AVIATION SCIENCE

SAFETY MANAGEMENT SYSTEM (SMS) PROGRAM

Version 1.1: August 1, 2018

Introduction

The UMES Aviation Science Safety Management System (SMS) identifies operational hazards and provides a framework and methodology to manage associated risks, so that operational safety is maintained to the highest degree possible. The UMES Aviation Science Program is committed to the improvement of the management system with regular reviews of performance indicators, analysis of malfunctions or undesirable operational results, and the follow-up of corrective actions and their effectiveness to improving operational performance.

SMS Components

The UMES Aviation Science Safety Management System is organized around four components of safety management:

- Policy - Clearly defined policies, procedures, organizational structure, and accountabilities
- Risk Management - Formal system of hazard identification, risk assessment, risk management, and resource allocation.
- Safety Assurance - Applies to the processes of internal evaluation, continuous monitoring, safety event reporting, and data analysis to assure the effectiveness of the safety system.
- Promotion - Training and continuous communications to all Aviation staff, faculty, and students of safety values and practices that support a sound safety culture.

Reporting and Feedback System "Safety Reports"

The UMES Aviation Science Program believes that a non-reprisal policy for safety hazard reporting is a cornerstone of successful safety programs and is essential to the establishment of a strong aviation safety culture.

Non-reprisal structure excludes the following:

- Can't involve drugs or alcohol
- Can't be blatant and/or disregard established rules and regulations
- Can't involve illegal activities
- Has to be first source reporting (Self reporting)

Accordingly:

- UMES will not initiate disciplinary proceedings against any staff, faculty, or student who discloses an incident or occurrence involving flight safety. This policy shall not apply to information provided to the program by a source other than the staff, faculty, or student.

- Communication should be in the form most appropriate for the situation. Emergency situations are to be immediately addressed with the SMS chair, in his absence, the Aviation Program Coordinator. For non-emergency situations staff, faculty, or students may utilize one of the UMES self-reporting methods for collecting information regarding safety. UMES utilizes an electronic form and a physical drop box with forms attached. The drop box format is designed to protect, to the extent permissible to outside persons, the identity of the person who provides the information.

Responsibility:

A clearly identifiable, qualified, and knowledgeable person who is ultimately accountable for the overall quality of a program. Responsibility for a manual or program resides with one person and cannot be delegated. (***Edward Brink***, SMS Chair)

Authority:

A clearly identifiable, qualified, and knowledgeable person with power to establish and modify a process. When it is deemed necessary to delegate one's authority, it must be communicated in writing or by e-mail or letter.

Safety Policy and Objectives

The Safety Management System (SMS) is an organized approach to managing operational safety risks to assure that an acceptable level of safety is achieved and maintained through a process of identifying operational hazards and providing a framework and methodology to assure that operational safety is maintained at the highest degree possible.

SMS integrates various and complimentary safety policies in a cohesive approach to safety management. SMS is a continuous process whereby hazards associated with day-to-day operations are identified and assessed for their risk level. Hazards with unacceptable risk are either mitigated or eliminated altogether.

Aviation Science Safety Policy

The UMES Aviation Science Program is committed to safety. Safety, Safety systems, Education, and Compliance are the forefront of aviation safety, as such we strive to meet and establish industry standards within our flight operation. To be successful, every staff, faculty member and student are responsible for his or her personal safety, the safety of the training and operational environment, and the safety of others within the program.

The UMES Aviation Science Program is committed to these seven industry standard safety objectives:

- Create a sustainable aviation safety culture
- Comply with all regulations and standards
- Reduce the likelihood of training fatalities
- Reduce the likelihood of aircraft accidents
- Reduce staff, faculty, and student flight operation injuries
- Reduce aircraft ground damage and aircraft incidents
- Assess and mitigate safety hazards and risks

The UMES Aviation Science Program and industry strongly believes that leadership, accountability, communications, and resources are essential to fulfilling safety objectives. Therefore, as it aligns with common industry practices:

All levels of staff and faculty, within The UMES Aviation Science Program, are expected to educate other staff, faculty, and students on policies and procedures, promote a culture of safety, and demonstrate the ability to lead by example.

Staff and Faculty within the UMES Aviation Science Program are required to comply with all UMES Safety policies and procedures.

Staff, faculty, and students are expected to report safety hazards, concerns, incidents, and errors immediately to his or her professor, instructor, CFI, or SMS Chair as well as report any behavior that violates policy, industry standards, regulatory requirements or laws. The UMES Aviation Science Program maintains several non-punitive reporting methods, including email, electronic form, and/or physical drop boxes. All staff, faculty, and students are expected to use these resources with the understanding that they may do so without fear of reprisal.

The UMES Aviation Science Program recognizes that SMS has earned aviation recognition as providing the highest level of organizational safety within the industry. This is achieved through

the enforcement, utilization, and education of SMS Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion.

This safety policy mimics closely that of working Safety Policies within the industry as they are designed for air carriers as required by Federal Aviation Regulations. As a result, this policy aids in the development of a sustainable, proactive aviation safety culture that students will carry forward to the aviation industry.

Safety Risk Management/Assessment (SRM)/(SRA)

Safety Risk Management is a structured approach to determining risks associated with identified hazards, assigning a risk level through the assessment of risk likelihood and severity, and designing risk mitigations and prevention controls in an attempt to lower probability and severity.

A. All UMES Aviation Staff, Faculty, and Students are required to apply SMS principles to safety related operations and may report new hazards via either:

- Directly reporting to the SMS Chair or Aviation Science Program Staff or Faculty,
- Drop boxes using the Hazard Reporting Form or
- The electronic hazard reporting form: https://umes.edu/Aviation/Pages/Safety-Reporting/

B. The SRM procedures are primarily performed by the UMES Aviation Safety Committee, but may also be performed by other individuals, staff and faculty who have also received documented training in performing the SRM process. All persons, when performing SRM, regardless of position, will perform SRM in accordance with training.

Hazard Identification and Analysis

Hazards are identified through a system event or through analysis of Safety Assurance data. System descriptions and task analysis will be developed to the level of detail necessary to identify hazards, develop operational procedures, and develop and implement risk controls.

System Description and Task Analysis

The UMES Aviation Science Program will analyze its systems, operations and operational environment to gain an understanding of critical design and performance factors, processes, and activities to identify hazards.

Identify Hazards

The UMES Aviation Science Program will identify and document the hazards in its operations that are likely to cause death, serious physical harm or damage to equipment or property in sufficient detail to determine associated level of risk and risk acceptability. Hazard information will be tracked, and managed throughout the entire SRM process.

Hazard Risk Assessment and Control

Risk assessment is a forward-looking critical analysis of possible credible outcomes, resulting from hazards identified or through the safety assurance or risk monitoring processes.

A. The UMES Aviation Science Program staff, faculty, and student safety committee will be trained and qualified to assist with risk assessment.

B. The risk assessment evaluation will include existing risk controls and triggering mechanisms by identifying likelihood and severity from the "Risk Matrix". Severity and Likelihood are plotted on the Risk Matrix to determine a risk rating. The risk rating is the color (Green, Yellow, Orange, or Red) of the block corresponding to the intersection of the Severity column and Likelihood row.

C. Risk Assessments will be maintained on file in accordance with the SMS Chair.

D. Some steps of the risk assessment may be accomplished several times as additional risks are identified.

E. Each SMS Risk Assessment must be signed by the SMS Chair to indicate the following:

    a. Approved - signifies that the risk assessment is complete, the risk is within the acceptable range, and that any residual risk has been considered and is acceptable.

    b. Disapproved - indicates the risk is not within acceptable standards or residual risk is unacceptable.

    c. A disapproved risk assessment dictates that the operation be discontinued. Risk may be brought into the acceptable range through system redesign or through implementation of additional prevention and/or mitigation strategies.

F. The Risk Matrix, located on the" Safety Reporting Form", will be used to assess risk identified on the Safety Reporting Form.

G. When a hazard is identified with an unacceptable level of risk, the bowtie method will be used as a tool to design and evaluate preventive controls and mitigation controls. Preventive controls aid in lowering the probability of risk where-as mitigation controls aid in lowering risk severity.

Safety Assurance (SA)

The UMES SMS committee will monitor, measure, and evaluate the performance of their SMS to identify new hazards, measure the effectiveness of risk controls, (to include preventative and corrective actions) and ensure compliance with regulatory requirements. Data from monitoring systems is integral to Safety Assurance.

Safety Performance Monitoring and Measurement

SMS outputs will be recorded, monitored, measured and analyzed at bi-monthly intervals. Each of the outputs will also have a method of measurement providing objective evidence of the attainment of the expectation. The internal evaluation process is the method of controlling the processes, through the associated data collection, analysis, assessment and corrective action processes. The individual outputs are the content of the process measures.

Finally, management involvement is the means of ensuring that the appropriate levels of responsibility and authority are brought into the process and that management can be accountable in a proactive way, rather than an after-the-fact attribution.

Continuous Monitoring

Daily review of operational processes is accomplished by staff and faculty of the Aviation Science Program. Monitoring of the system and operations to identify new hazards, measure the effectiveness of safety risk controls, and ensure compliance with regulatory requirements

applicable to the SMS, takes place through the staff and faculty continuous oversight of daily flight operations.

Change log:

Version 1.1, September 8, 2017: Original

Version 1.2, change date September 28, 2017: Adds Visual checkpoints to training areas and revises entry and exit procedures. Adds Google map of training areas.

Version 1.3, July 2018: Adds paragraphs 19 and 20 mentioning of Normal Procedures and Drug Policy Documents. Changes the word "company" to "Aviation Science" in paragraph 5.