SMS - Safety Management System Manual

Travis County

Manual Revision: 0

Manual Revision Date: 2020-02-14

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1. PREFACE

1.1. Accountable Executive Statement

At STAR Flight, safety is our number one core value. We are uncompromising in our commitment to the health and safety of our employees and community. We will continually improve our processes, demonstrate leadership, and promote comprehensive safety. We will require individual accountability, expect all employees to adhere to our safety standards, and actively participate in and support the advancement of our health and safety practices. Safety is the responsibility of all employees, including both top management and the individual line staff employee. Everyone is responsible for achieving zero serious accidents or injuries resulting in a SAFE day, a SAFE tomorrow, a SAFE year, and a SAFE career.

Providing safety leadership is a fundamental part of our organization and we will require individual accountability. STAR Flight is committed to being a leader in safety training and keeping our employees informed about the safety and health of our work as well as current safety issues, rules, and regulations.

It is the policy of STAR Flight to:

- Maintain a safe and healthy workplace for all employees in compliance with all applicable laws and regulations.
- Promote a positive attitude towards safety.
- Establish safety and health objectives for all levels of management and employees.
- Commit appropriate and sufficient resources to protect and support STAR Flight safety efforts including providing technical support for our crews.
- Provide management leadership and require all employees to take responsibility and ownership for safety, including bringing the attitude that “I am individually responsible for safety” to the job each and every day.
- Ensure that each employee understands that they have the obligation to stop a job/task to prevent an unsafe incident from occurring.
- Assure compliance with all STAR Flight safety, health, and security programs and practices.
- To provide industry leading training to our employees to better educate them how to comply with those policies as well as promote a culture of continuous improvement and commitment to safety and training.
- Regularly review and evaluate safety, health, and security programs, procedures, and practices to assure that they are effective and up to date.
- Assure timely and thorough reporting and investigation of all incidents including the identification of causal factors and the establishment of effective corrective actions.

STAR Flight is committed to setting a new standard for our industry and being the safest, most stable, and most rewarding place to work for the benefit of all of our employees and the communities in which we live and work. Together, we will THINK, COMMUNICATE, and WORK SAFELY, every minute, every hour, and every day.

Chuck Spangler

Program Director

Travis County STAR Flight

1.2. General

A Safety Management System (SMS) is utilized by Travis County in accordance with guidance furnished in the ICAO Safety Manual (Doc 9859) and FAA Advisory Circular (AC) 120-92b, Safety Management Systems for Aviation Service Providers, dated 08 January 2015.

1.3. Objectives

While the Safety Management System is overseen and administered by the Safety Officer, it is applicable to all personnel in the organization. The SMS provides an effective means of safety communication between managers and line personnel, and clearly outlines the company's intentions with respect to management principles, aspirations, and operational safety. The ultimate objective is to establish a path of continuous improvement in all aspects of aircraft utilization and maintenance.

1.4. Confidentiality

All information contained in this manual is proprietary information and is disclosed in confidence. It is the property of Travis County and shall not be used, disclosed to others, or reproduced without the expressed written consent of the operator.

1.5. Scope of the SMS and References

The Travis County Safety Management System (SMS) applies to all operating divisions, subsidiaries and entities within Travis County. The main focus of this manual is based upon the scope definition outlined in the following Advisory Circulars, Manuals, Standards, and Recommended Practices. Certain manual sections and paragraphs will be highlighted with conformance guidance given the following standards and references:

- Federal Aviation Administration (FAA) - Advisory Circular AC 120-92b; Safety Management Systems for Aviation Service Providers
- US Federal Code of Regulation Title 14, Part 5, Referenced in support of the FAA SMS Voluntary Program (SMSVP). Per FAA Order 8900.1 Safety Management Systems = [§ 5.x]
- International Civil Aviation Organization (ICAO) - Document 9859; Safety Management Manual
- ICAO Annex 19, Safety Management
- Occupational Safety and Health Administration (OSHA) Standards - 29 CFR Part 1910.2

This SMS Manual is maintained as a manual suite and sets forth instructions and guidance to all personnel regarding their responsibilities, authorities and the proper performance of duties as they pertain to the company’s Safety Management System. Additional programs which support the SMS are hereby incorporated by reference, and are maintained and revised as a manual appendix and or separate cover:

- Travis County Risk Management Policy
- OSHA Injury and Illness Prevention Program (IIPP) – as required by state and future Federal

requirements
- Internal Evaluation and Quality Audit Management Program (IEP)
- Emergency Action Plan (EAP)
- Travis County - FAA Aviation Safety Action Program (ASAP) – when implemented
- Travis County - Aircraft Data Monitoring and Management Program – when implemented

1.6. Cross Reference Documents

Manuals or SOPs of the company that contain relevant details of the SMS elements or processes applicable may include the following:

1. General Operations Manual
2. Safety Management Manual
3. Training Manual
4. Employee Handbook
5. Emergency Response Plan
6. Standard Operating Procedures

1.7. Definitions

- **Aircraft Accident -** An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which:
  - A person is fatally or seriously injured as a result of: being in the aircraft; or direct contact with any part of the aircraft, including parts which have become detached from the aircraft; or direct exposure to jet blast (except when the injuries are from natural causes, self the areas normally available to the passengers or crew); or,
  - The aircraft sustains damage or structural failure which: adversely affects the structural strength, performance or flight characteristics of the aircraft and would normally require major repair or replacement of the affected component (except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents, or puncture holes in the aircraft skin); or,
  - The aircraft is missing or is completely inaccessible.
- **Acceptable Level of Safety** - No further action needs to be taken for a risk that has been reduced to a level that is as low as reasonably practicable.
- **Accountable Executive –** A single identifiable person who, irrespective of other functions, satisfies the following:
  1. Is the final authority over operations authorized to be conducted under the certificate holder's certificate(s)
  2. Controls the financial resources required for the operations authorized to be conducted under the certificate holder's certificate(s)
  3. Controls the human resources required for the operations authorized to be conducted under the certificate holder's certificate(s)
  4. Retains ultimate responsibility for the safety performance of the operations conducted under the certificate holder's certificate(s).
- **FDM (Flight Data Monitoring)** - Operated under ICAO Annex 6, FDM is a reactive safety activity that records and analyzes flight parameters of eventful flights. It attempts to identify and remove potential hazards before they lead to accidents. Also known as FDA (Flight Data Analysis) and FOQA (Flight Operations Quality Assurance).
- **Hazard** - Per ICAO Standards, Hazard is a condition, object or activity with the potential of causing injuries to personnel, damage to equipment or structures, loss of material, or reduction of ability to perform a prescribed function.
- **Hazard Register** - A place for a company to list all hazards associated with their operation.
- **Just Culture** - A working environment in which all employees are encouraged to report safety concerns, conditions, or events that could or could have led to injury, damage, or other undesirable consequence. This includes the reporting of mistakes and errors, whether committed by the reporter or another person. Just Culture does not, however, excuse an individual from the consequences of gross negligence, willful misconduct or unlawful acts.

- **Risk –** The composite of predicted severity and the likelihood of the potential effect of a hazard.
- **Risk Control –** A means to reduce or eliminate the effects of hazards.
- **Safety Assurance –** Processes within the SMS that function systematically to ensure the performance and effectiveness of safety risk controls and that the organization meets or exceeds its safety objectives through the collection, analysis, and assessment of information.
- **SMS (Safety Management System)** - An organized approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.
- **Safety Objective –** A measurable goal or desirable outcome related to safety.
- **Safety Performance –** Realized or actual safety accomplishment relative to the organization's safety objectives.
- **Safety Policy –** A documented commitment to safety, which defines the operator's safety objectives and the accountabilities and responsibilities of its employees in regard to safety.
- **Safety Promotion –** A combination of training and communication of safety information to support the implementation and operation of an SMS in an organization.
- **Safety Risk Management –** A process within the SMS composed of describing the system, identifying the hazards, and analyzing, assessing, and controlling risk.
- **SPI (Safety Performance Indicator) –** A pre-defined measure or metric that the organization selects in order to monitor the level of safety performance of the SMS over a period of time. SPI's enable the organization to measure and demonstrate the effectiveness of the SMS.

1.8. Regulation Cross Reference Table

14 C.F.R. Reference	SMS Manual Policies
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5.3 General Requirements	Not Applicable
5.5 Definitions	1.7 Definitions
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5.23 Safety Accountability and Authority	3.2 Duties, Accountabilities, and Qualifications
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5.27 Coordination of Emergency Response Planning	4.3 Emergency Response Plan
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5.55 Safety Risk Assessment and Control	5.2 Safety Risk Management Process 5.2.1 Risk Assessment Matrix 5.2.7 Risk Mitigation Process 5.2.10 Final Risk Assessment
Subpart D - Safety Assurance	
5.71 Safety Performance Monitoring and Measurement	6.1 Safety Performance Monitoring and Measurement
5.73 Safety Performance Assessment	6.2 Safety Performance Assessment

5.75 Continuous Improvement	6.2.4 Continuous Improvement
Subpart E - Safety Promotion	
5.91 Competencies and Training	7.2 Safety Management System Training and Education
5.93 Safety Communication	7.3 Safety Communication
Subpart F - SMS Documentation and Recordkeeping	
5.95 SMS Documentation	9.1.1 SMS Documentation Development and Maintenance Process
5.97 SMS Records	9.2 SMS Outputs 9.3 Training Records 9.4 Safety Meeting Minutes

2. COMPANY AVIATION PROFILE

2.1. Physical Address

Corporate Office:

Travis County
700 Lavaca St.
Austin, TX 78701

Hangar Address:

Travis County
Kristin E. McLain Building
7800 Old Manor Rd.
Austin, TX 78724

2.2. Key Personnel

The following are key Flight Department personnel:

Program Director
Name: Chuck Spangler
Cell: 512-994-8994
Email: chuck.spangler@traviscountytx.gov

Director of Operations
Name: Craig Hilzendager
Cell: 605-261-3748
Email: craig.hilzendager@traviscountytx.gov

Chief Pilot
Name: Mark Parcell
Cell: 512-633-0951
Email: mark.parcell@traviscountytx.gov

Assistant Chief Pilot
Name: Taylor Petty
Cell: 512-944-2349
Email: taylor.petty@traviscountytx.gov

Director of Maintenance
Name: Frank Veliz
Cell: 512-671-0473
Email: frank.veliz@traviscountytx.gov

Safety Officer
Name: Joe LeBrecque
Cell: 254-290-3938
Email: joe.lebrecque@traviscountytx.gov

Chief Medical Supervisor
Name: Patrick Phillips
Cell: 512-585-5731
Email: patrick.phillips@traviscountytx.gov

Chief Clinical Supervisor
Name: Howard Polden
Cell: 512-720-9046
Email: howard.polden@traviscountytx.gov

2.3. Training Vendor(s)

FAR Part 142 Approved Training Vendor(s):

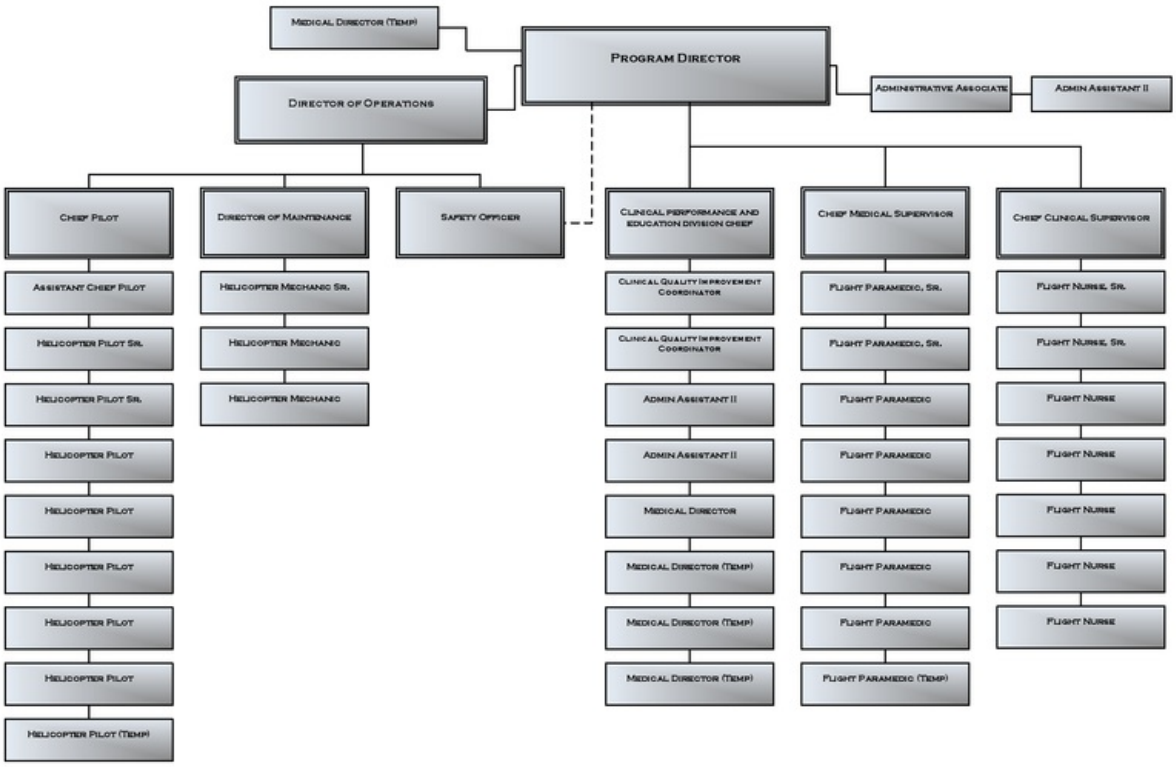
- Leonardo S.p.A. - Helicopters. UGAW

Supplemental Training Providers:

-

3. ORGANIZATION and STRUCTURE

3.1. Aviation Organization Chart/Table



3.2. Duties, Accountabilities, and Qualifications

[14 CFR 5.25(a) & (c)]

The Accountable Executive, identified above, is ultimately responsible for the safety performance of all aspects of Travis County.

The following are the duties, authorities and accountabilities of the assigned management and operating personnel of Travis County and the qualifications required to hold those positions.

3.3. Personnel Authority

All personnel in all job categories have the authority to carry out their assigned duties and responsibilities, including their safety management tasks, with the appropriate coordination with other company personnel, as applicable.

The following are the levels of management with authority to make decisions regarding safety risk tolerability:

1. For Low risks, supervisors and above may decide.
2. For medium risks, managers and above shall decide.
3. For high risks, directors and above shall decide if the risk level is tolerable. If any risk is determined to be medium or high, mitigation must be applied to reduce the risk to an acceptable level, but in no case will an activity be conducted if the risk level, after mitigation is applied, is determined to be high.

3.4. Accountable Executive

The Program Director will provide the resources, both human and financial, to enable the aviation organization to effectively develop and maintain a Safety Management System.

Key Roles and Responsibilities:

1. Is the final authority over operations authorized to be conducted under the operating certificate(s);
2. Has the ultimate accountability for corporate safety showing evidence of corporate commitment to safety from the highest organizational levels;
3. Develops and signs the Safety Policy, and regularly reviews it to ensure it remains relevant and appropriate to the organization's operations;
4. Identifies the levels of management with authority to make decisions regarding safety risk acceptance;
5. Communicates the Safety Policy throughout the organization;
6. Provides a clearly enunciated safety philosophy, with supporting corporate policies, including a nonpunitive policy for disciplinary matters;
7. Defines corporate safety goals, with a management plan for meeting these goals;
8. Develops well-defined roles and responsibilities with specific accountabilities for safety that are published and available to all personnel involved in safety;
9. Establishes a requirement for an independent Safety Officer;
10. Supports a demonstrable evidence of a positive safety culture throughout the organization;
11. Commitment to a safety oversight process which is independent of line management;
12. Develops and maintains a system of documentation of those business policies, principles, procedures and practices with safety implications;
13. Controls human and financial resources required by the organization;
14. Conducts regular review of safety improvement plans;
15. Conducts a formal safety review processes;
16. Ensures that the Safety Management System is properly implemented and performing in all areas of the organization;
17. Regularly reviews the safety performance of the organization and directs actions necessary to address substandard safety performance; and
18. Retains ultimate responsibility for the safety performance of the operations conducted under the certificate holder's certificate.

3.5. Director of Operations

The Director of Operations, or her/his designee, shall be accountable for day-to-day management of flight crews, dispatch / communications centers, and is responsible for establishing and maintaining flight operations policies and procedures that are designed to deliver operational excellence while assuring regulatory compliance.

Reports To: Program Director

Accountabilities and Duties: Refer to the General Operations Manual for compliance aspects of operational accountabilities and duties.

Key SMS Responsibilities: Promoting and ensuring the following:

1. Coordinate implementation, maintenance and integration of the SMS throughout the organization;
2. Facilitate hazard identification and safety risk analysis;
3. Monitor the effectiveness of safety risk controls;
4. Assure safety promotion throughout the organization;
5. Regularly report to the Accountable Executive on the performance of the SMS and on any need for improvement;
6. Professional leadership development and coaching skills;
7. Collaborative decision making (internal constituents and external regulators);
8. Change management and strategic decision making;
9. Qualified in Just Culture Algorithm and organizational coaching;
10. SMS Safety Attributes and performance metrics;
11. Health safety and environment management processes;
12. Human factors and the decision making process;
13. Operational, Venture and Enterprise Risk management tools and decision making;

14. Conflict Management;
15. Incident investigation management;
16. Safety management systems;
17. Emergency response support;
18. Internal evaluation program support; and
19. Just Culture management.

3.6. Director of Maintenance

The Director of Maintenance is accountable for ensuring that all aircraft are maintained in accordance with regulatory requirements and that all maintenance related safety management goals are met.

Reports to: Director of Operations

Accountabilities and Duties: Refer to the General Maintenance Manual for complete compliance aspects of operational accountabilities and duties. General duties include:

1. Planning and controlling all aircraft maintenance;
2. Liaising with the national civil aviation authority on maintenance topics;
3. Supervising aircraft maintenance staff;
4. Liaising with all non-company persons or Approved Maintenance Organizations (AMOs).

Key SMS Responsibilities:

To meet Key Personnel SMS requirements, the Director of Maintenance is responsible for promoting the following:

1. Coordinate implementation, maintenance and integration of the SMS throughout the organization;
2. Facilitate hazard identification and safety risk analysis;
3. Assure the effectiveness of safety risk controls;
4. Ensure safety promotion throughout the organization;
5. Regularly report to the Accountable Executive on the performance of the SMS and on any need for improvement;
6. Professional leadership development and coaching skills;
7. Collaborative decision making (internal constituents and external regulators);
8. Change management and strategic decision making;
9. Qualified in Just Culture Algorithm and organizational coaching;
10. SMS Safety Attributes and performance metrics;
11. Health safety and environment management processes;
12. Human factors and the decision making process;
13. Hazard identification and Accident prevention;
14. Human Factors Analysis and Classification;
15. Operational, Venture and Enterprise Risk management tools and decision making
16. Conflict Management;
17. Incident investigation management;
18. Safety management systems;
19. Emergency response support;
20. Internal evaluation program support;
21. Just Culture management; and
22. Change management and strategic decision making.

3.7. Chief Pilot

The Chief Pilot is accountable for the safe operation of the Flight Department aircraft and for meeting safety management goals.

Reports to: Director of Operations

Accountabilities and Duties: Refer to the General Operations Manual for complete compliance aspects of operational accountabilities and duties. General duties include:

1. Organizing, staffing and directing flight operations, cabin safety, crew scheduling and training programs;
2. Developing, controlling operations and maintaining operational standards of all aircraft operated;

3. Managing functions which have an impact on operational control (e.g. maintenance, crew scheduling, load control, equipment scheduling).

Key SMS Responsibilities:

1. Coordinate implementation, maintenance and integration of the SMS throughout the organization;
2. Facilitate hazard identification and safety risk analysis;
3. Assure the effectiveness of safety risk controls;
4. Ensure safety promotion throughout the organization;
5. Regularly report to the Accountable Executive on the performance of the SMS and on any need for improvement;
6. Professional leadership development and coaching skills;
7. Collaborative decision making (internal constituents and external regulators);
8. Change management and strategic decision making;
9. Qualified in Just Culture Algorithm and organizational coaching;
10. SMS Safety Attributes and performance metrics;
11. Health safety and environment management processes;
12. Human factors and the decision making process;
13. Hazard identification and Accident prevention;
14. Operational, Venture and Enterprise Risk management tools and decision making;
15. Conflict Management;
16. Incident investigation management;
17. Safety management systems;
18. Emergency response support;
19. Internal evaluation program support;
20. Just Culture management; and
21. Change management and strategic decision making.

3.8. Safety Officer

The Safety Officer or his/her Designee shall be accountable for day-to-day administration of the Travis County safety management system. In that role he/she has direct access to the Program Director.

Reports To: Director of Operations

Accountabilities and Duties: The Safety Officer shall manage the SMS and the safety promotion process throughout the organization. The Safety Officer reports the status of the Safety Management System to the Program Director.

Key SMS Responsibilities:

1. Coordinate implementation, maintenance and integration of the SMS throughout the organization;
2. Facilitate hazard identification and safety risk analysis;
3. Assure the effectiveness of safety risk controls;
4. Ensure safety promotion throughout the organization;
5. Regularly report to the Accountable Executive on the performance of the SMS and on any need for improvement;
6. Administer the Travis County Safety Management System. Advise the Director of Operations and Program Director on its challenges, successes, and progress with respect to continuous improvement;
7. Advise Travis County management on establishing annual safety performance goals;
8. Report to the Director of Operations and Program Director annually on the degree to which performance goals have been met;
9. Monitor industry safety concerns, which may have an impact on Travis County;
10. Hold responsibility for the development, implementation and administration of Travis County safety policies, safety training, safety audits, and associated records;
11. Develop and maintain the Travis County aviation Emergency Response Plan, including conducting an ERP training exercise annually;
12. Schedule safety meetings regularly and lead each meeting. Post minutes of each meeting on the company message board;
13. Coordinate action, as required, on all submitted Safety – Security – QA Reports, Risk Assessment Reports, Policy Waiver Reports, Change Management Reports, and Internal Audit Reports;
14. Analyze collected data from SMS reports and FDM reports, if applicable, to identify developing

trends, conditions, or situations that may indicate a need for refinement of procedures to enhance safety;

15. Investigate and report on incidents / accidents and make recommendations to preclude a recurrence;
16. Monitor the response and measure the results of safety initiatives;
17. Be available for consultation by concerned employees;
18. Be the corporate representative to domestic or international government, commercial companies and/or industry safety associations; and
19. Obtaining training, experience or in-depth knowledge of the following:
    a. Flight safety philosophy;
    b. Health safety and environment management processes
    c. Human factors and the decision making process;
    d. Hazard identification and Accident prevention;
    e. The role of the Safety Officer as advisor to senior management;
    f. Professional leadership development and coaching skills
    g. Collaborative decision making (internal constituents and external regulators)
    h. Change management and team performance management
    i. Qualified in Just Culture Algorithm and organizational coaching
    j. SMS Safety Attributes and performance metrics
    k. Health safety and environment management processes
    l. Human factors and the decision making process;
    m. Hazard identification and Accident prevention;
    n. Operational, Venture and Enterprise Risk management tools and decision making
    o. Conflict Management
    p. Incident investigation management;
    q. Safety management systems;
    r. Emergency response support;
    s. Internal evaluation program support;
    t. Just Culture management, and;
    u. Change management and strategic decision making.

4. SAFETY POLICY

4.1. SMS Policy Management

All management systems must define policies, procedures, and organizational structures to accomplish their goals. The Policy Management element of the SMS framework outlines expectations for all SMS elements, which in turn provide the foundations for SMS functionality. The Safety Policy component defines management's commitment, responsibility, and accountability for safety.

4.2. Safety Policy

Travis County is committed to providing a safe and healthy workplace by preventing injuries and property or environmental damage. Travis County shall meet or exceed all flight, maintenance, occupational safety and health standards and regulations.

In support of these core objectives, Travis County is committed to implementing a safety management system for managing risk. It is the responsibility of Travis County management to commit the necessary human and financial resources that continually improve safety with enhanced policies, processes and systems, and to maintain an environment of mutual trust, unrestricted communication and full accountability. In addition, Travis County is committed to implementing a Safety Management System that establishes safety objectives linked to the safety performance indicators and safety performance targets. These objectives, as well as the company's risk levels, will be reviewed on a regular basis.

It is the responsibility of every employee to fully support and comply with established policies and procedures. And, as it is the policy of Travis County to prevent injury and damage, employees shall identify and report hazards or safety issues to management. (A "safety issue" is any event, situation, or condition that might have or may lead to injury or property damage.) Under our policy of promoting a Just Culture working environment, all personnel should understand that Travis County will not initiate disciplinary measures against any employee for reporting a safety issue or in response to genuinely inadvertent conduct, but will hold fully accountable any employee who knowingly disregards established policies and procedures or who otherwise engages in willful misconduct.

Together these shared efforts, responsibilities and accountabilities will strengthen and solidify our positive safety culture. The result will be continuous improvement in our processes to ensure all our aviation activities uphold the highest safety performance levels and meet or exceed national and international standards.

It is the policy of Travis County to conduct its business in a manner that protects the safety of our employees and customers. Travis County is dedicated to the belief that all accidents are preventable and that a zero-incident goal is attainable. We also believe that no job or customer service level is so important that it cannot be carried out in a safe manner. Priorities of the moment can never supersede our core value in first performing a job safely. Travis County will strive to prevent all accidents and incidents through the active participation of every employee. We will accomplish this through risk analysis and systems safety processes that drive continual improvement. We will also strive to comply with and exceed all applicable flight, occupational and environmental safety regulations and strive for excellence in safety. Travis County is committed to continuous efforts to identify and manage all risks to a level that is deemed as low as reasonably practicable.

In sharing this responsibility, each employee is expected to make safe choices when applicable. All employees have the responsibility to follow accepted policies, practices, and procedures and to report any information that he or she believes may affect safety. Senior management at Travis County is committed to providing the required resources and support to pursue our unwavering commitment to maintaining a core value of continuous safety improvement.

Core Safety Values

To guide us in our commitment to being an industry leader in safety, we adhere to the following safety values:

- Nothing we do is worth having an accident.
- Every incident and accident will be evaluated in a just format.
- Safety is a shared responsibility of all employees.
- All levels of management are accountable for the safety of their employees.
- It is the responsibility of all employees to follow and comply with all company safety policies and procedures.

- We support a hazard reporting policy that encourages all employees to openly report any unsafe condition or act, based on a just safety culture platform.

It is through the personal commitment of all our employees that Travis County will provide our employees and customers with the highest level of flight and ground safety possible.

Signed,

Program Director

4.2.1. Basic Principles of the Safety Policy

The Safety Policy is the Company's internal/external declaration that aviation safety is our first priority and reflects the safety philosophy, policy direction and concrete commitment of top management. The safety policy shall by signed by the accountable executive. All employees will acknowledge the Safety Policy and strive for continual development of a positive safety culture.

Whenever the Safety Policy is updated, the updated policy shall be communicated via a Bulletin on the SMS web portal to all employees. Each member must read and acknowledge the bulletin.

4.2.2. Revisions and Distribution

The Safety Policy is the basis for establishing and executing the safety management system and for compliance with aviation laws, regulations and procedures. All Travis County regulations, procedures and manuals should be in accordance with this Safety Policy.

The Accountable Executive shall regularly review the Safety Policy so that it reflects the Company's internal and external policies and any organizational, operational or environmental change. Otherwise, the Safety Policy will be reviewed and, as necessary, revised every two years to assure its relevance to the operation.

4.3. Hazard Reporting Policy

Travis County is committed to providing its employees and customers with a safety management system to support the safest operation possible as noted in the company safety statement signed by the President of Travis County. In the pursuit of our goal, it is imperative that we have uninhibited reporting of all safety hazards, concerns and or suggestions that in any way may affect the safety of the flights or our employees in the delivery of our services. Sharing of timely information is a key factor for Travis County to make quality decisions in the proactive management of risk to a level that is as low as reasonably practical.

Every employee at Travis County has the responsibility and right to report safety hazards, concerns and / or suggestions that may affect the integrity of our flight operations or workplace safety issues to their immediate supervisor, Assistant Chief Pilot, Chief Pilot, Director of Operations, Human Resources or to the Safety Officer. Travis County has the responsibility to provide every employee the opportunity to report hazards and concerns and, to do so if desired, in a confidential format. All reports will be handled in a just and fair manner in accordance with a just culture framework.

To promote timely, uninhibited flow of information, it is the policy of Travis County that all reports will be managed using the just culture framework for the reporting of a safety hazard or perceived hazard, safety concern, human errors related to slips, lapses or mistakes and / or suggestion for improvement. The source of the employee report is not limited to designated safety reporting systems and also includes any required company related operational reports.

Travis County will follow a non-retribution policy for any employee who discloses a safety hazard or perceived hazard, safety concern, human behavior related event / or suggestion involving safety. However, this policy does not apply to behaviors /choices deemed reckless consisting of acts to willfully disregard substantial and unjustifiable risk to Travis County operations, its people, customers or property. The policy also does not apply to any event or condition that involves illegal activity, substance abuse, controlled substances, alcohol or intentional falsification. In such cases, Travis County reserves the right to take disciplinary actions as appropriate. Travis County also reserves the right to take appropriate action against employees who willfully disregard the reporting of known or recognized safety hazards.

Travis County will evaluate all reports and when deemed appropriate stemming from either operational systems

or individual choices to undertake corrective actions necessary to manage risk and prevent future hazards. Travis County recognizes training and education as an effective risk management tool and as such training is not recognized as disciplinary in nature, but would be consistent with the safety goals that Travis County has established. Travis County will also evaluate all reports for opportunities to improve system reliability and will implement appropriate changes to reduce, and eliminate where possible, hazards in the operational system.

Travis County has a process in place for employees to report safety hazards, concerns and / or suggestions that protects the identity of the employee if desired. This can be accomplished by reporting the incident or safety issue directly to the Safety Officer, which will be maintained confidential if requested or by using the online Baldwin Aviation safety portal.

We urge every employee to use this program to help us provide the highest level of safety for our employees and customers. Every employee who submits a report will be contacted to confirm receipt of the report and provide feedback on the final outcome regarding his/her report, provided they choose to leave contact information.

4.3.1. General

The Travis County Emergency Response Plan is maintained in a separate and more detailed document. This is a summary of that information and included here for SMS documentation purposes.

4.3.2. Accident / Incident Reporting

Any employee who becomes aware of an accident or incident must notify the Director of Operations. The Director of Operations will determine the level of corporate response by the scale and extent of the event and alert the concerned response personnel.

The Director of Operations is responsible for initiating the appropriate response to an accident, incident and other significant irregularities. Once an aircraft accident has been acknowledged, the Director of Operations notifies emergency response personnel at Travis County and outside agencies as appropriate for the event.

The Director of Operations determines whether or not to activate the Emergency Control Center (ECC). In need of immediate action, however, any employee may activate it first and then report to the Director of Operations.

4.3.3. Assignment of Emergency Responsibilities

The Program Director provides the overall direction of the corporate response efforts as an Emergency Commander of the Emergency Control Center (ECC). Executive officers and departmental roles and responsibilities are described in the Emergency Response Manual.

4.3.4. Flight Crew Responsibilities

At the scene of an aircraft accident or incident the senior crew member who is able shall take steps to ensure that:

1. Emergency assistance is summoned through any available radio frequency or by calling 911;
2. Passengers and other crew members are assisted in exiting the aircraft to a safe location;
3. First Aid and other assistance as necessary is provided to those who are injured;
4. The site is secured and protected until the arrival of emergency services; (The operator remains responsible for security of the aircraft and equipment, even after arrival of emergency services or investigative teams.)
5. Obtain the names and contact information of any witnesses;
6. Take pictures of the scene, the exterior and interior of the aircraft, paying attention (to the extent possible) to the position of flight controls, switches, other aircraft equipment;
7. Record, to the extent possible, the extent of injuries to personnel and which facility personnel were taken to for medical treatment.

4.3.5. Departmental Cooperation for Emergency Response Plan and Action

The Safety Officer leads a company-wide accident exercise twice a year and shall ensure a periodic testing of emergency response systems. All departments concerned shall be involved in meetings and accident exercise and revise their procedures, if improvements are needed.

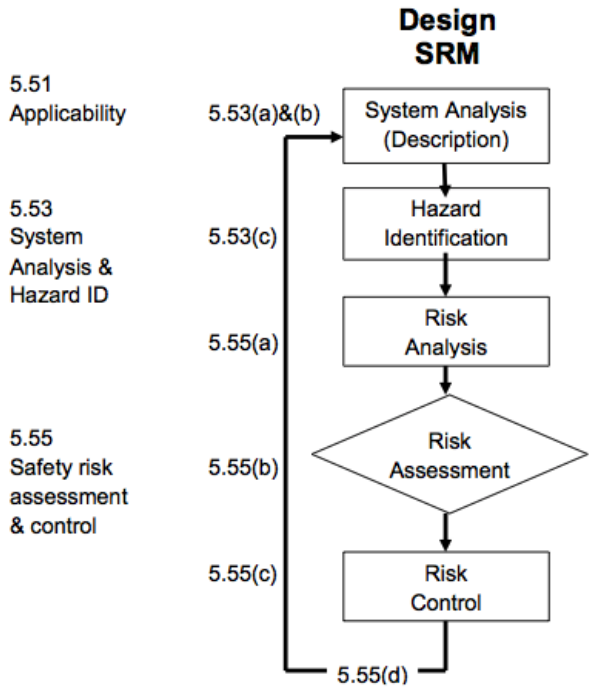
4.3.6. Emergency Response Records

All operational staff shall maintain documentation of information and activities regarding the accident. Data and information requested from relevant authorities shall be provided in a timely and accurate manner.

5. SAFETY RISK MANAGEMENT

5.1. Applicability

Before implementing a new system or revising an existing system for any part of the organization, the appropriate department manager and the Safety Officer shall complete a safety risk assessment to ensure that the new process(es) will not lower the existing level of safety assurance. A similar risk assessment shall be completed prior to implementation of or change to operational procedures resulting from identification of hazards or ineffective risk controls. The chart below depicts the major components of the Safety Risk Management process (numbering in the chart correlates to the applicable 14 CFR Part 5 regulation):



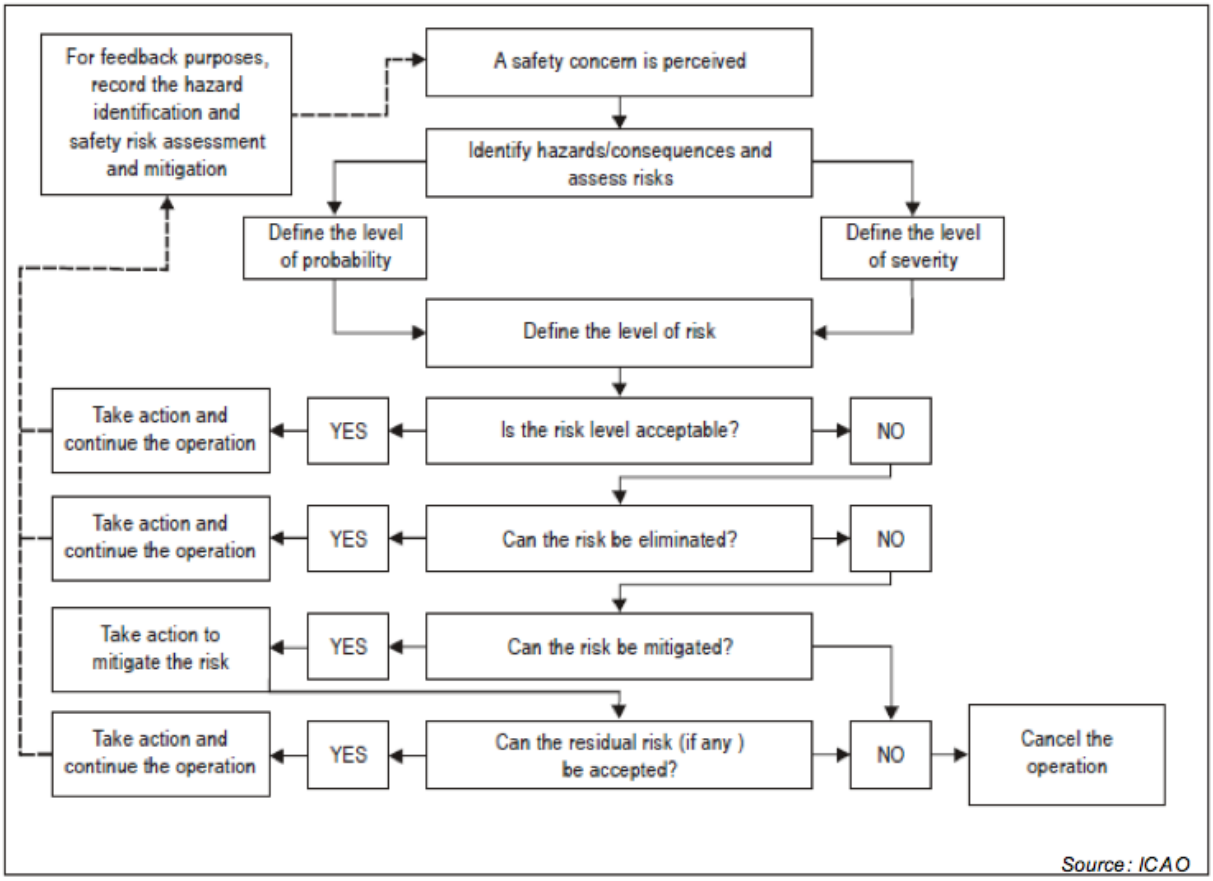
5.2. Safety Risk Management Process

System Analysis is conducting an analysis to identify potential hazards. This system analysis is completed via the Safety Risk Profile tool within the Baldwin SMS Portal. This tool considers various elements of the organization which facilitates hazard and risk identification. It should be conducted annually and following significant change to an organizational process related to safety.

In applying safety risk management, consideration must be given to the system in which a particular hazard was found, i.e. maintenance procedures, aircraft design or operation, etc. One should consider the function and purpose of that system, the system's operating environment, processes and procedures, and the personnel, equipment and facilities necessary for operation of the system.

While individual hazards and associated risks may show themselves by any number of means, they are identified within the Safety Management System primarily by either of two processes: Risk Assessment forms or Safety Reports. These tools are used to codify and assess risks, leading to the application of appropriate mitigating controls.

Safety Risk Management Process



Travis County uses a structured process for the analysis and assessment of risk associated with identified hazards based on a severity and consequence rating system.

Travis County used several methods to evaluate both strategic and tactical risk. The processes are based on the nature of the risk and the format in which the hazard is identified. Once hazards have been identified, the safety risks of their potential consequences must be assessed. Safety risk assessment is the analysis of the consequences of the hazards that have been determined as threatening either to the company or a particular operation such as an individual flight. Safety risk analyses use a conventional breakdown of risk into two components - the probability of occurrence of a damaging event or condition, and the severity of the event or condition, should it occur.

The acronym ALARP is used to describe a safety risk that has been reduced to a level that is **a**s **l**ow **a**s **r**easonably **p**racticable. In determining what is "reasonably practicable" in the context of safety risk management, consideration is given both to the technical feasibility of further reducing the safety risk and the cost. This may include a cost-benefit analysis. Indicating that the safely risk in a system is ALARP means that any further risk reduction is either impracticable or grossly outweighed by the cost. Safety risks assessed as initially falling in the acceptable region are acceptable as they currently stand and require no action to bring or keep the probability and/or severity of the consequences of hazards under organizational control.

Safety reports received from employees and or new business operation evaluations are assessed following the below table formats for severity and probability.

Definition	Meaning
Frequent	Likely to occur many times (daily)
Occasional	Likely to occur sometimes
Remote	Unlikely, but possible to occur
Improbable	Very unlikely to occur

Extremely Improbable	Almost inconceivable that the event will occur

There is a criterion to assess each identified hazard for its risk in terms of severity of occurrence. The following table shows the severity criteria:

Definition	Meaning
Catastrophic	Death, extreme damage, loss of asset
Hazardous	Serious injury, property/environmental damage, complete loss of critical asset component/system
Major	Recordable injury, property, environmental damage, partial loss of critical asset component/system
Minor	First Aid, limited damage, degradation in normal operational procedures or performance
Extremely Improbable	Statistically recordable, no injury or damage or significance to operational safety

5.2.1. Risk Assessment Matrix

Once the Probability and Severity values are determined, they will (together) provide the Risk Assessment value for that occurrence. This is typically displayed as a matrix.

RISK SCALE		SEVERITY				
		Catastrophic	Hazardous	Major	Minor	Negligible
PROBABILITY	Frequent	5	5	5	4	3
	Occasional	5	4	4	3	2
	Remote	5	4	3	2	1
	Improbable	5	3	3	2	1
	Extremely Improbable	4	3	2	1	1

The Risk Assessment value is a guide to further action by participants, management or both. In general, items in the **GREEN** area are normal operations. However, hazards identified there must still be addressed. Values in the **ORANGE** band require review by the appropriate Manager or supervisor. If a waiver is given, it must be documented. Values in the **RED** area require STOP WORK. No further work may occur until mitigation is implemented and effective.

The same analysis and assessment process shall be conducted after mitigation is complete. The final risk assessment value shall be documented using the appropriate online reporting forms as confirmation of a hazard controlled.

Risk Assessment Values and Resultant Actions

Assessment of Risk Level	Risk Acceptance or Mitigation Criteria
Unacceptable Risk Level 5	Risk level of hazard/occurrence is **Unacceptable** under existing circumstances. **Stop work!** Do not permit any operation until sufficient control measures have been implemented to reduce risk to a lower level.

Management Review & Approval Risk Level 4	Risk level of hazard/occurrence classified as **Acceptable with Mitigation or Approval.** Lowering the risk level will require reducing either the severity or probability (or both) using the following process(es) to lower the risk to ALARP: • Additional human resources and cost; • Significant change to existing operational procedures; • Requires inter-departmental discussion and coordination; Operation without implementation of risk control and mitigation will require Director of Operations and/or Accountable Executive approval.
Operational Caution Risk Level 3	Risk level of hazard/occurrence classified as **Acceptable with management Approval.** Management will evaluate the identified risk to verify it meets ALARP.
Acceptable Risk Levels 1 & 2	**Acceptable** with no further action needed under the existing circumstances. However, any hazards identified must be controlled.

5.2.2. Flight Risk Assessment Forms

Prior to the first leg of each helicopter air ambulance operation, the pilot in command shall have a completed risk analysis on file.

The risk analysis worksheet will be electronic and a color coded field on the Travis County's Electronic Data Base. The risk analysis will be displayed with the appropriate color in the background with the Aircraft Tail Number and the Assigned Pilots Name. If you click on the view button it will display the worksheet for the current risk analysis and will display the date, time and signature of the pilot. The risk analysis for each flight will be stored on the data base for a minimum of 90 days. 0-70 is notated in **GREEN**, and the flight is at the discretion of the pilot. 71-85 is notated in **YELLOW**, and the PIC, and crew should exercise extreme caution during a go/no-go decision for weather. >85 is notated in **RED**, and requires a call to the manager on call for further discussion.

When Travis County is assigned a flight by the Medical Communication Center (MED Comm.) the Aviation Communication Specialist will inform the pilot whether another helicopter air ambulance as refused or rejected the flight request. This information shall be evaluated as a part of the overall risk assignment. Travis County's Risk assignment is an electronic document and by the pilot logging on to the data base with his Travis County assigned secure users name and password certifies the process and will serve as the electronic signature.

5.2.3. Safety Reports

The objective of the Safety Report is to report and eliminate inappropriate conditions or unsafe factors which may lead to accidents or cause safety problems. It is important to understand that there need not be an actual incident to submit a Safety Report. Any condition or procedure that may lead to an unwanted event is sufficient to warrant submission of a Safety Report.

Reporting Procedures

All employees shall submit a Safety Report as soon as they discover or experience any safety issue. The primary means of submitting a Safety Report is via the Travis County web portal. Alternatively, information about the condition can be reported to any supervisor or to the Safety Officer.

Handling Procedure

The Safety Officer will validate the accuracy of information and notify the reporter the report has been received. The report will be controlled with its own document number and classified according to the occurrence types and managed within the database. The primary causes and contributing factors will be systemically analyzed, including the human factors, operating environment, working conditions and oversight system as follows:

- A formal investigation of the safety report will be completed based on an initial risk assessment as outlined in the SMS.
- If immediate improvement action is not required, the report will be recorded into the database as an event and will be used as statistical data.
- Based on the result of an investigation a prevention action request (PAR) will be sent to the responsible person. This individual shall review any and all suggestions for improvement and modify them as necessary. Such changes will be discussed with the Safety Officer and at the next scheduled safety meeting. If immediate improvement is not needed, it will be recorded into database and used as statistical data.
- The Safety Report data will be utilized and analyzed for safety management purposes. The effectiveness of action taken followed by correction/improvement request will be monitored for effectiveness as outlined in the continuous improvement process.
- The investigation results will be notified to the reporter and concerned department and the feedback will be shared.

Policy for Protection of Reporter's Identity

A Safety Report can be submitted anonymously. If the report was submitted with a name, the identity of the reporter will be included on the report.

The identity of the reporter can be released restrictively in the case of regulatory violation, state required report (accident), or with approval of the reporting party.

5.2.4. Flight Data Management Objectives (If Applicable)

The purpose of the flight data management (FDM) program is to promote flight operations standardization through the analysis of collected data from the flight data recorder in an aggregate format.

Applicability

The collected data from the FDM program will be used for measuring standardization and evaluating training objectives. It will not be used for flight crew proficiency evaluation or for punitive measures. A detailed overview of the company FDM program is outlined in the FDM manual.

5.2.5. Hierarchy of Controls

Some hazard controls are more effective than others in preventing a recurrence. The generally accepted order of desirability is as follows:

- Design (or engineer) out the hazard
- Isolation of the hazard
- Warnings and employee training
- Personal protective equipment

5.2.6. Cost / Benefit Analysis

A Cost/Benefit analysis may be conducted on the proposed controls to see which ones are reasonable mitigation and control solutions.

5.2.7. Risk Mitigation Process

When the risk associated with a particular operation or procedure is determined to be greater than personal or organizational tolerance for risk, steps shall be taken to reduce risk to a tolerable level of ALARP.

The Safety Officer is responsible to verify that identified risks or reported risks are managed using the outlined risk assessment process. All identified risks that require management approval will be reported to the company Safety Officer as designated in the SMS.

The risk mitigation process is as follows:

1. The Safety Officer shall develop risk mitigation options and present them to the Safety Committee.
2. The Safety Committee, with representatives from all applicable stakeholder functional areas, shall reach a consensus on the best mitigation strategy to employ based on return on investment, time to implement, and implementation difficulty, among other considerations.
3. The mitigation will be developed by the stakeholders and may be in the form of new or revised policy, process, procedure, or training.
4. When the mitigation strategy is determined and an immediate precaution is developed, a message shall be sent to all applicable personnel via the SMS web portal describing such.
5. Once the mitigation is developed, another message will be sent to all applicable personnel via the SMS web portal.
6. After the mitigation is implemented, another message will be sent to all applicable personnel via the SMS web portal to encourage them to provide feedback via a safety report if the mitigation appears to be less than effective.

5.3. Safety Investigation

5.3.1. Purpose of Event Investigations

After a reported event (flight, employee event, irregular event), the company Safety Officer will determine if the event requires notification of the defined management team as well as the Chief Pilot as per the emergency response guide. The following are the types of events that may justify a formal investigation:

- NTSB classified accident.
- Employee injury.
- Near miss event.
- Any event that is classified as a flight safety reportable event by the company.
- Irregularity events – human error based events that do not result in loss.
- Environmental related events.

The Chief Pilot is notified based on the definition of a recordable flight safety event. If so, the notification will take place via an e-mail or phone call based on the event severity. This notification will take place within 120 minutes of the reported event.

Based on the severity of the reported event and/or a risk assessment, either the Director of Operations or the Chief Pilot and the Safety Officer will mutually discuss the need for a formal investigation to be competed as well as a time frame for investigation. This discussion will take place within 24 hours of notification of the event.

The actual investigation, depending on the nature of the incident and the risk assessment rating, will be investigated by the Safety Department, and if deemed necessary, with the assistance of other involved departments. The investigation may be completed either by phone interview, in person or at the sight of the incident/accident. Based on mutual agreement of the involved departments and the Safety Department, a set timetable for the completion of the investigation will be established at the initial review process. The investigation will be focused solely on fact-finding and the determination of the initiating factors and the root causal factors. The intent of the investigation is to learn from the event in order to prevent future reoccurrence if applicable. This supports the company safety policy that all incidents and accidents are considered preventable.

The investigation team will use the flight safety investigation form or the employee injury investigation form in the Baldwin safety website.This process can use any of the following methods to review the event circumstances:

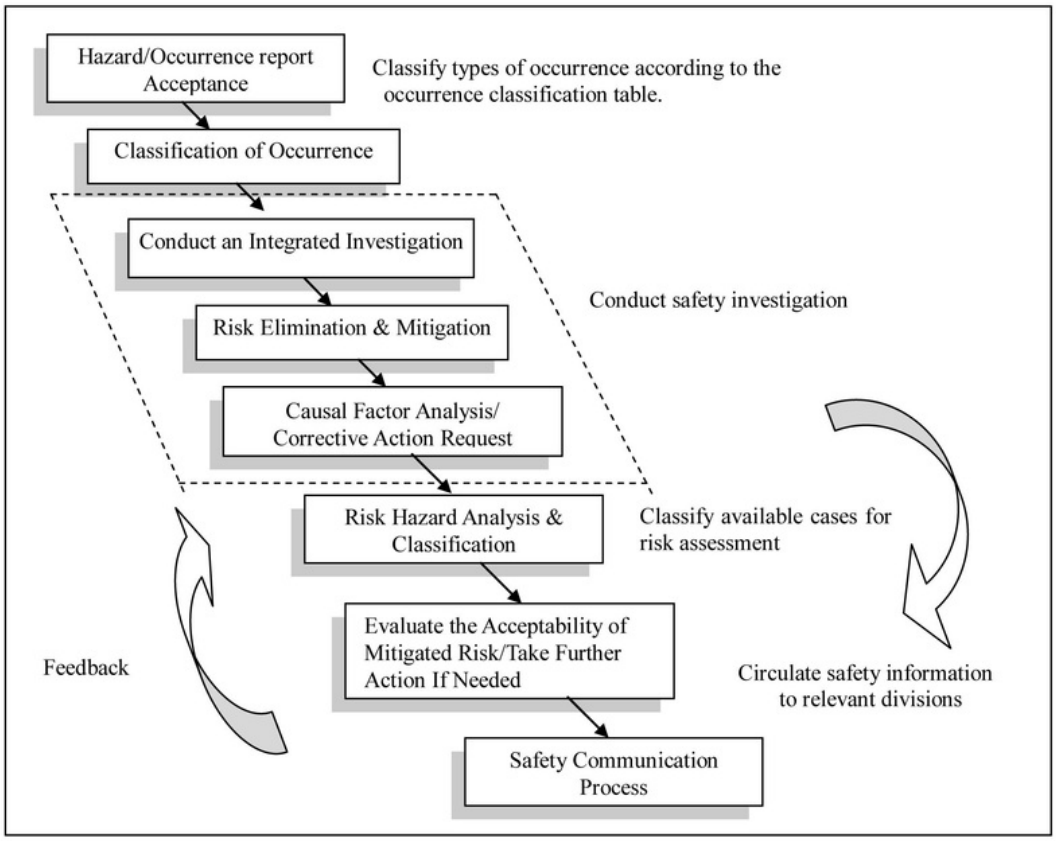
- Process flow charting – event time line.
- Five why process – drive for root cause.
- Cause and effect diagrams (fish bone).
- Brain storming.
- Set questions in the incident Investigation form.

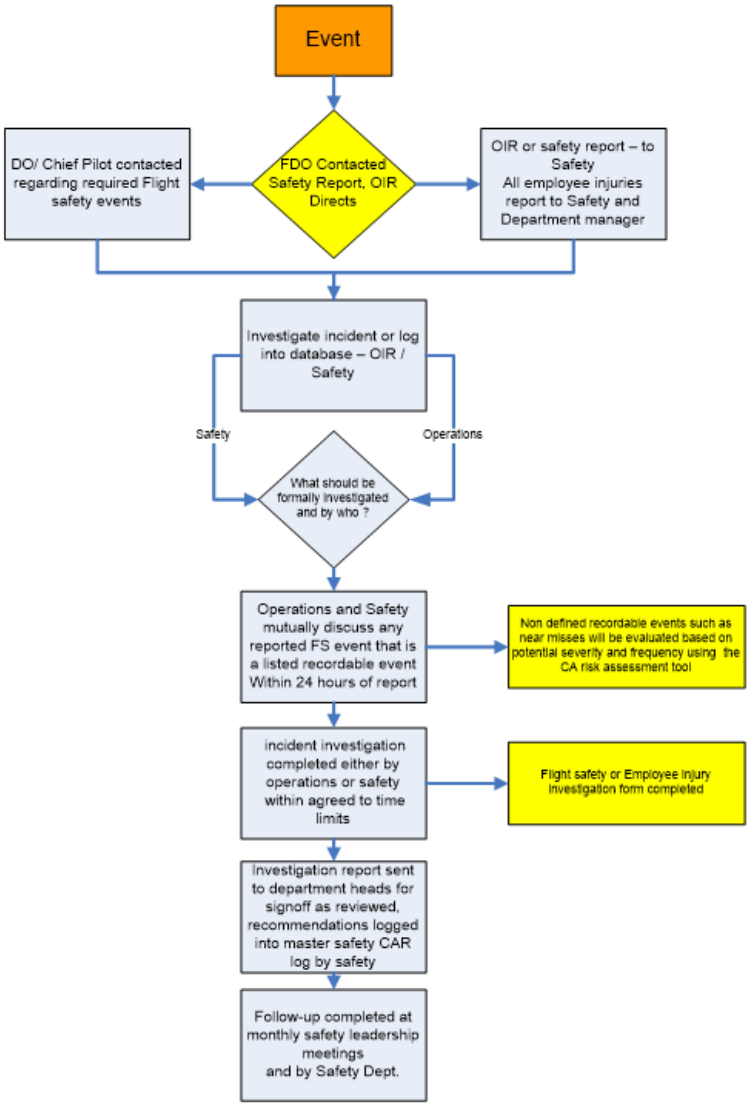
A report of the findings as to the initiating events, root causal factors and any suggested corrective actions will be completed and forwarded to the department head, Program Director, COO and the Safety Department.

5.3.2. Integrated Investigation Process

All event investigations are completed by collecting data and analyzing facts to determine the causal factors in order to develop corrective actions to prevent potential future events.

The following is the process flow for conducting an investigation and the company decision making regarding any recommendations.





5.3.3. Required Regulatory Notifications

The Safety Officer and/or Chief Pilot shall report any accidents, incidents or violations to the appropriate regulatory authority in the designated timeframe (i.e. NTSB, OSHA, EPA, etc).

5.3.4. Root Cause Analysis

Collected factual information related to the reported incident or condition should be analyzed to determine all contributing factors to the occurrence. Where appropriate, a Root Cause Analysis should be completed to determine the most basic factor leading to the occurrence.

Root Cause Analysis involves repeated asking of the question "Why?" to each explanation of steps leading to the occurrence. When further questioning can no longer bring an explanation, the root cause has likely been identified.

5.3.5. Conclusions / Recommendations

Collected factual information related to the reported incident or condition should be analyzed to determine all contributing factors to the occurrence. Where appropriate, a Root Cause Analysis should be completed to determine the most basic factor leading to the occurrence.

Root Cause Analysis involves repeated asking of the question "Why?" to each explanation of steps leading to the occurrence. When further questioning can no longer bring an explanation, the root cause has likely been identified.

5.3.6. Event Analysis Recommendations

Process improvement recommendations are one of the most important measures for accident prevention. Recommendations will be forwarded to the appropriate management staff and to the affected departments according to the investigation results. Significant events and those deemed noteworthy will be reviewed at the scheduled safety review board meeting.

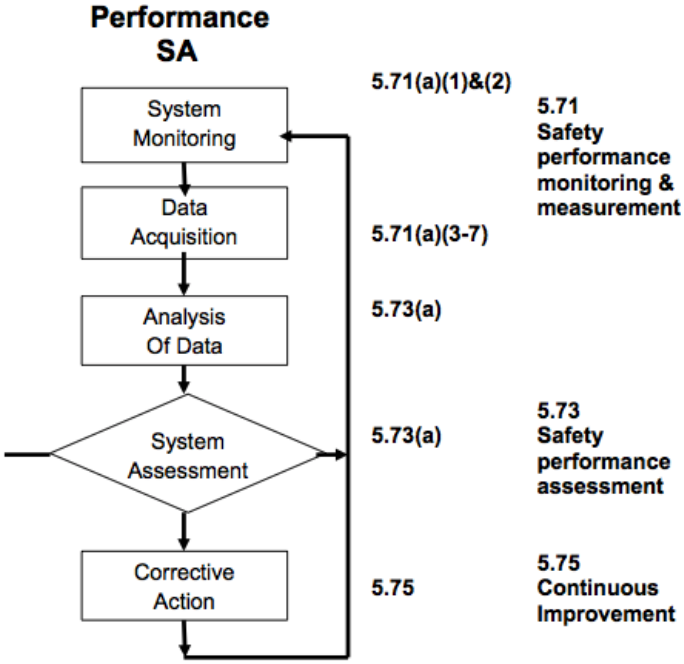
6. SAFETY ASSURANCE

6.1. Safety Performance Monitoring and Measurement

The Safety Assurance function applies the processes of quality assurance and internal evaluation to the objectives of making sure that risk controls continue to conform to their requirements and they continue to be effective in maintaining risk within acceptable levels. The Safety Assurance function takes over after the initial identification of hazards and assessment of risk. This system is built upon consistent monitoring of the operational environment and operational processes, auditing operational processes, and investigation of employee safety reports and incidents or accidents.

This system also provides for assessment of the need for new controls because of changes in the operational environment. It is important for Safety Assurance to integrate the effort across many different technical areas. This will ensure a more complete safety posture which takes the integrated environment into account.

The chart below depicts the primary components of the Safety Assurance process (numbering in the chart correlates to the applicable 14 CFR Part 5 regulation):



6.1.1. SMS Data Acquisition

Data can be captured from a variety of sources to monitor the safety performance of the organization.

The following elements describe how we acquire data with respect to operations, products, and services to monitor the safety performance of the organization:

1. **Monitoring of operational processes.** This is managed via data collection and analysis within the Baldwin SMS software and the FDM program described in the *Flight Data Management Monitoring / Flight Operations Quality Assurance* Section. The Baldwin SMS software provides safety reports that allow for voluntary reports to be filed if any issues are identified with operational processes. These forms can be analyzed for trends and custom SPIs can be developed within the SMS web portal software to track trends related to this data for monitoring purposes.
2. **Monitoring of the operational environment to detect changes**. This is also managed via data collection and analysis within the SMS web portal software and the FDM program described in the *Flight Data Management Monitoring / Flight Operations Quality Assurance* Section. The SMS web portal software provides risk assessment forms that include environmental considerations. These factors are analyzed for trends. Custom SPIs are developed within the SMS web portal software to track trends related to this data for monitoring

purposes.

3. **Auditing of operational processes and systems**. Periodic audits are conducted by independent, third-party auditors to determine the degree of effectiveness of the operations processes and systems. Findings related to these audits are in the SMS web portal software to track identified hazards, associated risks, and corrective actions.
4. **Evaluations of the SMS and operational processes and systems**. The SMS web portal software includes integrated internal evaluation forms that are used to discover weaknesses in the SMS and operational processes and systems. Findings from these internal evaluations are analyzed for trends and custom SPIs can be developed within the SMS web portal software to track trends related to this data for monitoring purposes.
5. **Investigations of incidents and accidents**. Investigations are recorded via Safety Reports inside the SMS web portal software. Root-cause analysis is integrated into this process and formally recorded. Investigators and contributors shall be assigned to these investigations as required, which is completely managed inside the software portal.
6. **Investigations of reports regarding potential noncompliance with regulatory standards or other safety risk controls established through the safety risk management process**. Investigations are recorded via Safety Reports inside the SMS web portal software. Root-cause analysis is integrated into this process and formally recorded. Investigators and contributors shall be assigned to these investigations as required, which is completely managed inside the software portal.
7. **A confidential employee reporting system in which employees can report hazards, issues, concerns, occurrences, incidents, as well as propose solutions and safety improvements**. A confidential reporting system is made possible via Safety Reports inside the SMS web portal software. An anonymous push button is provided, such that if an submitter selects this options, the safety report is filed and processed without identifying the submitter. Investigators and contributors shall be assigned to these reports, as appropriate, which is completely managed inside the software portal.

The following process describes how to analyze the data acquired through the methods identified in the preceding sub-sections.

1. The preceding 12 months of data is captured and plotted on a graph.
2. An average is computed from the above data.
3. A target is established that represents a reasonable objective to improve upon the previous year’s average.

6.2. Safety Performance Assessment

The purpose of the Safety Performance Assessment is to:

- Ensure compliance with the established safety risk controls;
- Evaluate the performance of the Safety Management System;
- Evaluate the effectiveness of the safety risk controls established under the the Safety Risk Management process and identify any ineffective controls;
- Identify changes in the operational environment that may introduce new hazards; and
- Identify new hazards.

The Safety Officer utilizes several tools built into the Travis County SMS web portal to continually assess the safety performance of the organization. The Safety Risk Profile, Safety Reports, Risk Assessment forms, and Change Management forms all serve to identify and codify hazards and their associated risks, leading up to the application of mitigating controls. The Safety Officer, along with other supervisory managers, continually monitor the effectiveness of such controls in managing risk.

The Safety Lab, located within the Travis County SMS web portal, contains several automated functions that compile and organize data collected from these reports. The Safety Officer will become proficient in the use of these tools to monitor safety performance of the organization as well as conditions in the operating environment that might introduce new hazards.

The Safety Officer shall use the above tools to assess the performance of the SMS against its requirements. The assessment will be conducted concurrently with the internal audit process detailed in this chapter. System assessments shall result in a finding of:

- **Conformity** with existing risk controls and SMS requirements;
- **Nonconformity** with existing risk controls and SMS requirements; or
- **New Hazards Identified**.

The Safety Risk Management process will be utilized if the assessment indicates the identification of new hazards, or if a need for system changes is identified. The Safety Officer maintains a record of all system assessments.

6.2.1. Safety Surveys

The employees of Travis County can provide an accurate reading of the state of the company's Safety Management System through periodic surveys of the work force. Surveys can be broad based in subject matter and participants or they can be targeted to a particular system and segment of the work force. A well-constructed survey will elicit subjective comments as well as objective data for analysis.

If properly administered (usually confidentially) a survey can uncover information that otherwise would not be told to management personnel. Survey responses can reveal emotions that range from very negative to very positive. All responses should be taken seriously and not dismissed as outliers, as one person can affect the attitude of others.

The Safety Officer should plan to conduct at least two surveys annually to maintain a good understanding of the state of the organization's safety culture.

6.2.2. Internal Audits

Travis County has developed a series of detailed Internal Audits to assess overall effectiveness of the SMS, ensure compliance with safety risk controls, and ensure compliance with company procedures, industry best practices and regulatory standards.

An audit schedule and the elements included in the internal audit process are:

Quarter 1	Quarter 3
Organization and Personnel	Company Operations Manual
Safety Management System	Emergency Response Plan
Training and Proficiency	Fatigue Management
Quarter 2	**Quarter 4**

Aircraft Equipment Requirements	Environmental Management
Aircraft Maintenance Requirements	Occupational Health & Safety
Compliance Monitoring	Security
Flight Operations	Transportation of Dangerous Goods

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

Note 1: *The Option 1 audit schedule is a Baldwin Aviation generated set of forms based off of industry standards and may be customized per operator to include different forms. The Safety Management System internal audit has elements that are specifically designed to validate the effectiveness of safety risk controls.*

Note 2: *The Option 2 audit schedule aligns with the four components outlined in ICAO Document 9859.*

Frequency: The internal audits should be conducted quarterly, as depicted in the table.

Checklist: The audit team should utilize the online checklist accessed through the Travis County SMS web portal to document the audit and record any findings utilizing the Safety Form.

Audit teams of one or more persons will be assigned by the Safety Officer. However, to the degree possible, the audit team leader should not be from the part of the organization being audited. An honest, unbiased audit will result from a person with limited knowledge asking questions about the processes and procedures being audited until those processes are understood to the degree necessary to complete the audit.

Compliance Monitoring Process

The internal audit program includes a checklist with an element which addresses compliance monitoring. This checklist has an element to ensure applicable regulatory changes are monitored and implemented. The process for this is as follows:

1. The Safety Officer, Director of Operations, and Director of Maintenance shall create an account with the U.S. Federal Register and subscribe the FAA Documents to receive automatic notifications of changes to applicable regulations. When an applicable change is identified, the Safety Officer shall communicate it to the Safety Committee and included as an action item for the next safety meeting.
2. The Safety Officer will brief the required change to the Safety Committee and review the required manual revision, making modifications as needed from all applicable stakeholders on the Safety Committee to reflect their specific method of complying with the applicable regulation.
3. The Safety Officer will communicate this approved revision to comply with the regulation to the manual update team.
4. The applicable manual will be updated as approved by the Safety Committee and changes published.
5. The Safety Officer will communicate the change to the applicable manual to all personnel affected by the change via the web portal Bulletin System.
6. The Safety Officer shall ensure that all personnel read the applicable bulletin.
7. The change to the manual shall be briefed at the next Safety Meeting and recorded in the Safety Meeting Minutes.

6.2.3. Audit Findings - Root Cause Analysis

A "finding" is any conclusion by the auditor that there is room for improvement in the area being audited. The Safety Officer shall keep appropriate managers informed of the existence of any findings resulting from an audit, external or internal.

Each finding shall be separately documented on an Audit Finding Form to provide a process for thorough investigation and root cause analysis. The root cause analysis should consider the following:

- Define the problem or describe the event factually. Include the qualitative and quantitative attributes (properties) of the harmful outcomes. This usually includes specifying the natures, the magnitudes, the locations, and the timings.
- Gather data and evidence, classifying that along a timeline of events to the final failure or crisis.
- For every behavior, condition, action, and inaction specify in the "timeline" what should have

been when it differs from the actual.

- Ask "why" and identify the causes associated with each step in the sequence towards the defined problem or event. "Why" is taken to mean "What were the factors that directly resulted in the effect?"
- Classify causes into causal factors that relate to an event in the sequence, and root causes, that if applied can be agreed to have interrupted that step of the sequence chain.
- If there are multiple root causes, which is often the case, reveal those clearly for later optimum selection. Identify all other harmful factors that have equal or better claim to be called "root causes."
- Identify corrective action(s) that will with certainty prevent recurrence of each harmful effect, including outcomes and factors. Check that each corrective action would, if pre-implemented before the event, have reduced or prevented specific harmful effects.
- Identify solutions that are effective, prevent recurrence with reasonable certainty, are within the organization's control, meet organization goals and objectives, and do not cause or introduce other new and unforeseen problems.
- Implement the recommended root cause correction(s).
- Ensure effectiveness by observing the implemented recommendation solutions.

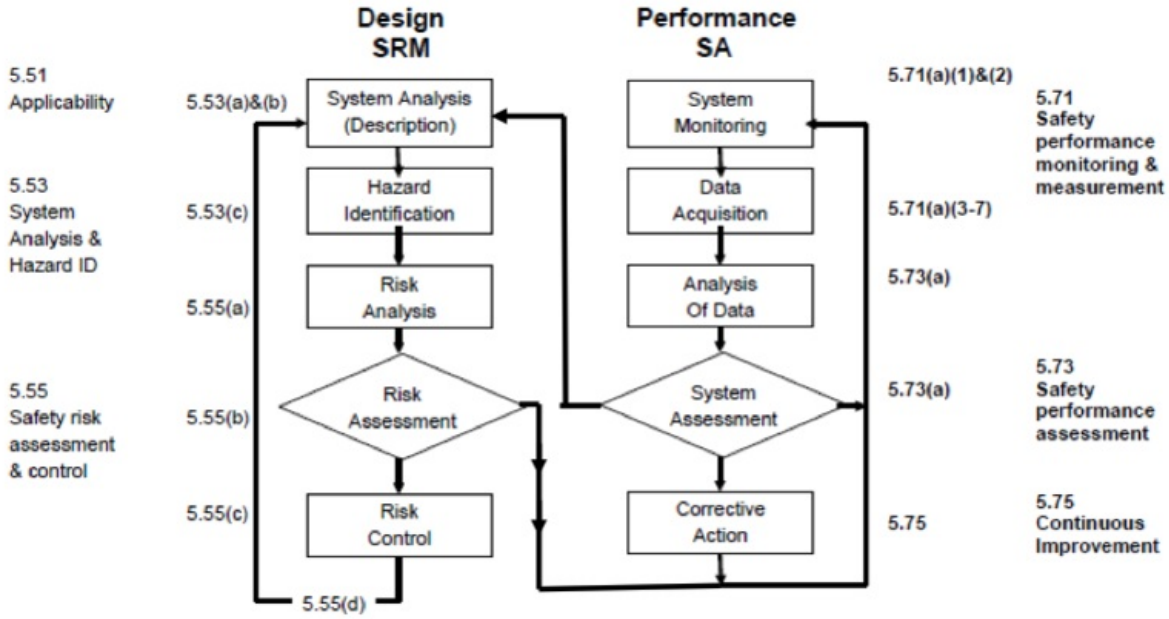
Other methodologies for problem solving and problem avoidance may be useful. Identify and address the other instances of each harmful outcome and harmful factor.

A sample Root Cause Analysis (RCA) process is shown below. (The example shows representative areas of consideration that might be part of the root cause analysis, but is not inclusive of all possible areas of investigation.)

6.2.4. Continuous Improvement

Identification of audit findings and subsequent corrective action is one of the primary means by which Travis County can strive for continuous improvement in safety performance, a core overall objective of the Safety Management System. Thus, conducting a thorough, unbiased internal audit is critical to the success of the SMS.

The following chart illustrate the combined Safety Risk Management and Safety Assurance Processes, as well as how Safety Assurance Functions are linked to the Safety Risk Management Processes (numbering in the chart correlates to the applicable 14 CFR Part 5 regulation):



6.2.5. Assessing Safety Performance

Safety performance shall be assessed against the stated safety performance objectives. The performance objectives will be reviewed quarterly and updated as required. The following describes this process:

1. The Safety Officer shall brief the Program Director quarterly on the following items:
    1. Safety Performance objectives;
    2. SMS performance via SPIs and targets;
    3. Compliance with established safety risk controls;
    4. Effectiveness of safety risk controls, to include identifying any ineffective controls;
    5. Identification of changes in the operational environment that may introduce new hazards; and
    6. Identification of new hazards.
2. This briefing shall be documented and attached to a Safety Meeting form in the SMS web portal.

Deficient Safety Performance

Internal evaluations are part of the safety performance assessment and are designed to identify ineffective controls, new hazards, or potential hazards. If any of these are identified, the Safety Officer, or delegated representative, shall submit an Audit Finding Form (if resulting from an audit) or Safety Report, as applicable, via the SMS web portal. The form shall be completed to include as much identifying information as possible to enhance trend monitoring.

These deficiencies will be managed like all other identified hazards and be included in the Hazard Risk Register once corrective action is determined. These deficiencies shall be briefed to the Program Director so appropriate direction and resources can be applied to address the deficient safety performance.

6.3. Safety Performance Indicators - Responsibility

It is the responsibility of Travis County's Safety Officer to develop and track viable safety performance markers that are used in the SMS to verify the safety performance of the Flight Department and to validate the effectiveness of safety risk controls. The analysis and assessment of how our company ‘functions’ to deliver its activities should form the basis for defining our safety policy, the related safety objectives and the corresponding safety performance indicators and targets.

The Safety Committee working with the Safety Officer shall recommend and provide guidelines to line departments and help them establish departmental safety performance indicators (SPIs). The SPIs shall consider safety requirements from regulatory agencies and other organizations, as well as collected safety data gathered from risk assessment forms, safety reports, and other safety management tools. Base line safety indicators that are tracked by Travis County Flight Department include the following lagging indicators:

1. On the job employee injury rates and occurrences
2. Flight safety recordable events as defined by Travis County safety committee
3. Environmental deviation occurrences
4. ASAP data - if applicable
5. Operational interruption reports

The SPIs are continuously monitored for trends by the Safety Officer and compared against safety performance targets. Trend data is provided to the respective departments. The department managers are responsible for developing and implementing corrective and preventive actions to control adverse trends. All trend data is reviewed by the Program Director and other senior management at scheduled safety committee meetings; however, adverse trends are addressed as soon as they are identified. Formal corrective action plans, with both corrective actions and preventive actions, may be developed.

The Safety Department will communicate relevant safety trend data to the following group based on the following schedule and format:

- All employees - twice a year via the company monthly safety newsletter or team meetings
- Senior managers - monthly via safety committee meetings
- Flight Operations management staff - quarterly via ASAP update meetings, if applicable
- County Executive - quarterly via Senior leadership meetings or via scheduled monthly safety committee meetings

The Safety Officer will review the department's plans and help with both risk assessments and cost / benefit analysis. Flight Department participants will be notified of all SPI trends.

6.4. Change Management

6.4.1. Safety Assessment

A safety assessment should be undertaken prior to the implementation of any major change potentially affecting the safety of operations to demonstrate that the change meets an acceptable level of safety.

The assessment will include the identification of any hazards and potential risks introduced by the changes. Mitigation of potential risks should be considered to reduce the likelihood of the impending changes increasing the organization’s risk associated with the changes.

Once implemented, the Safety Officer will review the changes at periodic intervals appropriate to the scope of the change to monitor for any residual or substitute risk as a result of the change.

6.4.2. Significant Changes

When significant changes are involved, a Safety Risk Profile (SRP) should be conducted. These include:

- Major operational (mission) changes;
- If the organization is undergoing rapid change, such as growth and expansion, offering new services, cutting back on existing service, or introducing new equipment or procedures;
- When key personnel are changed.

Significant changes should be documented on the Change Management Form and/ or Safety Report Form.

6.5. Hazard-Risk Register

Travis County utilizes a Hazard-Risk Register (HRR) as a repository to document a running list of all active hazards facing the organization. The HRR is located on the SMS Web Portal and is populated with data from SMS Inputs (Safety Reports, Risk Assessments, Internal Audits, Change Managements Forms, etc.) as well as outside risks that have been identified by the organization.

The Safety Officer reviews the HRR on at least a monthly basis to update any outstanding issues and add or remove risks, as appropriate.

7. SAFETY PROMOTION

7.1. General

Safety promotion activities are geared toward feedback of information about the safety climate of the Flight Department, assuring that participants regularly receive training and education on SMS principles and promoting a positive safety culture.

7.2. Safety Management System Training and Education

Purpose: Travis County will establish and provide Safety Management System training and education to all personnel. This will assure they understand the roles and responsibilities as they pertain to the SMS.

The Safety Officer shall maintain records of all training provided for each individual. Such records must be retained as long as the individual is employed by Travis County.

The Safety Officer shall ensure that all personnel are competent and adequately trained in the performance of their SMS related duties. The Safety Officer shall also identify the competencies required for each position.

In doing so, Safety Officer shall create a document entitled “SMS Competencies” and describe the competency required for each job function to effectively participate in the SMS to include the Accountable Executive, Safety Officer, Director of Operations, Director of Maintenance, Safety Committee Member, pilots, maintenance personnel, schedulers, dispatchers, administrative personnel, etc.

The minimum competencies for ALL personnel are as follows:

1. Understanding the need for SMS;
2. Understand the meaning of hazard, threat, risk, and mitigation;
3. Understand the inherent hazards and associated risks in the organization and mission;
4. Ability to identify hazards;
5. Ability to understand Risk level and assign an appropriate risk level to an identified hazard or situation;
6. Understand how to do the following within the SMS web portal:
    a. Ability to file a Safety Report;
    b. Ability to file other reports as required by their functional area;
    c. Ability to access a Bulletin, read it, and acknowledge it;
    d. Ability to view a submitted Safety Report;
    e. Ability to contribute to an ongoing investigation of a Safety Report;
    f. Ability to access the online manuals;
    g. Ability to make suggested changes to manuals; and
    h. Ability to make suggested improvements to the SMS.

7.2.1. Contents of Education

Travis County will provide safety training continuously and establish a safety training plan. The following topics will help employees carry out their duties safely and foster a positive safety culture.

Subject	Management	All Employees
Safety Policy	Required	Required
Basic Safety Management System Principles	Required	Required
Significance of Following Procedures	Required	Required
Roles and Responsibilities of All Employees	Required	Required
Roles and Responsibilities of Managers	Required	Optional
Hazard Types	Required	Required
Hazard Reporting Schemes	Required	Optional
Basic Risk Assessment Principles	Required	Required
Human Factors and Organizational Issues	Required	Required
Safety Feedback and Information Transfer Schemes	Required	Optional

Methods of Safety Promotion	Required	Optional
Operation and Use of the Safety Web Portal	Required	Required

7.2.2. Continuing Educational Programs

Annual safety training will be given to the managers and employees to acknowledge their roles and responsibilities within the Safety Management System. This information will be included in the training for new employees.

7.2.3. Effectiveness of Training

Audits are done to check the effectiveness of training. Safety performance indicator trends are also reviewed.

7.2.4. Management of Training Material

The training material shall be reviewed periodically for applicability. Changes in regulations, policies, procedures, technology, equipment or operations may require changes to the training and education program. The Safety Officer is responsible for all changes.

7.3. Safety Communication

Managers and supervisors at Travis County shall freely and consistently communicate important safety information to employees to develop and nurture a strong safety culture throughout the organization. The following are critical matters for attention and reinforcement:

1. Ensure that employees are aware of SMS policies, processes and tools that are relevant to their responsibilities;
2. Convey hazard information relevant to the employee’s responsibilities;
3. Explain why safety actions have been taken; and
4. Explain why safety procedures have been introduced or changed.

The following process shall be used to transmit critical safety information:

1. The Accountable Executive, Safety Officer, Director of Maintenance, or Director of Operations may send safety critical messages;
2. The message shall be drafted in the SMS web portal using the Bulletins feature;
3. The message shall be addressed to all applicable personnel;
4. The Safety Officer shall monitor the read rate for all bulletins and report these rates to the Director of Operations, Director of Maintenance, and Accountable Executive weekly; and
5. The Bulletins shall be retained for a minimum of 24 consecutive calendar months.

7.3.1. Safety Meeting

The Safety Officer should meet regularly, but no less than twice each year, with all employees of the Flight Department to reemphasize the organization's focus on personal and operational safety. Topics of discussion may include, but are not limited to:

- Program Director's safety message
- Summary of accidents and incidents and countermeasures
- Matters requiring immediate corrective actions for accident prevention
- Safety problems that are occurring repeatedly
- Any information and documents received from external organizations.

Minutes and/or notes should be posted by the Safety Officer in the SMS Web Portal.

7.3.2. Conducting Educational Programs

The Safety Officer shall issue safety briefings or information to all relevant departments as quickly as possible with special emphasis given to urgent requirements and guidelines for accident prevention.

Topics may include:

- Program Director's safety message
- Summary of accidents and incidents and countermeasures
- Matters requiring immediate corrective actions for accident prevention
- Safety problems that are occurring repeatedly
- Any information and documents received from external organizations.

The Safety Officer shall receive a written reply of the corrective actions taken for the issued safety directive from the relevant department and verify the status of correction through spot checking, if needed.

The Chief of each department, when receiving safety briefings or information, is responsible for disseminating to staff and putting the information into practice.

7.3.3. Open Door Policy

Any staff member may visit the Safety Officer at any time and present their opinions or suggested ideas on safety matters. This "open door policy" is available to all employees.

The Safety Officer shall consider any useful input for safe operations and accident prevention from employees. This should be reflected in practical safety activities and may require corrective measures.

The manager of each department shall encourage his staff to take part in the open door policy and shall not restrict employees from participation.

If the open door issues require immediate actions to be taken for accident prevention or safe operations, the Safety Officer shall take corrective measures after consulting with the concerned departments. The results of the corrective actions taken from the open door may be notified to the person who initiates the consultation, upon request.

7.3.4. Safety Information Sharing

There is a process for the dissemination of safety information throughout the organization. The Safety Officer shall issue safety briefings or information to all relevant departments as quickly as possible with special emphasis given to urgent requirements and guidelines for accident prevention. There are several methods of promoting safety and circulating safety information in the company.

- Documents: The Safety Officer publishes and distributes safety information periodically.
- Industry publications appropriate to the various disciplines within the Flight Department, i.e. flight operations, scheduling, maintenance, line service.
- A/V Materials: Safety, security training, examples of ground accidents on CD or on-line training.
- Electronic Documents: Email and safety material posted on the Travis County web portal including via the Message Center.
- Links to appropriate web sites.
- Safety Survey: Safety surveys are used on an irregular basis and may be distributed to all employees. The purpose of the survey is to identify hazards, measure the company's safety level and have employees provide their opinions on safety.

7.4. Safety Incentive Program(s)

Travis County promotes safety through its Safety Incentive Program. The program rewards safety performance over a regular period with recognition to individuals and groups. Each individual or group is measured by their safety performance such as damage, injury, incidents, hazardous acts or conditions. Performance in safety awareness and use of safety management resources is clearly demonstrated.

Safety Awards will annually recognize employees and/or groups who have demonstrated a commitment to the safety operation of company equipment and demonstrated a willingness to educate others in safety.

7.5. Safety Committee Meetings

The Safety Committee is chaired by the Safety Officer and also includes representatives from the following disciplines within the organization:

- Management, including:
  - Program Director
  - Director of Operations
  - Director of Maintenance
  - Chief Pilot
  - Aviation Communication Specialist
- Pilots
- Maintenance Technicians
- Medical Crew
- Schedulers / Dispatchers
- Administrative support

An individual Safety Committee member may represent more than one discipline.

The Safety Committee meets periodically to review and discuss the SMS and its safety performance, with the intent to provide recommended action to the Director of Operations. The decision for any action to be taken in response to a safety concern is strictly the responsibility of the Director of Operations.

The Safety Officer is responsible for setting the agenda for each meeting of the Safety Committee, for assembling and distributing information on the subject areas to be discussed, and for posting the minutes of each Safety Committee meeting. The Safety Committee meeting minutes should be posted for all members or the organization no later than three days after the meeting.

8. FATIGUE RISK MANAGEMENT SYSTEM

8.1. Fatigue Risk Management System (FRMS)

Managing fatigue-related risk under the SMS framework involves incorporating complicated defenses against the hazard of fatigue based on a careful assessment of risk. Crew members and maintenance personnel are prohibited from performing any of their assigned duties when they are fatigued.

The Travis County FRMS is based upon FAA AC120-103A, Fatigue Risk Management Systems for Aviation Safety (May 2013), ICAO FRMS guidelines, and NBAA Duty/Rest Guidelines (April 2014).

The FRMS is part of a repetitive performance improvement process that leads to continuous safety enhancements by identifying and addressing fatigue factors across time and changing physiological and operational circumstances. It is important to understand what these conditions are. With the same concept as our SMS, the objective of this FRMS is to manage, monitor, and mitigate the effects of fatigue to improve individual alertness and reduce performance errors.

Policies related to FRMS are incorporated throughout the company manuals. Some of the most pertinent policies are:

- **Administration**
  - Vacation/Off Duty
  - Pilot Logbooks
  - Operational Control
  - Operational Control procedures
- **Crew and Aircraft Scheduling**
  - Crew Availability
  - Duty Time / Flight Time (DT/FT) Limitations
  - DT/FT – Two Pilots
  - DT/FT – Three Pilots
  - DT/FT – Required Rest
  - DT/FT – Additional Requirements
  - Hotel Reservations
- **Operational Policies**
  - Minimum Crew
  - Physical and Emotional Well-Being
  - Crew Meals
  - Blood Donation / Blood Loss
- **Flight Planning**
  - Flight Risk Assessment
  - Safety and Hazard Reporting
- **Standard Operating Procedures**
  - Crew Resources Management
  - Pilot Incapacitation
  - Crew Reporting Times
  - Microphones
  - Sterile Flight Deck
  - Autopilot Usage
- **Training**
  - Flight Crewmembers Training Requirements Table
  - Maintenance Technicians Training Table
  - Flight Attendants/Cabin Crewmembers Training Table
  - Other Personnel Training Table
  - Fatigue Management
- **Maintenance Operations**
  - Maintenance Duty Time
  - Working Alone
  - Maintenance Training Program
  - Elements of Maintenance Activity
- **Forms**

- Flight Risk Assessment Form
- Technical Risk Assessment Form
- Policy Waiver Form
- Safety Reporting Form
- Fatigue Report Form

8.2. FRMS Policy

This FRMS policy applies to all Flight Department personnel. All are expected to have a sound understanding of human factor effects of fatigue. At a minimum, our scheduling processes will ensure that Travis County adheres to the Scheduling and Duty Time policies to the greatest degree possible. Deviation from these policies must be approved in advance by the Director of Operations or the Director of Maintenance via the Policy Waiver process.

It is the responsibility of management, as well as the individual, to manage on the job duties and between assignment duties, and to take advantage of rest opportunities in order to be fit and well rested for duty.

Individuals are expected to report fit for duty and sufficiently well rested to be able to safely perform the duties of the job. Likewise, it is the responsibility of the individual to alert management when he or she is not sufficiently rested to perform safely, and if so, management will replace that person with someone who is well rested. It is important to ensure that the individual reporting fatigued is not coerced into performing duties.

Because fatigue is a complex subject, all personnel within the organization will have adequate training to understand the causes of fatigue, how employees can maximize the benefits of rest opportunities, the use of various countermeasures to minimize the effects of fatigue and the overall responsibilities of the individual to report fit to safely perform duties.

All FRMS activities will be documented and recorded in order for the organization to adequately assess and modify fatigue management processes. These assessments will be reviewed on a regular basis and will have their own agenda at departmental safety meetings. This data collection is in the form of Safety Report forms, Risk Assessment forms, (FOQA if it applies), and all other SMS reporting processes.

It is the intent of department management to have periodic reviews of the FRMS policy to ensure that it remains applicable and appropriate. It will be by committee, quarterly/annual departmental meetings or a combination of the two.

8.3. Understanding Fatigue

8.3.1. Sleep

Sleep is a vital physiological need. Sleep is necessary to maintain alertness and performance, positive mood, and overall health and well-being. Each individual has a basic sleep requirement that sustains optimal levels of performance and physiological alertness during wakefulness. On average, an adult requires eight hours of sleep in a 24-hour period.

It has been shown in laboratory studies that loss of as little as two hours of sleep will induce fatigue and degrade subsequent waking performance and alertness. Over successive days, sleep loss — any amount less than is required — will accrue into a cumulative sleep deficit commonly referred to as a “sleep debt.” The physiological need for sleep created by sleep loss can be reversed only by sleep. Recovery from acute sleep loss takes one or two consecutive extended sleep periods. These extended sleep periods will be even longer if a person is suffering from a cumulative sleep debt. An individual who has obtained ample recovery sleep will be better prepared to perform after long hours awake or while working nonstandard schedules than a person who is operating with a sleep debt.

8.3.2. Recovering from Sleep Debt

Recovery from acute or cumulative sleep loss is critical when a person is challenged with non-standard schedules that include extended periods of wakefulness (e.g., extended duty periods) or circadian disruption (scheduled sleep/wake periods that are misaligned with the body's circadian rhythm). Recovery is necessary to reduce the accumulated effects of fatigue and enable an individual to perform assigned duties fully rested. Further, recovery periods should allow for recuperative sleep opportunities of an appropriate number of hours and, in some cases, an appropriate number of successive days.

Placement of recovery sleep periods is crucial and can be especially challenging when schedules include changing time zones because individuals may experience circadian misalignment. Westward travel is often associated with waking up too early in relation to the local time zone, and eastward travel is associated with delay in falling asleep in relation to the local time zone.

Another challenge an individual may experience when planning recovery rest is adaptation to time zone shifts (jet lag). Many operational factors impact the scheduling of recovery periods, and a simple rule may not fully account for the role that individual differences play in recovery. It is known that meeting daily sleep requirements and using restorative breaks promote optimal performance and alertness.

Frequent recovery periods reduce cumulative fatigue more effectively than less frequent ones. For example, weekly recovery periods are more likely to relieve acute fatigue than monthly recovery periods. Consequently, guidelines that ensure a minimum number of days off per week are necessary for minimizing cumulative fatigue effects over longer periods of time (e.g., month, year).

8.3.3. Circadian Physiology

Time-of-day or circadian effects are important considerations in determining 24-hour operational requirements because circadian rhythms do not adjust rapidly to change. In fact, the rhythms of many physiological functions adjust at different rates.

There is a 24-hour biological "clock" in the human brain, as in other organisms, that regulates 24-hour patterns of body functions. This clock controls not only sleep and wakefulness alternating in parallel with the environmental light/dark cycle, but also the oscillatory nature of most physiological, psychological and behavioral functions. The wide range of body functions controlled by the clock includes body temperature, hormone secretion, digestion, physical and mental performance, mood and many others. On a 24-hour basis, these functions fluctuate in a regular pattern with a high level at one time of day and a low level at another time.

The clock's circadian (*circa* meaning "around," *dies* meaning "day") pattern of wakefulness and sleep programs the human body for wakefulness during the day and sleep at night. This *circadian system* repeats this pattern on a daily basis. Certain hours of the 24-hour cycle — that is, roughly 0200 to 0600 (for individuals adapted to a usual day-wake/night-sleep schedule), called the *window of circadian low* (WOCL) — are identified as a time when the body is programmed to sleep, and during which alertness and performance are degraded.

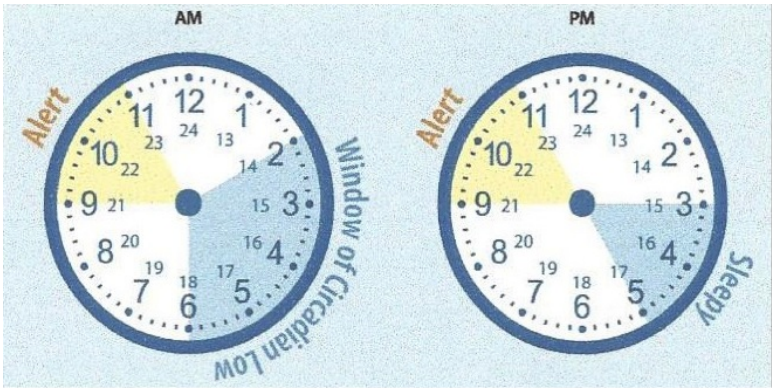
There is a second, less pronounced, period of reduced alertness between 1500 and 1700. The body is also programmed for two periods of enhanced alertness and performance, and these periods are estimated to occur roughly between 0900 and 1100 and again between 2100 and 2300.

Non-standard schedules interrupt daily wake and sleep patterns, resulting in internal circadian disruption. For example, an individual working during the night is maintaining wakefulness in direct opposition to physiological programming to be asleep. Physiological, psychological and behavioral functions are set by the circadian system to a low status during the WOCL and a person cannot compensate by being awake and active. Conversely, the same individual sleeping during the day is in direct opposition to physiological programming to be awake. The circadian system provides a high level of functioning during the day that counteracts the drive to sleep.

Circadian disruption also occurs with jet lag. When the biological clock is not aligned with the external environment's time cues, desynchronization occurs both in relation to the external environment and among the various internal physiological functions. Such circadian disruptions can lead to acute sleep loss, sleep debt, decrements in performance and alertness, and various health problems (e.g., gastrointestinal).

Scientists agree there is no simple equation to determine the rate of circadian adjustment in any one

individual. Numerous factors play a role, such as number of time zones crossed, direction of travel, amount and timing of light exposure, morning/evening types, and long sleepers vs. short sleepers.



8.3.4. Continuous Waking Hours

Extended wakefulness and prolonged periods of continuous performance or vigilance on a task will result in sleepiness and fatigue. Across duty periods, these effects can accumulate further. One way to minimize the accumulation of these effects is to limit the length of a duty period (i.e., the continuous hours of wakefulness during operations). Acute effects can be addressed through daily duty limits, and cumulative effects can be minimized by weekly limits. Cumulative limits (weekly and beyond) remain an accepted operational approach for minimizing accumulation of fatigue effects.

8.3.5. Individual Differences

There are considerable individual differences in the magnitude of fatigue effects on performance, physiological alertness and subjective reports of fatigue. These differences extend to the effects of sleep loss, night work, required sleep and recovery time for an individual.

Individuals vary from one another in sleep requirement, overall health, age and other factors. Individuals' fatigue level can also vary from day to day based on their participation in activities that contribute to fatigue while on duty and prior to a duty period. In this regard, long-duration commutes immediately before a duty period are of concern.

Scientists agree that increased workload amplifies the performance degradation produced by extended hours of wakefulness and adverse circadian phase (that is, being awake during the WOCL). Also, individuals respond differently to the effects of workload. In aviation, workload factors can include the number of flight segments, time on task, airport characteristics, weather conditions, aircraft capabilities and other environmental conditions.

This Flight Department has a diverse range of required work demands and operational environments. Because of this diversity, it should be understood that one set of guidelines cannot cover all personnel or operational conditions, and that there is no single or absolute solution to these challenges. Notwithstanding these differences, Travis County has developed policies to guide flight crew and maintenance technician work schedules with the objective to minimize the risks of fatigue in flight and maintenance operations. Managers and individuals alike must ensure that assigned duty periods adhere to Crew and Aircraft Scheduling and Maintenance Duty Time policies to the greatest degree possible. Deviation from these policies must be approved in advance by the Director of Operations or the Director of Maintenance via the Policy Waiver process.

8.4. Fatigue Recognition

Workers must be alert for non-work-related fatigue factors. Effects of family or social stress factors that take priority over sleep as well as undiagnosed or untreated sleep disorders must be addressed in order to combat the effects of fatigue.

Some symptoms of fatigue are:

- **Physical Symptoms**
  - Yawning

    - Heavy eyes
    - Eye-rubbing
    - Head drooping
    - Micro-sleeps
- **Mental Symptoms**
    - Difficulty concentrating on tasks
    - Lapses in attention
    - Difficulty remembering what you are doing
    - Failure to communicate important information
    - Failure to anticipate events or actions
    - Accidentally doing the wrong thing
    - Accidentally not doing the right thing
- **Emotional Symptoms**
    - More quiet or withdrawn than normal
    - Lacking in energy
    - Lacking in motivation to do the task well
    - Irritable or grumpy behavior with colleagues, family, or friends

8.5. Fatigue Training

All Travis County personnel will complete annual training on fatigue awareness, recognition, and mitigation strategies. This training may be completed via computer-based training or by lecture conducted by an outside training facility. The training curriculum should include the following topics:

- Fatigue awareness / competency training
- Refresher training
- Training on maximizing sleep and alertness
- Information for families / housemates on facilitating sleep at home
- Awareness about the impact of food and hydration on alertness
- Physical activity
- Appropriate use of stimulants such as "NoDoz"
- Availability of caffeine

8.6. FRMS Assessment

An effective FRMS can only be assured by following a process of continuously assessing the impacts of rest and duty time policies upon individual performance. Work patterns that routinely result in high levels of fatigue and degraded safety confidence must be recognized and adjusted accordingly.

The employee reporting, analysis and feedback mechanisms should be a component of the organization’s FRMS. Risk Assessments, Safety Reports, and employee surveys are the primary means of gathering information related to the experiences of the work force with respect to fatigue. The Safety Officer will review collected data at least quarterly and report to the Director of Operations on the status and effectiveness of the FRMS. This report will include recommendations to address perceived weaknesses in fatigue management, as appropriate.

9. SMS DOCUMENTATION AND RECORDKEEPING

9.1. Safety Management System Manual

This Safety Management System Manual will remain in force as long as the Flight Department remains a part of Travis County. It will be reviewed periodically (at least every 24 months) by the Accountable Executive and the Safety Officer to ensure that it reflects current SMS policy, processes and procedures.

The SMS documentation that describes the Travis County Safety Risk Management processes and procedures is available to all employees via the SMS web portal. The process to update and maintain the Safety Management System Manual is as follows:

1. Development and continuous improvement ideas are forwarded to the Manuals Administrator.
2. The Manuals Administrator presents the suggested revisions to the Safety Committee for review and approval. The Safety Committee approval must include the concurrence of the Director of Operations and/or Director of Maintenance, as applicable.
3. Once a revision is approved by the Safety Committee and applicable Director(s), the Manuals Administrator shall submit the required revisions to the applicable policies, processes, and procedures for inclusion in the Safety Management System Manual.
4. The changes will then be made to the draft copy of the manual.
5. The Manuals Administrator will be notified when the changes are complete and will review all changes prior to publishing.
6. Once the changes have been published, the Manuals Administrator will announce the changes to all affected personnel via the SMS web portal.

9.1.1. SMS Documentation Development and Maintenance Process

The following describes the method to develop and maintain SMS documentation including the Safety policy, processes and procedures.

General Documentation: The Safety Officer, with concurrence from the Safety Committee, will identify SMS documentation needs and annotate these requirements in the Safety Meeting Minutes. These documentation needs will be submitted via a “Change Request” within the “Manuals” interface. Change Requests will be actioned in a timely manner to develop the documentation to be integrated into the Safety Management System Manual.

Safety Policy and Processes: The Manual Administrator modifies the Safety Policy and Processes via the “Change Request” function within the Manuals Interface on the SMS web portal.

Procedures: The Manual Administrator adds and/or modifies procedures via the “Change Request” function within the Manuals Interface on the SMS web portal.

9.2. SMS Outputs

Records of outputs of safety risk management processes and of safety assurance processes are retained indefinitely on the Travis County SMS web portal.

Note: At a minimum, Safety Risk Management process records shall be kept as long as the control is in place.

Records of safety risk management outputs are organized within and linked to the Hazard Risk Register (HRR). A HRR entry shall not be “Closed” if the risk control measures are still applicable.

Note: Even if the HRR element is categorized as “Closed”, the records are still available for review.

9.2.1. Safety Assurance Documentation and Records

The process to develop and maintain Safety Assurance processes and procedures is as follows:

1. The Safety Officer shall review the Safety Assurance requirements described in the FAA Safety Management System Voluntary Program Standard (FAA SMSVPS) to determine documentation development needs.
2. These development needs shall be communicated to the Safety Committee for review and consensus.
3. Once a consensus is achieved for Safety Assurance documentation development needs, the Safety Officer shall send a "Change Request" via the online Manuals Interface, if it is a change to manuals, or via Baldwin SMS “Support” to develop documents outside the manuals system.
4. Baldwin Aviation shall develop the required documentation as requested by the Safety Officer.
5. The Safety Officer is notified that the draft documentation is ready for review.
6. The Safety Officer presents the draft documentation to the Safety Committee for review and approval.
7. After the Safety Committee approves the draft documentation, the Safety Officer approves the manual revision via the Manual Interface, or sends an “Approved” message via the “Support” message system for non-manuals documentation.
8. All Safety Assurance documentation shall be maintained within the online SMS web portal. If supporting documentation is generated outside the SMS web portal, it shall be uploaded into the “Documents” section of the SMS web portal.
9. All records of outputs of the safety assurance processes shall be maintained for a minimum of 5 years.

9.3. Training Records

The Safety Officer shall maintain records of all training provided for each individual. Such records must be retained as long as the individual is employed by Travis County.

9.4. Safety Meeting Minutes

The Safety Officer shall prepare minutes and/or notes for every Safety Meeting conducted by the Flight Department. These records shall be retained for a minimum of 24 months after the meeting. Original copies of posters, flyers, briefings, and other targeted communication shall also be retained for a minimum of 24 months after distribution / posting.

10. APPENDIX A - SMS IMPLEMENTATION PLAN

10.1. Phased Implementation Description

The phased implementation of Safety Management Systems (SMS) for existing certificate holders and other service providers required to have an SMS per 14 CFR Part 5, is permitted according to the following four levels (phases) and prescribed exit criteria for the satisfactory achievement of each level (phase):

- Level 1 - *Planning & Organizing SMS Implementation*.
- Level 2 - *Reactive Processes, Basic Safety Risk Management*.
- Level 3 - *Proactive/Predictive Processes, Functional SMS.*
- Level 4 - *Continuous Improvement, Continued Assurance*.

FAA & ICAO SMS Implementation Levels

Level	ICAO Framework Doc 9859 / Annex 19	FAA Framework 14 CFR Part 5
1	• Identify the SMS accountable executive; • Establish an SMS implementation team; • Define the scope of the SMS; • Perform an SMS gap analysis; • Develop an SMS implementation plan; • Establish a key person/office responsible for the administration and maintenance of the SMS; • Establish an SMS training program for personnel, with priority for the SMS implementation team; • Initiate SMS/safety communication channels. *SMS Elements: 1.1(i), 1.5(i), 1.3, 4.1(i), 4.2(i)*	**Planning and Organization.** Level 1 begins when your management team commits to providing the resources necessary for full SMS implementation. Level 1 includes a thorough understanding of your organizational structure and a comparison (gap analysis) between the FAA Part 5 requirements and your organizational structure. Your organization will develop an implementation plan to bridge your identified gaps.
2	• Establish the safety policy and objectives; • Define safety management responsibilities and accountabilities across relevant departments of the organization; • Establish an SMS/safety coordination mechanism/committee; • Establish departmental/divisional SAGs where applicable; • Establish an Emergency Response Plan; • Initiate progressive development of an SMS document/manual and other supporting documentation. *SMS Elements: 1.1(ii), 1.2, 1.4, 1.5(ii)*	**Basic Safety Management.** Level 2 is where you develop and implement basic Safety Risk Management (SRM) and Safety Assurance (SA) processes and apply those processes to existing systems. This is often called the “reactive phase.” At this phase, your company can identify hazards and address unacceptable risk. Level 2 implementation, depending on the size and complexity of the organization, typically takes 12 months to complete.

3

- Establish a voluntary hazard reporting procedure;
- Establish safety risk management procedures;
- Establish occurrence reporting and investigation procedures;
- Establish a safety data collection and processing system for high-consequence outcomes;
- Develop high-consequence SPIs and associated targets and alert settings;
- Establish a management of change procedure that includes safety risk assessment;
- Establish an internal quality audit program;
- Establish an external quality audit program.

SMS Elements: 2.1(i), 2.2, 3.1(i), 3.2, 3.3(i)

Functional SMS.

Level 3 is where your SRM process will be applied to the initial design of systems, processes, organizations, and services; development of new or changed operational procedures; and planned changes to operational processes. This is the "proactive/predictive" phase, where risks in future planned operations are addressed. Both the SRM and SA processes developed at Level 2 are now applied in a predictive manner —applying safety management to something that you are planning to do. At the completion of Level 3, you have a fully implemented SMS.

4

- Enhance the existing disciplinary procedure/policy with due consideration of unintentional errors or mistakes from deliberate or gross violations;
- Integrate hazards identified from occurrence investigation reports with the voluntary hazard reporting system;
- Integrate hazard identification and risk management procedures with the subcontractor's or customer's SMS where applicable;
- Enhance the safety data collection and processing system to include lower-consequence events;
- Develop lower-consequence SPIs and associated targets/alert settings;
- Establish SMS audit programs or integrate them into existing internal and external audit programs;
- Establish other operational SMS review/survey programs where appropriate;
- Ensure that the SMS training program for all relevant personnel has been completed;
- Promote safety information sharing and exchange internally and externally.

SMS Elements: 1.1(iii), 2.1(ii), 3.1(ii), 3.3(ii), 4.1(ii), 4.2(ii)

Continuous Improvement.

At Level 4, you are monitoring your SMS and operational processes. By the time you reach this level, all required SMS processes are already in place. A major objective of a successful SMS is to attain and maintain a sustained safety culture, continuous improvement, conducting a safety culture survey annually so the organization can become experts at managing the culture by level 4 for the life of the organization.

10.2. SMS Implementation Plan

Phased Implementation of Safety Management Systems

Level	Description	Date
1	Planning & Organizing SMS Implementation	Month, Year
2	Reactive Processes, Basic Safety Risk Management	Month, Year
3	Proactive/Predictive Processes, Functional SMS	Month, Year
4	Continuous Improvement, Continued Assurance	Month, Year