Safety Management System (SMS) Manual
Santa Maria Public Airport

April, 2008

Safety Management System
Santa Maria Public Airport

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Santa Maria Public Airport

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INTRODUCTION

In February 2007 the Federal Aviation Administration (FAA) issued Advisory Circular, AC 150/5200-37, *Introduction to Safety Management Systems (SMS) for Airport Operators*, to introduce the concepts of Safety Management Systems (SMS). The FAA has also opened a rulemaking project to consider formal requirements for SMS at certified airports. In support of this rulemaking effort, the FAA has initiated a pilot program to assist airports in the development of an SMS specific to their situation and operations, and to share their acquired experience on SMS development and implementation with other airports and the FAA.

The Santa Maria Public Airport District (SMPAD) has decided to take a leadership role in the development and implementation of SMS at the Santa Maria Public Airport (SMX) by participating in the FAA pilot program.

Safety Management System
Santa Maria Public Airport

i. Copyright

This manual and the information contained herein is the exclusive property of the Santa Maria Public Airport District (SMPAD). It must not be reproduced in whole or in part or otherwise disclosed to any third parties without the prior written consent from SMPAD.

ii. Control of SMS Documents

The Operations Department established under the Safety Management System (SMS) at the Airport shall be responsible for controlling the preparation, verification, revision and distribution of the SMS Manual and related SMS Forms.

RECORD OF AMENDMENTS

Amendment No.	Subject	Updated By	Date

1. SAFETY POLICY AND OBJECTIVES

1.1 The Need for Safety Management Systems (SMS)

The intent of SMS is to improve aviation safety. While the elimination of aviation accidents would be desirable, a 100% safety rate is an unachievable goal. No human activity or human-made system can be guaranteed to be absolutely safe. Although major air disasters are rare events, a whole range of incidents occur more frequently. Ignoring these underlying safety hazards could pave the way for an increase in the number of more serious accidents.

The air transportation industry's future viability may well be predicated on its ability to sustain the public's perceived safety while traveling. The management of safety is therefore a prerequisite for a sustainable aviation business.

The use of SMS at an airport can contribute to this effort by increasing the likelihood that airport operators will detect and correct safety problems before these problems result in an aviation accident or incident.

There are many clear benefits of establishing and implementing an SMS. These benefits include:

a) Meeting Moral Obligations to Prevent and Reduce Injuries to Airline Passengers and Airport Personnel

An SMS anticipates and addresses safety issues before they lead to an incident or accident that can injure passengers and people working at the airport. An SMS also provides the management of the airport with the ability to deal effectively with accidents and incidents so that valuable lessons are learned and applied to improve safety.

b) Economic

The costs of a major accident at, or near, the airport, with injuries to people and damage to property, can threaten the financial viability of the airport. Direct costs are the obvious costs for rectifying, replacing or compensating for injuries, and aircraft equipment and airport property damage. There are also many indirect costs which may not be as obvious, may be delayed over time and may eventually be higher than direct costs. These indirect costs, for example, could include:

- ✈ Loss of revenues if flights are cancelled or airlines cease operations at the airport;
- ✈ Loss of reputation;

- Legal and damage claims;
- Cost of replacing and compensating injured employees;
- Increased insurance claims or denial of insurance coverage;
- Clean-up of the accident site;
- Cost of internal and government investigations; and
- Loss of use of equipment.

c) Marketing of the Airport

An airport that has a good reputation for safety will be able to sell itself more effectively to new airlines who are considering operating at an airport. A bad reputation may cause airlines to look elsewhere to ensure the safety of their passengers and their high-cost aircraft.

e) Legal Responsibilities

There may be legal proceedings against the management of the airport. They will need to demonstrate that they have taken reasonable action to eliminate or prevent accidents. The lessons learned in other countries from accidents to aircraft and people show that, in many cases, failures in management were a key causal factor.

This document summarizes the policies, organization, systems and processes by which airport safety will be managed.

1.2 SMPAD Safety Policy

The Board of Director and General Manager of SMPAD have recognized the need for, and benefits of, an effective SMS for SMX.

It is SMPAD policy to provide the highest reasonable standard of safety within SMX by identifying and minimizing those risks arising from airport activities which could contribute to aviation accidents and incidents.

SMPAD is committed to implementing SMS at SMX so that:

- All SMPAD airport employees involved in airside operations understand the hazards and risks in airside operations;
- All airport employees employed in airside operations receive proper training to do their jobs safely to protect themselves, other workers, passengers, aircraft and equipment;

- Proper procedures and adequate equipment and facilities are in place to ensure safety;
- All airport employees can report aviation safety concerns, issues, incidents and accidents without fear of negative personal consequences or reprisal;
- When safety concerns are identified, they will be analyzed and appropriate action will be taken;
- All airport employees working airside are updated on safety issues by their management;
- Safety information is effectively exchanged among all key tenants at the Airport; and
- Continual improvements to safety can be made.

Safety is an integral part of the provision of an efficient, effective airport system. All managers and supervisors are accountable for safety in the performance of their responsibilities.

SMPAD will continue to adopt explicit safety standards which comply with statutory obligations and meet, or exceed, FAA regulations and standards.

SMPAD will develop a culture among all managers and staff which fosters an increasing understanding of the importance of safety in all of its activities and the resultant responsibilities of each individual. SMPAD will provide the environment, support and training necessary to achieve this goal.

1.3 Safety Objectives

As a means to continuous safety improvements, SMX Departments will develop and propose annual safety objectives for approval by the General Manager. The Departments will monitor their performance in meeting these objectives. These annual safety objectives will address (but not be limited to):

- Incursions of vehicles, aircraft, or pedestrians on movement areas;
- Aircraft bird strikes;
- Safety hazards/deficiencies identified during airport self inspections by type of hazard (e.g., pavement, lighting, markings, signage);
- Airside safety violations (number by class of violation);
- Number and type of accidents and incidents on the Airport Operating Area (AOA) involving air carrier aircraft and/or ground vehicles;
- Operable time of lighting systems;

- Number of aborted landings/takeoffs due to airfield hazards;
- Number of airside based employees who have received and passed safety and SMS related training, both initial training and recurrent training; and
- Number of safety hazards reported through non-punitive safety reports.

2. ORGANIZATION FOR SAFETY

2.1 Organizational Structure

The organizational structure for safety at SMX is presented in Exhibit 2-1.

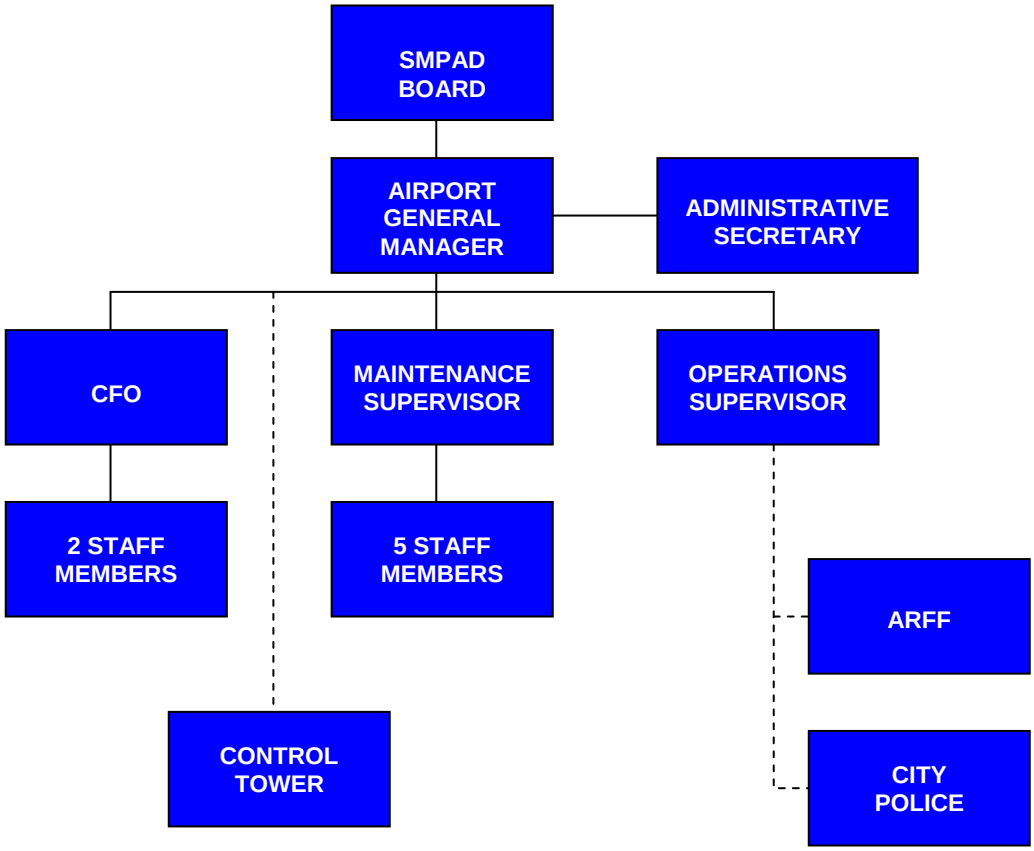

Exhibit 2-1. SMPAD Organization Structure

2.2 Safety Roles and Responsibilities

This section describes the role and responsibilities of key participants in airport aviation safety.

2.2.1 SMPAD Board of Directors

The Board of Directors endorses the SMS and the safety policies contained within the SMS.

2.2.2 SMX General Manager

The responsibilities of the Airport General Manager for SMS include:

- Approval of the SMS;
- Approval of the safety policy and objectives;
- Chairs the Airport Safety and Security Committee;
- Periodic reviews and updates of the SMS, safety policy and objectives; and
- Ensuring that financial and human resources required for proper execution of the SMS are available.

2.2.3 Operations Department

The Operations Department is responsible for updating the Airport Certification Manual (ACM) and ensuring that airport operations comply with the ACM and 14 CFR Part 139. Key duties that have a direct impact on aviation safety are listed below:

- Maintaining and updating the Airport Certification Manual (ACM);
- Staff liaison for special events on the Airport;
- Coordinating ground control and noise mitigation measures;
- Implementing the Storm Water Pollution Prevention Program;
- Conducting inspections of fueling operations and facilities;
- Developing and monitoring the Wildlife Management Program;
- Developing and implementing the Hazardous Materials Program;
- Conducting safety inspections of District hangers
- Participating in FAA certification inspection and ensuring correction of deficiencies;
- Coordinating with the Fire Department to ensure that they comply with FAR Part 139 requirements;
- Enforcing Airport rules and regulations;
- Notification of key District personnel of emergency incidents;
- Updating Airport Emergency Plan and conducting emergency exercises and drills;
- Issuance of NOTAMS (Notice to Airmen);
- Receives, reviews and maintains Airport Monthly Inspection Reports prepared by Maintenance Staff;

- Authorizing request for aircraft engine run tests; and
- Responding to aircraft alerts and emergencies as required in the Airport Emergency Plan.

The Operations Supervisor also is the Airport Safety Coordinator and as such he is responsible for:

- Developing and implementing the badging and vehicle identification program;
- Ensuring badged employees are properly trained for the Airport Movement Area (AMA) and Security Identification Display Area (SIDA);
- Supervising contract security;
- Coordinating the law enforcement officers stationed at SMX; and
- Conducting security training seminars.

The role of the Operations Department in administering and implementing the SMS would include:

- Participating in various airport safety meetings to coordinate the exchange of safety information;
- Ensuring that periodic observations and inspections of safety practices of airside operations are conducted;
- In consultation with other airport staff, conduct analysis of safety concerns, hazards, incidents and accidents; (e.g., trend analysis) and determine action required;
- Providing safety risk management advice to other airport staff in the analysis of safety concerns, hazards, incidents and accidents to determine action required;
- Ensuring appropriate action is taken in response to safety concerns, hazards, incidents and accidents;
- Keeping records of all safety related reports, incidents and accidents, and conducting trend analysis;
- Providing and coordinating safety promotion;
- Ensuring the provision of safety training for airport employees and tenants located or working on the AOA;
- Implementing a non-punitive reporting system;
- Ensuring that safety audits are conducted;
- Measuring safety performance in relation to safety objectives; and
- Annual review of the safety policy and safety objectives.

The Operations Department, as will be detailed subsequently, also provides initial and recurrent training programs for airside drivers and pedestrians.

2.2.4 The Maintenance Department

The Maintenance Department has important responsibilities that impact aviation directly. It is responsible for:

- Maintaining the concrete and asphalt integrity of all runways, taxiways and ramp to provide a high level of physical safety;
- Daily, weekly, monthly and random inspections of runways and taxiways, beacon and wind sock, airfield lighting, fencing and vegetation growth;
- Implementing wildlife control in the AOA;
- Maintaining runway and taxiway paint markings to help in the prevention of runway incursions;
- Runway rubber removal maintenance to comply with FAA Standards;
- Monitoring all runways, taxiways, and ramps for prevention of FOD accidents;
- Maintaining service roadway system to provide easy access around the airfield without interfering with air traffic;
- Installation, cleaning and replacement of signs on all AOA and access roads for safety to prevent vehicle and aircraft accidents;
- Managing tree cutting, brush and weeds around the AOA to maintain clear visibility and an obstacle-free area for safe aircraft operations;
- Maintaining the fence line to prevent wildlife from entering the AOA to provide for safe aircraft operations;
- Maintaining all storm water pipelines and structures to prevent flooding and run-off that can pose a safety risk to aircraft;
- Maintaining FAA control panels and all airfield lighting for runways, taxiways, and ramps for safe aviation operations;
- Maintaining emergency generator for airfield lighting;
- Construction worksite security and safety inspections;
- Repairing and maintaining mobile and hand-held radios to assure constant and dependable communications; and
- Maintaining all pump houses for proper fire protection.

For SMS, the Maintenance Department's responsibilities include:

- Participating in the Airport Safety Committee;

- Establishing annual safety objectives in accordance with Section 1.3 and providing relevant performance data to the Operations Department; and
- Conducting Safety Risk Management Assessments as required per Section 3.

2.2.5. Tenants at the Airport

Tenants at SMX such as the airlines and FBO's have full accountability and authority for safety within their respective area of operation.

As part of their safety responsibilities, tenants are required to have in place safety training and safety plans subject to audit by SMPAD.

Rationale: An audit should only be used as a last resort if other mechanisms such as the Airport Safety Committee, direct discussions are not successful.

2.3 Airport Safety and Security Committee

At SMX, it has been decided that safety issues would be addressed as part of an Airport Safety and Security Committee. For the size of the Airport and the commonality of issues, one committee was considered appropriate. In addition, the Operations Department is responsible for both safety and security.

2.3.1 Roles and Responsibilities

With regard to safety, the Airport Safety and Security Committee is a body of expertise to address and provide advice on safety issues at SMX.

The specific terms of reference for the Airport Safety and Security Committee regarding aviation safety are as follows:

1. Provide a forum to discuss aviation safety matters affecting the airport and its users;
2. Help identify hazards and risks and advise on safety measures to improve safety, for example;
   - apron congestion
   - FOD
   - airside vehicle operations
   - noise and jet blast
3. Review safety practices and procedures and recommend any necessary changes, for example:

a. Revised vehicle operating procedures or vehicle lanes
b. Escorts of arriving and departing passengers
c. Revision of training frequency and implementation of refresher training

4. Review airport safety rules (regulations);
5. Review reports on safety hazards/risks, incidents and accidents and action taken, or proposed;
6. Review audit reports and action taken or proposed;
7. Provide advise on methods to develop and promote apron safety awareness initiatives, such as poster campaigns and safety presentations/exhibitions;
8. Promote airside discipline; and
9. Provide advice on safety measures to be incorporated in airport expansions or modifications.

NOTE: The existence of the Airport Safety and Security Committee does not substitute for the safety management arrangements made by individual organizations represented on the committee.

2.3.2 Membership of the Committee

The Airport Safety and Security Committee consists of senior managers representing their organizations with the capacity to make decisions and deploy resources. The following organizations are included:

- The General Manager will act as Chairperson;
- The Operations Department (will act as Secretary);
- The Maintenance Department;
- The Control Tower;
- The major airlines at SMX;
- One aeronautical firm operating on the Airport;
- A member of the general aviation (GA) tenant community; and
- A manager from each of the fixed based operators (FBO's).

2.3.3 Airport Safety and Security Committee Meetings

The Airport Safety and Security Committee is chaired by the General Manager of the Airport. The Operations Department will provide Secretariat services to the committee.

The Safety and Security and Committee meets at least quarterly. It may meet more regularly if warranted and called for by any one member. The Operations Department will prepare and distribute meeting agendas in a timely manner together with any relevant papers for members' consideration. All members may submit potential agenda items.

There will be a full distribution of minutes of meetings. Any actions arising from meetings will be annotated in the Minutes and these action items will be followed through. The Operations Department will monitor action items being taken and review progress made by those responsible for taking action.

The Committee may from time to time establish and nominate special Working Groups to consider and report on particular safety issues.

2.4 Overview of Airside Safety Responsibilities

Everyone working airside has a role to play in ensuring the safety of people, aircraft, vehicles and equipment. For example, anyone working airside should report any potential hazards that they see.

A summary of key responsibilities and accountabilities for airside safety have been listed for SMX Management, ATC, the airlines, ground handlers, fixed base operators and fueling companies in Exhibit 2-2. The list is meant to provide for illustrative purposes only and may not capture all aviation activities on the AOA.

Exhibit 2-2. Key Responsibilities and Accountabilities

	Airport Infrastructure and Services	Aircraft Operations	Passenger Movements	Vehicle Operations
SMX Management, Operations & Maintenance	Provide safe infrastructure and services including: - well maintained runways, aprons, taxiways and other maneuvering areas, and equipment - fully functioning approach and runway lighting - runway and apron markings and signage Ensure wildlife and bird control. Provide adequate apron flood lighting. Ensure provision of adequately trained and equipped Emergency Fire and Response services. Implement Safety Management System. Safe storage of hazardous materials. Sweep runways as required. Safe construction of facilities. Report to FAA on condition of movement areas. Daily inspections of FOD on runways.	Observe that safe practices are being followed. Pickup any FOD. Provide and empty FOD bins. Provide safety vests to all airport airside employees. Provide noise protection to airport employees. Ensure that all airside personnel are using safety vests and ear protection.	Support airlines in passenger movements by monitoring guidance provided by airlines/ground handling firm agents	Set policies and practices on safe vehicle operations including issuing of driver and vehicle permits. Provide basic training in airside vehicle operations. Monitor vehicle operations to ensure safe practices are being followed. Establish designated vehicle lanes on the aprons and other areas of the airport Ensure airport vehicles are properly equipped and maintained Monitor vehicle movements prior to aircraft engine start and taxiing.
Airport ATC	Report on conditions of the movement area and related areas to the Operations Department. Monitor hazard beacons and airside lights and report outages	Provide guidance on safe landing and departure. Direct aircraft to apron		

Exhibit 2-2. Key Responsibilities and Accountabilities (Cont'd.)

	Airport Infrastructure and Services	Aircraft Operations	Passenger Movements	Vehicle Operations
Airlines & Ground Handlers, FBOs	Report any safety concerns or potential hazards to Operations Supervisor	Servicing of the aircraft. FOD inspections on aprons. Pickup any FOD. Provide safety vests, noise protection and other safety equipment to employees. Pilot in Command has overall responsibility for safety of aircraft and passengers. Ensure that cell phones are not used within 50 feet of a refueling aircraft Enforce no smoking on apron with employees and passengers Remove garbage and grooming waste from apron as soon as possible after collection Employees are not to run on apron Provide training of marshallers Ensure that marshallers are in place at least 5 minutes before aircraft arrival Marshall aircraft in and out of parking stands.	Lead passengers safely to and from aircraft by most expeditious and safe route either to the terminal or passenger bus. Monitor passenger route to aircraft and report/correct any hazards that may develop. Warning passengers not to run, to walk in designated areas, not to smoke, not to use cell phones within 50 feet of refueling operations, not to throw trash, etc. Monitor passenger movement prior to aircraft engine start.	Establish and implement vehicle safety policies and practices specific to aircraft being serviced Augment basic driver training provided by the airport.
Fueling Companies	Report any safety concerns or potential hazards to the Airport Operations Department.	Provide training in safe fueling of aircraft. Establish and implement policies and practices for safe fueling and fuel storage. Pickup any FOD. Clean up small fuel spills. Reporting large fuel spills more than 5 gallons to SMX. Where more than one vehicle is used ensure that the operations are coordinated.		Provide properly equipped and maintained fueling vehicles, fuel storage facilities and equipment.
GA Community	Report any safety concerns or potential hazards to the Airport Operations Department.	Comply with ATC instructions. Comply with SMX rules and regulations.	Ensure passengers stay off movement areas	No driving on movement areas.
Aeronautical Service Providers	Report any safety concerns or potential hazards to the Airport Operations Department.	Proper towing and operation of aircraft.		Compliance with SMX vehicle rules & regulations.

3. SAFETY RISK MANAGEMENT

3.1 Introduction

Risk is a by-product of doing business. Not all risks can be eliminated, nor are all conceivable risk reduction measures economically feasible. The risks and costs inherent in aviation require a rational process for decision-making. Daily, decisions are made in real time, weighing the probability and severity of any adverse consequences implied by the risk against the expected gain of taking the risk. This process is known as *"risk management"*. For the purposes of this manual, *risk management* can be defined as follows:

- ***Risk management****. The identification, analysis and elimination (and/or mitigation to an acceptable or tolerable level) of those hazards, as well as the subsequent risks, that threaten airport operations.*

In other words, risk management facilitates the balancing act between assessed risks and viable risk mitigation. Risk management is an integral component of safety management. It involves a logical process of objective analysis, particularly in the evaluation of the risks.

The Safety Risk Management (SRM) process is important because it can:

- Control the risk of an accident before any harm is done;
- Supply useful information for the development and implementation of measures to control safety and minimize the possibility of accidents;
- Determine if existing or planned safety measure are adequate; and
- Provide SMX management with valuable information about potential hazards and dangers that may be under estimated or overlooked in daily operations.

3.2 Application

A formal SRM process will be conducted when:

- There is a significant accident or incident;
- There is a negative trend in safety-related airport inspections, safety events or safety infractions;
- When there is concern that established practices and procedures, equipment or facilities are not as safe as they could be;
- Major changes are planned, including changes to equipment, runways and taxiways, airfield systems, key personnel, ground operations, air traffic control operations, staffing levels, etc.;

- The airport is undergoing significant change such as increases in air services or contraction in services;
- When new equipment or systems are being installed; and
- When new facilities are going to be constructed.

3.3 The Safety Risk Management (SRM) Process

The SRM Process is summarized schematically in Exhibit 3.1 and described below.

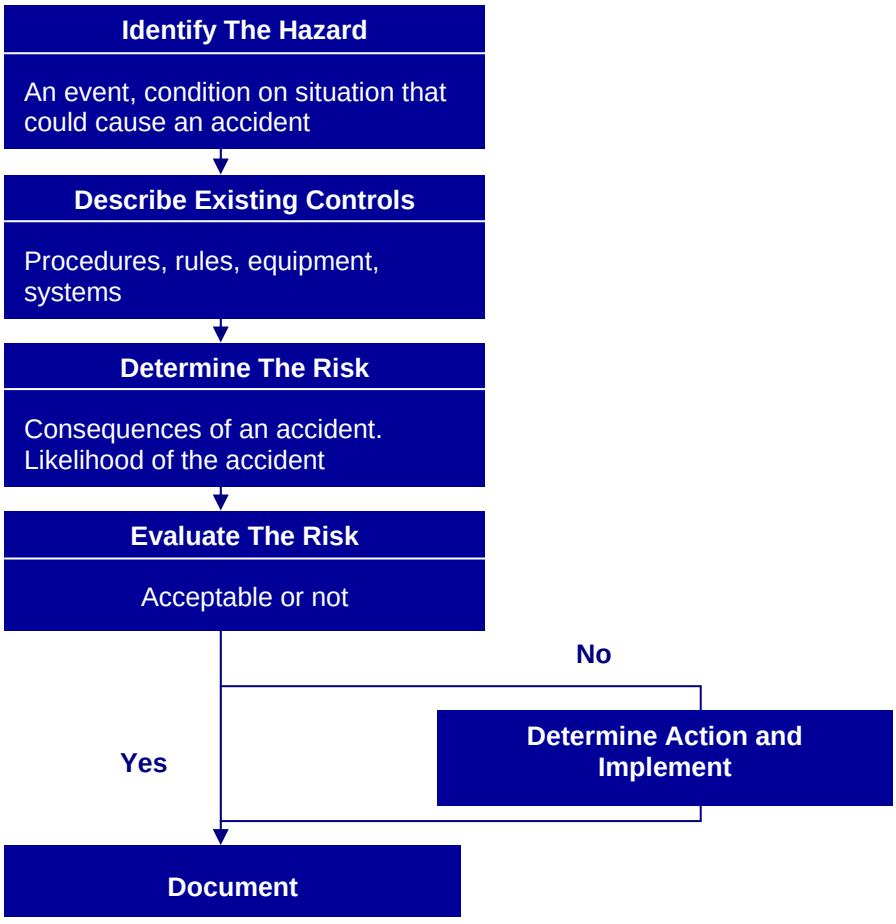

Exhibit 3-1. Safety Risk Management Process

The Department Supervisor within an applicable Airport Department will take the lead role in conducting a formal Safety Risk Assessment including the identification of hazards. The Department Supervisor will use the Operations

Supervisor to provide advice in conducting a Safety Risk Assessment. The responsible Department Supervisor will also consider enlisting other staff within his, or her, own department, other departments, possibly selected tenants and ATC to provide a wide perspective and expertise in conducting the analysis. A committee should be struck where warranted.

3.3.1 Identify the Hazard

A hazard is an event, condition or situation that could result in an accident involving aircraft, equipment and people.

The AOA of any airport can have numerous hazards that may bring about accidents or incidents if not properly mitigated or prevented. Exhibit 4-2 provides examples of typical potential airside hazards. This exhibit should not be considered as a complete list of potential hazards but only as examples of some of the hazards that may occur.

The source of potential hazards is wide and may not be immediately obvious. Examples include:

- ***Design factors***, including equipment and task design;
- ***Procedures and operating practices***, including their documentation and checklists, and their validation under actual operating conditions;
- ***Communications***, including the medium, terminology and language;
- ***Personnel factors***, such as policies for recruitment, training and remuneration;
- ***Organizational factors***, such as the compatibility of operational and safety goals, the allocation of resources, operating pressures and the corporate safety culture;
- ***Work environment factors***, such as ambient noise and vibration, temperature, and lighting;
- ***Regulatory oversight factors***, including the applicability and enforceability of regulations; the certification of equipment, personnel and procedures; and the adequacy of surveillance audits; and
- ***Defences***, including such factors as the provision of adequate detection and warning systems, the error tolerance of equipment and the extent to which the equipment is hardened against failures.

Exhibit 3-2. Potential Airside Hazards

Aircraft Operations and Servicing	Vehicle Operations	Actions of Individuals	Airport Infrastructure and Services	Environmental Conditions
• Jet Blast • Prop Wash • Fuel Spills • Grounding • Bonding • Dangerous Goods Spills • Improper parking • Improper Marshalling • FOD • Apron Congestion • Noise • Lack of protective pylons around aircraft • Lack of chocks when aircraft parks • Disposal of grooming waste •	• Erratic driving • Driving too fast • Mechanical Condition • Condition of brakes, tires • Improper parking • Parking in aircraft operations areas • Blocking fuel truck when fueling • Leaving engine running in an unattended vehicle • Lack of hazard lights • Lack of radios or communication equipment • Lack of coordination between vehicles during aircraft servicing • Lack of reverse alarms • Lack of guidance on reversing • Failure to yield right of way to aircraft and pedestrians • Oil spills on apron and/or in passenger walkways	**Employees** • Running on ramp • Lack of safety protective equipment • Riding baggage carts • Riding in rear of pick-up trucks • Lack of training • Using equipment in an improper manner • Ignoring aircraft hazard beacons • Improper checking around aircraft during departure marshalling • Ignorance of meaning of apron markings • Smoking on ramp • Use of cell phone within 50 feet of a refueling operation • Improper guidance to passengers • Throwing trash and/or equipment on apron • Failure to use FOD bins • Under the influence of drugs or alcohol **Passengers** • Failure to follow guidance • Wandering on apron • Smoking • Use of cell phone within 50 feet of a refueling operation • Throwing trash on apron • Running on apron **Others** • Individuals on airside without authority	**Airport facilities** • Poor runway condition • Poor apron condition • Failure of one or all runway lights • Failure of approach lights • Illumination provided by apron floodlights • Lack of FOD bins • Lack of fire extinguishers • Lack of training for staff • Poor apron marking visibility • New Construction on airside **Fire Service** • Lack of training in aircraft fire fighting • Lack of appropriate equipment for fuel/aircraft fires • Lack of vehicle maintenance **Maintenance Garage** • Improper storage of hazardous materials • Improper storage of equipment and supplies **Air Traffic Control** • Lack of visibility of runway ends • Lack of visibility for taxiway entrances to runway	• Birds • Wildlife • Adverse weather • Marking of natural hazards • Confusing lights • Airside signage

The identification of hazards is not the responsibility of any one person or organization. There are formal procedures in place to identify hazards, such as the airport self-inspection program. Furthermore, all those working on the airside are encouraged to identify events or situations that could compromise safety. The SMS includes an employee reporting system described in Section 5 of the SMS.

3.3.2 Describe Existing Controls

The identification of a hazard also describes the controls that are currently in place associated with a hazard (e.g., driver training programs, airport self-inspections, airport markings and signage) to assist in determining the risks of the hazard and action strategies to reduce the risk.

3.3.3 Determine the Risk

The Safety Risk Assessment Team will determine the risks of the hazard.

A risk is the chance (great or small) that people or aircraft will be harmed or damaged by a hazard; i.e., risk that an accident will happen. Risk is measured in terms of possible consequences of the accident (the severity of the accident) and the probability that the accident could happen.

Rationale: There essentially is no meaningful quantitative data for conducting SRM at an airport using numerical methods. Thus, we have developed what we consider a relatively simple qualitative approach to SRM based on Jacobs experience with teaching SRM at other airports. The benefit of SRM is that it provides a more formalized and consistent approach to assessing safety risks than currently in place.

Consequences (severity of the potential accident)

In determining a risk, the consequences of a potential accident are assessed. The consequences used in this rating are presented below along with a guide to their application.

RATING	EXAMPLES (one or more resulting conditions)
Minor	No, or very, limited financial loss. Only 1 or 2 individuals involved. Very limited, or no, damage to aircraft, vehicles or equipment. Minor operational delays. First aid treatment may be required. People could be off work for several days due to injury.
Moderate	Repairs to damaged aircraft, equipment or vehicles. Operational delays. Medical treatment required in hospital or emergency clinic. Significant cost to individuals involved. Some media attention.

RATING	EXAMPLES (one or more resulting conditions)
Major	Extensive repairs or replacement of aircraft, equipment or vehicles. Major operational delays. Extensive injuries to a number of people. Possible death of 1 or 2 individuals. Strong media attention, loss of public confidence.
Catastrophic	Aircraft destroyed. Multiple deaths, extensive injuries. High profile media attention. Severe loss of public confidence.

Risk Probability

The second consideration in risk assessment is the probability of the hazard causing an accident or injury. There essentially is no meaningful quantitative data for conducting SRM at an airport using numerical methods. Thus, a qualitative approach is required. This provides a formalized and consistent approach to assessing safety risks.

The relative rankings of the probability for use in SRM analysis are given below

RATING	EXAMPLES
Rare	Accident not expected to happen under most normal circumstances. Very unlikely.
Possible	Might or could occur at some time in the future.
Likely	Will probably occur with some certainty in the future.

3.3.4 Evaluate the Risk

There will always be risks involved in aviation operations. Some risks can be accepted, some can be eliminated, while others can be reduced to acceptable levels.

Once the probability and the consequences of an accident, the Safety Risk Assessment team evaluates the relative rating of the risk by using the following matrix.

	Potential Consequences			
Probability	**Minor**	**Moderate**	**Major**	**Catastrophic**
Rare	Low	Low	Medium	High
Possible	Low	Medium	High	High
Likely	Medium	Medium	High	High

The risk ratings used in the matrix are defined as follows:

High risk: A high risk is unacceptable. Management needs to take **immediate action** to mitigate or eliminate the hazard for an existing condition. For planned changes to equipment, systems, operations, etc. management, the change cannot be implemented unless the potential hazards are further mitigated to medium or low levels.

Medium risk: Management will react to mitigate or eliminate the hazard as expeditiously as possible within existing resource constraints. In the short term, the risk is tolerable.

Low risk: This level of risk is considered acceptable and no further action is required unless the risk can be reduced further, or eliminated, at little or no effort.

Factors that may be considered when evaluating risk, particularly whether a risk is acceptable are as follows:

- Managerial. Is the risk consistent with SMX's safety policy and objectives?
- Affordability. Does the risk defy cost-effective resolution?
- Legal. Does the risk conform with current FAA regulatory requirements?
- Cultural. How will the airport's employees and other stakeholders view this risk?
- Market. Will SMX's competitiveness relative to other airports be compromised?
- Political. Will there be a political price to pay for not reducing or eliminated the risk?
- Public. What will be the reaction of the media or special interest groups regarding the risk?

In undertaking the evaluation of risk, the Risk Evaluation Guide provided in Appendix 1 will be used. This will be completed for any formal assessment of risks and hazards as required by Section 3.2.above as well as any reported safety hazards.

3.3.5 Determine Action and Implement

If the Safety Risk Assessment team has determined that the risk is acceptable then no further action is required other than documenting the previous Safety Risk Assessment steps.

If a risk is deemed high or medium, the accountable Airport Department Supervisor will be responsible for taking action or developing recommendations

to mitigate or eliminate the hazard. The accountable Airport Department Supervisor should consider a range of options depending upon the outcome of the risk evaluation. The responsible manager may want to seek advice from the Safety Assessment Team if appropriate. The potential solutions could include:

- An infrastructure solution including such options as rehabilitation, reconstruction or new facilities;
- Changes or modifications to equipment or maintenance programs;
- The issuance of Airport Safety Directives that could include consideration of changes to operating procedures and/or new procedures;
- Airport Safety Guidelines that could include such items as limiting exposure to the risk, increased surveillance of the hazard or activities associated with it, improved supervision, targeted safety advice etc.;
- Safety training which could include the provision of new on-site training programs and/or modifications to existing safety training programs;
- Provision of safety information and the provision of specific safety brochures, posters, etc.; and
- Restrictions on an individual's right and ability to work on the airside.

When required, the SMX Department Supervisor will prepare a safety action plan outlining planned risk reduction measures, with specific target dates and responsibilities of key participants. If required and time allows, final approval of the plan shall be given by the General Manager. The SMX Department Supervisor will be responsible for ensuring that the safety action plan is implemented.

Where the action plan involves expenditures beyond the authority of the General Manager, the recommendations will be forwarded to SMPAD Board of Directors for consideration and action.

If a hazard and its associated risks are primarily the responsibility of a tenant, the tenant will be responsible for developing their own safety action plan when requested by the Operations Supervisor or the General Manager; for example, as the result of an audit.

The Operations Department will monitor implementation and provide regular (at least quarterly) written updates on the status safety action plans to the General Manager and the Airport Safety and Security Committee.

3.3.6 Document the Safety Risk Assessment

The application of the Safety Risk Assessment including any resulting safety action plans will be documented by the accountable SMX Department Supervisor. The documentation will maintained by the Operations Department.

4. SAFETY ASSURANCE

4.1 Introduction

SMS Safety Assurance augments existing SMX practices and procedures to ensure airport safety including:

- The airport self-inspection program;
- The wildlife hazard management plan;
- Storage and handling of fuel;
- The airport emergency plan;
- Airport condition reporting including the issuance of NOTAMS;
- Accident and incident reporting, as part of pedestrian and ground vehicle control programs; and
- Construction safety plans.

4.2 Employee Reporting System

This section of the SMS addresses non-punitive employee reporting, systematic safety reviews, safety oversight and auditing.

To further enhance airport safety by identifying safety hazards, all employees of SMPAD, aeronautical firms and FBO's working on the AOA are encouraged to report any accidents, incidents, potential hazards or safety concerns that they observe or are involved in. Examples include: a driver not stopping for passengers, airside personnel potentially exposed to jet blast, FOD receptacles not emptied, vehicles left unattended on the apron, confusing signs, poor lighting, etc.

AOA employees are encouraged to prepare a written Employee Safety Report using the form provided in Appendix 2. The form is available from the Operations Supervisor's Office. The employee should submit the Employee Safety Report to the Operations Supervisor. An employee may also make a verbal report to the Operations Supervisor who will assist in preparing the written Safety Report. If the employee wishes his or her name to be confidential for any reason, then this should be indicated on the Employee Safety Report.

The Operations Supervisor will investigate the concern or hazard and provide a response to the initiator of the report. If necessary, a Safety Risk Assessment will be conducted.

4.3 Non-Punitive Reporting Policy

The purpose of any investigation of an accident, incident or safety hazard is to establish the facts and cause, and, where necessary, take measures to prevent further occurrences. SMPAD believes that free and full reporting of incidents and accidents is a primary aim and that every effort will be made to avoid action that may inhibit reporting.

SMPAD Management will not take any disciplinary action against an employee reporting a safety incident or accident even if a reported incident or accident indicates an unintentional mistake by the employee.

This reporting policy does not apply to criminal acts, deliberate violations of safety regulations and safe operating procedures, or gross negligence.

If requested by the employee, the Employee Safety Report will be treated in confidence. In this case, SMPAD and its employees will not disclose the name of the person submitting a safety report unless required to do so by law. The Operations Supervisor will de-identify the Employee Safety Report before initiating any investigation or action. All personnel and organizational names are removed from the report. Dates, times and related information which could be used to infer an identity are either generalized or eliminated.

4.4 Airfield Accidents and Incidents – Mandatory Reporting

The Operations Supervisor on behalf of SMPAD is responsible for ensuring that a Mandatory Safety Report is prepared for accidents and incidents on the AOA. The Operations Supervisor should prepare the report with the input of those that witnessed or observed the incident or accident.

The Airport's Mandatory Safety Reporting does not eliminate any regulatory requirements for reporting that have been imposed by the FAA on third party operators at the airport such as an airline or the air traffic control tower.

4.5 Accident Investigation

All accidents and incidents require investigation. On behalf of SMPAD, the Operations Supervisor will undertake an investigation of all accidents or occurrences using the Accident and Incident Report Form contained in Appendix 3. The Operations Supervisor will enlist whatever technical expertise that is required within SMPAD. If necessary, the Santa Maria Police Department will participate in the investigation.

SMX's investigation does not negate any regulatory requirements for accident investigation required by FAA, federal, state or local regulations.

4.6 Systematic Reviews

Systematic review allow for assessing adherence to SMPAD's safety policy and achievement of safety objectives. Systematic reviews are the responsibility of the Operations Department in consultation and coordination with the other SMX departments. Systematic reviews include the following activities:

- On-going trend analysis of accidents, incidents, self-inspection reports, NOTAMs, condition reports through information provided by the Maintenance Department, Employee Safety Reports, and investigation of accidents and incidents;
- Periodic assessments of the achievement of safety objectives with data provided quarterly by the Airport Departments; and
- Review of the proceedings of the Airport Safety and Security Committee, safety risk assessments and safety audits.

Based on the lessons learned from these reviews (either individual or collective), the outputs of the systematic reviews could include a wide range of recommendations such as new Safety Risk Assessments, revisions to SMS safety policies and objectives, SMS practices and responsibilities, revisions to operational or maintenance practices, systems, facilities or equipment.

Although the Operations Department is required to make an annual review of the SMS safety policy and objectives, recommendations based on systematic reviews can be made whenever considered appropriate.

4.7 Safety Oversight

Safety oversight is the responsibility of the General Manager. Safety oversight includes periodic reviews of how well the SMS is working, whether safety policies and objectives are still relevant if there are negative trends in safety indicators, etc.

4.8 Safety Audits

The General Manager will determine if and when safety audits are required.

There are two types of safety audits undertaken at the Airport.

The first safety audit is an internal audit of SMX AOA activities and includes the safety functions undertaken by:

- Airport Operations;
- Maintenance;
- Contractors; and
- Fire and Emergency Response Service.

The other safety audits are external audits of the functions that are undertaken by the SMX tenants such as the airlines, FBO's or contractors.

The above audits may be undertaken by SMPAD, by a specialist external auditor appointed by SMPAD or by another airport operator retained by SMPAD.

Tenants may also undertake independent safety audits of their operations at the Airport. The Operations Supervisor should arrange with each of these organizations so that SMPAD is provided with copies of the audits and the relevant safety plans.

4.9 Record Keeping

The following records will be kept by the Operations Department for at least 3 years:

1. The original SMS Manual and subsequent revisions;
2. Annual reviews of the SMS policy and safety objectives conducted by the Operations Department;
3. Completed Safety Risk Management assessments and associated safety action plans noting completion of action items;
4. Completed Accident and Incident Analysis Forms;
5. Minutes of the Meetings of the Airport Safety and Security Committee;
6. Minutes of Safety Meetings;
7. Safety audit reports;
8. Safety Bulletins;
9. Description of Training Programs, who attended and when; and
10. Description of promotional activities.

All mandatory incident and accident reports will be kept for at least 10 years unless there is a legal action outstanding, or anticipated, regarding an incident or accident, then they will be kept until the legal action is disposed of.

5.0 SAFETY PROMOTION - COMMUNICATIONS

5.1 Safety Communication Policy

SMPAD is committed to ensuring that all SMX personnel working airside at the Airport are informed about the safety polices and objectives, how well the airport is meeting safety objectives, results of accident and incident investigations, new safety practices, and other matters dealing with safety.

Safety Communication will be achieved through a number of mechanisms described below.

5.2 The Airport Safety and Security Committee

As previously described in detail, the Airport Safety and Security Committee provides an essential partnership between Airport Management and airside tenants to share safety information and provide advice regarding safety in AOA operations. This committee meets at least quarterly and minutes of the meeting will be distributed to all participants.

The minutes of the meetings will also be summarized and communicated to airside personnel through Safety Management Bulletins.

5.3 SMS Manual

The SMS Manual is available for review by all SMX employees working on the AOA in the Operations Supervisor's office. The SMS Manual will be provided to all new employees. All airport airside employees are expected to read the document.

5.4 Safety Management Bulletins and Posters

The Operations Supervisor will issue brief periodic Safety Bulletins. The topics of these Safety Bulletins will include, for example:

- ✈ Announcement of the new, or revised, SMS Manual and its highlights and where copies can be obtained or reviewed;
- ✈ Summaries of the minutes of Airport Safety and Security Committee meetings, particularly action items;

- Results of incident and accident investigations emphasizing lessons learned and action to be taken to reduce potential hazards;
- Announcement of new work practices and procedures; and
- New safety rules that must be followed.

The Operations Supervisor will issue the Safety Bulletins to each airside tenant and to each SMX employee working on the AOA.

The Operations Supervisor will, as appropriate, prepare and display safety posters dealing with such topics as:

- Voluntary and mandatory reporting;
- Safety rules that must not be violated; and
- Safety goals and indicators.

5.5 AOA Employee Recognition

In order to promote a safety culture at the Airport, SMPAD will institute a recognition program for employees of SMX, FBO and aeronautical firms to honor an individual working on the AOA that makes a significant contribution to safety at the Airport. The award may be based on identifying and correcting a significant airside hazard, working over the course of the year in a safe and efficient manner, providing safety leadership to other airside employees, etc.

To be considered for this award, employees may be nominated by their peers or Airport Management. The employee's direct superior will endorse the nomination and forward to the Operations Supervisor.

The award will be presented at the annual safety meeting of the New Year.

5.6 Safety Meetings

At the beginning of each year, the Operations Supervisor will hold an annual safety meeting with all SMX AOA staff. The purpose of this meeting is to:

- Report on safety performance in meeting safety objectives;
- Summarize the initiatives and action taken, or planned, to address safety concerns and potential hazards;
- Report on lessons learned and action taken as a result of any incidents and accidents; and

- ✈ Discuss in an open forum the safety concerns that any of the participants might have.

The Operations Supervisor will provide Minutes of the Annual Safety Meeting to the Airport Safety and Security Committee for distribution to their AOA employees.

In addition to the annual safety meeting, the Operations Supervisor may from time to time throughout the year conduct appropriate safety meetings to discuss safety issues at SMX as required.

5.7 Ramp Safety Campaign

The Airport will establish a ramp safety campaign highlighted by Ramp Safety Week where the Airport and the tenants highlight a ramp safety issue and promote reduction of the hazard as well as cultural changes with ramp personnel.

To augment this one week targeted safety campaign, the Airport will also sponsor several safety awareness days during the year highlighting specific airside hazards such as FOD, fuel spills, etc.

6.0 SAFETY PROMOTION – TRAINING

6.1 Training Policy

SMPAD is committed through training to provide all of its employees working on the AOA with the skills and competencies to recognize and minimize aviation safety.

6.2 Existing Safety Training Programs

The key mechanism for training of Airport maintenance and operations employees is on-the-job training (OJT) augmented with FAA airport safety videos. New maintenance employees are provided two months of OJT before they are allowed to operate alone on the AOA. Refresher training is conducted every 3 – 6 months in a group session. In addition to aviation safety, training sessions include workplace safety practices and maintenance/operations practices and policies.

The Operations Supervisor has developed an Airport Driver Training Guide. The Training Guide is applicable to all persons who require vehicular access onto the AOA for work purposes during working hours. The Airport Driver Training Guide includes the following major topics:

- Familiarity with the airport including driving on movement and non-movement areas, and airport signage;
- Airport driving rules and regulations including enforcement;
- Detailed procedures for movement area driving including communications with the Tower;
- A general description of hazards at the airport such as jet blast, noise and FOD; and
- Night and bad weather driving.

The Training Guide also includes a 5 page “quiz” to test understanding of the training material.

New airport employees who need to drive on the AOA are required to review the Airport Driver Training Guide as well FAA videos on airport hazards, wildlife, hazmat and other FAA Part 139 subjects. New employees must also pass the quiz before being issued a security badge to drive on the AOA and two months OJT training before operating alone on the AOA. All airport employees who drive on the AOA take annual recurrent driver training and testing as described above.

The Airport Driver Training Guide is provided to the airlines and FBOs. All of their new employees who drive on the AOA are required to pass the quiz. All applicable employees are tested annually.

GA pilots do not receive the Airport Driver Training but receive a pamphlet which authorizes them to operate a vehicle only between the entry gate for GA pilots and their hanger. They are not permitted to operate their vehicles on any other parts of the AOA (e.g., aprons for commercial airlines, taxiways).

According to the ACM, each fueling agent at the airport is required to have a supervisor complete an aviation fuel-training safety course acceptable to the FAA. The fueling agent's supervisor is required to have recurrent training at least once every 24 months. Other employees of the fueling agent involved in fueling operations are required to have OJT and recurrent training every 24 months provided by the agent's trained supervisor. Written certification to Airport Management is required every 12 months. Records are to be maintained by the Operations Supervisor.

ARFF Training

ARFF personnel, according to the ACM receive instruction in accordance with AC 150/5210-17, Programs for Training Aircraft and Fire Fighting Personnel.

6.3 SMS Training

As part of the training of new SMX employees working on the AOA, the Operations Department will provide an SMS training program. The curriculum includes:

- The need for SMS;
- SMPAD safety policies and objectives;
- Organization for safety – role and responsibilities;
- Safety risk management – including human and organizational factors;
- Safety assurance; and
- Safety promotion.

Re-current SMS training will be provided during annual refresher training sessions.

The Operations Supervisor will record that a training session has been given to an employee. This record will be kept by the Operations Department and placed in the employee's personnel file.

6.4 Specialized Airside Tenant Safety Training

Each airside tenant at the Airport will provide specialized training in operational procedures and safety procedures applicable to their function at the airport. Examples include: fueling procedures, aircraft chocking, aircraft push-back, aircraft power back, escorting of arriving and departing passengers, movement and parking of aircraft service vehicles upon aircraft arrival and departure, aircraft marshalling, etc.

Each airside operator will keep a record of the training provided for possible review by the Airport or by an independent auditor.

The Airport recognizes that many of the airside operators already provide this training and keep records of their training.

APPENDIX 1

RISK EVALUATION GUIDE

RISK EVALUATION GUIDE

Potential Hazard - a description of the hazard that has the potential to damage aircraft, vehicles, equipment & systems; and to cause injury & death	**Existing Controls** – a description of existing systems, procedures, equipment, training, etc. in place to control the hazard

Potential Outcomes & Accident – a description of the possible direct & intermediate results of the hazard and the possible accident: conditions that could lead to the accident	**Consequences of the Accident Happening** • Minor • Moderate • Major • Catastrophic	**Likelihood of the Accident Happening** • Rare • Possible • Likely	**Evaluation of the Risk** • Low • Moderate • High

APPENDIX 2

EMPLOYEE SAFETY REPORT

Appendix 2 – Employee Safety Report

Safety Management System
Santa Maria Public Airport

Employee Safety Report

Name: _____

Organization Position: _____

Do you want your report to be treated as confidential? Yes ____: No_____

[Name and position to be removed by the Operations Department if requested by the employee]

PART A
TO BE COMPLETED BY THE PERSON IDENTIFYING THE HAZARD

Please fully describe the Hazard, Incident or Accident

.

Date of occurrence: _____ Time: _____

Location: _____

Description:_____
_____
_____
_____
_____
_____
_____
_____
_____

In your opinion, how often does this hazard exist or take place

Not Frequently				Very Frequently
1	2	3	4	5

PART B
TO BE COMPLETED BY THE OPERATIONS DEPARTMENT UPON INVESTIGATION OF THE HAZARD

The report has been de-identified and entered into the company database

Signature: _____ Date: _____

Name_____

Based on investigation of the hazard:

Describe the hazard(s):

How frequently does the hazard exist or occur?

What are the possible sources of the hazard?

What are the possible consequences (accidents) that could result from the hazard(s)?

Minor Moderate Major Catastrophic

Why?

What is the likelihood of the accident that could result from the hazard(s)?

Rare Possible Likely

Why?

What action is required to ELIMINATE or CONTROL the hazard and PREVENT injuries or damage?

_____
_____
_____
_____
_____

Resources Required: _____

SANTA MARIA PUBLIC AIRPORT DISTRICT

_____

Responsibility for action:

_____

Referred to _____ for further action.

Signature: _____ Date: _____

Appropriate Feedback given to staff.

Signed _____ Date _____

APPENDIX 3

ACCIDENT AND INCIDENT REPORT FORM

ACCIDENT AND INCIDENT REPORT

To be completed by the Operations Department for all accident and incidents and safety violations which could endanger people, aircraft, vehicles, or equipment?

Name of person that completed this report:_____
Organization and Position:_____
Telephone number:_____
Date of Accident/Incident/Safety Violation:_____
Time:_____
Location:_____
Date of Report:_____

Names of Witnesses

Witness 1
Name:_____

Address:_____

Telephone:_____

Witness 2
Name:_____

Address:_____

Telephone:_____

Witness 3
Name:_____

Address:_____

Telephone:_____

Details

Details of the accident/incident/safety violation: (Include details of people involved, aircraft, vehicles, and equipment. Include details of what took place that contributed to the accident /incident)

_____

_____

_____

_____

_____

_____

_____

_____

Details of any injuries:

_____

_____

_____

Details of any damage to aircraft/vehicles/equipment/facilities:

_____

_____

_____

_____

SANTA MARIA PUBLIC AIRPORT - ACCIDENT/INCIDENT ANALYSIS

SECT. 1 OPERATIONAL ACTIVITY AND RESULT

RESULT OF ACCIDENT

( ) AIRCRAFT DAMAGE
( ) VEHICLE DAMAGE
( ) EQUIPMENT DAMAGE
( ) PERSONNEL INJURY
( ) OTHER _____

IMPACT OF ACCIDENT ON OPERATIONS

( ) AIRCRAFT ARRIVAL DELAY
( ) AIRCRAFT SERVICING
( ) AIRCRAFT TURNROUND
( ) AIRCRAFT DEPARTURE DELAY
( ) VEHICLE OUT OF SERVICE
( ) AIRCRAFT DELAY
( ) EQUIPMENT OUT OF SERVICE
( ) OTHER _____

SECT. 2 CONTRIBUTING FACTORS CHECKLIST

Instructions on completing this section:
1 Tick each contributing factor.
2 For each factor not contributing, mark ‘N/A’
3 Provide brief narrative for each contributing factor

A. INFORMATION

Provide copies of all relevant work cards; procedures; maintenance manuals; operation orders; instructions etc and append to this report. Determine through interviews with those involved and/or witnesses whether the information was:
( ) Not understandable
( ) Unavailable/inaccessible
( ) Incorrect
( ) Conflicting with other directions or information
( ) Other

Specify exactly what information was inadequate or led to the incident

B. EQUIPMENT/TOOLS/PARTS

Provide a list of equipment/tools in use at the time of the accident. Determine through interviews with those involved and/or witnesses whether the equipment/tools/parts were:
( ) Unsafe
( ) Inappropriate to task
( ) Inaccessible
( ) Could not be used in intended environment
( ) Unreliable
( ) No instructions for use
( ) Mis-calibrated
( ) Too complicated
( ) Unavailable
( ) Incorrectly labeled
( ) Other (explain)

Specify exactly what equipment, tool, or part, failed, was inadequate or led to the incident

C. AIRCRAFT/EQUIPMENT/VEHICLE DESIGN

Determine through interviews with those involved and/or witnesses whether the aircraft/equipment/vehicle was:
( ) Too Complex
( ) Not accessible
( ) Not user friendly
( ) Was a confusing variation between models/variants
( ) Other (explain)

D. MAINTENANCE ERROR

Determine through interviews with those involved and/or witnesses what procedures were followed and compare to written maintenance instructions. Highlight any areas where tasks carried out deviated from written maintenance procedures

E. JOB/TASK/ACTIVITY

Determine through interviews with those involved and/or witnesses the actual job/task/activity underway at the time of the accident. Highlight any distractions that may have been present.

F. QUALIFICATIONS/SKILLS

Determine from interviews with those involved and /or witnesses the qualifications of the individual(s) involved in the accident. Check SMX/Concessionaire/Contractor training records for the individual involved

G. FACTORS AFFECTING INDIVIDUAL PERFORMANCE

Determine if any of the following factors were involved in the accident

Aircraft ground equipment

( ) Improper installation
( ) Equipment not installed
( ) Wrong part installed
( ) Wrong orientation
( ) Improper location
( ) Repetitive or monotonous task
( ) Complacency
( ) Complex or confusing task
( ) Inadequate planning/prioritization
( ) New task or task change
( ) Different from similar tasks
( ) Boredom
( ) Other (explain)

Individual Qualifications

( ) Proficiency/experience level and years of experience
( ) Task knowledge
( ) Process knowledge
( ) System Knowledge
( ) Other (explain)

Individual Human Factors

( ) Physical health (including sight/hearing)
( ) Peer pressure
( ) Fatigue
( ) Body size/strength
( ) Time constraints
( ) Significant life changes
( ) Alcohol/drugs/medication
( ) Other

Explain in point form how these factors lead may have lead to the incident:_____

H. ENVIRONMENT AND FACILITIES

Determine if any of the following were present during the time leading up to the accident or at the time of the accident:
( ) High noise levels
( ) Vibration
( ) Distractions/interruptions (e.g. cell phone use) ( ) Cleanliness
( ) Hazardous/toxic substances
( ) Power sources
( ) Inadequate ventilation
( ) Dark
( ) Unsafe work area
( ) Hot
( ) Cold
( ) Humidity
( ) Rain
( ) Wind
( ) Other

Explain in point form how these factors may have lead to the incident:_____

I. ORGANISATIONAL ISSUES
Determine from interviews with those involved in the accident and their supervisor(s) the following:

( ) Amount of supervisory support provided
( ) Company policy re activities underway during the accident
(( ) Morale Issues within the company
( ) Other
Explain in point form how these factors may have lead to the incident:_____

J. SUPERVISION

Determine from discussion with individual involved/witnesses/ and the involved employee's immediate supervisor:
( ) How planning/organization of tasks was undertaken
( ) How tasks were prioritized
( ) How delegation/assignment of task was undertaken
( ) What supervisors expectations were, and if these were realistic
( ) the amount of supervision provided
( ) Other

Explain point form how these factors may have lead to the incident:_____

K COMMUNICATION

Determine from interviews with those involved in the accident and their company's supervisory chain of command whether the following types of communications were adequate:

( ) Between departments
( ) Between shift and supervisor
( ) Between people
( ) Between supervisor and manager
( ) Between shifts
( ) Other
Explain in point form how these factors may have lead to the accident:_____

L. ANY OTHER FACTORS

Provide a description of any other factor not listed above that may have lead to the accident

SECT. 3 RECOMMENDED CORRECTIVE ACTIONS

A. CURRENT PROCEDURES /OR POLICIES:

Are there any current procedures and/or policies in SMX intended to prevent the accident, but didn't?

B. RECOMMENDED CORRECTIVE ACTIONS

List recommended corrective actions:
( ) New or modified operational instructions. Specify:
( ) New or modified company regulations. Specify:
( ) New or modified inspection schedules. Specify:
( ) New or modified engineering/maintenance/training manuals. Specify:
( ) New or modified inter-company communications procedures. Specify:
( ) Any other changes or proposed new instruction/regulation or policy document. Specify:

C. OTHER CORRECTIVE ACTIONS SUGGESTED

NOTE: This form has been adapted and amended from an example provided by the Boeing Airplane Company whose co-operation in granting permission to reproduce this item is hereby acknowledged. Boeing wishes it to be stressed that this form, (or any adaptation of it) is not designed or intended to be used in isolation but as part of a wider based system for accident investigation and follow up.

Signature:_____ Date:_____