Gap Analysis

Santa Maria Public Airport

Safety Management System

Submitted to:

Santa Maria Public Airport District

Submitted by:

Jacobs Consultancy

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I. INTRODUCTION

Background

In February 2007 the FAA issued Advisory Circular, AC 150/5200-37, *Introduction to Safety Management Systems (SMS) for Airport Operators*, to introduce the concepts of 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 Pubic Airport (SMX) by participating in the FAA pilot program.

As part of the pilot program, the SMPAD has retained the services of Jacobs Consultancy to provide consulting services to develop a Safety Management System (SMS) Program for SMX.

Objectives

The specific objectives and deliverables of the SMS development project include:

1. A Gap Analysis: The gap analysis will identify procedures, polices, documentation, and actions that the District needs to implement as part of its SMS that go beyond the current Part 139 requirements.
2. A Draft Plan: A draft of the complete SMS Manual and Program Plan.
3. The Final Plan: The final copy of SMS Manual and Program Plan ready for implementation by the District. The FAA's requirements for the SMS Manual and Program Plan are included in Appendix A.

This report addresses the Gap Analysis. Phase 2 of the SMS project will develop the SMS for SMX and document it in an SMS Manual and Program Plan.

Methodology

Jacobs Consultancy prepared the Gap Analysis based on:

- Relevant FAA documentation including:
  - Advisory Circular AC 150/5200-37
  - The Draft Statement of Work (SOW) for the SMS Airport Pilot Study
  - The Safety Management System (SMS) Pilot Study Participants Guides (April 6, 2007)
- Relevant SMX documentation;
- Selected interviews with SMX management and SMX tenants;
- International guidelines regarding SMS; and
- The consulting team's experience with the preparation of SMS for other airports.

Operations as SMX

Santa Maria Public Airport (SMX) is in Santa Maria, California, serving northern Santa Barbara County and the Central Coast of California. Currently SMX includes approximately 2,550 acres and two active runways. The primary runway 12-30 is 150 feet wide, 6,300 feet long. The crosswind runway 2-20 is 75 feet wide and 5,130 feet long and is used when RW 12-30 is not available.

In 2006, SMX handled 95,000 passengers and 64,000 aircraft movements. SMX is currently serviced by Allegiant Air with 5 weekly flights and Skywest Airlines with 5 daily flights. There are 206 General Aviation (GA) tenants, two FBO's and approximately 15 Aeronautical Service Firms working on the Airport Operating Area (AOA). Federal Agencies such as Customs and Border Protection, the TSA, and the US Forest Service are also present at the Airport.

Under Federal Aviation Regulation Part 139, SMX operates as a **Class I Airport** with air carrier service utilizing twin-engine aircraft with a seating capacity of 10 to 30 passengers, and jet aircraft with a seating capacity of 31 to 150 passengers. On occasion, the airport receives larger air carrier charter operations which uses Boeing 737 and McDonnell Douglas MD-80s.

The terminal building provides office space, baggage and ticket counters for the two airlines and four car rental agencies. There is a single hold-room that is being expanded and a newly constructed building addition for bag claim to meet the growing passenger demand. The District owns a 38,947 square foot hangar building that is leased exclusively to aviation related businesses. Additionally, Artic Air and Central Coast Aviation have constructed new hangers to support the off shore oil rigs and larger corporate and general aviation aircraft.

The District is extending the primary runway 12-30 to 8,000 feet to attract new airlines, longer range aircraft, aircraft servicing and repair firms such as Dassault Falcon Aircraft and provide improved service for its current tenants. This project will assist the District in its marketing efforts and continue growth of the airport's businesses.

Structure of the Gap Analysis

The Gap Analysis is structured to address the four elements of an SMS as outlined in the FAA's Advisory Circular. As well we have added a separate element for Safety Organization which the Advisory Circular described under Safety Policy and Objectives.

1. Safety Policies and Objectives
2. Safety Organization
3. Safety Risk Management
4. Safety Assurance
5. Safety Promotion

Under each of these five elements, the Gap Analysis addresses the FAA's detailed SMS Program content outlined in the SMS Pilot Study Participant Guide and the Draft Statement of Work.

More specifically for each element, the Gap Analysis:

1. Summarizes the FAA's SMS guidance documentation, international guidance material where appropriate and Jacob's Consultancy Team's SMS experience;

2. Describes what systems, policies and practices exist at SMX; and then

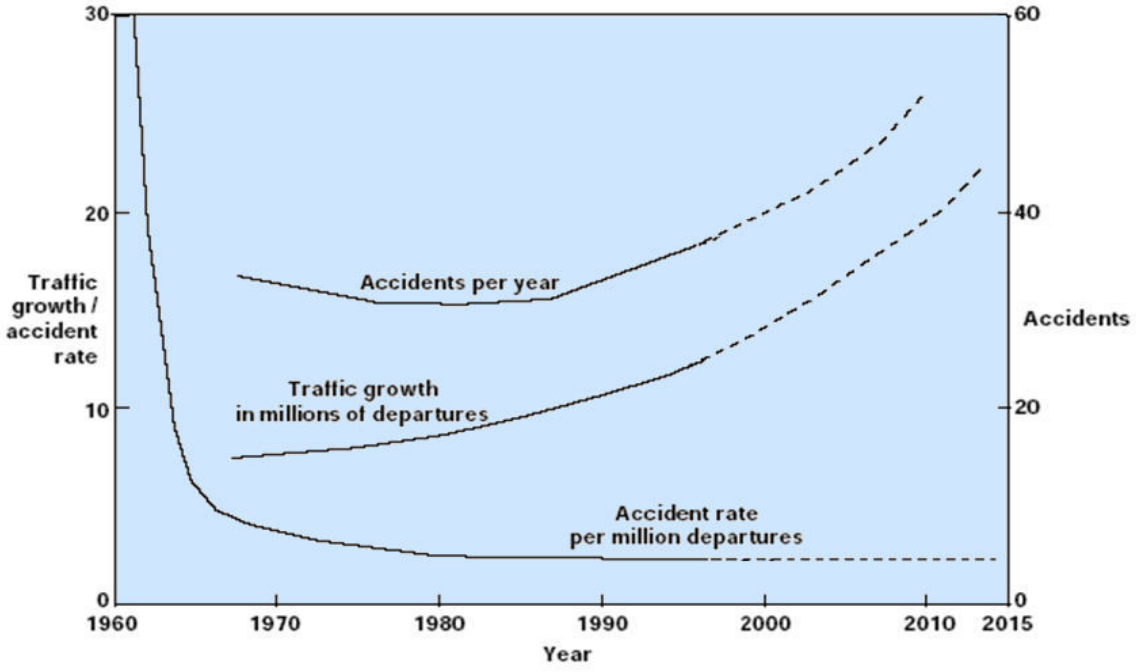
3. Identifies procedures, policies, objectives, organizational issues and documentation (i.e., Gaps) that need to be developed for SMS and how they will be addressed in the subsequent tasks to develop the SMS Manual and Safety Program Plan.

Intent of SMS

The intent of SMS is to address 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. Failures and errors will occur, in spite of best efforts to avoid them. Although major air disasters are rare events, less catastrophic accidents and 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 accident rate in the air transport industry has decreased dramatically between the early 60's and the mid 80's from 30 to near 2, per million departures. It could be easily argued that this rate was achieved from continuing efforts by the industry to make air travel a safe mode of transportation. But as the following diagram shows, between the mid eighties and now, we find an 80% increase in air traffic and a 73% increase in the number of accidents. Although the accident rate per million departures remains steady at 2, air travel safety as perceived by the public is likely to decline if traffic growth and accident rate per million departures remain the same. Air travel related accidents make instant worldwide news and there will be more and more reports even while maintaining a relatively low accident rate. Safety management when well in place within the industry will be a key factor in further reducing the accident rate and achieving actual and perceived improvement in aviation safety.



II. SAFETY POLICES AND OBJECTIVES

Key Features

The FAA SOW for SMS states that Safety Policies and Objectives should include:

- Written safety policy statement(s) and a description of how it is communicated to airport employees; and
- Identification and description of the airport safety goals.

The FAA Advisory Circular under Safety Policy indicates that management's commitment to safety should be formally expressed in a statement of safety policy that reflects the airport's safety philosophy and that is signed by Top Management.

Key attributes of the policy could also include the following:

- The commitment of senior management to implement SMS;
- States the airport's intentions, management principles and commitment to continuous improvement to safety at the airport;
- Is communicated to all employees;
- Is implemented at all levels of the airport;
- Confirms that safety is everyone's responsibility; and
- Recognizes that there will always be threats to safety and that the airport will provide the highest reasonable standard of safety. The Advisory Circular refers to a commitment to make safety the highest priority which may have a different meaning.

The Advisory Circular under Safety Objectives (section 2.2.2) does not address objectives but deals with the organization for safety. The Advisory Circular does refer to safety performance indicators and targets under Safety Assurance (section 2.4).

SMS guidelines, including the FAA Advisory Circular, give very little practical advice on safety goals or objectives. The terms "goals" and "objectives", as well as "targets" are frequently used interchangeably. The intent in the guidelines; nonetheless, is to have measurable indicators of safety.

Existing Policies and Objectives

SMPAD has an approved mission statement that states that SMX will "Provide a safe, friendly, attractive and economically sound Airport through integrity and efficiency". A safety policy related to SMPAD employee occupational health and safety is contained in the Injury and Illness Prevention Program but is not directly related to airside aviation safety.

SMPAD does not have a written safety policy endorsed by Senior Executive (Top Management) to indicate their commitment to aviation safety which is a key element of an SMS.

Gaps and Development Required

The mission statement does provide sufficient policy direction concerning aviation safety. Phase 2 of the SMS project will need to develop and document safety policies that should be endorsed by the Board.

Safety objectives are also required to allow for assessment of safety performance and developments at the airport. Safety objectives should be linked for example to such factors as:

- Safety hazards identified during inspections; e.g., type and quantity of FOD (Note: the airport's self-inspection program captures this information but does not systematically monitor trends in this information);
- Airside safety violations (number by class of violation);
- Aircraft bird strikes;
- Incursions of vehicles, aircraft, or pedestrians on movement areas;
- Number and type of accidents and incidents on the AOA and/or the controlled movement area involving air carrier aircraft and/or ground vehicles;
- Operable time of lighting systems;
- Number of aborted landings/takeoffs per year due to airfield hazards;
- Number of airside based employees who have received safety and SMS related training; and
- Number of safety hazards reported through non-punitive safety reports.

Safety policy statements and objectives will be developed during Phase 2 of the SMS pilot project.

The safety objectives will need to be included in the Airport General Manager's statement of objectives and then communicated to all of the organization. They should be no different from other organizational objectives in that they should be:

- Be specific and measurable;
- Be achievable and challenging; and
- Realized within a specific time frame.

III. SAFETY ORGANIZATION

Key Features

The FAA SOW for SMS describes the following requirement related to the safety organization.

- An organizational chart identifying the names and safety responsibilities of all key personnel, such as the following:
  - Top Management
    - Safety Manager
    - Department Heads/Managers
    - Established Safety Committees and Chairpersons

The Advisory Circular provides considerable guidance on how an airport should be organized for safety. The key features described in the Advisory Circular are as follows:

- SMS requires that Top Management (also referred to as Senior Management) in the organization, one with the authority to adequately control resources, be assigned SMS responsibilities.
- Defined safety authorities and responsibilities for all key personnel that are assigned to the airport.
- Identification within the system of someone responsible for administration of the overall SMS. Often, that one responsible person will be the Safety Manager. This person reports to the highest level of management to assure appropriate consideration of all reports, recommendations, and issues.
- At larger airports, operations may support the Safety Manager being a full-time permanent employee and in some cases having a support staff.
- The responsibilities of the Safety Manager are clearly defined along with identified lines of communication within the organization.
- Depending on the size and complexity of the airport's operation, it may be useful to establish a safety committee. The safety committee acts as a source of expertise for the Safety Manager and is chaired by the Safety Manager.

The SMS should also address how, and to what extent, 3rd party operators at the airport such as the airlines, fueling companies, and ground handlers are integrated into the airport SMS. ICAO has made very strong reference to the inclusion of 3rd parties at an airport. Ice's Safety Management Manual, Doc 9859 A/460, First Edition – 2006, chapter 18, – AERODROME OPERATIONS, states that:

> **Subsection 18.3.1**
>
> *(…) Within the framework of an aerodrome SMS, the aerodrome management must oversee the activities of all the service providers, tenants, contractors and others to ensure the safest and most efficient performance of the aerodrome.*

Subsection 18.3.8

Given the complexity of the factors creating risk potential at aerodromes, the aerodrome management must coordinate the activities of the diverse stakeholders at an aerodrome – often with conflicting expectations and priorities. The sharing of a common focus among the stakeholders, most of whom are employees of agencies other than the aerodrome authority, needs to be fostered. In addition, resource commitments from the airlines and other service providers must be obtained.

The FAA Circular does not address this organizational requirement to any extent. Third parties are major contributors to accidents at an airport and if they are not integrated into the airport's SMS, then the SMS may not be very effective. Yet at the same time, an airport does not have direct accountability for 3rd party operators. There are number of means that 3rd party operators can be included or participate in the airport SMS including:

- Through the vehicle operator permit system;
- Through the airport's self inspection programs;
- Through participation in Safety Committees, and
- New and revised airport tenant use and lease agreements.

Existing Policies, Practices and Systems

The SMPAD organizational structure for SMX is depicted in Exhibit III-1. The key positions that have a direct impact on airside aviation safety include:

- The Operations Supervisor;
- The Maintenance Supervisor;
- The Contract Control Tower; and
- The Santa Barbara County Fire Department.

The **Operations Supervisor** is responsible for the following activities (either directly or through contracted services) that have a direct impact on aviation safety:

- 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 (effective January 2008);

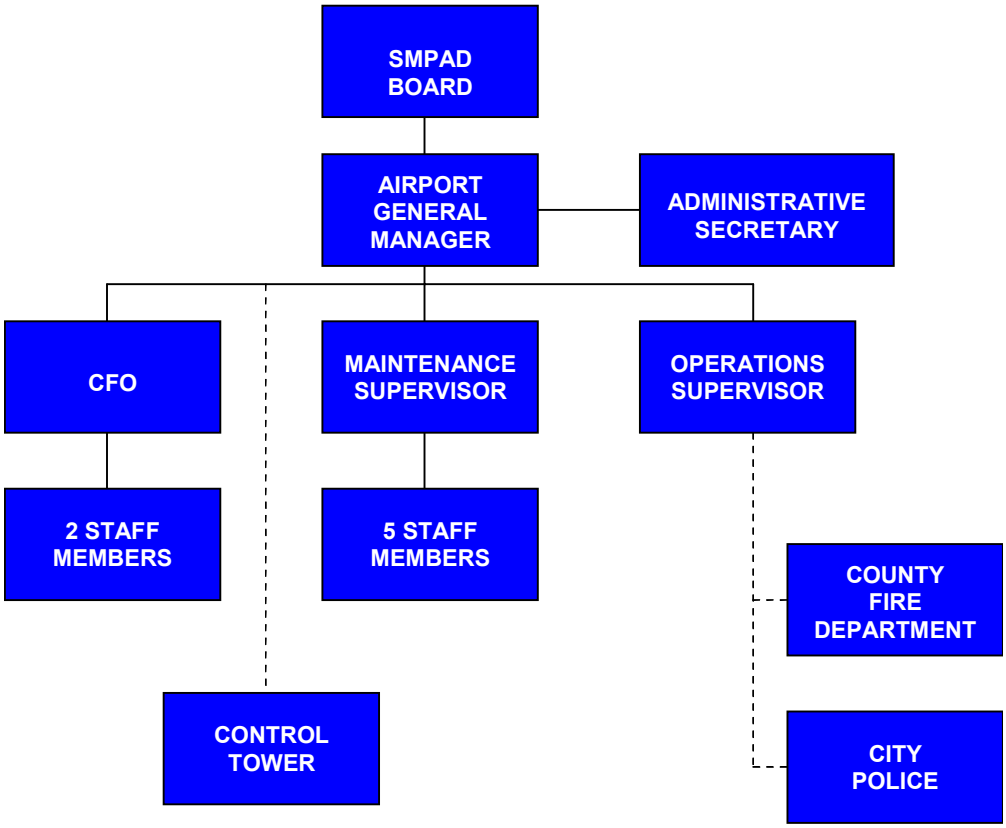


Exhibit III-1. SMPAD Organization Structure

- 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.

He 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 Bomar Security;
- Coordinating the City Police stationed at SMX; and
- Conducting security training seminars.

The **Maintenance Supervisor** and his staff have important responsibilities that impact aviation directly. These responsibilities include:

- 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; and
- Repairing and maintaining mobile and hand-held radios to assure constant and dependable communications.

The **Santa Maria County Fire Department** is responsible for providing ARFF training and operations at the airport according to FAA regulations. The Fire Department also responds to emergencies in the County. Based on the latest type of aircraft used at the Airport, the Airport has been designated as Category A for Aircraft

Rescue and Firefighting (ARFF). The Fire Department has one 1,500 gallon ARFF vehicle and one operator available at all times during operating hours of the airport.

SERCO is responsible for **Contracted Control Tower** operations at the airport in accordance with FAA regulations.

Airport Committees

SMPAD also has a number of committees that deal with a wide range of tenant, operations and related safety issues and as a means to discuss SMPAD plans and programs. The committees include:

- A quarterly GA Tenant Meeting; typically 20-30 GA pilots attend these meetings.
- A quarterly Operations Meeting comprising the Operations Supervisor, the Maintenance Supervisor, the Santa Barbara Fire Department and City Police Department.
- A quarterly Aeronautical Service Provider Meeting that includes the two FBOs and approximately 15 firms providing a wide range of aeronautical and other services at the airport.

Each meeting is chaired by the Airport General Manager and each meeting is rotated in a separate month from the other meetings.

Gaps and Development Required

SMPAD does not have an organizational structure defined specifically for addressing the requirements of an SMS such as an SMS Safety Manager and Top Management responsibilities for SMS. The Airport does of course have Supervisors that have defined responsibilities to ensure the safety of aviation operations.

Considering the size of SMX, particularly in terms of staff members, the Airport General Manager should be the senior manager responsible for SMS. He has the authority to control resources within the mandates set out by the SMPAD Board of Directors. As outlined in the ACM, the General Manager is the administrative officer of the Santa Maria Public Airport District with overall supervisory responsibility for the activities of the airport. He is responsible for the safe operation of aviation activities, maintenance and construction of all facilities, fulfillment of requirements of governmental agencies, preparation and supervision of the budget, management of physical properties and other administrative duties assigned by the Board of Directors of the Santa Maria Public Airport District.

The responsibilities of the Airport General Manager for SMS would include:

- Approval of the SMS;
- Approval of safety policy and goals;
- Periodic reviews and updates of the SMS, safety policy and goals; and
- Ensuring that financial and human resources required for proper execution of the SMS are available.

We would also recommend that the Board endorse and adopt the SMS and associated safety polices and goals once the SMS is developed.

Furthermore considering the airport's size, the Operations Supervisor should be made responsible for administering and implementing the SMS. The airport is too small to have a dedicated, independent safety manager. The Operations Supervisor is already carrying out many activities related to SMS including, for example:

- Maintaining and updating the ACM;
- Developing and monitoring the Wildlife Management and the Hazardous Materials Program;
- Conducting inspections of fueling operations and facilities;
- 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;
- Updating the Airport Emergency Plan and conducting emergency exercises and drills;
- Issuance of NOTAMS (Notice to Airmen);
- Receiving, reviewing and maintaining Airport Monthly Inspection Reports prepared by Maintenance Staff; and
- Ensuring badged employees are properly trained for the Airport Movement Area (AMA) and Security Identification Display Area (SIDA).

The role of the Operations Supervisor 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 in 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.

During the initial visit to SMX, the Jacobs Consultancy Team met with the FBOs, SkyWest Airline, SERCO and SMX staff. During those meetings, the role of an Airport Safety Committee was discussed as a means of integrating tenants and third parties into the SMS. Everyone interviewed indicated that they thought the concept of an Airport Safety Committee would be a useful mechanism to exchange information about aviation safety issues and to develop ways to improve safety where appropriate. It was felt that this Committee should include a representative from each FBO, each airline, the control tower; one or two representatives from the GA tenants, and one or two representatives of other airport tenants.

Development of the SMS in Phase 2 will need to consider who chairs the Airport Safety Committee: the Operations Supervisor responsible for SMS.

Development of the SMS in Phase 2 will further define the role of this committee and confirm its composition. At this stage, we would recommend that the Airport General Manager chair this committee. This committee could also deal with security issues and therefore be named the Airport Safety and Security Committee.

Phase 2 will also:

1. Confirm the Airport General Manager's responsibilities for SMS;
2. Confirm and clarify where required that responsibilities of the Operations Supervisor in administering and implementing the SMS.
3. Clarify where required the safety responsibilities of the Maintenance Supervisor.

With respect to integration of tenants into the SMS, SMX already has in place a vehicle operator permit system and a self inspection program that will be described in a subsequent section. With these in place and with the proposed Airport Safety Committee, we conclude that these measures will be sufficient.

IV. SAFETY RISK MANAGEMENT

Key Features

The FAA SOW for SMS describes the following requirements related to safety risk management (SRM).

- Description of the safety risk management process, including application of "The Five Phases of SRM (safety risk management)," as discussed in AC 150/5200-37;
- Guidance on the use of SRM and trend analysis;
- Defined process for documenting the results of SRM, including a description of how documents will be stored, i.e., electronic or paper; and
- Descriptions of how top management will follow up on SRM to ensure safety mitigation strategies are appropriate.

The FAA's Advisory Circular indicates that safety risk management is a fundamental component of SMS. The principal steps in the safety risk management (SRM) process include: identification of a potential hazard, analysis of the risk, evaluation of the risk and development of an action plan to mitigate the risk if necessary.

The Advisory Circular goes on to say that SRM should identify hazards to failures of the system (i.e., operations, equipment, people, and procedures). Possible sources of system failure could include:

- 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); and
- External services (example: ramp traffic by Fixed-Base Operator (FBO) or law enforcement vehicles).

Existing Practices and Systems

SMX currently does not have a formal Safety Risk Management process.

Gaps and Development Required

The Safety Risk Management (SRM) process will need to be developed and documented during Phase 2 of the project.

We will develop a practical approach to SRM appropriate to the size of SMX that will be qualitative in nature and understandable by airport employees. For example, we will develop simple paper-based forms for conducting a safety assessment and a simplified risk evaluation matrix for summarizing the results of an assessment. The Jacobs Team will provide training to employees of the airport in SRM at the end of this SMS development project.

V. SAFETY ASSURANCE

Key Features

The FAA SOW for SMS describes the following requirements related to safety assurance:

- A plan and description of employee non-punitive reporting systems, existing and planned.
- A description of the airport quality management and/or risk management program (if applicable) and its integration into the airport SMS.
- Description of a plan to integrate apron safety management into the airport SMS. (The FAA's review of the plan will be limited to measures for preventing accidents or incidents involving aircraft.) The plan could include the following:
    a. Description of current apron safety management practices, such as reporting requirements to the National Transportation Safety Board (NTSB), Flight Standards, or the Occupational Safety Health Administration (OSHA).
    b. An explanation of how current apron safety management practices meet the intent of SMS. This could include the safety plans and practices of tenants and operators at the airport, which should complement the airport SMS.
- A detailed method to document self-auditing processes and their findings. Self-auditing may be part of the airport self-inspection process. If it is, explain how the self-inspection process addresses systems safety, i.e. if the self-inspection program identifies a hazard on the airport it should determine the risk and document the process for follow-up.
- A detailed method to document self-inspection reviews, analysis, and findings.
- Process to document and review lessons learned from within the organization.

The Advisory Circular states that safety assurance includes self-auditing, external auditing and safety oversight. According to the Advisory Circular safety oversight can be achieved through auditing and surveillance practices.

The Advisory Circular also says that in addition to the airport operator's existing responsibilities for self-inspection and correction of discrepancies under 14 CFR Part 139, an effective airport SMS **audit program** should:

- Develop identified safety performance indicators and targets (Note: Jacobs Consultancy believes indicators and targets should be addressed as part of Safety Objectives).
- Monitor adherence to safety policy through self-auditing;
- Allocate adequate resources for safety oversight;
- Solicit input through a non-punitive safety reporting system;
- Systematically review all available feedback from daily self-inspections, assessments, reports, safety risk analysis, and safety audits;
- Communicate findings to staff and implement agreed-upon mitigation strategies (14 CFR Part 139 already requires this for actions covered by that regulation); and

- Promote integration of a systems approach to safety into the overall operation of the airport.

The Advisory Circular also provides further guidance on non-punitive safety reporting, self-auditing and safety performance monitoring. This guidance material is provided below and generally follows international SMS guidance material.

- "The SMS should include a visible non-punitive safety reporting system supported by management. The safety reporting system should permit feedback from personnel regarding hazards and safety-related concerns. The SMS should use this information to identify and address safety deficiencies. The safety reporting system may also identify and correct non-conformance to safety policy."

- "Safety auditing is a core safety management activity. Similar to financial audits, safety audits provide a means for systematically assessing how well the organization is meeting its safety objectives. Senior Management may choose to have an external agency audit the system (e.g., by a consultant or another airport operator). The safety audit, together with other safety oversight activities, provides feedback to managers concerning the overall safety performance of the organization".

- "Safety performance monitoring validates the SMS, confirming the organization's safety objectives. Through regular review and evaluation, management can pursue continuous improvements in safety management and may revise safety objectives to ensure that the SMS remains effective and relevant to the organization's operation."

Existing Practices and Systems

The Operations Supervisor conducts quarterly inspections of fueling facilities of each of the tenant that provides fueling services at the Airport. Inspections are conducted on all fuel storage areas, self-fuel farms and fuel trucks in compliance with FAR 139.321.

The current ACM does not appear to refer to inspections of fueling operations. FAA Advisory Circular 150/5200-18C, "Airport Self-Inspection" refers to daily inspection of fueling operations. This may have been an oversight in documentation given that the Airport Operations Manager has referred to a Mobile Fueler Fire Safety Inspection Report (Appendix D-2 of the approved ACM). [This issue needs to be discussed with the Airport Supervisor.]

SMPAD has a self-inspection program in place. Maintenance Staff under supervision of the Maintenance Supervisor has the primary responsibility for conducting daily, weekly and monthly inspections of runways and taxiways, windsocks, the airport beacon, bird hazards, gates and fencing, vegetation growth, lighting and the standby generator. Maintenance staff notes any deficiencies and corrective action taken on a prescribed form. The inspection report although completed daily by Maintenance is forwarded at the end of each month to the Operations Supervisor. The forms used for conducting and reporting on inspections, deficiencies and corrective action are provided in Appendix B.

Bomar Security is responsible for conducting inspections of the movement area, particularly lighting, during nighttime hours. These inspections are conducted from the perimeter road. Bomar is not permitted to drive on the taxiways and runways. Airport Management should review AC 150/5200-18C which suggests more detailed inspection forms than currently used. These more detailed forms are useful in providing specific criteria that inspectors should be looking for.

The ACM also states that inspections will be done:

- During and after construction or maintenance activity;

- During rapidly changing meteorological conditions;

- Immediately after an incident or accident; and
- After any other unusual condition on the airport.

Conditions that could affect air carrier operations are disseminated to the air carriers via NOTAMS.

SMX does not have a separate Apron Safety Plan. Instead it has developed a new Airport Driver Safety Training Guide as part of its training program as described subsequently. With the relatively low volume of traffic at the airport, we conclude that a separate Apron Safety Plan is not needed.

Gaps and Development Required

Although SMX has a self-inspection program in place, the program does not address system safety as outlined previously under Safety Risk Management. Self-inspection deals primarily with ensuring compliance with detailed FAA standards but can form a key component of safety assurance; for example, trend analysis of reported deficiencies.

Gaps that will require development in Phase 2 to meet the FAA's detailed guidance material referred to previously include:

- Non-punitive safety reporting;
- Systematic reviews of feedback from self-inspection, assessments, reports, safety risk analysis and audits which will allow the monitoring of adherence to safety policy and the monitoring of safety performance indicators related to safety objectives;
- Auditing; and
- Safety oversight which we would define as regular Senior Management reviews and evaluations of the implementation of safety policies, progress to meeting safety objectives and lessons learned as means to continuous improvements in safety management.

The FAA Advisory Circular says that non-punitive reporting systems should permit feedback from personnel regarding hazards and safety-related concerns. However, if it is to apply only to *hazards and safety-related concerns*, then we question why does it need to be *non-punitive?* Our understanding is that a non-punitive system is a way to safeguard employees from disciplinary action when reporting incidents and accidents in which they are directly or indirectly involved. Deliberate or unlawful actions are excluded of course. This is consistent with a *systematic, explicit, and comprehensive approach for managing safety risk (AC, Paragraph 3).* We have discussed this issue with FAA and have concluded that incidents and accidents should be included.

The development of the non-punitive reporting system should also consider whether tenant employees should be part of this system, or whether the system should be limited to SMPAD employees. We have discussed this issue with the FAA and they have indicated that each airport is unique and should set up practices particular to their airport.

VI. SAFETY PROMOTION - TRAINING

Key Features

The FAA SOW for SMS describes the following requirements related to safety promotion, and training specifically.

- A plan for employee SMS indoctrination and training. SMS indoctrination training should provide an outline of proposed curriculum and resources.
- Documented process to identify training requirements for systems safety.
- A plan to validate training effectiveness and the process to gain training feedback, including useable metrics.

The Advisory Circular in addition to the above states that training and education should include:

- Initial (general safety) job-specific training;
- Recurrent safety training;
- Training that includes human factors and organizational factors ; and
- A training file for each employee to identify and track employee training requirements and verify that the personnel have received the planned training.

Existing Policies, Practices and Systems

The key mechanism for training of airport maintenance and operations employees has been 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 who has been at the airport for approximately one year has recently developed a new Airport Driver Training Guide and is starting to formally implement the associated program. 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.

Plans are that new airport employees who need to drive on the AOA would review the Airport Driver Training Guide as well FAA videos on airport hazards, wildlife, hazmat and other FAA Part 139 subjects. New employees would be required to pass the quiz before being issued a security badge and would then be given two months OJT training before operating alone on the AOA. Plans include having all airport employees who drive on the

AOA take annual recurrent driver training and testing as described above. It should be noted that there is very little turnover in airport employees operating on the AOA.

The Airport Driver Training Guide will also be provided to the airlines and FBOs. All of their new employees who drive on the AOA will be required to pass the quiz. Eventually all applicable employees would be tested annually.

GA pilots will 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 hangar. 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.

Gaps and Development Required

As detailed above, SMPAD's focus in the past has been OJT training to new airport employees operating airside augmented with FAA airside safety videos. Refresher training has also been provided by the Maintenance Supervisor. The Operations Supervisor has recently developed a new Airport Driver Training Guide that addresses airfield safety. Plans are underway to apply this training material more formally for new employees of the Airport, airlines and FBOs that need to drive on the AOA. Recurrent training is also being planned.

Given that there is no SMS in place, there is a Gap in SMS requirements for SMS indoctrination and training. Nor is there any training that addresses human and organizational factors stipulated under Key Features above.

VII. SAFETY PROMOTION - COMMUNICATIONS

Key Features

The FAA SOW for SMS describes the following requirements related to safety promotion, and specifically for communications:

- A defined process to communicate safety policies and objectives throughout the organization including examples of how information will be communicated and any processes for follow-up.
- Procedures to promote safety awareness and participation in non-punitive reporting systems. Documented plan for training and education, safety communication, competency, and continuous improvement processes. [applicable to number of SMS components and will be addressed under each component]

The Advisory Circular essentially reiterates the requirements above but also provides some examples including:

- Safety seminars;
- Safety letters, notices and bulletins;
- Safety lessons-learned;
- Bulletin boards, safety reporting drop boxes, and electronic reporting through web sites or email;
- A method to exchange safety-related information with other airport operators through regional offices or professional organizations; and
- In the future, voluntary posting of safety-related information on an existing FAA web-based safety reporting system currently being used by air operators.

Existing Policies, Practices and Systems

Although SMPAD has a program for employee occupational health and safety, it does not have a formal promotional airside safety program as envisioned under SMS. SMPAD also does not have a non-punitive reporting system for aviation safety.

Gaps and Development Required

Phase 2 of the SMS will develop an aviation safety promotion program.

Appendix A
Draft Statement of Work
FAA SMS Airport Pilot Study
Requirements for the Final Plan

"The contents and scope of the SMS Manual and program plan should include or address the following:"

1. Written safety policy statement and description of how it is communicated to airport employees.
2. Identification and description of the airport safety goals.
3. A plan for employee SMS indoctrination and training. SMS indoctrination training should provide an outline of proposed curriculum and resources.
4. Documented process to identify training requirements for systems safety.
5. A plan to validate training effectiveness and the process to gain training feedback, including useable metrics.
6. A defined process to communicate safety policies and objectives throughout the organization. Include examples of how information will be communicated and any processes for follow-up.
7. A plan and description of employee non-punitive reporting systems, existing and planned.
8. An organizational chart identifying the names and safety responsibilities of all key personnel, such as the following:
    - Top Management
    - Safety Manager
    - Department Heads/Managers
    - Established Safety Committees and Chairpersons
9. Description of the safety risk management process, including application of "The Five Phases of SRM (safety risk management)," as discussed in AC 150/5200-37, *Introduction to Safety Management Systems for Airport Operators.*
10. Guidance on the use of SRM and trend analysis.
11. Defined process for documenting the results of SRM, including a description of how documents will be stored, i.e., electronic or paper.
12. Description of how top management will follow up on SRM to ensure safety mitigation strategies are appropriate.
13. A description of the airport quality management and/or risk management program (if applicable) and its integration into the airport SMS.
14. Description of a plan to integrate apron safety management into the airport SMS. (The FAA's review of the plan will be limited to measures for preventing accidents or incidents involving aircraft.) The plan could include the following:
    - A description of current apron safety management practices, such as reporting requirements to the National Transportation Safety Board (NTSB), Flight Standards, or the Occupational Safety Health Administration (OSHA).
    - An explanation of how current apron safety management practices meet the intent of SMS. This could include the safety plans and practices of tenants and operators at the airport, which should complement the airport SMS.
    -
15. A detailed method to document self-auditing processes and their findings. Self-auditing may be part of the airport self-inspection process. If it is, explain how the self-inspection process addresses systems safety, i.e.

if the self-inspection program identifies a hazard on the airport it should determine the risk and document the process for follow-up.

16. A detailed method to document self-inspection reviews, analysis, and findings.
17. A description or plan to integrate the tailored SMS program plan into the overall operation of the airport.
18. Documented plan for training and education, safety communication, competency, and continuous improvement processes.
19. Procedures to promote safety awareness and participation in non-punitive reporting systems.
20. Process to document and review lessons learned from within the organization.
21. Schedule for implementation and anticipated associated costs.

Appendix B
Inspection Checklists

Inspector's Initials																															
Day of Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Daily																															
R/W & T/W:																															
Debris																															
Lighting																															
Excess water																															
BEACON OPERATION																															
RPM (12)																															
BIRD HAZARD																															
WIND SOCKS (6)																															
GATES & FENCING																															
WEEKLY																															
R/W & T/W Surface																															
Edges																															
AIRLINE RAMP LIGHTS																															
R/W & T/W LIGHTS:																															
Vegetation growth																															
Cleanliness of Lenses																															
OBSTRUCTION LIGHTS																															
GENERATOR																															
Prestart check																															
1 hour load test																															
MONTHLY																															
WINDSOCKS																															
Freedom of motion																															
Condition of fabric																															
ARFF EQUIP. CHANGE																															
NEW OBSTRUCTIONS																															
R/W & T/W MARKINGS																															

Note: Write "OK" adjacent to those items that do not require attention.
Write"R" adjacent to those items that require attention and log on reverse side
Write "W" adjacent to those items for which a Maintenance Request is issued and log on reverse side.

Date:____/______/20_____ Description of problem: Corrective Action Taken: Intials:	Date:____/______/20_____ Description of problem: Corrective Action Taken: Intials:	Date:____/______/20_____ Description of problem: Corrective Action Taken: Intials:	Date:____/______/20_____ Description of problem: Corrective Action Taken: Intials:
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SANTA MARIA PUBLIC AIRPORT

AIRPORT INSPECTION REPORT INSTRUCTIONS

DAILY:

Runways and Taxiways — Debris. Check all runways and taxiways used by the airlines. Be alert for debris (screwdrivers, bolts, rocks, litter, etc.) and remove anything observed. Be certain that no equipment is parked where it might be struck by taxiing aircraft.

Lighting. Check every runway and taxiway light to ascertain that all are functioning normally. Be especially alert for defective lighting during inclement weather. Install new lamps and lenses as required.

Excess Water (Inclement Weather). Periodically check all runways and taxiways to ascertain that there are no puddles in excess of one—half inch deep or which obscure markings. Also be alert to potential flooding from blocked storm drains. Check to see that edges of maneuvering surfaces are not being eroded or undermined.

Beacon Operation. Check beacon RPM (12).

Windsocks. Ascertain that all six windsocks are functioning normally. Check every light of the lighted windsock to ascertain that all are functioning normally.

Gates and Fencing. Ascertain that all fencing is in good repair and all gates functioning normally.

WEEKLY:

Runways and Taxiways — Surfaces. Ascertain that all maneuvering surfaces meet the requirements of FAR Part 139 Certification Manual (Paved Areas).

Runways and Taxiways — Edges. Ascertain that all edges of maneuvering surfaces meet the requirements of FAR Part 139 Certification Manual (Paved Areas).

Airline Ramp Lights. Determine that all are operating normally. Fuel Farm Lights. Determine that all are operating normally.

Runway and Taxiway Lights. Check for obstructing vegetation, cleanliness of lenses. Check photocells.

Obstruction Lights. Determine that all are operating normally.

Windsocks. Check for freedom of motion and condition of fabric.

Standby Generator. Perform operational load check.

SANTA MARIA PUBLIC AIRPORT

AIRPORT INSPECTION REPORT INSTRUCTIONS

MONTHLY:

ARFF Equipment Changes. Check with Station 21 to determine that there have been no changes in ARFF protection.

Fuel Storage Facilities and Fuel Trucks. Check fuel farm and fuel trucks to determine that all security devices are in place (fencing, padlocks, signing). Check for fire hazards.

New Obstructions. Check area adjacent to airport for any new obstructions that may violate FAR Part 77.

Runway and Taxiway Markings.

Check for deterioration and visibility.

Bimonthly, quarterly, semiannually, biennially scheduled and unscheduled maintenance are conducted in accordance with AC 150/5340-26 series.