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Risk Management

Lesson Preparation:

- Watch the Risk Management video.

Cognitive Learning Objective:

- Remember the significant elements of Risk Management (RM).

Cognitive Samples of Behavior:

- Define RM.
- List the goals of RM.
- Name the four RM principles.
- Identify the steps of the RM process.

This lesson introduces you to Air Force Risk Management (RM) and provides you with a basic understanding of the five-step process. The narrative below is excerpted from AFI 90-802 *Risk Management.*

AF RISK MANAGEMENT OVERVIEW

Definition

RM is a decision-making process to systematically evaluate possible courses of action, identify risks and benefits, and determine the best course of action (COA) for any given situation. RM enables commanders, functional managers, supervisors, and individuals to maximize capabilities while limiting risks through application of a simple, systematic process appropriate for all personnel and functions in both on- and off-duty situations. Appropriate use of RM increases an organization's and individual's ability to safely and effectively accomplish their mission/activity while preserving lives and precious resources.

Tenets

- Risk is inherent in all missions, operations and activities, both on- and off-duty.
- Risk can be effectively mitigated if understood and appropriate action is taken.
- All personnel are responsible for utilizing RM concepts, tools and techniques.
- The RM process outlined herein applies to risk-related decisions when such decisions are not governed via separately established requirements/guidelines (i.e., statutes, regulations, or DoD/AF policy/guidance that address personnel health and safety or environmental matters and dictate particular decisions or outcomes within these requirements/guidelines).

RM Goals

- Enhance mission effectiveness at all levels, while preserving assets and safeguarding health and welfare.
- Create an Air Force cultural mindset in which every leader, Airman, and employee is trained and motivated to manage risk in all their on- and off-duty activities.
- Integrate RM into mission and activity planning processes, ensuring decisions are based upon risk assessments of the operation/activity.
- Identify opportunities to increase AF warfighting effectiveness in all environments, and ensure success at minimal cost of resources. The RM process shall be institutionalized and be an inherent part of all military operations to address safety, occupational and environmental health risks.

RM Foundations

Essential concepts of AF RM:

- RM is a comprehensive system for improving individual and organizational performance in all functional areas, operations and activities, both on- and off-duty.
- RM must be tailored to meet the unique mission needs and operational requirements of each organization and personnel within the organization.
- RM provides the process and tools to develop and enhance awareness and understanding of at-risk activities and behavior of personnel both on- and off-duty. These processes and tools help create effective risk assessments that identify potential hazards and effective strategies to mitigate or eliminate the hazards.
- Effective RM has the added advantage of not only identifying risks, but also identifying areas where regulatory guidance or standard operating procedures may be overly restrictive or inconsistent with mission/activity requirements. In this event, a comprehensive risk assessment may be used to support solicitation of waivers, variances, or changes, but will not in itself constitute authority to violate or deviate from any directive, policy, standard, or other applicable regulatory guidance.

RM does not:

- Inhibit flexibility, initiative or accountability in any chosen course of action.
- Remove risk altogether or support a “Zero Defect” mindset. RM provides decision makers with the tools and strategies necessary to make the appropriate decision for a given set of circumstances.
- Take the place of training, practice, drills, rehearsals, tactics, techniques and procedures associated with a specific event and/or action.
- Override or supersede compliance with federally mandated Department of Defense (DoD), Occupational Safety and Health Administration (OSHA) standards, federal environmental cleanup standards, AF standards/criteria, or any risk-based statutory and regulatory requirements that apply and dictate the outcome of such requirements. The AF does not have authority to grant exemptions and waivers for statutory and regulatory requirements that have risk related exposure elements or standards. All other waivers, variances, or change requests must be properly vetted through the appropriate agency for approval. In addition, the RM does not sanction or justify violations of any law.

AF RM CORE CONCEPTS

RM Principles

Four principles govern all actions associated with RM. These principles are the cornerstone of effective RM and are applicable 24-hours a day, 7-days a week, 365-days a year (24-7-365) by all personnel, for all on- and off-duty operations, tasks and activities.

- Accept no unnecessary risk. Unnecessary risk comes without a commensurate return in terms of real benefits or available opportunities; it will not contribute meaningfully to mission or activity accomplishment and needlessly jeopardizes personnel or other assets. All AF missions and daily routines involve risk. The most logical choices for accomplishing a mission are those that meet all mission requirements while exposing personnel and resources to the lowest acceptable risk; take only those risks that are necessary to accomplish the mission or task. However, we cannot and should not be completely risk averse; even high risk endeavors may be undertaken when there is a well founded basis to believe that the sum of the benefits exceeds the sum of the costs. Balancing benefits and costs is a subjective process and tied intimately with the factors affecting the mission or activity; therefore, personnel with prior knowledge and experience of the mission or activity must be engaged whenever possible in making risk decisions to ensure a proper balance is achieved.
- Make risk decisions at the appropriate level. Although anyone can make a risk decision that impacts their personal well being, some risk acceptance decisions must be made by an appropriate decision making authority that can effectively allocate resources and implement controls to mitigate or eliminate risks associated with an operation/activity. Making risk decisions at the appropriate level also establishes clear accountability. Leaders and individuals must be aware of how much risk they can accept and when to elevate RM decisions to a higher level. Those accountable for the success or failure of the mission or activity must be fully engaged in the risk decision process.
- Integrate RM into operations, activities and planning at all levels. Integrate RM into planning at all levels and as early as possible. This provides the greatest opportunity to make well informed risk decisions and implement effective risk controls. To effectively apply RM, commanders, supervisors, and personnel must dedicate time and resources to integrate RM principles into planning, operational processes and day-to-day activities. Risk assessments of operations and activities are most successful when they are accomplished in the normal sequence of events (the pre-planning of a mission or activity) by individuals directly involved in the event, and not as a last minute or add-on process. Any amount of pre-planning that can be accomplished, even in a time constrained environment, is better than no planning at all.

- Apply the process cyclically and continuously. RM is a continuous process applied across the full spectrum of military training and operations, base operations functions, and day-to-day activities and events both on- and off-duty. It is a cyclic process that is used to continuously identify and assess hazards, develop and implement controls, evaluate outcomes and provide feedback to our Airmen to save lives and preserve combat resources.

RM Levels. The principles, goals and fundamental concepts of RM highlight the universal application of RM concepts both on- and off-duty. There are two primary levels of RM (Deliberate, & Real-Time) that dictate the level of effort and scope that should normally be undertaken when evaluating risk(s). Deliberate and Real-Time RM are interrelated when making RM decisions; they are separated only at the point where the planning phase transitions to the execution phase of the mission/activity. A strong, effective RM process involves careful and Deliberative planning coupled with effective, Real-Time RM. This full spectrum approach ensures comprehensive risk mitigation and the likelihood of mission/activity success.

- Deliberate: Deliberate RM refers to pre-mission/activity planning and normally involves the full formal application of the complete 5-Step RM Process. This process can range from an in-depth planning process involving thorough hazard identification (ID), detailed data research, diagram and analysis tools, formal testing, and long term tracking of the risks associated with an operation, activity or system, down to normal day-to-day operations/activity planning that utilize the same 5-Step RM Process, but require less time and resources to complete. Generally associated with strategic-level planning, in-depth RM planning is reserved for complex operations/systems, high priority/high visibility situations or circumstances in which hazards are not well understood. In-depth RM planning is normally implemented well in advance of the target system, mission, event, or activity, and is normally reserved for more complex and riskier efforts (i.e. large troop/unit movements, airshow planning, system development, tactics & training curricula development, scheduled vacations, organized camping/hiking activities, scheduled home repairs, etc.). As the situation, operation or activity becomes less complex, familiar and/or closer to execution, Deliberate RM planning becomes simplified and the focus shifts to ensuring near-term hazards and mitigation strategies are considered. Across the spectrum of Deliberate RM, we must always include the experience, expertise and knowledge of experienced personnel to identify known hazards/risks and strategies to effectively mitigate risks for the specific mission, activity or task in both on- and off-duty situations. Although pre-planning is always desired for any situation, we must also consider how we deal with RM once we begin the execution phase of an activity.

- Real-Time: This level of RM is always associated with RM decisions made in “Real-Time” during the “execution” or tactical phase of training, operations, emergency/crisis response situations, or off-duty activities where there is normally little or no time to conduct formal/Deliberative RM planning. It is usually an informal, mental risk assessment that is done “on the fly” (i.e. short notice taskings, weather/

natural phenomena driven activities, emergency responses, spontaneous off-duty activities, etc.) using basic RM process steps to identify and mitigate hazards in the new or changing situation. As time is normally constrained or limited in these situations, Deliberate RM planning is impractical. In Real-Time situations it is imperative that individuals are able to efficiently and effectively apply RM concepts to mitigate risks.

5-Step RM Process

RM is a continuous, systematic decision-informing process consisting of five primary steps that define the formal RM process primarily associated with Deliberative RM planning and forms the basis for Real-Time RM considerations. The following is a brief description of the 5-Step RM Process.

1. Identify the Hazards: Step one of the RM process involves application of appropriate hazard identification techniques in order to identify hazards associated with the operation or activity. Hazards can be defined as any real or potential condition that can cause mission degradation; injury, illness, death to personnel or damage to or loss of equipment/ property. Key aspects of this step include:

- Mission/Task Analysis: Review current and planned operations and/or tasks associated with the mission or activity.
- List Hazards: Identify and list hazards and/or factors that may lead to dangers and risks associated with the operation or activity.
- List Causes: List the causes associated with each identified hazard, and try to identify the root cause(s) against which to apply RM strategies.

2. Assess the Hazards: The assessment step involves the application of quantitative and/ or qualitative measures to determine the probability and severity of negative effects that may result from exposure to hazards/risks and directly affect mission or activity success. This process can be formalized or intuitive. Key aspects of this step include:

- Assess Hazard Exposure: Evaluate the time, proximity, volume or repetition involved to determine the level of exposure to hazards.
- Assess Hazard Severity: Determine severity of the hazard in terms of potential impact on personnel, equipment, or mission/activity.
- Assess Probability: Determine the probability that the hazard will cause a negative event of the severity assessed above. Probability may be determined through estimates or actual numbers (if available).
- Assess Risk Levels: Determine the level of risk associated with the hazard as it relates to Severity and Probability. The level of risk will vary from “extremely high” as associated with frequent exposure and catastrophic effects to “low” as associated with unlikely exposure and negligible effects.

- Complete Risk Assessment: Combine severity and probability estimates to form a risk assessment for each hazard. By combining the probability of occurrence with severity, a matrix can be created where intersecting rows and columns form a Risk Assessment Matrix.

3. Develop Controls & Make Decisions: Step three involves the development and selection of specific strategies and controls that reduce or eliminate risk. Effective mitigation measures reduce one of the three components (Probability, Severity or Exposure) of risk. Risk mitigation decisions must be made at the appropriate level for the identified risk. The higher the risk, the higher the decision-level needs to be to ensure that an appropriate analysis of overall costs to benefits has been carefully weighed. Keep in mind there is no "cookie-cutter" approach or specific standard for establishing levels of RM decision authority across the Air Force. However, it is critical that leadership/decision makers ensure that the levels of decision authority are aligned appropriately for mission requirements and experience levels of the personnel conducting operations/activities under their responsibility. It is possible for decision-levels to vary within a command for differing operations/activities if training requirements, mission sets or activities are divergent enough to warrant separate standards (i.e., AETC, AF Special Operations Command (AFSOC), etc.). Decision-makers must ultimately choose the most mission supportive risk controls, consistent with RM principles that provide the best solution for the given hazards. Risk decisions must never be delegated to a lower level for convenience or when the situation dictates senior-level involvement; exceptions may be considered in time critical situations where delays might endanger lives, resources or equipment. Key aspects of this step include:

- Identify Control Options: Starting with the highest-risk hazards as assessed in Step 2, identify as many risk control options as possible for all hazards. Each hazard should have one or more controls that can effectively eliminate, avoid, or reduce the risk to an acceptable level.

- Determine Control Effects: Determine the effect of each control on the risk(s) associated with the hazard. With controls identified, the hazard should be re-assessed taking into consideration the effect the control will have on the severity and or probability. This refined risk assessment determines the residual risk for the hazard (assuming the implementation of selected controls). At this point, it is also appropriate to consider the cost (personnel, equipment, money, time, etc.) of the control and the possible interaction between controls; do they work together?

- Prioritize Risk Controls: For each hazard, prioritize those risk controls that will reduce the risk to an acceptable level. The best controls will be consistent with mission objectives and optimize use of available resources (manpower, material, equipment, funding, time).

- Select Risk Controls: For each identified hazard, select those risk controls that will reduce the risk to an acceptable level. As in prioritizing controls, the best controls will be consistent with mission/activity objectives and optimum use of available resources (outlined above).

- Make Risk Control Decision: Analyze the level of risk for the operation/activity with the proposed controls in place. Determine if the benefits of the operation/activity now exceed the level of risk the operation/activity presents. Be sure to consider the cumulative risk of all the identified hazards and the long term consequences of the decision. If the cost of the risk(s) outweighs the benefits, re-examine the control options to see if any new or modified controls are available. If no additional controls are identified, inform the next level in the chain of command that, based on the evaluation, the risk of the mission exceeds the benefits and should be modified. When notified of a situation in which risk outweighs the benefit, the next level in the chain of command must assist and implement required controls, modify/cancel the mission, or accept the identified risks based on a higher level of the risk-benefit equation. Keep in mind that as circumstances change for a given mission/activity, the benefit-to-risk comparison must also be made to ensure that previous "Go/No-Go" decisions are valid.

4. Implement Controls: Once control measures have been selected, an implementation strategy must be developed and carried out. The strategy must identify the: who, what, when, where and cost(s) associated with the control measure. For mission-related controls, accountability must be emphasized across all levels of leadership and personnel associated with the action so that there is clear understanding of the risks and responsibilities of commanders and subordinates alike. There must always be accountability for acceptance of risk regardless of circumstances. Key aspects of this step include:

- Make Implementation Clear: Provide a roadmap for implementation, a vision of the end state, and describe successful implementation. The control measure must be deployed in a method that ensures it will be understood by the intended audience.

- Establish Accountability: Accountability is a critically important area of RM. The accountable person is the one who makes the decision (approves the control measures), and hence, the right person (appropriate level) must make the decision. Also, be clear on who is responsible at the unit or execution level for implementation of the risk control. Individuals involved in a specific RM process must be aware of who is responsible and accountable at each stage of an operation/activity and when (if possible) decisions will be elevated to the next level.

- Provide Support: To be successful, command/leadership must be behind the control measure(s) put in place. Provide the personnel and resources necessary to implement the control measures. Incorporate sustainability from the beginning and be sure to deploy the control measure along with a feedback mechanism that will provide information on whether the control measure is achieving the intended purpose.

5. Supervise & Evaluate: The RM process continues throughout the life cycle of the system, mission, or activity. Leaders and supervisors at every level must fulfill their respective roles to ensure controls are sustained over time. Once controls are in place, the process must be periodically reevaluated to ensure controls remain effective and mission supportive over time. Key aspects of this step include:

- Supervise: Monitor the operation/activity.
- Evaluate: The RM process review/evaluation must be systematic. After assets are expended to control risks, a cost benefit review must be accomplished to see if risk and cost are in balance. Significant changes in the system are recognized and appropriate RM controls are reapplied as necessary to control the risks. Effective review/evaluation will also identify whether actual costs are in line with expectations and how the controls have affected mission performance (good or bad). Other considerations:
- Feedback: A review by itself is not enough; a feedback system must be established to ensure that the corrective or preventative action taken was effective and that any newly discovered hazards identified during the mission/activity are analyzed and corrective action taken. Feedback informs all involved as to how the implementation process is working and whether or not the controls were effective. Feedback can be in the form of briefings, lessons learned, cross-tell reports, benchmarking, database reports, etc. Without this feedback loop, we lack the benefit of knowing if the previous forecasts were accurate, contained errors, or were completely incorrect. Commanders, supervisors and individuals must work with appropriate RM Process Managers, Instructors/Advisors to ensure effective RM feedback and crosstell is collected and distributed to enhance future operations, and activities. Note: For a complete explanation of the 5-Step RM Process refer to AFPAM 90-803 *Risk Management (RM) Guidelines and Tools.*.

TERMS

Accept no unnecessary risk—Unnecessary risk comes without a commensurate return in terms of real benefits or available opportunities. All Air Force missions and our daily routines involve risk. The most logical choices for accomplishing a mission are those that meet all mission requirements while exposing personnel and resources to the lowest acceptable risk.

Environmental Health—The discipline and program concerned with identifying and preventing illness and injury due to exposure to hazardous chemical, physical, and biological agents that may be encountered in the ambient environment – air, water, or soil.

Hazard—Any active or latent condition that can cause mission degradation; injury, illness, or death to personnel; or damage to, or loss of, equipment or property.

Impact—Any change to the environment, whether adverse or beneficial, wholly or partially resulting from organizational activities. Activities can have tangible impacts on the environment either directly or indirectly.

Integrate RM into operations, activities and planning at all levels—To effectively apply RM, commanders must dedicate time and resources to integrate RM principles into the planning processes. Risks are more easily accessed and managed in the planning stages of an operation.

Make risk decisions at the appropriate level—Making risk decisions at the appropriate level establishes clear accountability. Those accountable for the success or failure of the mission must be included in the risk decision process.

Personal Risk Management (PRM)/Personal Leadership—The concept of taking personal responsibility for actions and applying sound RM principles before initiating any on- or off-duty activity. PRM considers risk decisions, mitigation strategies and impacts to self and others.

Preventive Action—Action to eliminate the cause of a potential noncompliance and/or nonconformity.

Risk—A combination of the probability and severity of a loss or an adverse impact resulting from exposure to hazards. The greater the risk, the more likely it will cause a drain on resource capability and negatively affect the mission.

Risk Assessment—The process of detecting/prioritizing hazards and their causes, and systematically assessing the associated risks to mission or activity success.

Risk Assessment Code—The assignment of a hazard severity and probability of occurrence indices to a potential hazard. The RAC provides the foundation for comparative analysis among identified hazardous conditions which may impact human health, public health or the environment.

Risk Management (RM)—The systematic process of identifying hazards, assessing risk, analyzing risk control options and measures, making control decisions, implementing control decisions, accepting residual risks, and supervising/reviewing the activity for effectiveness.

Safety—The discipline and program concerned with the prevention of any active or latent condition that can cause mission degradation; injury or death to personnel; or damage to, or loss of, systems, equipment, facilities, or property.

System—A composite entity, at any level of complexity, of personnel, procedures, materials, tools, equipment, facilities, and software. The elements of this composite entity are used together in the intended operational or support environment to perform a given task or achieve a specific mission requirement.

System Safety—The term used to describe the application of the RM principles and practices to the Systems Engineering ESOH risk management process during the developing, sustaining, modifying, and disposing of a weapon system.

Bibliography:
AFI 90-802, *Risk Management,* 11 February 2013.