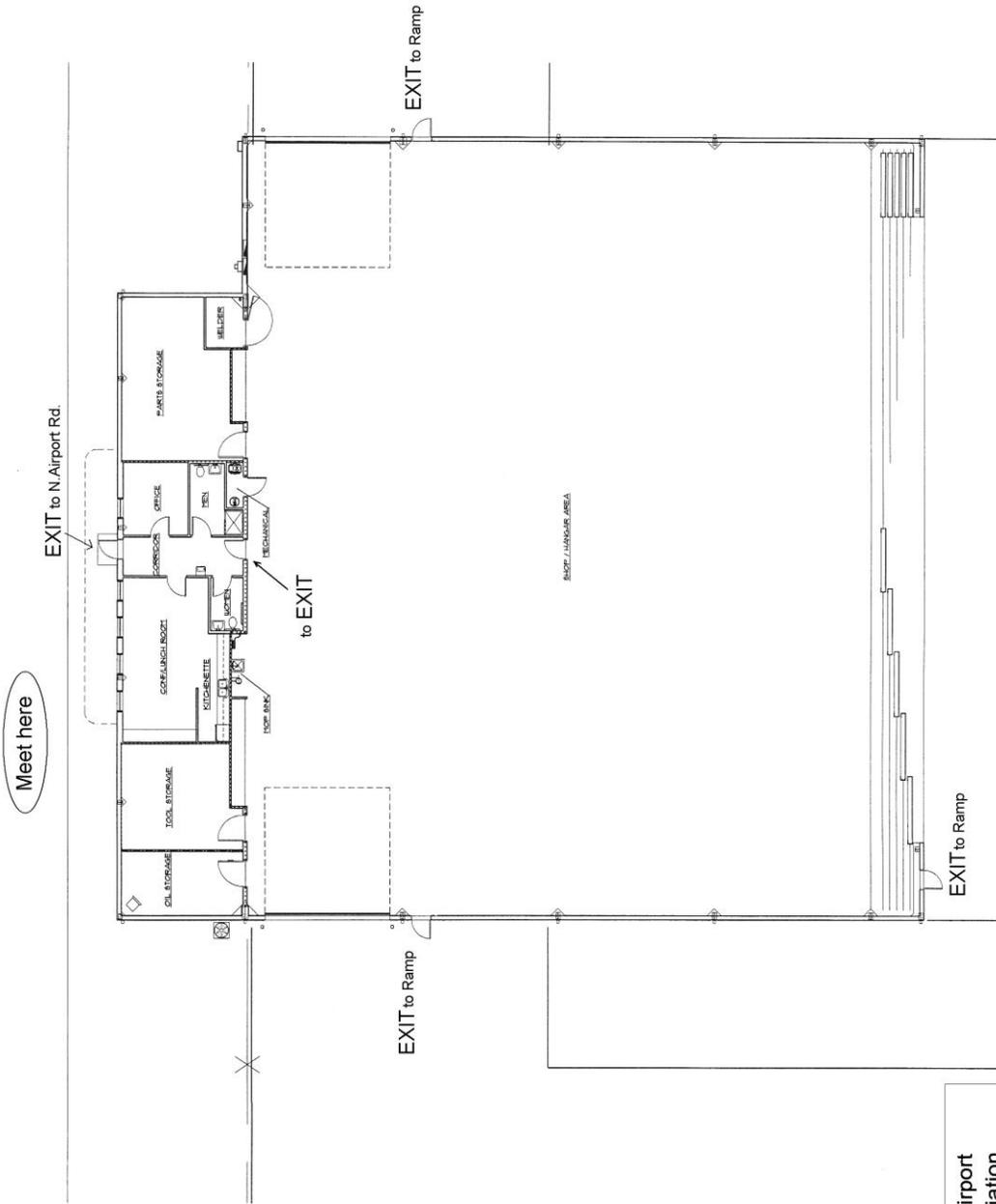


Southern Illinois Airport  
Hangar 7: SIUC AF Maintenance  
North: ↑  
Revised: 20 MAY 2008

3.4.3.9. Hangar 8: SIUC Aviation Technologies Helicopter Lab



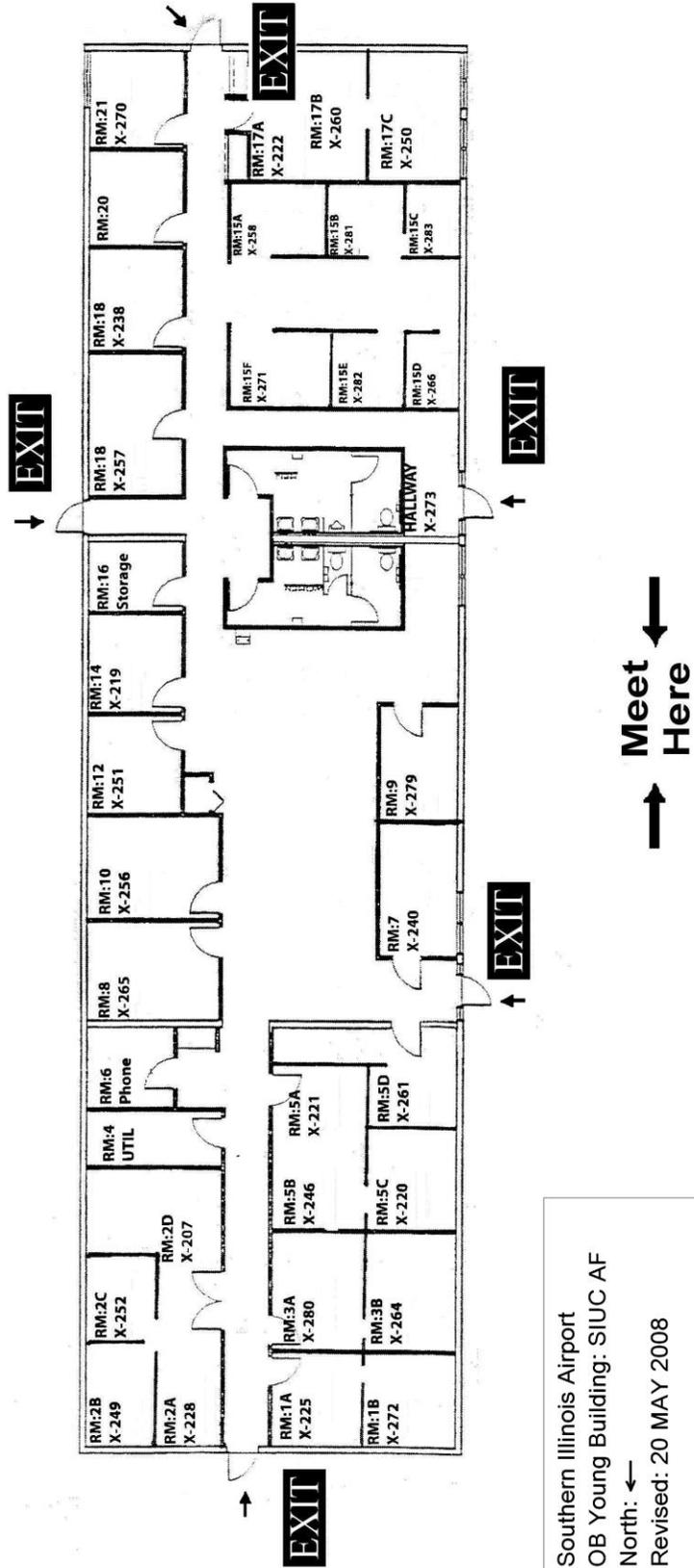
3.4.3.10 Hangar 9: Tate Aviation



Southern Illinois Airport  
Hangar 9: Tate Aviation  
North: →  
Revised: 20 MAY 2008

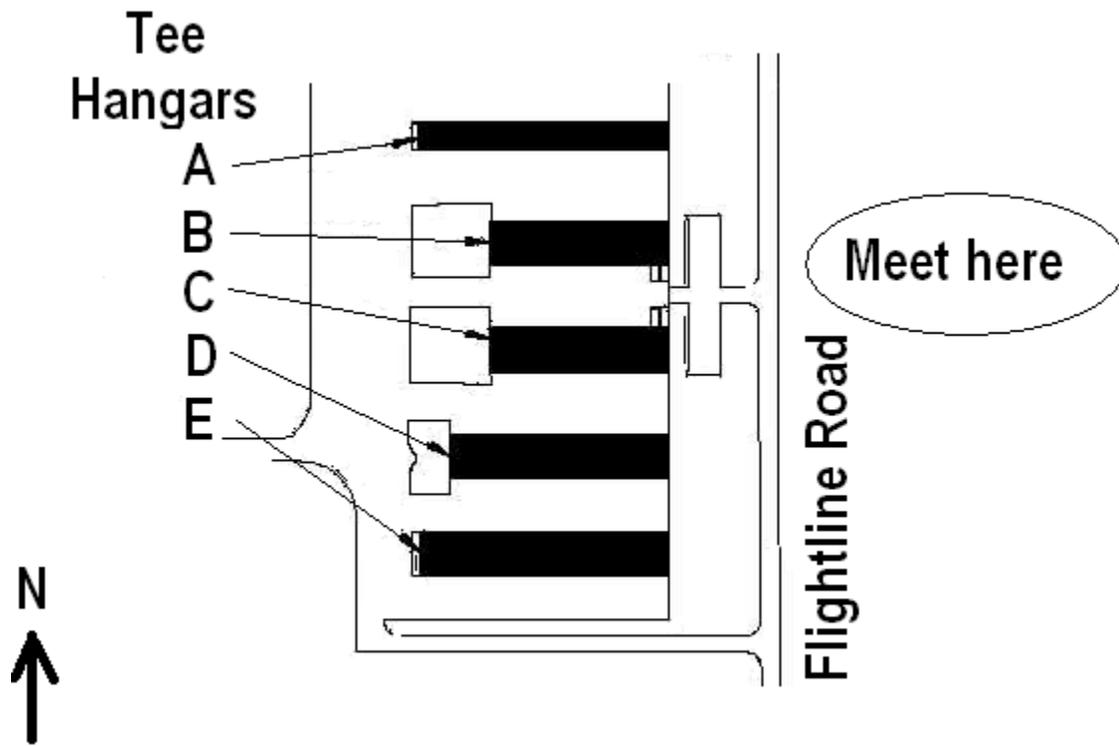


3.4.3.12. OB Young Building: SIUC Aviation Flight Instructional Staff



Southern Illinois Airport  
OB Young Building: SIUC AF  
North: ←  
Revised: 20 MAY 2008

3.4.3.13. Tee Hangars



3.4.4. Suggested verbiage to accompany evacuation route notices posted in buildings. Evacuation route notices posted prominently in each building shall include both the visual depiction (floor plan) and verbiage similar to that included here.

**In the event of a fire:**

Evacuate the building and proceed to the designated meeting area. If able, notify 911 and then the Airport Manager's office at 618-529-1721. Follow the direction of emergency responders. Do not reenter the building until cleared to do so by the appropriate authority.

**In the event of an emergency evacuation of the airfield:**

Unless otherwise directed by emergency responders, all persons shall proceed south on North Airport Road then south on Airport Road to IL Route 13.

**In the event of emergency sheltering in place:**

Proceed to [appropriate room given building]. Follow the direction of emergency responders. Be prepared to leave the building when cleared to do so by the appropriate authority.

3.4.5. This section shall be reviewed for updates on an annual basis, or any time there is a change in important personnel/airport tenants/regulatory requirements/etc.

**Element 3.5: Investigation and Analysis**

**3.5.1. Accident/Incident Investigative Process.**

3.5.1.1. Investigation is the process of gathering information about an accident/incident. The SIA Airport Safety Coordinator will use the format outlined below in the investigation of an accident/incident and will select appropriate procedures that apply to the type of accident/incident (injury, collision, damage, theft, etc.)

3.5.1.1.1. Assure essential details have been reported using the SIA Event Report Form

1. Time and date of occurrence.
2. Exact location.
3. Conditions at time of occurrence.
4. Full names, addresses and phone numbers of all persons (employees, bystanders, claimants, contractors, medics or physicians) involved.
5. Nature and extent of any injuries.

6. Full names, address and phone number of all witnesses.
7. Witness accounts of the incident/accident.
8. Equipment involved.

#### 3.5.1.1.2. Record Identifying Information

1. Where did the incident/accident occur?
2. What are the events leading up to the incident/accident?
3. What were the conditions surrounding the incident/accident:
4. Draw a diagram or sketch.
5. When did the incident/accident occur?
6. Were there any injuries?
7. What/who was damaged/injured? How extensive?

#### 3.5.1.1.3. Describe Accident/Incident

1. Who had control of the cause?
2. Explain what happened?

### 3.5.2 Analysis of Reported Occurrences

#### 3.5.2.1. Analysis

1. What were the unsafe acts or conditions, if any?
2. What personal job factors were involved?
3. What factors under SIA control were contributing?

#### 3.5.2.2. Evaluate Accident/Incident

1. What is the severity of the loss?
2. What is the probability of recurrence?

### 3.5.3. Corrective and Preventative Action

#### 3.5.3.1. Prepare Investigation Report

1. Complete SIA Event Reporting Form - Appendix H
2. Date report.
3. Return investigation reports to the SIA Airport Safety Coordinator.

#### 3.5.3.2. Determine Corrective Action

1. Will physical or material changes be made to prevent or reduce the likelihood of recurrence?
2. What policies and/or procedures will be modified or created to prevent recurrence?

#### 3.5.3.3. Document costs when incident involves damage/loss to airport property

1. Assign specific work for labor and materials used for clean-up expense, restoration and repair of damaged property.
  - Labor should indicate whether straight-time
  - Labor should reflect hours at overtime pay
2. Provide documentation of materials and services purchased
  - Purchase orders and invoices
  - Justification
3. Document extra expenses over and above normal operating costs that are directly related to the loss until the damaged or destroyed property has been repaired or replaced, commencing with the date of damage or destruction and ending with resumption of normal operations.

## **COMPONENT 4: SAFETY PROMOTION**

### **Element 4.1: Communication**

#### 4.1.1. Basic Promotion

Safety Management System communication and promotion activities should include the following activities:

1. SMS initial and recurrent training for SIA personnel and tenants

2. Distribution of SMS brochures/material for safety awareness & information
3. The development of SMS oriented posters
4. Quarterly newsletters
5. Seminars that address SIA SMS topics and safety issues/concerns
6. The development of an SMS webpage on the SIA website
7. Personnel will be encouraged to participate in the reporting of all safety hazards without the concern of punitive action by airport officials (See Non-Punitive Reporting Policy - Section 1.3)

#### **Element 4.2: Safety Information Dissemination**

4.2.1. Safety-related publications will be available throughout the main terminal building. Pertinent safety information will be posted on the safety webpage of the SIA website. Safety seminars will also be held periodically to discuss safety issues and disseminate safety information.

#### **Element 4.3: Safety Committees**

4.3.1. The Airport Safety/Security Committee is an advisory body where all safety and security issues pertaining to the SIA are discussed. Some of the functions of this committee include:

1. Discuss safety & security issues affecting the airport
2. Formulate suggestions and advise on enhancing the safety and security on and in the vicinity of the airport
3. Discuss all vulnerabilities and deficiencies in the current safety and security system, and develop corrective measures

4.3.2. The Airport Safety/Security Committee consists of representatives from the SIAA and tenants of SIA. SIA closely interacts with tenants on all safety-related issues - both formally and informally. The safety committee meets quarterly. The airport manager is the chairman of these meetings. Representatives from the following tenants are formal members of the committee, including:

1. SIUC Flight & Management
2. SIUC Aviation Technology
3. Air Traffic Control Tower

4. Tate's Aviation Company
5. T-Hangars
6. SIAA Police

4.3.3. The Airport Safety/Security Committee discusses both safety and security issues pertaining to the airport. The airport safety coordinator will work with the airport manager in the oversight of the Safety/Security Committee. Each representative on the committee is responsible for the dissemination of information discussed in the Safety/Security Committee meeting to his/her section/organization.

#### **Element 4.4: Safety Award Program**

4.4.1 The SIA Safety Award Program will be presented quarterly recognizing outstanding or significant improvement in the safety culture of the airport through recognition of safety issues as well as accident prevention. The objectives of the Southern Illinois Airport Authority Safety Incentive Program are to reduce pain and suffering of Airport employees and costs to the public due to on-the-job injuries and property damage.

#### **4.4.2 Safety Award Program Concept**

The program is designed to enhance individual safety awareness by creating an incentive to be safe. This is accomplished by making awards to groups who have remained accident free for a specified period of time.

#### **4.4.3 Department Eligibility**

Departments or divisions which suffer no lost time accidents or incur no damage to Airport equipment, property, or vehicles resulting in claims over \$250 in a quarter or biannual period (see Art. 3-8.3) will receive a luncheon at the Airport's expense. The determination of eligible departments or divisions will be made by the Safety Committee according to a review of workmen's compensation claims and Supervisor Accident Investigation Forms submitted during the specified period of time. In departments where employees work in shifts, an employee will be considered a member of the shift that he/she is assigned to on the day an accident occurs even if the employee has traded with someone on that day.

*Quarters are defined as January 1-March 31, April 1-June 30, July 1-September 30, and October 1- December 31. Biannual is defined as January 1-June 30 and July 1-December 31.*

#### **4.4.4 Division of Departments**

Airport Administration	Biannual	(includes Airport Manager, Secretary, Interns)
Airport Maintenance	Quarterly	(Includes facility and vehicle maintenance, ARFF)

Airport Security

Quarterly

#### 4.4.5 Awards

Departments or divisions qualifying for the luncheon shall be allowed to take up to a two-hour lunch break on a date set by the department director. Each department or division qualifying for the award will receive a budgeted amount per person for full and part-time employees. The luncheon may consist of a departmental barbecue, meal in a restaurant, catered meal, or other meal as determined by the department director. The meal must be from a restaurant within the City limits of either Carbondale or Murphysboro. The department director or supervisor will purchase the lunch for his/her employees and take the receipt to the Management Secretary where the amount will be reimbursed by check. No special arrangements have to be made for employees who are vacationing or absent on the day of the scheduled luncheon.

#### **Element 4.5: SMS Training**

4.5.1. The airport manager through the airport safety officer will provide for initial and recurring Safety Management System training. Recurring training will be provide within 9-15 months of the initial training and annually thereafter. Information for developing the contents of the training program may be found in AC 150-5000-37. Both training programs will provide students information on the following topics.

##### 4.5.1.1. Elements of a Safety Management System

4.5.1.1.1. General.

4.5.1.1.2. Safety Policy and Objectives.

4.5.1.1.3. Safety Policy.

4.5.1.1.4. Safety Objectives.

4.5.1.1.5. Safety Risk Management

4.5.1.1.5.1. General

4.5.1.1.5.1. SRM Background Information

4.5.1.1.5.1. The Five Phases of SRM.

4.5.1.1.6. Safety Assurance

4.5.1.1.7. Safety Promotion

#### **Element 4.6: Systems Safety Training**

4.6.1. There are many elements of a safety program. Such programs begins with the identification of hazards (both known and predicted), attempting to correct the hazard, and then sharing hazard information with anyone who might encounter it. It is this final phase of the

process that falls under the term training. Every safety program must have a training element to be effective. Therefore, the SIA should have some form of training program.

4.6.2. Training can be accomplished through many media. For example, safety posters can confront personnel each day when displayed in their workplace in a location that ensures people see them. The types of media one may use in a safety program are listed below:

4.6.2.1. Posters and bulletin boards.

4.6.2.2. Safety meetings

4.6.2.3. Safety training sessions

4.6.2.4. Safety newsletters or papers.

4.6.2.5. Emails, memo's and letters.

4.6.2.6. Purchased and internally developed videos.

4.6.2.7. Safety briefing guides.

4.6.2.8. One-on-one discussions between supervisors and their subordinates or instructors and their students.

4.6.2.9. Safety notes, cautions, and warnings in publications and manuals.

4.6.2.10. Safety policy statements posted in conspicuous locations.

4.6.2.11. Computer-based safety training programs

#### 4.6.3. Basic safety training program requirements (IAW Wood, 2003)

4.6.3.1. Safety training needs to be provided at the beginning of employment and periodically throughout the year.

4.6.3.2. Airport safety training should include all applicable safety areas. For airports this includes: ground and/or occupational safety and health, flight line, maintenance, construction safety, flight-line driving, hazardous materials, airfield, First Aid and CPR, fire equipment and extinguisher and air operations safety.

4.6.3.3. Training records should be maintained for each employee. These records should reflect all safety or safety related training participated in by the employee. Such records eliminate questions of whether a person has been briefed on certain topics.

#### 4.6.4. Specific safety topics for airport personnel training.

- 4.6.4.1. Airport safety policy
- 4.6.4.2. Operations and maintenance standards
- 4.6.4.3. The airport safety record
- 4.6.4.4. Introduce safety staff
- 4.6.4.5. What constitutes a reportable accident, incident, hazard, or OSHA lost time accidents or illnesses
- 4.6.4.6. How to report accidents, incidents, hazards or OSHA lost time accidents or illnesses
- 4.6.4.7. Accident response responsibilities
- 4.6.4.8. Known airport hazards (buildings, ramp, runway environment)
- 4.6.4.9. Hazardous materials handling
- 4.6.4.10. The Aviation Safety Committee
- 4.6.4.11. What to expect during safety inspections and audits and how they are reported.
- 4.6.4.12. Safety Awards Program
- 4.6.4.13. Applicable fire extinguisher training
- 4.6.4.14. Manager safety responsibilities and safe decision making (For Managers Only)

#### 4.6.5. Contractor Training

4.6.5.1. Any contractor doing business on the Southern Illinois Airport must receive training on their safety responsibilities while on airport property. Ensure contractors are familiar with applicable contents of AC 150/5370-2E, AC 90-67, AC 150/5210-5, , AC 150/5340-1, AC 150/5340-18, AC 150/5200-30.

4.6.5.2. This training should be provided to contractor management in sufficient time that the contractor's employees can be briefed prior to coming on airport property

#### **Element 4.7: Emergency Preparedness and Response (EPR) Training**

4.7.1. The Airport Emergency Plan (AEP) has been approved by the airport manager, and coordination has been accomplished with those individuals and agencies listed in the plan. If any emergency situation arises that is not covered by the AEP, the airport manager has the authority to direct such actions as he/she may deem necessary. The Airport Emergency Coordinator (AEC) shall be the airport manager or his/her assigned designee, who shall exercise complete control during emergency or disaster conditions. In the event the airport manager is unavailable, the airport fire chief shall be the designated AEC. During an emergency, the agencies/individuals

listed within the plan will have responsibility to provide oversight for their respective organizations and/or their organization's activities. The airport manager is responsible for conducting an annual review of the emergency plan, involving all the agencies included in the AEP.

#### 4.7.2. Emergency/Disaster Response

4.7.2.1. The airport manager and/or his designated representative is responsible to notify agencies and individuals authorized to respond and mitigate the situation, and help in the rescue, evacuation, clean-up, restoration, directing, supporting and ensuring the safety of airport personnel and other assets.

#### 4.7.3. Contact During Emergency

4.7.3.1. The AEP has a list of all the parties, including both the airport personnel as well as the non-airport agencies that have to be contacted in case there is an emergency at the airport. Contact information includes office as well as mobile numbers of:

1. Airport Manager
2. Airport Personnel, including Maintenance & Security
3. Southern Illinois Airport Authority's Board of Commissioners
4. Fixed Based Operators
5. Southern Illinois University Flight Program
6. Air Traffic Control Tower
7. Emergency Services
  - a. Jackson County Ambulance Services
  - b. Carbondale Fire Department
  - c. Murphysboro Fire Department
  - d. Oxford Crane & Trucking
  - e. Memorial Hospital of Carbondale
  - f. St. Joseph Memorial Hospital, Murphysboro
  - g. Jackson County Coroner
  - h. Jackson County Sheriff
  - i. Illinois State Police
  - j. Southern Illinois University Police

The following is a description of the roles & responsibilities during an emergency.

### Responsibilities & Responses During Emergencies at SIA

No.	Threat/Emergency in the Airport	Airport Personnel to be Contacted	Non-Airport Agency to be Contacted
1	Bomb Threat (Buildings)	Airport Manager/Witness ARFF Personnel/ Airport Police Personnel	Jackson County Sheriff's Dept. (911) TSA Security
2	Bomb Threat (Aircraft)  <b>Note:</b> Jackson County Sheriff's Department will alert the Scott Air Force Base Bomb Disposal Unit for assistance & disposal	Airport Manager/Witness ARFF Personnel/ Airport Police Personnel Air Traffic Control Tower	Jackson County Sheriff's Dept. (911) TSA Security
3	Structural Fires	Airport Manager/Witness Incident Commander	Jackson County Dispatch...911
4	Natural Disaster	Airport Manager	Tenants ( To secure their assets)
5	Radiological Incidents	Airport Manager/ ARFF Personnel	Jackson County Emergency Mgmt.
6	Sabotage/ Hijack/ Unlawful Interference of Operation	Airport Manager	Jackson County Sheriff's Dept. (911) Illinois State Police Federal Bureau of Investigation FAA Flight Standards District Office National Transportation Safety Board TSA Security ATC Tower

7	Power/Lighting Failure in the Movement Area	Airport Manager	NA
8	Medical Assistance	Airport Manager/ Designee	Memorial Hospital of Carbondale Jackson County Ambulance Service St. Joseph Memorial Hospital
9	Assisting Disaster Victims	Airport Manager/ Designee	Memorial Hospital of Carbondale Jackson County Ambulance Service St. Joseph Memorial Hospital
10	Crowd Control	Airport Manager (Indirect) Airport Police Personnel	Jackson County Sheriff's Dept. (911)  Illinois State Police
11	Fuel Farm Fires	Airport Manager	Carbondale Fire Department Murphysboro Fire Department DeSoto Fire Department

#### 4.7.4. Personnel Training

4.7.4.1. The Airport personnel are required to undergo annual "Emergency Personnel" training which includes Aircraft Rescue & Firefighting (ARFF) training, Live Burn training, and Emergency Medical Training. In this annual exercise, airport personnel undergo training in:

1. Airport Familiarization
2. Aircraft Familiarization
3. Rescue & Firefighting Personnel Safety
4. Emergency Communications Systems/Fire Alarms
5. Use of Fire Hoses, Nozzles, Turrets & Other Appliances
6. Application of the Types of Extinguishing Agents
7. Emergency Aircraft Evacuation

8. Firefighting Operations
9. Adapting and Using Structural Rescue
10. Aircraft Cargo Hazards
11. Familiarization with Firefighting Duties in the AEP

#### 4.7.4.2. Airport Personnel Also Undergo General Training In:

1. Airfield Access & Operation
2. Duties Under the ACM
3. Handling & Storing of Hazardous Substances and Materials
4. Reporting Conditions of the Airport that May Affect the Safety on the Airport

#### 4.7.4.3. Additional Training

4.7.4.3.1 All SIA maintenance employees have undergone the 40-hour Basic Airport Firefighter Certification Course in accordance with FAR 139.319(J). They also participate in at least one ARFF live-fire drill every 12 months. This drill includes a pit fire with an aircraft mock-up or similar device. The drill uses enough fuel to provide a fire intensity that simulates realistic firefighting conditions. Standards for the burning area structure can found AC 150/5220-17. The drill provides an opportunity for the firefighting team to become familiar with the use of all fire extinguishment equipment they will use in the event of an accident. SIA employees also are trained and authorized to engage as First Responders during emergency situations. They receive their approval after undergoing an approved training program, including the approved written and practical testing procedures. SIA employees also undergo the Heartsaver Automated External Defibrillator (AED) Program. They receive their certification after a successful completion of objectives and skills evaluations in accordance with the curriculum of the American Heart Association.

The SIA employees also undergo basic tools & shop safety training, including Forklift safety at the airport.

#### 4.7.4.4. News & Media Information Coverage

The Airport Terminal Building Conference Room will serve as the Public Information Center (PIC) for any information pertaining to an emergency. The news media may be escorted to the accident site in case of an accident once the rescue operations are completed and the accident site is secured. The public information officer shall coordinate this escort with the approval of the airport emergency coordinator. Press clearance for access to the PIC will be given by the law enforcement officer stationed at

the PIC. Only valid credentials will be accepted for access. Any unauthorized persons attempting to gain access to the site of an on-airport emergency shall be arrested.

#### **Element 4.8: Driver Training**

4.8.1. As of October of 2008, SIA complies with FAA regulations prescribing AOA (Aircraft Operated Area) driver's training for FAR Part 139 airports. The SIA Airport Driver's Training Program is necessary to reduce the effects of human error when operating a motorized vehicle on the AOA. SIA's driver training program has been tailored to address specific situations on the airport, including: runway incursions, operating a vehicle in snow and other potentially hazardous situations. All personnel operating motor vehicles on the airport are expected to complete the SIA's driver training program. Drivers expected to operate on the AOA are asked to contact the SIA Management Office and notify its staff of his/her request to operate a vehicle on the airfield. Presentation of both a valid US driver's license and rationale for operating a vehicle on the AOA are required for SIA Management to refer the person to a designated SIA driver training instructor. For further instructions please refer to the SIA Driver Training Manual and/or contact an SIA driver training instructor.

#### **Element 4.9: Snow Removal Driver Training**

Snow removal shall occur by authorized SIA maintenance personnel only. Those operating snow removal vehicles on the AOA are required to successfully complete the SIA driver's training program. Please refer to the SIAA driver's training manual.

The SIA driver's training program and snow & ice removal comply with AC 150/5210-20 and section 13 of AC 150/5200-18C.

Maintenance personnel shall be responsible to ensure snow removal activities do not create hazardous conditions at the airport. While effective communication between personnel and the Tower is critical, the snow removal crew should remain vigilant at all times while operating on an active airfield.

##### 4.9.1 Snow Removal Procedures

Snow removal crew shall:

- Acquire permission from the Tower to close and clear designated sections of the airfield.
- Maintain contact with the Air Traffic Control Tower at all times while operating on the AOA.
- Ensure that snow piles do not block drains, sewer covers and drainage channels
- Ensure snow piles do not block airfield signs and markings

- Attempt to clear areas around airfield signs *first* to reduce the risk of visual disorientation.
- Check to make sure that all foreign objects have been picked up after snow and ice removal operations
- If a friction measurement device is available issue the appropriate numbers obtained from the equipment. Do not attempt to correlate friction measurement numbers with braking action reports.
- Conduct a special sign inspection after snowstorms for signs that may have been damaged by plows or by snow thrown by blowers.
- Ensure no taxiway and runway markings have been damaged beyond minimum standards by snow removal activities.
- Ensure taxiways and runways are free of unacceptable physical surface damage caused by snow removal machinery.
- Ensure no snow removal equipment has been left behind in aircraft operated areas.
- Ensure drains and drainage channels are functioning and free of debris to allow for snow and ice remains to drain properly.
- In case a risk of severe icing exists, maintenance personnel shall be required to commence clearing as soon as possible in order to prevent buildup.

#### 4.9.2 Incursion prevention.

Snow removal personnel shall:

- Comply with vehicular requirements for vehicles operating on the AOA as described in the airport driver's training manual. Vehicles not in compliance will require to be escorted when moving about the airfield.

- Mark closed taxiways and runways as described in the ACM
- Remain clear of active taxiways and runways
- Use service roads when possible

#### 4.9.3 In the event of a declared aircraft emergency:

- Maintenance personnel shall stand clear of all runways
- Remove all personnel, vehicles and equipment from runways
- Keep lights on snow removal vehicles turned on to increase visual awareness of the inbound aircraft.

#### 4.9.4 Incidents, accidents and violations

In the event of an incident, accident, or violation the event shall be reported to the Airport Authority as described in the ACM and SIAA driver's training manual.

Punitive measures will be in compliance with the SIAA Rules and Regulations handbook and all individuals are subject to the applicable local, state and federal law, rules and regulations.

### **Element 5.0: Non-Airport Personnel Safety Awareness Training**

#### 5.0.1. The Southern Illinois Airport endeavors to

- Create an environment of learning and promoting safety in all areas related to the airport and its operations
- Maintain a safe environment both on the airport, specifically the airfield
- Provide safety rules for both Airport as well as Non-Airport personnel for continued awareness of safety issues

5.0.2. The SMS document provides the Airport personnel with a system that addresses the overall issue of safety at the airport. These personnel, which also include the tenants of the airport, will have the safety issues discussed on a regular basis. Thus all airport personnel should be able to adhere to all the pertinent safety standards and maintain a sound safety culture. Non-Airport personnel include Maintenance and Construction workers, occasional runway painting and repair personnel and farmers who are specifically contracted to farm the crop fields inside the airport perimeter.

5.0.3. All safety concerns related to construction on the airport will be governed by the safety plan which is a part of the construction documents. The safety plan is framed by the Airport Manager and the Construction Engineer. This plan details the safety measures to be followed by

the contractor's personnel during the construction process on the airport property. This plan is submitted to the Federal Aviation Administration (FAA) and the Illinois Department of Transportation (IDOT) for approval. Once approved the safety Plan sheet becomes a part of the construction documents. Any alteration to the safety plan should undergo the whole approval procedure once again. This safety plan is circulated among all the personnel involved in the construction project at the airport.

5.0.4. All personnel associated with mowing on the airport property, will follow the safety instructions given by the Airport Manager. The mowing personnel will be in touch with their chief who is on the field with them, for instruction and other safety communication. All personnel will be debriefed by the Airport Manager or his designated member. Farming and Cropping personnel shall not come within 100 feet of the runways and taxiways at all times. In addition to that they shall not come more than 200 feet of the Threshold of the runways. They will be guided and if needed, helped in their tasks by the airport maintenance personnel.

5.0.5. All non-airport personnel entering the airport shall be guided/lead by Airport personnel in accordance with the SIA driving instructions as per Section 4.8, pertaining to the Driver Training program. The SIA Safety Handbook provides the details of all the policies and procedures that are to be followed at SIA.

5.0.6. The Southern Illinois Airport conducts an annual 'Hot Air Balloon Festival' and during this event some airport flying activities are suspended, and the festival area cordoned off. The public has access to this designated area throughout the duration of the festival. The Airport Manager who presides as the Chairperson of the festival committee shall be responsible for all safety instruction and enforcement within the perimeter of the airport.

5.0.7. All personnel contracted for repair and maintenance work on the airport premises, not funded by a Federal or State grant shall be accompanied by airport personnel who shall be responsible for all the safety issues involving their contracted duties.

### **Element 5.1: Apron Safety**

5.1.1. Currently, the Airport meets guidelines regarding apron safety for an airport. As part of the self-inspection reporting program required by FAR Part 139, apron areas should be inspected for pavement deficiencies, markings, and other general conditions as appropriate. However, with the implementation of an SMS program, the airport has the opportunity to enhance the safety environment of the apron areas by implementing a reporting system. This would be accomplished by developing a safety culture that promotes using a reporting system; a non-punitive system is recommended because a punitive system discourages reporting of all incidents, for fear of reprimand. Statistics from other industries, such as nuclear and chemical, that have been operating under the guidelines of SMS support that a non-punitive reporting system ultimately proves to be more effective than a punitive system. The adoption of SMS by ICAO further supports the effectiveness of the system.

5.1.2. Completely understanding the airport's risks and hazards requires the best set of data on incidents as possible. The first step would be to initiate this through the coordination of the

stakeholders, tenants and airport staff through an SMS committee. It is recommended that an Executive Committee and a Working Committee be established. The Executive Committee would include the Airport Manager, the organization's Risk Manager, and the Airport's Safety Coordinator. The Working committee would include those individuals who work routinely on the ramp, interacting with aircraft ground operations, and would include such representatives as Airport Operations, the Airport's Safety Coordinator, ground handlers, fueling agents, and airport maintenance.

5.1.3. Training that is appropriate for that area should include components such as vehicle and pedestrian activity around aircraft, safety equipment requirements such as reflective vests, and Foreign Object Damage (FOD) control. By identifying components to include in the safety training, hazards and risks would be identified. This should be a collaborative effort with the stakeholders and tenants, and would feed into the SRM process. Tying these hazards or risks would help identify if specialized programs, such as a FOD committee (consisting of a refined set of employees that work around aircraft and proactively promote attention to FOD control and removal) would be beneficial to the safety of the apron areas.

5.1.4. The unique situation to the operators combined with the unique environs of SIA result in a specific set of issues or circumstances that would be truly unique to SIA, emphasizing need to involve a committee to assist with the identification (and eventual implementation) of risks and hazards inherent to SIA. Targeted training of ground handlers, ramp tenants and agents or any other individuals operating in the vicinity of aircraft on the apron areas is an important component of the apron safety plan, which may even be part of the SRM process. Airports in the United States generally have many different parties that providing ground handling services to the airlines. Some have airline employees, others contract the service out to third parties, and sometimes FBO or other airport tenants provide fueling, maintenance, catering, etc., that have access to the ramp and aircraft activity. The many different companies involved can result in a gap between what the airline's or airport's desires as an acceptable level of safe practice, but, can also provide an opportunity for cross-training, since many airport tenants or parent companies may have SMS or similar safety programs in place. It would be very beneficial to coordinate with each tenant to determine whether such a program is in place, so that integrated training or observance of their program could be accomplished.

5.1.5. Furthermore, as the industry evolves, and more and more segments (i.e. SIUC flight training, FBOs, etc.) implement SMS programs, the airport should ensure that their SRM is complimentary to their tenants' policies. Completion of a best practices survey to assess how other airport manage ramp safety concerns may prove beneficial in identifying issues which SIA may not have yet encountered, but could be real risks or hazards. Completion of this effort leads to the establishment of a formal policy to report and track incidents and hazards. Agencies which should be notified of an incident or hazard would vary based on the incident of hazard. The FAA should be notified of any incidents involving damage to aircraft or injury to people resulting from such an incident. Incidents not involving aircraft should be reported as necessary to OSHA. All incidents should be reported to the Airport for compilation and tracking into the SIA reporting system.

5.1.6. Working through the SRM process – essentially effective and relevant committee involvement – would result in a clear identification of potential risks, an assessment of the severity of such risks, and a means to mitigate, minimize and track risks and hazards. Using the SRM matrix; the airport should assess and customize the program by identifying hazards that either exist or could exist at SIU. Furthermore, the committee should use as a baseline the SIA Safety Manual and expand on what is already in place, any enhancements to the program coincide and improve (and do not conflict with) the existing procedures or policies.

5.1.7. The establishment of a ramp safety plan, associated committees and implementation of a self-reporting system may be refined as the Airport Cooperative Research Program (ACRP) Project on Airport Apron Management and Control Programs With and Without Regulatory Oversight is completed and distributed. This report will provide a comparison and evaluation of safety benefits, with regard to apron management and control programs in other countries that currently regulate apron operations<sup>1</sup>. It is anticipated that this report will be completed in July 2009.

5.1.8. Section 2.2 of the Gap Analysis identified that although a safety reporting system is identified in the SIA Safety Manual, the system will require some modifications to become compliant with SMS standards. Current reporting of incidents or hazards is verbal, and not formalized as policy. The various committees involved in the formulation or (and eventual long-term implementation and participation in an SMS project) should develop a reporting process that is commensurate with the hazard and risk, correlating to the SRM. A greater hazard or risk should be weighted accordingly. The minimal hazard or risk should require the notification and completion of an incident report that would also be used to create a database of statistics of hazards or risks. A greater hazard or risk would require completion of the same incident report, tracking of the incident, etc., but more extensive notifications would be required. The implementation of this reporting system would evolve as the stakeholders/committee determines and assigns categories of hazards or risks that correlate to the SRM.

5.1.9. Even though the SIA Safety Manual does not currently require written documentation of ramp or apron incidents, it is implied through the SIA Safety Manual that the intent is to provide a safe operating environment. Collaboration of all tenants that work in an around the ramp areas, as well as airport or other employees that have access to these areas would be most beneficial in working toward a common safety goal.

## **Element 5.2: Safety Inspection Training**

5.2.1. FAR Part 139 requires a certain level of training of airport operations personnel. To integrate this training with the Airport's SMS program, it is important to emphasize the following topics:

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<sup>1</sup> Transportation Research Board, Airport Cooperative Research Program, <http://www.trb.org/TRBNet/ProjectDisplay.asp?ProjectID=2427>, (accessed May 2008.)

- a. What an SMS program is, and the intent that it enhances safety, minimizes and helps to mitigate hazards and risks, and that it is a proactive program that promotes non-punitive self-reporting.
- b. Reiterate that it incorporates a corporate policy on safety from upper level management, which will flow into the corporate culture of the airport
- c. Emphasize what SMS includes that is not covered by the training requirements associated with FAR Part 139
- d. Identify components that are unique to an SMS plan: such as proactive culture, the SRM modeling as it relates to mitigating risk
- e. Emphasize how the implementation of SMS is different than the normal routine of FAR Part 139 self inspections. Using self-reporting of incidents and hazards as the foundation for tracking risks, SMS emphasizes being proactive about safety from upper level management through all staff, by working outside formal regulations. Being proactive about safety and self reporting inherently enhances safety.
- f. Realize that the SMS plan will need to evolve over time, and will continue to improve with the collaboration of tenants, airport employees, various stakeholders and safety committees; recognizing that this overall effort may be challenging until the plan is in place.
- g. Ensure that the overall SMS goals and safety policy are incorporated into the training program Recurrent training, collaboration with tenants that utilize SMS or a similar policy, and the development of safety training specific to job functions (i.e. airfield, ramp training vs. terminal, custodial) will enforce the over effectiveness of the SMS program.

### **Element 5.3: Training Effectiveness**

Several methods shall be used to gauge training effectiveness, including:

- Direct observation of safe behavior and adoption of safe practices (managerial presence throughout the organization)
- Impact of training on airport accident and incident rates
- Testing/examination of subject knowledge
- Employee feedback (annual surveys)

#### **Element 5.4: Schedule for Implementation and Associated Costs**

##### Implementation Schedule:

- June 2006 - January 2009 = Airport Manager Review and Refinement of the SMS Document
- January 2009 - September 2009 = Development of Training Programs
- October 2009 - December 2009 = Training on Incident Reporter 2.0 SRM Tracking Software
- January 2010 - July 2010 = Development and purchase of promotional items, including Safety Website Development
- August 2010 - December 2010 = Development of a Formal Safety Committee, Executive Committee and a Working Committee
- January 2011- July 2011 = Initial SMS Training for Airport Employees and Tenants
- August 2011 - January 2013 = Implementation of SMS practices and transformation to a safety-conscious culture

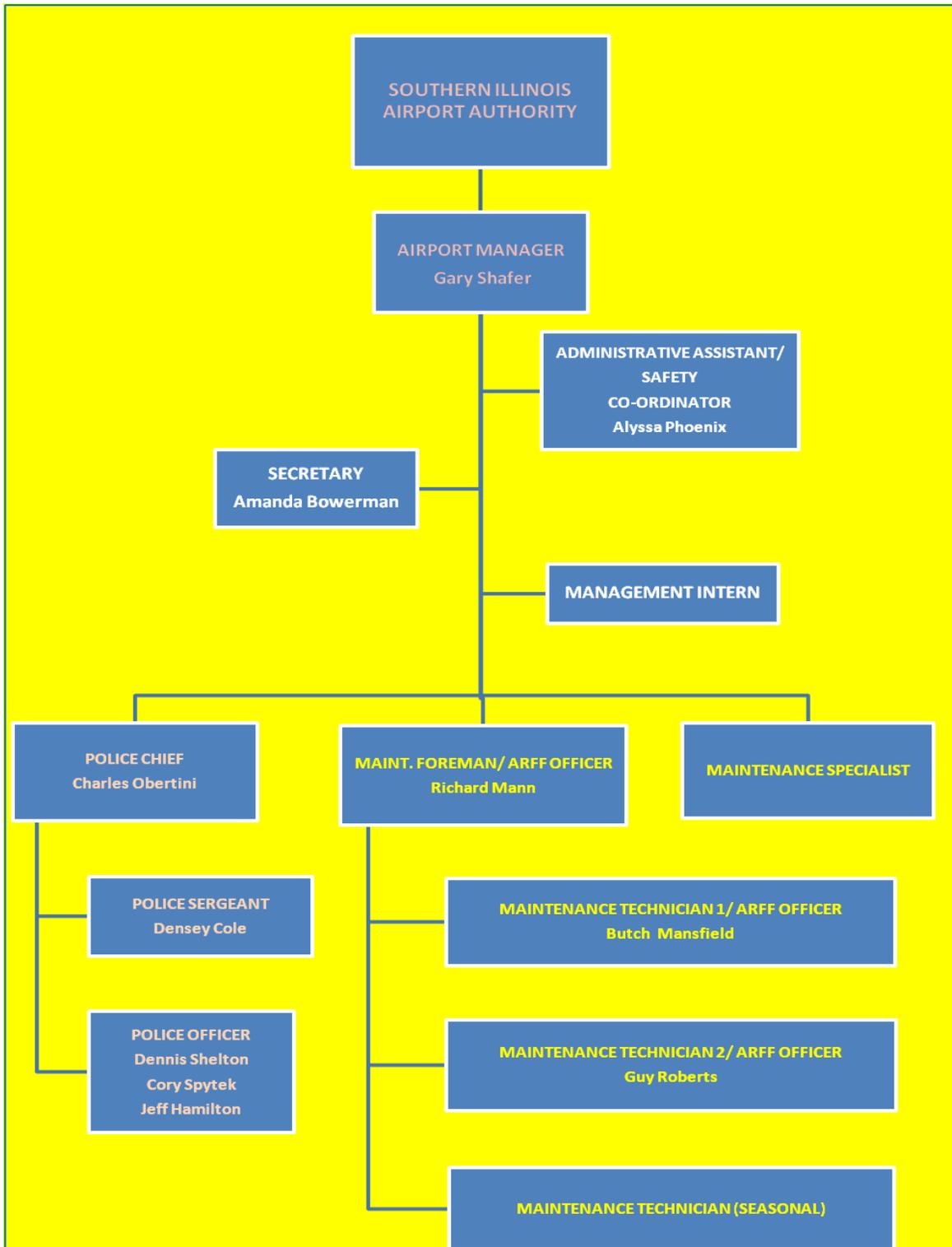
##### Associated Costs:

- Development and Delivery of Training Programs = \$10, 000.00
- Salary increase associated with Safety Coordinator additional duties = \$5000.00 per year
- Safety Website creation + \$1000.00
- Purchase of Incident Reporter 2.0 SRM Tracking Software = \$2000.00
- Purchase of promotional materials = \$5000.00
- Employee professional development, i.e. conferences, travel etc. = \$5000.00 per year
- Estimated Total = \$28,000.00 for initial implementation

Associated costs are approximations and may vary upon implementation/purchase. Incident Reporter 2.0 SRM Tracking Software has already been purchased.

APPENDIX A

SIA Organizational Chart



## APPENDIX B

### Safety Risk Management (SRM) Checklist

1. Describe the activity/operation.

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2. Identify hazards associated with the activity/operation. Identify potential problems.

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3. Determine the risk. "What can go wrong?"

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4. Analyze and assess the risk. Utilize the SIA SRM Risk Matrix to perform this step of the process:

**Risk Matrix Index:** \_\_\_\_\_

5. Treat the risk. What corrective action is needed to minimize risk to an acceptable level?

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6. If necessary, was airport management notified of any corrective action requiring their consultation? Check one.

Yes \_\_\_\_\_ No \_\_\_\_\_

Name: \_\_\_\_\_

Job title: \_\_\_\_\_

Location: \_\_\_\_\_

Date and time: \_\_\_\_\_

## APPENDIX C

### Example: Application of SRM in a Construction Plan

**NOTE:** *Because of the many variables within the development of a construction plan this case will focus on only one hazard and risk example.*

XYZ Airport has two runways and is planning to install drainage near the approach end of the secondary runway. Construction vehicles must cross the primary runway to gain access to the construction site. Because there are numerous operations during the day, a decision is made to do work at night during lighter traffic. The Airport Safety Manager understands a need to develop a plan for night construction to avoid interruption of day operations. It is clear that there are many challenges in developing such a plan.

To begin formulating the plan, the Airport Safety Manager consults with a designated Construction Safety Committee and follows the guidance outlined in the FAA Advisory Circular 150/5370-2, *Operational Safety on Airports During Construction*. One area of concern found during this process was the movement of construction vehicles to and from the work site in a way that would avoid runway incursions. In evaluating this process, the committee decides to follow the concept of systems safety and apply SRM to evaluate their decisions.

#### Phase 1. Describe the System:

- Runway environment during construction at night, including a high volume of construction vehicle traffic between the ramp and the construction site
- Existing driver training program and the use of escorts for construction vehicles
- Air Traffic Control Tower, but no radio communications with construction vehicles, which are not radio-equipped
- Signs, markings and lighting for the taxiways, runways, and construction area

#### Phase 2. Identify the Hazards:

- Construction vehicles crossing primary runway

#### Phase 3. Determine the Risk:

- Aircraft hitting a construction vehicle on the primary runway

#### Phase 4. Assess and Analyze the Risk:

- Using the Predictive Risk Matrix, it is the opinion of the committee there is a *remote* chance a construction vehicle will deviate from prescribed guidelines and cross the primary runway without an escort. There are night air carrier operations at the airport, so there is a remote chance that an aircraft would conflict with a crossing vehicle. The likelihood that a construction vehicle crossed the runway and caused an aircraft accident

is therefore *remote* or *extremely improbable*, but the committee understands that the severity of such an incident could be *catastrophic*

- The committee agrees that the proposed means of getting construction vehicles to the construction site is unacceptable and must be mitigated

**Phase 5. Treat the Risk:**

- The committee decides to *control* the risk by using an existing airport perimeter road to gain access to the construction site. All construction vehicles will then be escorted on the perimeter road. Use of the perimeter road may delay construction vehicles due to driving distance but it's in the best interest of safety
- The committee documents this decision process for future follow-up with the airport manager or airport safety officer.

## APPENDIX D

### Safety Management System Audit Checklist

#### 1. MANAGEMENT SUPPORT

- A. Are SIA supervisors and managers visibly involved in and supporting the SMS?  
How?
  - B. Does the SIA Safety Coordinator have direct access to management? At what level?
  - C. Does the SIA Aviation Safety Coordinator regularly attend operational planning meetings and briefings? Staff meetings?
  - D. Is the SIA Safety Coordinator kept advised of items and decisions involving safety?

#### 2. AIRPORT SAFETY STAFF

- A. Are all full time and additional duty aviation safety positions filled?
- B. Are the people filling these positions well qualified?

#### 3. PROGRAM

- A. Is there a written statement of policy on aviation safety?
- B. Is the SMS reviewed regularly? Has it been distributed? Does anyone but the safety Coordinator know what is in it?
- C. Is there a pre-accident plan? Has it been reviewed? Exercised? Is it current?

#### 4. SAFETY TRAINING

- A. What training is provided to SMS managers?
- B. What safety training is provided to other personnel? Is it documented?
- C. Who has not received training?
- D. Is training provided to those specified in the safety program?

#### 5. SAFETY OFFICE RELATIONSHIPS

- A. If there are additional duty safety specialists at multiple levels or tenet safety personnel, what is the relationship between them?
  - Do they meet regularly?
  - Do they communicate directly with each other?
  - What information is disseminated down?
- B. What is the relationship between the additional duty safety specialists and the VGT Safety Coordinator?

## 6. SMS SAFETY INSPECTION PROGRAM

- A. Does an inspection program exist?
- B. Who conducts the inspections?
- C. Are the inspection reports valid? Who acts on them?
- D. Has anything changed as a result of the inspections?
- E. Is there a follow up system?

## 7. INVESTIGATIONS

- A. Are incidents and accidents investigated? By whom?
- B. What is the quality and depth of the investigation?
- C. Has anything changed as a result of the investigation?
- D. Who reviews the investigation reports?

## 8. HAZARD REPORTING PROGRAM

- A. Does a hazard reporting program exist?
- B. Does any use it? How many recent reports?
- C. How are reports processed?
- D. Has anything changed because of the reports?
- E. Is there a feedback to the submitter?
- F. Who reviews the reports?
- G. Who reviews the changes generated by the reports?

## 9. DISTRIBUTION OF SAFETY INFORMATION

- A. How is safety information distributed?
- B. Is it getting to people who need it?

## 10. AIRPORT SAFETY COMMITTEE

- A. Is there an airport safety committee?
  - How often does it meet? Who chairs it? Does it have an agenda? Does it keep minutes? Who do they go to? Is anything accomplished by the committee?
- B. Is it effective?

## 11. ANALYSIS PROGRAM

- A. Is there a safety analysis program?
- B. What data are analyzed?
- C. What use is made of the analysis?
- D. Is it effective?

## 12. MISCELLANEOUS

- A. Are tenets familiar with the airport SMS program?
- B. Do they support it?
- C. Do they report hazards/incidents/accidents?
- D. Do they know who the Airport Safety Coordinator is?
- E. What is their opinion of the SMS program?
- D. Does the airport provide safety support to tenet organizations?
- E. Are elements of the SMS not discussed earlier in this checklist part of the program audit?

**APPENDIX E****Emergency Notification Telephone Numbers****1. AIRPORT PERSONNEL**

Gary R. Shafer, Airport Manager

Office: (618) 529-1721

Cell: (618) 534-3123

Richard Mann, Maintenance Foreman

Office: (618) 529-2221

Cell: (618) 967-8470

Charles Obertini, Police Chief

Office: (618) 529-2221

Cell: (618) 534-3662

**2. SOUTHERN ILLINOIS AIRPORT AUTHORITY BOARD COMMISSIONERS**

Patrick Brady

Home: (618) 684-5086

Steven Burroughs

Cell: (618) 201-2187

Carl Stoker, Secretary

Home: (618) 684-3068

Stephen Kunce

Cell: (618) 201-3893

**3. FIXED BASE OPERATOR**

Tate Aviation Company

Office: (618) 529-2359

After Hours: (618) 303-0670 (Carrol at Southern Illinois Airport)

(618) 367-3317 (Leon at Salem-Leckrone Airport)

#### 4. SOUTHERN ILLINOIS UNIVERSITY AVIATION PROGRAMS

Dr. David NewMyer, Aviation Management and Flight

Campus: (618) 453-8898

Airport: (618) 453-9242

Cell: (618) 201-5888

John K. Voges, SIUC Chief Flight Instructor

Office: (618) 453-9244

Dispatch: (618) 453-9254

Cell: (618) 521-9403

John Cotter, Aviation Technologies

Office: (618) 536-3371

Cell: (618) 713-0371

#### 5. AIR TRAFFIC CONTROL TOWER

Gary Whitney, Manager

Office: (618) 529-1311

After Hours: (618) 513-0608 (Gary Whitney cell)

(618) 439-9399 (Gary Whitney home)

#### 6. OTHER AIRPORT TENANTS/BUILDINGS

Hangar 2/Airport Security

Cell: (618) 534-3662

Hangar 6/Roger Turnbough, SIUC Line Service

Office: (618) 453-9223

Hangar 7/Harold Delaney, SIUC Maintenance Shop Foreman

Office: (618) 453-9239

Hangar 8/SIUC Helicopter Lab

Office: (618) 453-9284/5

#### 7. LOCAL EMERGENCY SERVICES

Jackson County Ambulance Service

Emergency Contact: **911**

Non-Emergency Contact: (618) 529-5158

Carbondale Fire Department

Emergency Contact: **911**

Non-Emergency Contact: (618 ) 457-3234

Murphysboro Fire Department  
 Emergency Contact: **911**  
 Non-Emergency Contact: (618) 684-3991

Oxford Crane and Trucking  
 Office: (618) 993-3434

Memorial Hospital of Carbondale  
 Emergency Contact: **911**  
 Non-Emergency Contact: (618) 549-0721

St. Joseph Memorial Hospital  
 Emergency Contact: **911**  
 Non-Emergency Contact: (618) 684-3156

Jackson County Coroner  
 Office: (618) 684-4215

Jackson County Sheriff  
 Emergency Contact: **911**  
 Non-Emergency Contact: (618) 687-3822

Illinois State Police  
 Emergency Contact: **911**  
 Non-Emergency Contact: (618) 542-2171

Southern Illinois University Police  
 Office: (618) 453-3771

## **8. FEDERAL AGENCIES**

Federal Bureau of Investigation  
 Springfield Office: (217) 522-9675

FAA Flight Standards District Office  
 Springfield Office: (217) 744-1910

National Transportation Safety Board  
 Chicago Field Office: (630) 377-8177  
 Communication Center: (202) 314-6290

Transportation Security Administration  
 Hotline: (866) GA SECURE  
 Terry Myers: (309) 797-3097



## APPENDIX G

### Bomb Threat Information Sheet

The following is adapted from the SIUC Building Emergency Response Plans.

Person Receiving Bomb Threat:

□ **Try to get as much information from the person making the threat as possible. Ask the following questions:**

- When is the bomb going to explode? \_\_\_\_\_
- Where is it right now? \_\_\_\_\_
- What does it look like? \_\_\_\_\_
- What kind of bomb is it? \_\_\_\_\_
- What will cause it to explode? \_\_\_\_\_
- Did you place the bomb? \_\_\_\_\_
- Why? \_\_\_\_\_
- What is your address? \_\_\_\_\_
- What is your name? \_\_\_\_\_
- Write down as much of the exact wording of the threat that you can remember.

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□ Note the following characteristics of the call and caller:

- Number displayed on Caller I.D. \_\_\_\_\_
- The time of the call. \_\_\_\_\_
- Length of call. \_\_\_\_\_
- The phone number where the call was received. \_\_\_\_\_
- The gender/age of the caller: Male Female Adult Child
- Caller's voice:
 

<input type="checkbox"/> Calm	<input type="checkbox"/> Soft	<input type="checkbox"/> Distinct	<input type="checkbox"/> Lisp	<input type="checkbox"/> Disguised Voice
<input type="checkbox"/> Angry	<input type="checkbox"/> Loud	<input type="checkbox"/> Slurred	<input type="checkbox"/> Raspy	<input type="checkbox"/> Deep Breathing
<input type="checkbox"/> Excited	<input type="checkbox"/> Laughter	<input type="checkbox"/> Whispered	<input type="checkbox"/> Deep	<input type="checkbox"/> Clearing Throat
<input type="checkbox"/> Slow	<input type="checkbox"/> Crying	<input type="checkbox"/> Nasal	<input type="checkbox"/> Ragged	<input type="checkbox"/> Cracking Voice
<input type="checkbox"/> Rapid	<input type="checkbox"/> Normal	<input type="checkbox"/> Stutter	<input type="checkbox"/> Familiar	<input type="checkbox"/> Accent _____
- Background Sounds
 

<input type="checkbox"/> Street Noises	<input type="checkbox"/> Local	<input type="checkbox"/> Clear	<input type="checkbox"/> House Noises
<input type="checkbox"/> Animal Noises	<input type="checkbox"/> Voices	<input type="checkbox"/> Crockery	<input type="checkbox"/> Factory Machinery
<input type="checkbox"/> Long Distance	<input type="checkbox"/> Cellular	<input type="checkbox"/> Booth	<input type="checkbox"/> Office Machinery
<input type="checkbox"/> Music	<input type="checkbox"/> Static	<input type="checkbox"/> Motor	<input type="checkbox"/> PA System
- Threat Language
 

<input type="checkbox"/> Well Spoken (Educated)	<input type="checkbox"/> Irrational	<input type="checkbox"/> Taped
<input type="checkbox"/> Message Read by Threat Maker	<input type="checkbox"/> Incoherent	<input type="checkbox"/> Foul

Do not hang up the phone. Put it down; go to another phone and **Call 911.**

## APPENDIX H

### Event Reporting Form

#### **Southern Illinois Airport Event Reporting Form**

The intent of this form is to identify, track, and through increased awareness prevent similar situations from occurring in the future. This document is not intended to provoke a safety check of any employee. The information requested will help us contact you in the event that more information is needed. **Your personal information on this form is strictly voluntary** and anonymity will be maintained to continue to promote the reporting of safety related events. Please submit completed forms or direct any questions on how to complete this form to The Southern Illinois Airport Authority Safety Manager, 618-529-1721.

#### **Type of Event/Hazard/Situation**

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**Date of Occurance** \_\_\_\_\_

**Local Time** \_\_\_\_\_

#### **Location**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Ramp Areas     | <input type="checkbox"/> Public Access Areas | <input type="checkbox"/> Airport Buildings |
| <input type="checkbox"/> Runway/Taxiway | <input type="checkbox"/> Fueling Facilities  | <input type="checkbox"/> Hangers           |
| <input type="checkbox"/> Unpaved Areas  | <input type="checkbox"/> Control Tower       | <input type="checkbox"/> Safety Areas      |
| <input type="checkbox"/> Fencing/Gates  | <input type="checkbox"/> Navigational Aids   | <input type="checkbox"/> Other _____       |

#### **Factors**

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Weather                            | <input type="checkbox"/> Security                 | <input type="checkbox"/> Airport Marking/Lighting/Signage  |
| <input type="checkbox"/> Wildlife                           | <input type="checkbox"/> Aircraft Traffic         | <input type="checkbox"/> Ground Vehicles and Mobile Equip. |
| <input type="checkbox"/> Obstructions                       | <input type="checkbox"/> Airport Design           | <input type="checkbox"/> Hazardous Materials               |
| <input type="checkbox"/> NOTAMS                             | <input type="checkbox"/> Maintenance/Construction |  |
| <input type="checkbox"/> Rescue and Firefighting Operations | <input type="checkbox"/> Other _____              |  |

#### **(Optional)**

**Name** \_\_\_\_\_

**Address** \_\_\_\_\_

**City** \_\_\_\_\_ **State** \_\_\_\_\_ **ZIP** \_\_\_\_\_

