



UNITED STATES MARINE CORPS

2D MARINE AIRCRAFT WING
U.S. MARINE CORPS FORCES, ATLANTIC
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WgO 3500.23C
DSS
15 Mar 2007

WING ORDER 3500.23C

From: Commanding General, Second Marine Aircraft Wing
To: Distribution List A

Subj: 2D MAW OPERATIONAL RISK MANAGEMENT (ORM)

Ref: (a) OPNAVINST 3710.7R
(b) OPNAVINST 3500.39B
(c) MCO 3500.27B
(d) II MEFO 3500.1

Encl: (1) ORM Program
(2) 2D MAW Annual ORM Training PowerPoint Brief
(3) "Institutionalized" ORM PowerPoint Brief
(4) Headquarters Marine Corps ORM Matrix
(5) Risk Assessment Code Matrix
(6) 2D MAW Inspector General Checklist ORM Tab

1. Situation. The Marine Corps directs that Operational Risk Management (ORM) become integral to the planning and execution of all USMC operations. This order applies equally to training and combat, with the tenets and philosophies of ORM transcending to the protection of our force off duty as well.

a. In addition to the guidance outlined in the Marine Corps order, the foundation and basics of the Operational Risk Management program are taught as part of the curriculum in our Marine Corps formal schools; with the practical application of ORM resident in all USMC units. The cohesive system of rules, regulations, and programs which glue Marine Corps aviation together form the structure with which we reduce the ever-present variability and risk of operations to acceptable levels - sound leadership and ORM are integral to this process. The basic premise of ORM is well understood, but the degree of application and standardization of the program still varies greatly among our subordinate commands. Refining the ORM program to more completely infuse its practices in daily operations is the focus of this order.

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ALMAR 210/97 states: "Our goal is to institutionalize the ORM process so that all Marines apply it – as a matter of course – in their planning, training and operations. To that end, commanders shall incorporate ORM into their operational routines. This includes regular use of the process for crisis action and exercise planning, clear guidance in the commander's intent on the level of acceptable risk, and discussion of risk assessment and controls at decision briefs."

b. The holistic nature of the ORM program as outlined in this order captures the spirit of how it is to be applied in Second Marine Aircraft Wing (2D MAW). Portions of this order are directive in nature while other sections are designed to provide instruction and guidance with salient information offered to bridge the gap from the Marine Corps order and the II Marine Expeditionary Force order down to the Groups, the squadrons, as well as the individual Sailor, Marine, and citizen employee of 2D MAW.

c. Commanding Officers are directed to develop, institute, and inculcate ORM into the commands in your charge. All personnel assigned to 2D MAW are directed to utilize ORM and apply its principles daily, on duty as well as off. The information presented in this order will assist all of you in this mission, beginning with enclosures (1) and (2) that contain a basic discussion of the ORM program.

2. Cancellation. WgO 3500.23B. Major revisions have been made to this order, therefore the complete review of its contents is required by all personnel.

3. Mission. Second Marine Aircraft Wing personnel shall utilize the Marine Corps Operational Risk Management program in the execution of all operations in order to achieve mission accomplishment while reducing risk to acceptable levels and thus preserving our personnel and material resources.

4. Execution

a. Commander's Intent: ORM is directly linked to mission success. Mission success is predicated on safe operations. Therefore ORM, mission success, and safe operations are all inextricably linked. Commanders in 2D MAW are directed to "operationalize" the way that we apply safety and "institutionalize" the ORM programs within their commands.

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(1) Safety and operations must be inextricably linked.

(2) A holistic approach to ORM must be applied.

(3) ORM shall be practiced by all Marines with timely risk management decisions made at the right levels.

b. Concept of operations: In order to be effective the ORM program must be driven by a top-down focus of effort. It is imperative to develop a progressive training plan implemented under complete command backing.

(1) ORM shall be "institutionalized" by focusing efforts in three areas:

(a) Written Directives;

(b) Education and Practices;

(c) Supervision and Executive Oversight.

(2) The rationale driving these three focus areas is simple. ORM policies and practices must be codified so they become standardized and achieve longevity within each unit. The policies and practices must be taught through formal education and honed through constant practice. The ORM program, with its policies and practices ingrained, shall be constantly evaluated through supervision and executive oversight to determine its effectiveness and need for refinement or remediation.

(3) There is a logical shift in emphasis over time as In-Depth, Deliberate, and Time Critical ORM is applied to these three "institutionalized" focus areas (see Figure 1). For amplification and clarification of this concept reference enclosure (3).

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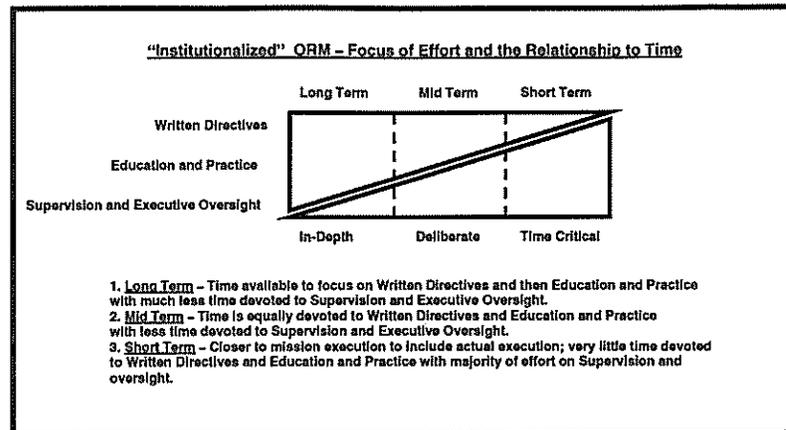


Figure 1

c. Specified Tasks.

(1) The ORM program must look at all aspects of operations in a holistic fashion - the way that we understand and apply the "single battle concept." Managing risk during the execution of ground and aviation operations is our primary focus. However, the same principles and philosophies of ORM apply equally for on-duty non-operational events as well as during off duty recreational activities.

(2) For 2D MAW Group level commands:

(a) Develop a repository of ORM best practices that transcends all subordinate units, offered in the spirit of the Marine Corps lessons learned system. On a quarterly basis 2D MAW Department of Safety and Standardization (DSS) will collect the data provided by the Groups to review the best practices and disseminate Wing wide.

(b) Work with 2D MAW G3 to proactively manage the training, exercise, and employment plans (TEEP) for major subordinate commands to best affect each units' battle rhythm on the macro level.

(c) Track and conduct trend analysis for events that challenge safe successful operations and those events where mishaps occurred. Use this data to develop plans of action to prevent like mishaps in the future.

(d) Increase the level of military occupational specialty community specific and cross-

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community pollination of tactics, techniques, and procedures tied to successful ORM.

(e) Inform, educate, train, and empower all personnel. Ensure that all new joins receive basic ORM training within 30 days of joining the unit.

(f) Actively look for tools to enhance mission accomplishment and safety: this applies equally to material as well as non-material solutions.

(g) The Colonel level commander is authorized to approve High Risk missions during combat and contingency operations; no High Risk missions will be executed during peacetime missions or training events.

(h) Supervise and submit the monthly update of the Headquarters Marine Corps ORM Tracking Matrix to 2D MAW DSS. Enclosure (4) contains an example of the report.

(3) For Squadrons and Detachments:

(a) Focus efforts to develop a healthy and effective organizational safety culture within your unit. "The way that we do things here" should reflect professionalism and disciplined war fighting. Fostering positive group values surrounding high standards of performance, honor, accountability, and personal conduct are key elements.

(b) Brilliance in the basics and mastering the fundamentals in a building block fashion is critical.

(c) Allow for and foster a medium for growth. Teach the application of solid and timely risk decisions made at the lowest appropriate levels. Communication up and down the chain of command is a key element.

(d) Progressive, integrated, and focused training plans are an absolute necessity. Well thought out learning objectives, intermediate milestones, and evaluation points must be written into the plan.

(e) Develop and employ ways to measure unit and individual effectiveness and readiness, and enforce standardization across the spectrum of training.

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(f) Praise and reward good risk management efforts with publicly recognized incentives, and underscore a zero tolerance policy for gross violations of established policy. Utilize the "Anymouse" program in all units to foster hazard reporting.

(g) Ensure that at least one officer and one senior Staff non-commissioned officer are trained and designate as ORM instructors. Make additional instructors as needed depending on the size of the unit and specific needs. See the Administration and Logistics portion of this order for approved ORM instructor training.

(h) Utilize the Squadron Assisted Risk Assessment (SARA) to the maximum extent possible for all flying commands.

(i) Request from higher headquarters for permission to execute any mission that falls under the High Risk category of the threat assessment matrix. See enclosure (5) for a description and an example of the risk assessment matrix.

(4) For each 2D MAW civilian, Sailor, and Marine:

(a) Take to heart the fact that in order for ORM to work it has to be understood, applied, and executed at the lowest level - this is the key to decentralized implementation and the execution of a successful ORM program.

(b) Get out from behind the desks and lead, teach, and mentor others.

(c) Know your people; intervene with intrusive leadership as needed, before there is a problem. The 2D MAW Non-commissioned Officer Leadership program provides additional guidance in this area.

(d) Speak up if there is something wrong. Stop an evolution if something is likely to go catastrophically wrong.

(e) Trust your "gut feelings."

(f) Conduct annual ORM training as directed; and take it one step further and look for new and

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innovative ways to further define and integrate ORM into all day to day operations.

5. Administration and Logistics. The basic tenets of Operational Risk Management are provided in this section for ease of referral.

a. ORM Terms.

(1) Hazard - A condition with the potential to cause personal injury or death, property damage, mission degradation or mission failure.

(2) Risk - An expression of possible loss in terms of severity and probability.

(3) Risk Assessment - The process of detecting hazards and assessing associated risks.

(4) ORM - The process of dealing with risks associated within military operations, which includes risk assessment, risk decision-making, and implementation of risk controls.

(5) Risk Assessment Matrix - a simple tool that is used to evaluate the likelihood and severity of defined hazards inherent in an operation during mission execution. Enclosure (5) contains a complete description of the risk assessment matrix.

b. ORM incorporates a Five-Step Process that is executed in numerical order.

(1) Identify Hazards - Begin by listing and outlining the major elements in the operation to be evaluated. Then conduct a preliminary hazard analysis by listing all the possible hazards associated within that particular operation.

(2) Assess Hazards - For each hazard identified above, determine the associated degree of risk in terms of probability and severity. Use of the risk assessment matrix may prove useful in this step.

(3) Make Risk Decisions - Develop risk control options that mitigate and reduce risks to acceptable levels. With the selected control measures in place, determine if

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the benefits of the operation outweighs the risks. Then decide on the preferred course of action to reduce each set of identified hazards.

(4) Implement Controls - Make preparations and then execute the control measures agreed upon that will reduce and mitigate the risks identified for each hazard.

(5) Supervise - Conduct follow-up evaluations of the control measures and the operation itself to determine if all controls are sufficient to ensure mission accomplishment. Take corrective action and repeat this process as necessary.

c. ORM describes a Three-Level Process based on available time.

(1) In-Depth - "Long Term" - Time is available to thoroughly research all available data, employ decision aids, and complete the full spectrum of ORM steps for each set of hazards to reduce the associated risk.

(2) Deliberate - "Mid Term" - The application of the ORM five-step process still takes place but is specifically tailored due to time constraints.

(3) Time Critical - "Short Term" - The hasty application of the ORM five-step process when time is of the essence and the ability to execute the Deliberate or In-Depth methods is not feasible.

d. ORM Guiding Principles.

(1) Accept risk when the benefits outweigh the cost. Manage risk through mitigation measures so that a mission can be executed with the minimal likelihood of loss.

(2) Accept no unnecessary risk. Risks are only accepted when the likelihood of those risks negatively affecting mission accomplishment is very low.

(3) Anticipate and manage risk by planning. Risks are more easily controlled when they are identified early in planning and when control measures are taken to reduce the risk to a negligible and acceptable level.

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(4) Make risk decisions at the right levels. In order for ORM to work risk management decisions must be timely and made at the lowest levels.

- e. 2D MAW approved ORM instructor training courses are:
- (1) The Naval Safety Center ORM Instructor Course;
 - (2) The Aviation Safety Officer's Course;
 - (3) The 2D MAW ORM Instructors Course.

6. Command and Signal

a. Unit Commanders are charged with the implementation of this ORM program. Communication and sharing of successful ORM program specifics, best practices, techniques and procedures will be an important element in strengthening our collective ORM efforts in 2D MAW.

b. Each unit within 2D MAW will be periodically inspected for compliance as prescribed by the Marine Corps ORM Order and this directive. Enclosure (6) is the 2D MAW Inspector General Checklist ORM Tab.

c. Questions regarding this order should be directed to the 2D MAW Aviation Safety Officer serving as the ORM Executive Agent, located in the Joint Safety Center aboard MCAS Cherry Point or by telephone at (252) 466-7132.

d. Execute upon receipt of this order.


K.J. GLUECK JR.

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2D MAW Introduction to ORM (Operational Risk Management)

1. **Background.** This portion of the 2D MAW ORM order provides valuable background information on the program. It is best utilized in conjunction with the order itself and with the accompanying enclosures. It is not meant to be an unabridged compendium; more accurately it is to serve as a primer to lay the foundation for further study and development of existing ORM concepts and unit programs within Second Marine Aircraft Wing.

Marine Corps leaders have always practiced risk management in their operational decision making process. However, the approach to risk, and the degree of success in dealing with it, has varied widely depending on the leader and his level of training and experience. High mishap rates drove the establishment of several safety programs, but clearly a different approach was needed - therefore Operational Risk Management was chosen as the tool used to standardize actions in evaluating risks and making valid operational decisions.

The ORM concept grew out of ideas originally conceived to improve safety in the development of new weapons, aircraft and space vehicles, and nuclear power. The U.S. Army adopted Risk Management in 1991 to reduce training and combat losses. On April 3rd, 1997 the Marine Corps published MCO 3500.27, the first edition of "Operational Risk Management", which directed the implementation of ORM as an integral part of planning, training, and operations for all Marine Corps units. The following is an excerpt from ALMAR 210/97:

"Our goal is to institutionalize the ORM process so that all Marines apply it - as a matter of course - in their planning, training and operations. To that end, commanders shall incorporate ORM into their operational routines. This includes regular use of the process for crisis action and exercise planning, clear guidance in the commander's intent on the level of acceptable risk, and discussion of risk assessment and controls at decision briefs."

Thus ORM was born in the Marine Corps, and today the program serves as our number one tool used to mitigate risk, reduce hazards, and pave the way for successful mission accomplishment.

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2. Discussion

a. The proper application of the ORM process increases the Marine Corps ability to execute the full spectrum of missions: while reducing the likelihood of mishaps; lowering the number of injuries and property damage costs; and providing for a more effective use of resources. It improves training realism and effectiveness, thus improving combat readiness.

b. Specifically, the ORM process shall be used by all personnel, at all levels, to aid in decision making to increase operational effectiveness. This is done by anticipating hazards and reducing the potential for loss, thereby increasing the probability of a successful mission.

c. The principles of ORM apply equally to readiness in peacetime and operational success in combat, both on duty as well as off. ORM helps to conserve Marine Corps assets so that they can be applied at the decisive time and place.

d. ORM is not meant to be just a function of the Safety or Operations Departments within each unit. Instead it is intended to be a holistic application of the tenets of the ORM program applied by the unit commanders, the small unit leaders, and each individual Marine, sailor, and civilian employee. To be effective ORM must be executed as a "top down" program driven by the unit commander and employed by all personnel down to the lowest levels. Therefore, the ORM program positively affects the way that we make risk decisions daily, and enables all personnel to manage risks more effectively.

e. The ORM process has been proven to be effective, and is mandated by our Commandant to fulfill our sworn responsibility to protect our Marines and safeguard our equipment. This order provides amplification and guidance on this program for all personnel in 2D MAW.

3. Basic Understanding of ORM. ORM is systematic and methodical, employs informed decisions, weighs all risks and benefits, and empowers personnel to take a proactive role in controlling hazards. It is a closed loop process

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of identifying and controlling hazards. It follows a logical five-step sequence, is applied on one of three levels depending on the situation and time available, and is guided by four principles. The basic program structure and sequenced methodology is provided, while the application of ORM allows for initiative and ingenuity. The basics of ORM are discussed next to provide all personnel a foundation for the application of the program.

a. Terms

(1) Hazard - A condition with the potential to cause illness, injury, death, property damage, or mission degradation. This can even be applied to national interests and all levels of war from tactical to strategic.

(2) Cause - Something that produces an effect, result, or consequence. It applies to a person, an event, or a condition responsible for that action or result. Stated another way, a cause is what we attribute or pinpoint a failure to.

(3) Risk - Equates to a possible loss expressed in terms of severity and probability. Leaders can make better decisions once a hazard is distilled to a risk or set of risks. The Risk Assessment Code Matrix in Enclosure (5) of this order describes risk and risk assessment in further detail.

(4) Risk Assessment - The process of detecting hazards and assessing associated risks. Steps 1 and 2 of the ORM five-step process constituted the risk assessment portion of ORM.

(5) Severity - Expected consequence of an event in terms of degree of injury, illness, property damage, or other mission-impairing factor.

(6) Controls - Actions taken to modify the variables of a problem that will eliminate hazards or reduce the level of risk.

3. The ORM Process

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a. The five-step process used in performing ORM, designed to be completed in numerical order.

- (1) Identify Hazards
- (2) Assess Hazards
- (3) Make Risk Decisions
- (4) Implement Controls
- (5) Supervise

Table 1 below helps to better illustrate the ORM process by comparing it to familiar Marine Corps operations and the acronym BAMCIS. The five steps of ORM are performed within - not instead of BAMCIS.

BAMCIS	ORM
Begin Planning	Identify Hazards
Arrange for Reconnaissance	
Make Reconnaissance	Assess the Hazards
Complete the Plan	Make Risk Decisions
Issue the Order	Implement Controls
Supervise	Supervise

Table 1

b. Step 1 - Identify Hazards

- Subject matter experts will conduct the general operational analysis and identify the major steps of an operation
- Then a hazard analysis is completed for each of the major steps of an operation, with the hazards associated with each step are captured and the possible causes of the hazards listed

c. Step 2 - Assess Hazards

- Determine the degree of risk for each hazard in terms of severity and probability
- *Figure 1* below depicts the Risk Assessment Code matrix that is described in detail in Enclosure (5). Use of this matrix is recommended but not required in the application of all three levels of ORM. Its use does provide a consistent framework for evaluation by highlighting the relative perceived risks pertaining to hazards, and prioritizes which hazards must be controlled first

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Explanation of the Risk Assessment Code Chart

RAC 1 = Critical
 RAC 2 = Serious
 RAC 3 = Moderate
 RAC 4 = Minor
 RAC 5 = Negligible

		Probability of Occurrence				
		Likely to Occur	Probably will Occur	May Occur	Unlikely to Occur	
		A	B	C	D	
Death or critical Injury	S	Cat I	1	1	2	3
	E					
Serious Injury	V	Cat II	1	2	3	4
	E					
Moderate or Minor Injury	R	Cat III	2	3	4	5
	I					
Negligible Injury	T	Cat IV	3	4	5	5
	Y					
		RAC Levels (1 to 5)				

Figure 1

c. Step 3 - Make Risk Decisions

- Develop controls for each hazard to mitigate or eliminate the hazard itself; beginning with the most serious hazards first since you might not have time to control each and every hazard
- Determine any residual risk by repeating Step 2 with the controls in place to determine if the means of control selected was successful
- Make the risk decision with the controls in place to determine if the benefit outweighs the risk
 - Accept the risk only if the benefit is clearly greater than the risk
 - Communicate with higher authority if the risk remains too great

d. Step 4 - Implement Controls

- Incorporate selected control measures into action

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- Communicate the plan to the lowest levels detailing who will do what and by when

e. Step 5 - Supervise

- Evaluate the successful application of the controls to determine if they are having the desired effect
- Enforce standards and controls, ensure tasks are performed to standard
- Remain alert for changes and unexpected developments that require additional application of Time Critical, Deliberate, or In-Depth ORM
- Take corrective action when necessary to ensure mission accomplishment

4. The Three Levels of ORM

The nature of Marine Corps operations requires the ORM process to be tremendously flexible. Leaders must often make tough, complex decisions in a matter of minutes, or at times even seconds. On the other hand, many decisions permit weeks or months of staff work. Therefore ORM was developed to operate on three levels (which are all identical except for the level of detail and the time available to complete the process). The Commander or senior leader present chooses which level of ORM to use based on the mission, situation, time available, proficiency level of personnel, and the assets and other resources available.

a. Time Critical ORM is an "on-the-run" mental, and at times oral, review of the situation using the five-step ORM process. This level of ORM is normally applied in the execution phase of training and operations to control hazards introduced by unexpected events and changes to the environment or the plan.

b. Deliberate ORM is the more detailed application of the complete five-step process and is recorded on paper with ample time available for detailed work.

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c. In-Depth ORM is the deliberate process with a very detailed risk assessment of Steps 1 and 2. This is used when the longest time is available to research and define a problem with the thorough completion of each of the five steps - for each major hazard inherent in every step of an operation.

5. Four Principles of Applying ORM

- a. Accept risk only when the benefit is far greater than the risk.
- b. Accept no unnecessary risk.
- c. Anticipate and manage risks by planning.
- d. Make risk decisions at the right level.

6. ORM Tools. Two tools will be briefly introduced: Brainstorming, and Affinity Diagrams.

a. Brainstorming is a technique that guides a group in an interactive exchange of ideas, deferring judgment until the end of the session. It is a good way to quickly generate many diverse ideas. This technique is particularly effective when participants feel "free" to offer their ideas without fear of criticism. It is best used to identify the majority of potential risks and plausible control measures. A brainstorming session may be structured (each group member presents an idea in turn) or unstructured (the facilitator accepts random inputs from the group). Structured brainstorming ensures participation by all group members. Unstructured brainstorming may be dominated by one of more group members. Either way this technique must be controlled with the outcome recorded for future work.

b. Affinity Diagrams employ a technique that breaks an operation down into categories to focus analysis on one area at a time. It is similar in use to an operational analysis; except that the Affinity Diagram groups similar items together instead of listing them in chronological sequence. It can be a stand-alone hazard analysis technique, especially valuable in combat hazard identification. To use an Affinity Diagram first separate the mission into categories, then list the hazards associated with each category, followed by the possible

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causes of the hazards (an example is provided in *Table 2* below).

Causes	Categories	Hazards
Enemy	SALUTE	
	DRAW-D	
Terrain & Weather	Terrain	
	Visibility	
	Time of Day	
	Temperature	
Troops	Training	
	Physical Condition	
	Morale	
Fire Support	Type Support	
	Range	
	Control Measures	
Time	Planning	
	Rehearsals	
	Movement/Execution	
Space	Congestion	
Logistics	Support Requirements	

Table 2

6. **2D MAW ORM.** The excerpt highlighted from ALMAR 210/97 specifies the goal of the Marine Corps to "institutionalize ORM." Therefore in 2D MAW we will focus on strengthening our ORM program in three areas.

- (a) Written Directives;
- (b) Education and Practices;
- (c) Supervision and Executive Oversight.

As stated in the 2D MAW order, the rationale driving these three focus areas is simple. ORM policies and practices must be codified so they become standardized and achieve longevity within each unit. The policies and practices must be taught through formal education and honed through constant practice. The ORM program, with its policies and practices ingrained, shall be constantly evaluated through supervision and executive oversight to determine its effectiveness and need for refinement or remediation. See *Figure 2* for a graphical depiction along with the logical shift in emphasis over time.

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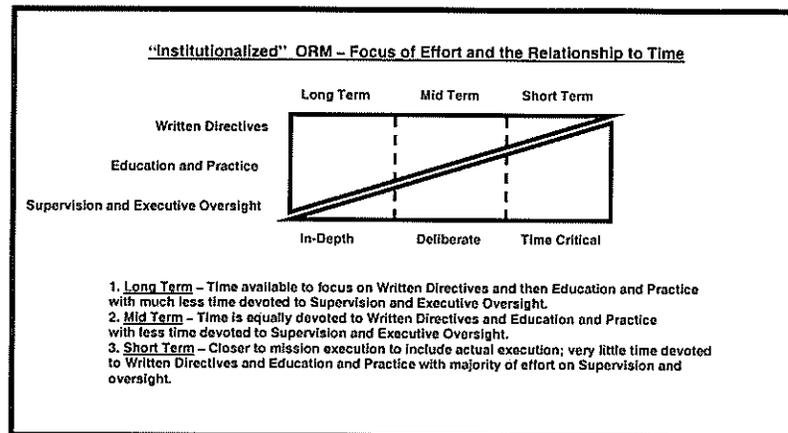
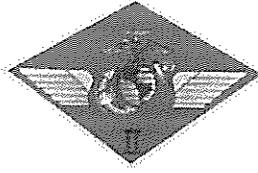


Figure 2

Review Enclosure (3) for a complete explanation of this concept of employment to "institutionalize" ORM in your unit.

7. Summary. Given the right tools, leadership, and resources the effectiveness of our ORM program will flourish in Second Marine Aircraft Wing. Use the information provided in this Wing order to better refine and develop your program. Share your ideas and success stories so that others can learn vicariously from your efforts.



2D MAW Annual Operational Risk Management Training

OPNAVINST 3500.39B
MCO 3500.27B
II MEFO 3500.1
WgO 3500.23C

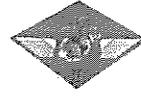
Operational Risk Management (ORM) is the Marine Corps tool used to reduce and otherwise mitigate risks associated with operational and non-operational activities.

Operational Risk Management doesn't just reduce mishaps, more accurately it improves our ability to accomplish the mission efficiently and effectively. ORM does employ the term "operational"...it doesn't say "safety"; although the two concepts are completely linked to one another.

This PowerPoint presentation meets the annual training requirement for 2D MAW and is designed to provide a basic understanding of the ORM process, terms and guiding principles.

We will conclude this lesson with case study review as applications of the ORM program.

Areas of Instruction



ORM Terms

5 Step ORM Process

Causes of Risk

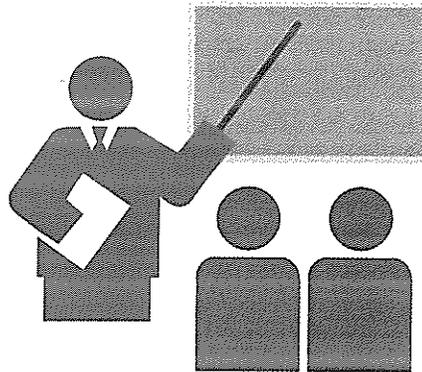
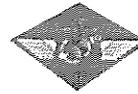
4 ORM Principles

Benefits of ORM

3 Levels of ORM

The summary of what we'll cover in this training.

ORM Terms



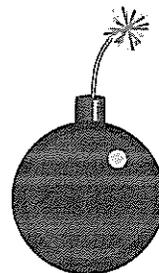
It is important that you understand the basic terms used in ORM. You will hear these terms applied within your organization as part of the planning process, during briefing, and execution.

ORM Terms



Hazard:

A condition with the potential to cause personal injury or death, property or mission degradation or failure.



Read definition.

Most of us think of injury or damage when we think of hazards. But, remember the last part of this definition...anything which can cause mission degradation is a hazard. That includes enemy threats, security threats, negligent or inefficient use of assets, training degradation, time constraints, something which could damage command image and credibility, etc.

ORM Terms



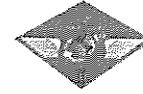
Risk:

An expression of possible loss in terms of severity and probability.

Read definition.

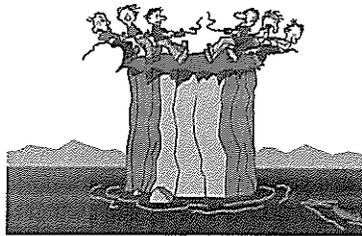
What do we mean when we say severity and probability?

ORM Terms



Severity:

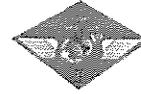
**The worst credible
consequence which can occur
as a result of a hazard.**



For the purposes of ORM, severity is the worst credible consequence which can occur as a result of a hazard. It is the potential degree or criticality of loss.

In simple terms, Severity is an expression of how serious the injury or illness, how much equipment damage, how much lost time, money, man-hours or loss of credibility could be experienced as a result of the hazard.

ORM Terms



Probability:

The likelihood that a hazard will result in a mishap or loss.



The probability (or likelihood or frequency that a hazard will result in a mishap or loss) is based on factors such as location, exposure, personnel, experience and historical information.

Severity & Probability: Risk Assessment Code (RAC)



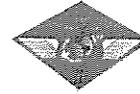
HAZARD SEVERITY	LIKLEY	PROBABLE	MAY OCCUR	UNLIKLEY
	A	B	C	D
Catastrophic	1	1	2	
Critical	1	2		
Marginal	2			5
Negligible			5	5

1 - Critical 2 - Serious 3 - Moderate 4 - Minor 5 - Negligible

The risk assessment code (RAC) matrix is a simple tool providing a qualitative method for identifying risk by considering the hazard's severity and likelihood.

For the purposes of ORM, Risk is typically expressed in terms of Risk Assessment Codes (RACs).

ORM Terms



Risk Assessment:

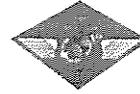
The process of detecting hazards and assessing associated risks.

Risk assessment is developed within the first two steps in the five step risk management process (Identify Hazards and Assess Hazards).

Detecting hazards may be done by experience, historical information, actual data or "mental simulation" - "What's can go wrong here?."

This step is inherently subjective and depends heavily on the experience of the individuals conducting the Risk Assessment. "You don't know, what you don't know"; so it is always prudent to have personnel who are experienced with the operations conducting the Risk Assessment.

ORM Terms



Controls:

Methods for reducing risk for an identified hazard by lowering the probability of occurrence, decreasing potential severity, or both.

Hierarchy of Controls:

Engineering – reduce risk by design, material selection or substitution. Engineer the hazards out of the operation thus eliminating it.

Examples: Substitution, Ventilation, Isolation, Enclosure

Administrative - reduce risk through written policy, limiting time of exposure, solid SOP's and training. Reduced work times in contaminant areas, employee training, written programs, policies, and procedures. With supervision and strict adherences to them all.

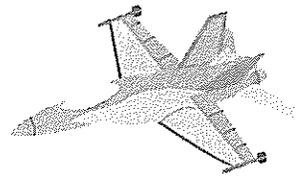
Personal Protective Equipment (PPE) – least effective because it does not reduce the probability of a mishap or an event occurring, it only reduces the severity when it does happen. Examples: Cranials, eye protection, ear plugs, gloves etc.

ORM Terms



Operational Risk Management:

The process of dealing with risk associated with operations or events, which includes risk assessment, risk decision making, and implementation of effective risk controls.



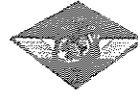
Read definition.

ORM is a formal process, it is one that can be applied in all operational situations from the simple to complex.

It can be applied by individuals and groups of individuals at all levels of the chain of command.

It can be applied rigorously using sophisticated mathematical techniques or it can be applied real time inside someone's head.

ORM Process



Identify Hazards

Assess Hazards

Make Risk Decisions

Implement Controls

Supervise

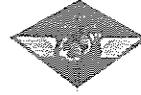
The operational risk management process is a simple five-step process: The concept of applying a standard, systematic approach, to minimizing risk was originally developed to improve safety in the development of weapons, aircraft, space vehicles, and nuclear power. It has been embraced by many civilian corporations and the Army, and is now being implemented in the Navy, Marine Corps, Air Force, and Coast Guard.

Although a risk management process like this has been part of the NAVOSH program for years, it has traditionally been applied primarily to workplace hazards. However, this process is also effective when applied to planning, operations, training and procedures. Recently in an effort to emphasize these other applications, the Navy and Marine Corps has mandate the use of "operational risk management."

The five steps are:

1. Identify potential causes of injury, damage, or mission degradation;
2. For each hazard identified determine the associated risk in terms of severity and probability;
3. Develop risk control options, then decide if benefit outweighs risk. Seek further controls or guidance from your chain of command if necessary;
4. Once risk decision is made and a course of action chosen to mitigate the preponderance of the risk then implement selected controls;

ORM



A decision making tool
Increases ability to make informed decisions
Reduces risks to acceptable levels

The ORM process:

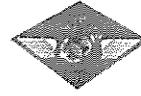
- is a decision making tool which can be used by people at all levels to increase operational effectiveness. The foundation of ORM is education and implementation at the lowest levels of the organization.

- increases the ability to make informed decisions by providing the best baseline of knowledge and experience available.

- minimizes risks to acceptable levels by systematically applying controls to each risk which is not acceptable. The amount of risk we will take in war is much greater than that we should be willing to take in peace, but the same systematic process should be used to evaluate risks in both situations.

Accepting risk is NOT the same as taking a gamble! Setting in place all parameters that will mitigate and minimize all expected risks of an associated hazard to acceptable levels thus paving the way for mission success, is what is the ultimate goal.

ORM Goal



**To optimize operational capability
and readiness by managing risk to
accomplish the mission with minimal
loss.**

Obviously, we can't totally eliminate risk in on duty and off-duty operations, but we can reduce the amount of loss we experience (in personnel, equipment, and risk to mission accomplishment).

Causes of Risk



- * **Change - The “Mother” of risk**
- * **Resource constraints**
- * **New technology**
- * **Complexity**
- * **Stress**

These are some of the things we face in the Marine Corps which tend to cause risk:

- Change is the big one...changes should alert us to new hazards and increased risk.
- “Doing more with less” seems to be the motto of the Marine Corps...how long can we keep stretching our resources? What’s the risk involved?
- New technology is great, but sometimes the gain from increased capabilities is offset by our human abilities to absorb all the new information or adapt to the new equipment.
- The more complex the problem, the more hazards presented. There are more ways for things to go wrong.
- We see in an analysis of mishap causal factors that human error occurs in 80% of our mishaps. Stress significantly affects the ability of humans to perform.

Causes of Risk



(Cont.)

- * **Societal Constraints**
- * **Environmental Influences**
- * **Human Nature**
- * **Speed/Tempo of Operation**
- * **High Energy Levels**

- Society's standards and expectations drive public opinion, which does have some bearing on military operations. Noise abatement procedures and flight routes, rules of engagements and weapons to target matches are sometimes driven by societal constraints vice pure military efficiency or necessity.

- Environment (e.g. weather, sea state) is always a significant consideration in naval operations. Other environmental influences include things that affect the operational environment.

- Humans tend to make mistakes, mis-communicate, have personality conflicts, get fatigued, get complacent, and so on. We need to recognize the potential for human nature to present risk in our operations.

- Risk certainly increases when the tempo of operations is high. It can also increase when the tempo is low, due to complacency.

- Nervous energy, excitement associated with new situations and perceived pressure to perform can all increase risk (ie, real-world mission, NATOPS check flight, aircraft emergency, etc.).

Four ORM Principles



- 1. Accept risk only when benefits outweigh the cost**
- 2. Accept no unnecessary risk**
- 3. Anticipate and manage risk by planning**
- 4. Make risk decisions at the right level**

1. A certain degree of risk is inherent in operations from training to combat, and to an extent it is related to gain. Sometimes the greater the potential gain, the greater the risk.

2. As stated before, the acceptance of risk does not equate to the imprudent willingness to gamble. We must take only those risks which are absolutely necessary to accomplish the mission; and only after we had put control measures in place to mitigate and reduce the level of risk to an acceptable level.

3. Risks are more easily controlled when they are identified early in the planning process – providing time to evaluate and control the risks.

4. Risk decisions must be made at the lowest level of leadership possible. Normally, it is the leader whom is directly responsible for the operation. When that leader determines that the risk is too high, or goes beyond the commander's stated intent, he should seek additional guidance from the chain of command. By design some risk decisions must be made at the highest levels.

ORM vs. Non-standard Approach

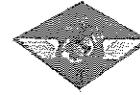


Systematic	Random, individual-dependent
Proactive	Reactive
Integrates all types of risk into plan	Safety as after-thought once plan is done
Common Process/Terms	Non-standard
Conscious decision based on risk vs. benefit	“Can do” regardless of risk

Although the five steps of ORM are a lot like the decision-making process that good leaders have always used, applying a standard process is different in some important ways.

- ORM is more systematic. All too frequently hazard identification and assessment is random, and highly dependent upon an individual's past experience and organizational skills. ORM requires the operators to focus on one piece of the puzzle at a time, completing each step in detail before moving on to the next.
- ORM is more proactive. It requires an attempt to identify ALL hazards, not just the things that have happened in the past.
- ORM addresses all types of risk which could threaten our ability to accomplish the mission during the planning process (security, readiness, communications, enemy threats, fiscal limitations, credibility, health, personal safety, equipment failures, etc.). This allows effective prioritization of risks, which helps focus limited time and assets on the most important issues, rather than addressing safety threats as an after-thought once the plan has already been formulated.
- ORM enhances communication about risk by providing a common process and set of terms. It provides a means to articulate concerns and justify decisions.
- ORM calls for a conscious decision to accept or reject the assessed risk based on the potential cost and benefit to the overall mission. It also requires a leader to communicate with the chain of command when risk outweighs the benefit.

The Benefits of ORM



- **Improve mission effectiveness**
- **Improve readiness**
- **Reduction in mishaps – preserve lives and equipment**

Risk Management has been highly successful in other organizations.

Civilian companies drastically reduced workman's compensation costs using risk management. (XTRA corporation, international shipping container and tractor trailer leasing Co. paid out \$2.85 million in 1982 and only \$63,000 in 1994).

The U.S. Army's class A aircraft mishap rate was 0.64 in FY96, down 83% from their FY91 rates, and lower than any other service. The Army also demonstrated a 64% reduction in casualties during battalion training cycles, using risk management.

In June 96, CVWR-20 completed a highly successful embarkation on board the USS Stennis (first time the entire wing embarked together in 6 years), including 3 days of cyclic night and day flight ops, with only two minor injuries (no lost work days).

Amplify with personal examples of how ORM has benefited you and/or the commands you served.

ORM Levels of Application



- 1. Time-critical - on the run consideration of the 5 Steps**
- 2. Deliberate - application of the complete 5-step process**
- 3. In-depth - complete 5-step process with detailed analysis**

The amount of time and level of detail involved in the five steps varies, depending upon the circumstances.

Time-critical ORM entails a quick, mental review or discussion of the plan with your immediate team [or in your head when alone] using the five steps during the execution phase of operations or training; and for crisis response planning.

Deliberate ORM is an expanded, more detailed application of the five steps in planning for an operation or reviewing procedures. This process level is used when there is a good understanding of the issues based on experience and time to go through the steps in some detail.

In-depth ORM is similar to deliberate, but with a much more thorough and detailed risk assessment. It is used to more thoroughly explore the hazards and their associated risks in a complex operation, system or event, or one in which the hazards are not well understood. The In-Depth Risk Assessment usually involves several meetings with representatives from key departmental players (i.e. CO, XO, Ops, Safety, S-4, and the subject matter experts, etc.).

Time-Critical ORM

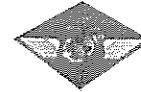


- 1. Identify Hazards**
- 2. Assess Hazards**
- 3. Make Risk Decisions**
- 4. Implement Controls**
- 5. Supervise**

The "Time Critical" ORM process is ORM at the most basic level; and is used during execution of operations and training or short-fused planning. Most people probably use it instinctively without recognizing it as a formal process. However, the more deliberate and in-depth ORM you have done, the more systematic and thorough your time-critical ORM will become.

1. Visualize the expected flow of events and identify any conditions which might result in personnel injury or death, property damage, or degraded mission performance. If some prior planning has been done, focus on changes in the operation from the original plan.
2. Determine which of the identified hazards present the greatest risk, considering the potential outcomes and their probability.
3. Determine what controls can be implemented to counter the highest-risk hazards and what course of action will best accomplish the mission with an acceptable level of risk. Ensure that the benefits of the selected course of action outweigh the anticipated risk.
4. Implement the risk controls and decide on the course of action.
5. Monitor the operation for effectiveness of controls. Correct ineffective controls and begin the ORM process again as further changes occur.

Your Responsibilities



Understand basic ORM principles and steps

**Identify operations under your control and
conduct “mini” risk assessments**

Make and execute plans to minimize risks

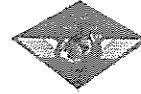
Notify higher when the risks outweigh benefits

Apply these principles BOTH on and off duty

Read verbatim.

Marines are directed to utilize the ORM program, on duty as well as off.

ORM Case Studies



Success Stories: Examples where ORM worked

Lessons Learned – Analysis of a mishap where ORM could have prevented it

Discussion of upcoming events where application of deliberate ORM is essential

Prepare some examples ahead of time that complete the case study discussion period.

Solicit examples that portray events whereas ORM mitigated a mishap from occurring or minimized the losses sustained in the event of a mishap.

Research a mishap that is directly related to the mission of your command (Type/Model/Series aircraft, MOS, Group, etc) and discuss the lessons learned and how the event could have been prevented with the utilization of sound ORM Concepts.

List some events that are on the horizon for your unit (deployment, exercises, dets, high risk flight, recreational event or social outings, etc.) that will require the use of a deliberate ORM analysis to ensure all hazards are identified and controlled to minimize the risk of the event. Then complete this training by developing an ORM plan to mitigate risks associated with that upcoming event.

*“Operationalizing” Safety
&
“Institutional” ORM*



*Second Marine Aircraft Wing
Department of Safety and Standardization*

3/8/2007

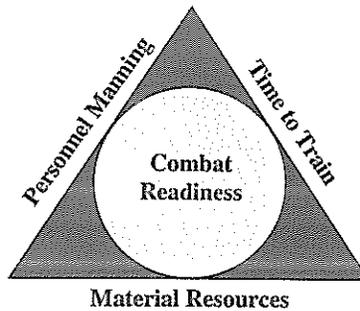
OPNAVINST 3500.39B
MCO 3500.27B
II MEFO 3500.1
WGO 3500.23C

1

With the 2007 re-write of the 2D.MAW ORM Order we introduce and underscore the concept that operations and safety are inextricably linked – meaning that mission accomplishment cannot occur without these two functional areas and philosophies completely tied together.

This brief will introduce and provide examples of “Institutionalized” ORM and ways to “Operationalize” Safety.

Several points are developed that are aviation specific, but the same methodology applies to all communities; air, ground, on duty as well as off.



As we execute the “long war” we understand that significant challenges to Marine Corps operations often exist. The likelihood of certain hazards occurring increases operational risk; especially given personnel manning shortfalls, compressed time to train, and limited material resources. ORM is our #1 tool used to fight these challenges.

3/8/2007 This graphic portrayal is never an equilateral triangle – its always isosceles

2

The interrelationship between personnel, material resources, and time to train is critical to understand. In the Marine Corps there never is an optimal balance; instead there are constant compromises made to develop the best course of action given the preponderance of required elements.

ORM must be part of this equation – every step of the way from beginning to end.



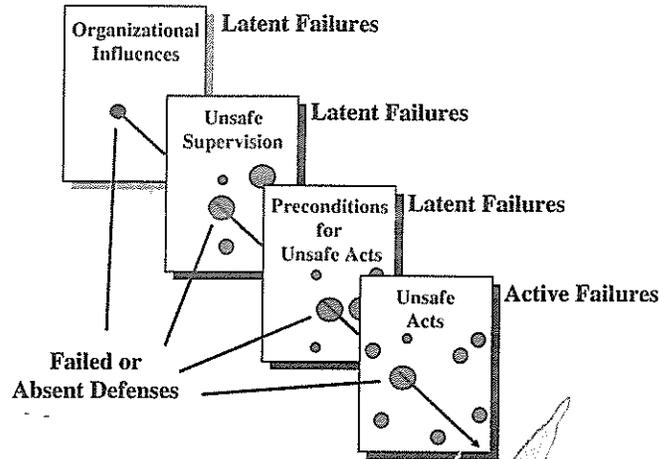
*Defining mission success includes the
preservation of all assets while
safeguarding our people who are our
most precious resource*

3/8/2007

3

This axiom applies to all that we do. You cannot be successful if you fail to preserve all material and personnel resources. The obvious issue if you fail in this area is that you run out of resources: the less tangible but equally disruptive is the impact on the current and future missions when you must focus on making up for the realized shortfalls in trained personnel or material resources while picking up the pieces of the tragic and catastrophic loss. Any one who has lived through the recovery period of a fatal mishap knows how disruptive this is to future missions.

Link Analysis – Reason’s 1990 Model



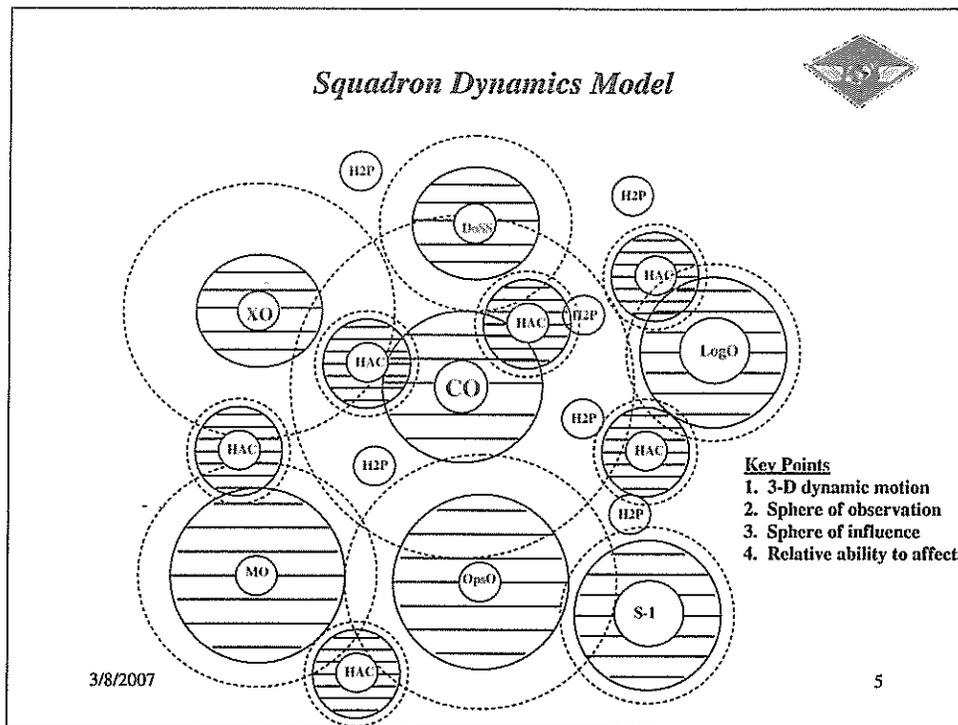
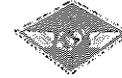
Mission accomplishment requires us to be professional in the planning and execution of every task. A good safety track record is a byproduct of our professionalism.

4

We all have heard the metaphor “links in a mishap chain.” This illustration takes that concept and builds upon it by using pieces of Swiss Cheese instead of metal links. The holes in the pieces of cheese depict failed or absent defenses with each individual piece of cheese being a different level of failure; from institutional influences to the final unsafe act of the individual Marine.

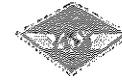
In theory if you patch a hole or misalign the pieces of cheese by doing things right you can prevent a mishap from occurring.

Squadron Dynamics Model



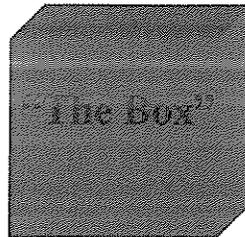
Within all units, the relationships amongst personnel affect the way that a unit functions. The dynamics of this model are like the molecular theory of a gas whereas constant movement and pull exists. Each person has a different sphere of observation and a different sphere of influence and thus has a different relative ability to affect the outcome of assigned missions and tasks. If you pull out a key player who is often the key to efficient, effective, safe operations then more failed or absent defenses are introduced. Think of when you pull the CO and OpsO out of a unit to attend an event while the unit continues to train – more risk is incurred since the integrated leadership and oversight is temporarily removed. The goal is to raise the level of professionalism in terms of knowledge, experience, and ability of all personnel to reduce the strain when key players are pulled from the dynamic.

“The Box” defined



CO's Safety Program and Standard Operations Procedures

OPNAV
NATOPS
T&R
ANTTPs



Tactical acumen
Professionalism
Good decision making
and common sense

Operational
Risk
Management

*You will plan all operations in the center of the box
- no box expanding drills are authorized 6*

3/8/2007

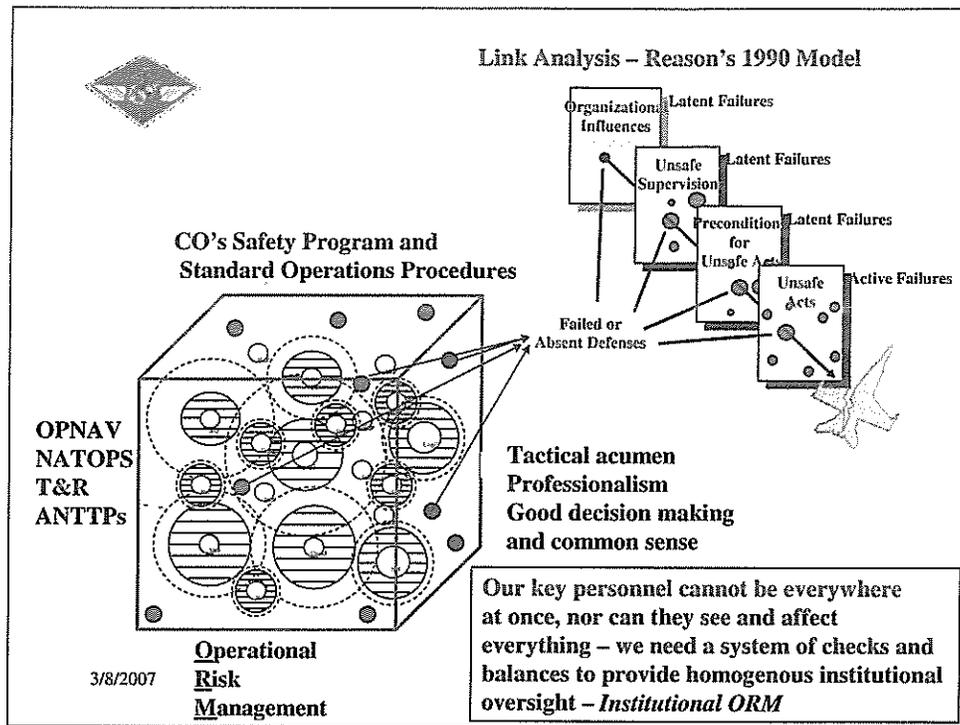
“The box” is our term applied to the list of rules, regulations, and practices (both constraints and restraints) that guide our daily operations.

The goal is to ensure that all pilots and Squadron personnel operate within the confines of “The box.”

If we plan for all operations to occur within the center of the box, other outside foreseen and unforeseen influences will pull us towards the edges.

We will never allow operations designed to execute outside of “The box.” When expanding “The box” becomes necessary we will proceed slowly, methodically, and with all the checks and balances in place. ORM will be the process followed – completely.

This concept is sometimes mislabeled to include a pilot’s comfort level. Comfort level is a factor that affects decision making ability during execution. Comfort level is best developed during a well-thought out progressive training plan with a professional stair-step approach and a system of checks and balances.



This graphic demonstrates that we operate inside the box that is defined by our programs, policies, and precepts established by the leadership of the unit Commander. The dynamics of the model are also affected by the human element and the personnel within a unit – good and bad, the dynamics within the box can leave failed or absent defenses that manifest everyday in the pieces of Swiss Cheese.

Sometimes the holes are not present or the holes are misaligned: and sometimes all the holes align and a mishap occurs.

“Institutionalized” ORM is designed to positively affect all of these dynamics.

Organizational and Supervisory Factors

- Underlying latent causal factors

- Unhealthy command climate
- Poor safety culture
- Inability to learn from indicators and mistakes
- Failure to enforce all standards
- False sense of urgency
- Lousy decision making
- Undisciplined operations



Behavior is the result of the culture you live in

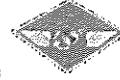
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“Institutional” ORM acknowledges and highlights the Organizational and Supervisory factors that form underlying latent causal factors in a mishap chain.

It is an accurate statement that “Behavior is the result of the culture that you live in.” Therefore it is imperative that the unit CO make every effort to institutionally defeat these negative traits that can grow into cancer legions within an organization.

Individual Human Factors



- Overzealousness
- Complacency
- Lethargy
- Forgetfulness
- Anxiety
- Assumption



Knowledge, training, culture, and discipline are our best defense

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Besides the organizational and supervisory factors, the individual person can also be a significant causal factor in a mishap.

Mandating professionalism in every sense of the word is a critical component. Leadership that builds and instills this professionalism through knowledge, training, culture, and discipline is our best defense.

The cohesive system of rules, regulations, and programs which glue aviation together form the structure with which we reduce the ever-present variables to acceptable levels – implemented with sound leadership.

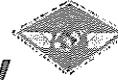
– *Institutional ORM*

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Therefore “Intuitional ORM” incorporates the cohesive system of rules, regulations, and programs which glue aviation together to form the structure with which we reduce the ever-present variables to acceptable levels – implemented under sound leadership.

'Operationalizing' Safety



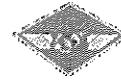
- **Knowledge base**
- **Attention to detail**
- **Thorough and progressive training**
- **100% adherence to standards**
- **Fidelity and accountability**
- **Wargaming and oversight**
- **Authority stop an evolution if things don't look right, feel right, or smell right**

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Read verbatim. Safety and operations are inextricably inked. The focus of effort shifts from what would have been traditionally considered Safety issues or Operations issues to what is now two departments looking at the same problem from two different angles with the result of more professional – efficient, effective, safe operations.

ORM = Combat Safety



- **A well trained unit**
- **Marines that are very good at the basics**
- **The employment of solid aircraft and equipment**
- **Thorough mission planners good at planning**
- **The reliance on simple effective tactics**
- **Continuous threat awareness [all threats]**
- **Disciplined execution – aggressive, but well thought out**
 - **Incorporating surprise, deception, daring, and flexibility**

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Read verbatim.

An outstandingly successful Institutional ORM program will pave the way for successful mission accomplishment during training or during contingencies or combat operations. The issues raised tie directly to how to train, employ, and fight our units.



*Knowledge is the basis for professionalism,
mature judgment and moral courage
are required for its practice*

3/8/2007

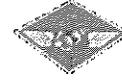
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Brilliance in the basics, based on knowledge and training, executed professionally.

Build in a margin of safety.

Mature judgment and moral courage must be integral to the process.

Hazard Detection



Hazards, synonymous with mishap causal factors: may exist as a result of poor design, improper or unprofessional work or operational practices, inadequate instructions or publication, or because the environment is demanding and unforgiving

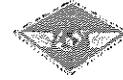
Hazards can be detected during every phase of a mission from planning through execution

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Read definitions verbatim and discuss the fact that hazards are present in every phase of the mission from planning through execution and are exacerbated by the hazards listed above.

Hazard Elimination



The keys to effective hazard elimination are knowledge of required procedures and reporting instructions, proper use of materials and equipment, and safety awareness

Hazards must be mitigated and eliminated each step of the way

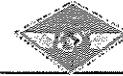
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Hazards must be mitigated to ensure mission accomplishment.

Operational Risk Management

Approach and Integration Strategy



ORM is our #1 Tool...

1. Top-down application
2. Strong Command backing
3. Decentralized implementation
4. Application down to the most basic levels
5. Standardized process

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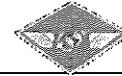
Discuss verbatim.

Effective Command climates that incorporate *Trust, Integrity, Accountability, Leadership, and Communication* have earned a prominent status within our Marine Corps ethos and professional touchstones. They guide our moral compass in the execution of our duties. A healthy Command climate focused on mission accomplishment that is founded solidly on ORM principles is our key to success.

As directed the Executive Officer is the ORM Program Manager for each unit*, but this is “our” program – and one which each Commanding Officer must take full responsibility to see implemented to the fullest extent. The DoSS will serve as the executive agent in its execution. However, all personnel have vital roles as the leadership of our aviation and ground units.

*as directed in the OPNAVINST 3500.39B

Operational Risk Management



Principles & Processes

ORM is our #1 Tool...

Four Principles

1. **Accept risk when benefits outweigh the cost**
2. **Accept no unnecessary risks**
3. **Anticipate and manage risk by planning**
4. **Make risk decisions at the right level**

Five-Step Process

1. **Identify Hazards**
2. **Assess Hazards (severity/probability)**
3. **Make Risk Decisions**
4. **Implement Controls**
5. **Supervise (watch for changes)**

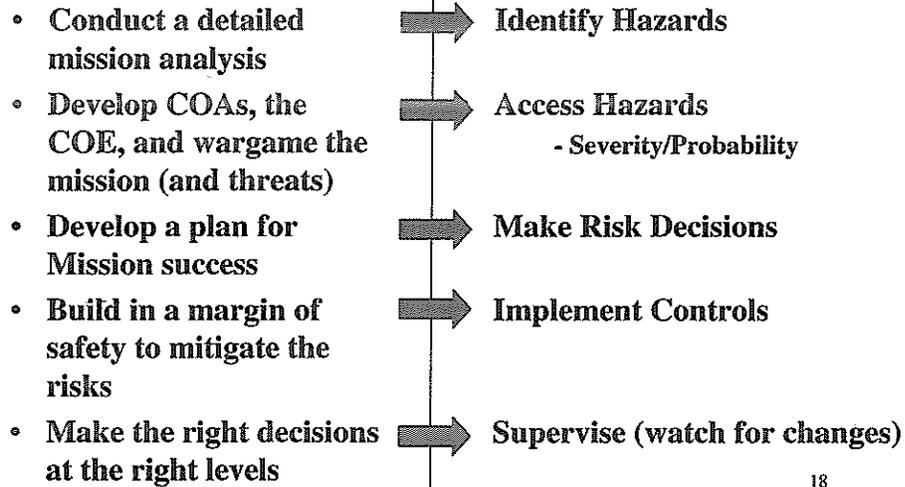
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Here is a short review of the four principles and the five-step process of the ORM program. Risk assessment and mitigation is a required step in every aspect of the Command's mission from planning through execution.

Operational Risk Management

ORM is our #1 Tool...



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Apply mission analysis, COA development, through mission planning and briefing to the risk management steps. Error on the side of caution. Plan to execute mission squarely in the center of the box. Environmental factors, mechanical failures, the enemy, and human error will drag you to the sides (or even outside) of the box. Never plan "box expanding" drills.

2D MAW - Institutional ORM

Three levels of ORM

- Long Term – In-Depth
- Mid Term – Deliberate
- Short Term – Time Critical



Operationalized in three areas

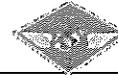
- Written Directives
- Education and Practices
- Supervision and Executive Oversight

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The three levels of ORM are In-depth, Deliberate, and Time Critical and they equate to long term, mid term, and short term timelines. The Marines of 2D MAW will incorporate these levels of ORM and apply them to three definable areas; Written Directives, Education and Practices, and Executive Oversight. So for each three levels of ORM we shall explore and define these three sub-areas in order to standardize and institutionalize ORM processes within our Wing.

Focus

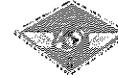


- **“Actions in the objective area”**
 - A literal industry term
 - A metaphor capturing both tactical as well as administrative critical success points
 - Distillation of the key elements
 - Holistic approach inclusive of all aspects of the employment of the operations
 - From movement plans to mission planning and briefings, as well as off duty incident prevention, etc.
 - Hazards and risks are identified and measures taken to ensure mission accomplishment

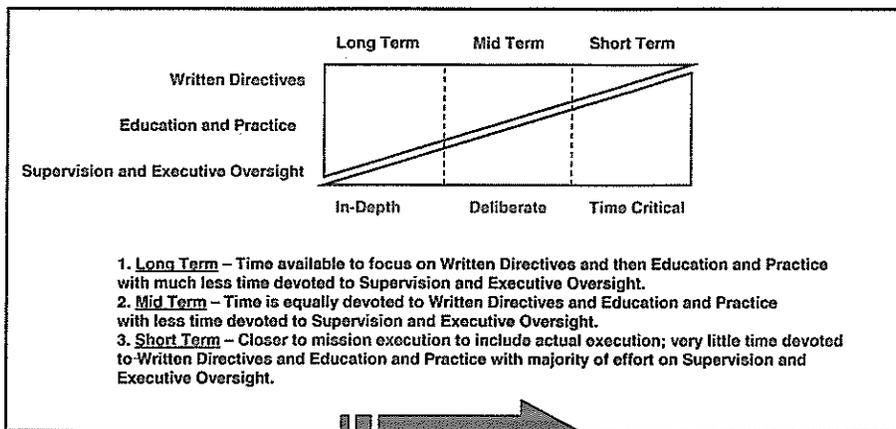
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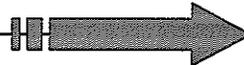
Everything we do can be focused by the phrase “actions in the objective area.” This concept is key to exploring the hazards and risks that are present in everything we do; and underpins the holistic approach to mission accomplishment.



"Institutionalized" ORM – Focus of Effort and the Relationship to Time



1. **Long Term** – Time available to focus on Written Directives and then Education and Practice with much less time devoted to Supervision and Executive Oversight.
2. **Mid Term** – Time is equally devoted to Written Directives and Education and Practice with less time devoted to Supervision and Executive Oversight.
3. **Short Term** – Closer to mission execution to include actual execution; very little time devoted to Written Directives and Education and Practice with majority of effort on Supervision and Executive Oversight.



There is a logical shift in emphasis over time

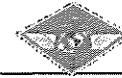
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The rationale driving these three focus areas is simple. ORM policies and practices must be codified so they become standardized and achieve longevity within each unit. The policies and practices must be taught through formal education and honed through constant practice. The ORM program, with its policies and practices ingrained, shall be constantly evaluated through supervision and executive oversight to determine its effectiveness and need for refinement or remediation.

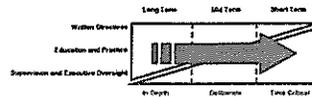
As the following slides will depict, there is a logical shift in emphasis over time as In-Depth, Deliberate, and Time Critical ORM is applied to these three "institutionalized" focus areas.

Long Term – In-Depth



Written Directives

- DoD and HQMC Safety and ORM Policies
- OPNAVINST, NATOPS, ANTPs
- Training and Readiness (T&R) Manual
- Mission Essential Task List (METL)
- MAWTS-1 Course Catalogue
- Commanding Officer's Guidebook on Policy Directives
- 2D MAW, Group, and Squadron Standard Operating Procedures (SOPs)
- Pre-deployment Training Plan (PTP), Training, Exercise, and Employment Plan (TEEP)
- Operations Department Aviation and Ground Monthly Training Plan
- Operations Department Aviation and Ground Weekly Training Plan
- Maintenance Training Plans
- Department of Safety and Standardization (DSS) 30/60/90 Plan
- Letters of Instruction (LOIs)
- Fragmentary (FRAG) Orders and handouts for all major evolutions
- Squadron Pilot and Aircrew Training Syllabi
 - Progressive vice cyclic training plans
- Learning objectives for T&R Phases and major training evolutions
- Master Scenario Events List (MSEL)
- Squadron Assisted Risk Assessment (SARA)



Institutional procedures and practices founded in written directives

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Discuss verbatim.

Written Directives and Policies are formally written down, and thus are codified, so that a high degree of standardization and completeness takes place for all operations. Without this requirement the efficiency and effectiveness of training and operational execution would suffer. Lack of focus would be prevalent and even a certain degree of chaos.

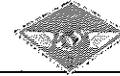
These directives for our tool set are not an exhaustive list; each Command should develop a unit specific listing based on its particular needs.

We craft our progressive pre-deployment training plans, which drives our battle rhythm during the work-up. All institutional procedures and practices shall be founded in written directives.

Side note:

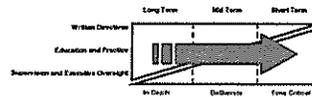
Subordinate directives developed by the Squadrons must be in compliance with higher directives. Only the unit CO's shall approve deviations from a higher directive. Moreover, such a decisions will be made after the unit confers with higher and the planned deviation will most likely include a small deviation for a specific purpose and a specific period of time; the lower commands will emplace additional risk mitigation measures to ensure that a system of checks and balances is utilized during execution. Closing the loop, those units will provide a written after-action to higher so that a

Long Term – In-Depth



Education and Practices

- **Formal Schools**
 - Aviation Safety Officers School
 - Aviation Safety Command Course
 - HCMC Commanders' Course
 - Operational Risk Management
 - SARA instruction and supervised employment
 - ORM instruction and supervised employment
- MAWTS-1 Academic Support Package
- Squadron Pilot and Aircrew initial and continuing education
- Progressive vice cyclic training plans
- Tactical Decision Games (TDGs)
- Briefing of Serious Incident Reports and Hazard Reports
- "I was there" stories during All Officer's Meetings (AOMs)
- "Best Safety Practices" – 2 minute lesson learned during every maintenance shift changeover
- Focused Professional Military Education (PME) program
- Human Factors Analysis and Classification System (HFACS) review and application



Institutional procedures underscored by education and practices

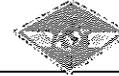
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Discuss verbatim.

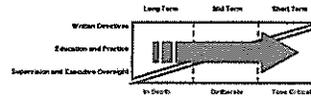
Professional education is extremely important. As is the training conducted on the unit level. Much can be learned vicariously from others instead of first-hand on the job training and by trial and error.

Long Term – In Depth



Executive Oversight

- Higher Headquarters inspection of all programs
- Standardization Board
 - Tactics Board
 - Pilot/Aircrew Training Board
- Human Factors Council/Human Factors Board (as required)
- Committees established for all major evolutions
 - Officer In Charge appointed
 - Initial, Main, Final Planning Conferences through evolution execution
- Wargaming and Crosswalk conferences
- *White Hat* meetings
- *Guardian Angel* oversight
- Everything goes through the Operations Department
- Progressive vice cyclic training plans
- CO decision/approval process inculcated



Institutional procedures practiced and enforced throughout

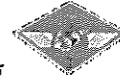
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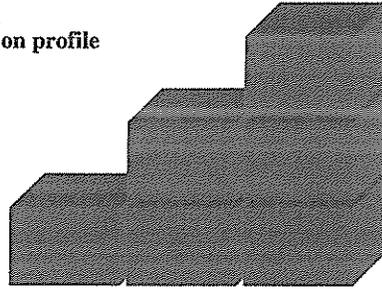
Discuss verbatim.

Effective squadrons invest a great deal of time and resources in company grade flight leaders. The “senior” Captains brief and lead the majority of the training and operational missions. This frees up the Majors to fulfill their responsibilities as Department and Division Heads. Majors should lead flight events from time to time in order to relieve the Captains or to set the example. Majors must be omnipresent during the planning process. And Majors will serve as *Guardian Angels* in each flight to be the “safety backstop” if events degrade and early intervention is required. The *Guardian Angel* is more than an insurance policy – it should be mentor program for the squadron pilots.

Progressive Vice Cyclic Training



- Identifying the holistic training requirement based on the mission profile and the threat
- Academic training
- Hands-on static training
- Stair-step training flights
- Tactical Missions
 - Planning
 - Briefing
 - Execution
 - Debriefing
- Re-assess; re-attack or move to the next phase of training



Mission oriented: crawl, walk, run – building block approach to training

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Developing a mission oriented building block training plan cannot be overemphasized. Training time is too precious to waste and the risks associated with failing to ramp up from simple to complex are too great. This takes time and effort to get right – but it is a must.

Progressive Vice Cyclic Training Plan

1. Mission Analysis Conducted: Credible Air and Ground Threat to Aviation
2. Teach Classes on the most likely threat to be encountered; Ground, Rotary Wing, Fixed Wing
 - Ground Threat
(ZSU-23-4 & Gun Dish RADAR, SA-8 & Land Role RADAR, SA-7)
 - Rotary Wing Threat
MI-8, MI-24 and associated Air to Air Weapons Systems
 - Fixed Wing Threat
SU-23 and associated Air to Air Weapons Systems
3. Dissect all primary and associated threat systems and determine what each particular system employs against helicopters. Know how we will identify if it is out there (APR-39, AH-1W LASER Detection Set, visual, etc). Know how the system is commonly employed (autonomous or within an integrated air defense system)
4. Teach all CH-46E Aircraft Survivability Equipment (ASE)
 - ALE-39, ALQ-157, ALE-39/47, AAR-47
 - Cover all the basics of the systems to include programming
 - Conduct hands-on training operational and troubleshooting
 - Match expendables against the threat
 - Develop plans to maximize ASE to defeat the planned threat (expendable cocktails)
5. Teach tactical formation maneuvering (TACFORM)
6. Teach terrain flight (TERF)
7. Teach Ps-EH
8. Teach XM-218 employment (pilots as well as crew chiefs)
9. Fly TERF, TACFORM, and TACFORM at TERF altitudes, fly aerial gunnery sorties
10. Teach Basic RADAR Principles
 - RADAR Horizons, RADAR Resolution Cell, RADAR Terrain Masking (RTM) Predictions
11. Teach Electronic Warfare Classes
12. Fly the Electronic Warfare T&R syllabus flights
13. Teach the Defensive Measures Course, conduct a DM walk-through (non-fly day) – all aircrew
14. Fly the DM Syllabus (Ground Threat Reaction, Rotary Wing, and Fixed Wing)
15. Fly tactical flights incorporating "surprise encounters" with these types of threats
16. Debrief the training plan re-evaluate strengths and weaknesses, and schedule refresher training

This is a CH-46E example, but the same methodology applies to all communities.

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Training time is too short to simply schedule training events because the training calendar must be filled with events and it has been a while since we taught a particular introductory class.

Instead, if you can identify the most likely mission profile and threat. Then you can develop a progressive and iterative, building block approach that maximizes the training value to the entire unit.

The pre-deployment training plan (PTP) and training, exercise, employment plan (TEEP) will provide the skeletal framework, while the taxonomy flowing from the major events containing the progressive training plan forms the muscle.

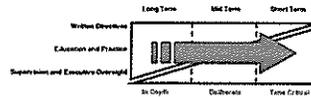
In the end you will have covered the majority of annual training requirements during our training journey – while chipping away at the other training requirements in a “not to interfere basis.”

Mid Term – Deliberate



Written Directives

- Operations Department Aviation and Ground Monthly Training Plan in execution
- Operations Department Aviation and Ground Weekly Training Plan in execution
- Mission LOI, FRAG Order, handouts, learning objectives, MSELs
 - Reviewed for accuracy and completeness
 - Funnel the event
 - Underscore learning objectives
- T&R Manual requirements met
 - Standardized Crawl, walk, run – building block approach
 - Proper time and assets scheduled for each T&R “X”
- Daily flight schedule written
 - Prerequisites, currency and proficiency requirements met
 - Experience levels prescribed and met
 - Designations and qualifications (HAC to HAC for multi-piloted aircraft)
 - Individual ability
 - Total flight time considered (i.e. 1000 hours in the cockpit)
 - Crew pairings chosen
 - Limit the total number of hours flown, and the total numbers of events to complete
- Continue to standardize what is taught (beyond the T&R Manual) for each phase of flight training
 - E.g. TERF, NVG, Shipboard Ops, Externals, DM, weapons employment, etc.
 - Reading assignments, discussion topics, standardized “dance card” for what is practiced in flight



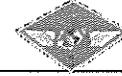
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27

Discuss verbatim.

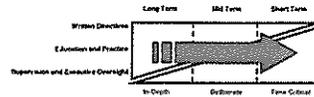
There is still plenty of time in this phase to work written directives that will tightly focus the efforts of the unit.

Mid Term – Deliberate



Education and Practices

- Classroom instruction focusing more closely on the mission at hand
 - External Operations
 - Shipboard operations
 - Terrain Flight (TERF), Low Altitude Training (LAT)
 - Night Vision Goggles (NVG)
 - Weapons employment
 - Close Air Support
 - Low/Med/High Threat Tactics
- Mission planning demonstrations
- Mission planning and briefing executed on non-fly days
- Briefing of Serious Incident Reports and Hazard Reports
- Pilot mentor program
- Pilot on-wing program (first three flights with same instructor pilot)
- Maintenance training days MATMEP
- BITS/Safety Stand Down events



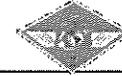
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Discuss verbatim.

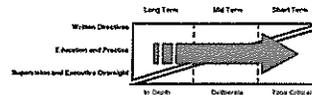
This phase takes advantages of education and practices to build the foundation of knowledge that is the basis of professionalism. This is where the majority of the learning and standardization takes place.

Mid Term – Deliberate



Executive Oversight

- **Standardization Board**
 - Beyond what is written in the T&R Manual
 - Mission profile specific standardization from planning through execution
- Risk mitigation decisions met
- Manage battle rhythm and operations tempo
- SARA database employed accurately
- Major evolution committees
- **Operation specific issues met**
 - Landing Zone (LZ) surveys conducted
 - Training routes certified
 - Airspace coordinated
 - Site safety surveys conducted
 - Extended/Closed field hours and Prior Permission Required (PPRs) coordinated
- **Maximum participation during mission planning and briefing**
 - Weapons and Tactics Instructors (WTIs), Flight Leaders, Instructor Pilots (IPs)
 - Other pilots not assigned to fly the mission are also involved
 - Pilots under training share portions of the flight brief and practice leading Sections/Divisions
- **White Hat and IP Coordination Meetings**
 - All WTIs, Flt Ldrs, and IPs provide a Quality Assurance Check (QA) of the plan
- **MSEL Brief for all pertinent Flt Ldrs and aircraft commanders**
- **Flight Briefs – crystal clear – focus on actions in the objective area**
- **Crew rest, crew day, total flight hour limitations adhered to**
 - Combating acute and chronic fatigue



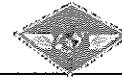
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29

Discuss verbatim.

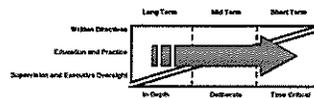
The mission framework is the key – remember that simple effective tactics built upon the crawl, walk, run progressive training plan is essential. Control as many variables as possible – plan to operate in “the box” with no ‘box expanding’ drills authorized.

Short Term – Time Critical



Written Directives

- FRAG Order updated, supported unit contacted for last minute updates
- ORM Worksheet developed, reviewed, and updated
- Daily flight schedule executed – with very few changes



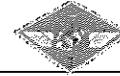
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Discuss verbatim.

As the diagram to the bottom right implies we have a logical shift from written directives to a more active role in education and practice, and a very involved and heavily weighted executive oversight.

Short Term – Time Critical



Education and Practices

- **Operations Duty Officer (ODO)**
 - Operations Department guidance
 - Local flying area update
 - Notice to Airmen (NOTAMS) researched/briefed
 - Home Field status updates
 - Maintenance liaison
 - Primary Flight Control (PriFly) liaison [ship board]
 - Weather update
- **Focused areas during the mission, flight, and cockpit briefs – re-brief's as required**
 - Actions in the objective area
- **White Hat meeting to ensure each IP has correctly identified the risks and developed an adequate plan to mitigate them**
- **Reference directive publications to clear up any ambiguous issues related to the conduct of the mission**



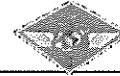
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31

Discuss verbatim.

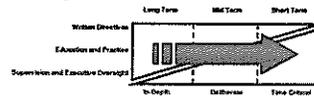
Interaction at this point focuses attention to the final steps prior to executing the mission.

Short Term – Time Critical



Executive Oversight

- Rehearsal of mission brief
- Mission brief conducted
- Objective area walk-through or “sand table exercise”
- *White Hat* meeting
- Scrutinize all “last minute” schedule changes
- Fly the mission exactly as planned and briefed
 - In flight decisions are expected when foreseen or unforeseen events take place
 - Zero tolerance for last minute creativity and non-briefed maneuvers
- Fly the NATOPs numbers – all pilots must be very good at the basics
- Limit the number of missions a crew can “flex” to
- Limit the number of times a crew can enter an objective area
- Require objective area updates and hand-overs between aircraft
- Spread load cockpit workloads amongst the flight members
- Emplace liaison officers on the deck as appropriate for landing in any non-standard LZ
- WTIs and Senior Flt Ldrs lead the flights with *Guardian Angels* omnipresent
- CO, XO, DoSS site visits – visible hands on leadership
- Anyone can stop an evolution
 - If it doesn't look right, feel right, or smell right; call “terminate” or “knock it off”, stop the show and sort it out



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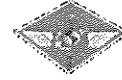
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Discuss verbatim.

Be extremely leery of last minute changes – difficult to ensure the same analytical rigor goes into the decisions when all the institutional practices are not employed.

Trust your education and your instincts during this phase.

CO's mandate...



- **Thorough mission analysis**
- **Detailed Planning**
- **Employment of sound tactics**
- **Clear and concise briefing**
- **Professional execution**
- **Timely and pertinent debriefing**

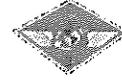
Disciplined Warfighting

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From mission receipt to the debrief, everything is conducted as professionally and thoroughly as possible.

What is expected...



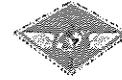
- **Display professionalism in every situation**
- **Know, abide and enforce all established rules and procedures**
- **Actively participate in efforts to identify and eliminate hazards**
- **Recognize and respect your own limitations**

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Do exactly what is expected. Build in a margin of safety

Summary



**“Operationalizing” Safety and
“Institutionalizing” ORM in a proactive
and holistic program driven by unit
Commanding Officers is a critical
element in mission accomplishment: with
the byproduct of preserving our
resources and protecting our people –
our most precious resource.**

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This brief was a primer. It opens the door for future development of the ORM program and processes that will strengthen risk mitigation and pave the way for mission accomplishment. The role of the Commanding Officer cannot be overemphasized. “Operationalizing” Safety and “institutionalizing” ORM are pillars of a successful program.

2nd MAW

Operational Risk Management

Unit	Standard Requirements										Training & Reporting									
	Command Survey Baseline / Semi-Annual		Human Factors Council	Slan Boards	Avn Safety Council	G-WOE Training	CRM Training	ORM Training	NATOPS Inspection	Last NSC On Site	Last IG Biennial	CO Execute Orders	CO's Flight Training	CO ASC Trained	AMO School Trained	ASO School Trained	WTT School Trained			
	30 days	6 months	Monthly	Monthly	Quarterly	Annual	Annual	18 months	On Site	Biennial	6 Months Prior	Prior to CoC	Trained	Trained	Trained	Trained				
MAG-14	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05	Aug-05			
VMAQ-1	Jun-06	Nov-06	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Jan-05	Aug-05	Apr-06	Mar-05	Nov-03	Apr-03	Mar-03	Oct-03	Nov-03			
VMAQ-2	Nov-06	Nov-06	Feb-07	Feb-07	Dec-06	98%	Yes	Yes	Apr-05	May-05	Apr-06	Mar-05	Nov-03	Apr-03	Mar-03	Oct-03	Nov-03			
VMAQ-3	Dec-05	Dec-05	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Oct-05	Aug-05	Oct-06	May-05	Oct-03	Mar-05	Apr-05	Apr-05	Apr-05			
VMAQ-4	Jan-06	Jan-06	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Oct-05	Jun-04	Dec-03	Oct-03	Dec-03	Dec-03	Dec-03	Dec-03	Dec-03			
VMAI-203	Apr-05	Apr-05	Feb-07	Feb-07	Dec-06	98%	Yes	Yes	Aug-05	Aug-05	Mar-05	Mar-05	Nov-05	Mar-05	Nov-05	Nov-05	Nov-05			
VMAI-223	Jul-06	Jul-06	Feb-07	Feb-07	Jan-07	98%	Yes	Yes	Mar-06	Jul-05	Mar-05	Mar-05	Mar-05	Mar-05	Mar-05	Mar-05	Mar-05			
VMAI-231	Jan-07	Jan-07	Feb-07	Feb-07	Jan-07	100%	Yes	Yes	Jan-05	May-06	Jul-06	Jul-06	Jul-06	Jul-06	Jul-06	Jul-06	Jul-06			
VMAI-542	May-06	May-06	Feb-07	Feb-07	Jan-07	95%	Yes	Yes	Nov-05	Jan-02	Aug-04	Oct-04	Oct-04	Nov-05	Nov-05	Nov-05	Nov-05			
VMAI-252	Jul-06	Jul-06	Feb-07	Feb-07	Dec-06	97%	Yes	Yes	Mar-05	Apr-06	Jan-05	Mar-05	Mar-05	Mar-05	Mar-05	Mar-05	Mar-05			
MALS-14	Sep-05	Sep-05	Feb-07	Feb-07	Jan-07	97%	Yes	Yes	Mar-05	Aug-05	Jan-05	Mar-05	Mar-05	Mar-05	Mar-05	Mar-05	Mar-05			
MAG-26	Aug-05	Aug-05	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Aug-05	Aug-05	Nov-06	Oct-06	Aug-06	Nov-04	Mar-05	Mar-05	Mar-05			
HMM-261	Nov-06	Nov-06	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Sep-05	Jan-06	Nov-06	Oct-06	Aug-06	Nov-04	Mar-05	Mar-05	Mar-05			
HMM-284	Jan-06	Jan-06	Feb-07	Feb-07	Dec-06	W	Yes	Yes	Nov-05	Nov-05	Nov-05	Oct-05	May-05	Jan-06	Jan-06	Jan-06	Jan-06			
HMM-266	May-06	May-06	Feb-07	Feb-07	Dec-06	90%	Yes	Yes	Aug-05	Aug-05	Sep-05	Spring-07	Oct-01	Jan-04	Jan-04	Jan-04	Jan-04			
HMLA-167	Jul-05	Jul-05	Feb-07	Feb-07	Oct-06	W	Yes	Yes	Sep-05	Mar-03	Oct-04	Mar-06	Apr-05	Nov-05	May-05	May-05	May-05			
VMMT-204	Aug-05	Aug-05	Feb-07	Feb-07	Dec-06	88%	Yes	Yes	Dec-05	Nov-05	Apr-06	Jan-01	Apr-04	Apr-05	Apr-05	Apr-05	Apr-05			
MALS-26	Jun-06	Jun-06	Feb-07	Feb-07	Oct-06	97%	Yes	Yes	Mar-03	Mar-03	Apr-06	Apr-06	Apr-06	Apr-06	Apr-06	Apr-06	Apr-06			
MAG-29	Jul-05	Jul-05	Feb-07	Feb-07	Dec-06	98%	Yes	Yes	May-06	May-06	Aug-06	May-06	May-06	May-06	May-06	May-06	May-06			
VMM-162	Aug-06	Aug-06	Feb-07	Feb-07	Nov-06	98%	Yes	Yes	TBD	TBD	Aug-05	Oct-04	Dec-05	Aug-05	Nov-05	Nov-05	Nov-05			
VMM-283	Mar-06	Mar-06	Feb-07	Feb-07	Dec-06	96%	Yes	Yes	TBD	TBD	Sep-05	Mar-06	Oct-05	Jan-06	Apr-06	Apr-06	Apr-06			
HMM-365	Feb-07	Feb-07	Feb-07	Feb-07	Jan-07	91%	Yes	Yes	Jan-07	Nov-03	Jun-03	Oct-06	Dec-06	Jan-07	Mar-07	Mar-07	Mar-07			
HMM-464	May-05	May-05	Feb-07	Feb-07	Dec-06	91%	Yes	Yes	Jan-07	Nov-03	Jun-03	Oct-06	Dec-06	Jan-07	Mar-07	Mar-07	Mar-07			
HMLA-289	Oct-05	Oct-05	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Dec-05	Nov-05	Nov-05	Dec-05	Feb-06	Mar-06	Apr-06	Apr-06	Apr-06			
HMT-302	Jul-06	Jul-06	Feb-07	Feb-07	Nov-06	97%	Yes	Yes	Aug-05	Dec-06	Apr-06	Apr-06	Aug-01	May-05	Sep-05	Sep-05	Sep-05			
MALS-29	Dec-05	Dec-05	Feb-07	Feb-07	Dec-06	97%	Yes	Yes	Aug-05	Dec-06	Apr-06	Apr-06	Aug-01	May-05	Sep-05	Sep-05	Sep-05			
MAG-31	May-06	May-06	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			
VMFA-115	Jul-05	Jul-05	Feb-07	Feb-07	Nov-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			
VMFA-122	Jun-06	Jun-06	Feb-07	Feb-07	Nov-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			
VMFA-251	Jul-06	Jul-06	Feb-07	Feb-07	Nov-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			
VMFA-312	May-06	May-06	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			
VMFA(AW)-224	Jan-06	Jan-06	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			
VMFA(AW)-332	Feb-06	Feb-06	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			
VMFA(AW)-533	Oct-05	Oct-05	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			
MALS-31	Jun-05	Jun-05	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			
MACG-28	Dec-06	Dec-06	Feb-07	Feb-07	Dec-06	100%	Yes	Yes	Apr-06	Jun-04	Jun-04	Mar-06	Mar-06	Aug-02	Aug-02	Aug-02	Aug-02			

Note (1): M & RA is responsible for completing the PCS Orders and the scheduling of the CMC Commander's Course however the Wing shall report status IAW MARADMIN 270/05 (6 months prior to PCS orders).
 PCO: enter month and year; shade it red if not completed prior to change of command and shade it green if completed prior to change of command.
 CMC CDRS: enter month and year; shade it red if not completed prior to change of command and shade it green if completed prior to change of command.

Note (2): Each Wing is responsible for reporting the completion of the Commanding Officer's refresher flight training IAW MARADMIN 270/05 and CMC Policy Directive 1-05.

•Change of Command: enter date

•Command Survey:

Baseline: enter date; informal survey required within 30 days of change of command IAW MCO 5100.29A

Semi-Annual: enter date; Semi-annual review in addition to the baseline using either:

(1) NSC site visit, (2) NSC Cultural Workshop, (3) On-line CSA/MCAS survey or (4) same T/M/S squadron per ORM Fundamentals Campaign msg

•Human Factor Council: enter date; Mtg required monthly IAW MCO 5100.29A

•Standardization Boards: enter date; Boards required monthly IAW MCO 5100.29A

•Orty Safety Council: enter date; Council required every quarter IAW MCO 5100.29A

•C-WOE Training: enter percentage of Squadron complete; 90% and above complete, shade green. Below 90%, shade red.

•Annual CRM Training: enter yes for 90% trained or greater (green) or no for less than 90% trained (red); required annually IAW OPNAVINST 1542.7

•Annual ORM Training: enter yes for 90% trained or greater (green) or no for less than 90% trained (red); all Marines require annual ORM training IAW MCO 3500.27B

•NATOPS Inspection: enter date; required to have a NATOPS inspections every 18 months IAW OPNAVINST 3710.7T

•Biennial Naval Safety Center survey: enter date of most recent survey; Biennial Naval Safety Center survey requirement IAW MCO 5100.29A

•Last IG: enter date; required to have an IG inspection every 2 years IAW MCO 5040.6G

•CO Aviation Safety Commanders Course: enter date trained; trained IAW OPNAVINST 3750.6R

•ASO: enter date trained; trained and in the billet IAW MCO 5100.29A

•AMO: enter date trained; trained and in the billet IAW OPNAVINST 4790.2H

•WTI: enter date trained; trained and in the billet IAW MCO P3500.12C

2D MAW Risk Assessment Code Matrix – Explanation and Use

Explanation of the Risk Assessment Code Chart

- RAC 1 = Critical
- RAC 2 = Serious
- RAC 3 = Moderate
- RAC 4 = Minor
- RAC 5 = Negligible

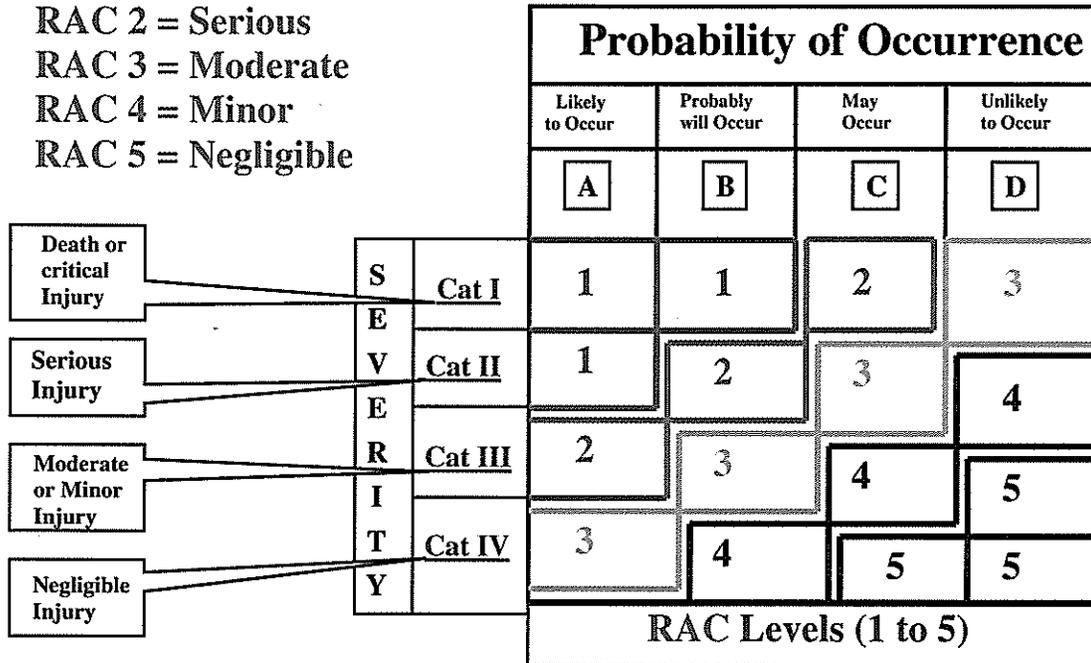


Figure 1

1. **Discussion.** The Risk Assessment Code matrix provided in Figure 1 provides an example of this valuable tool. This method of reviewing risks associated with a hazard to operations provides a standardized and methodical course to quickly assess the likelihood of an event occurring, and with due consideration given to the severity of the outcome. The resultant is a Risk Assessment Code (RAC) valued from “1” to “5” that is then used to assist leaders with their decision points. The ORM process has already been ongoing with the risks identified and plans for control set in place. The RAC levels themselves already take into consideration successful risk mitigation efforts. In the end, if a RAC level remains unacceptably high, then more prudent courses of action must be investigated and developed.

2. **Risk Assessment Code (RAC) categories**

- 1- Critical 2 – Serious 3 – Moderate 4 – Minor 5 – Negligible

The categories listed above represent varying degrees of risk that associate the probability or likelihood of an event occurring. The severity of injury or negative effect to mission (property damage or damage to interests) if a particular hazard causes the

unwelcome event to occur. Mandatory missions aside, normally a RAC of 1 dictates that the risk is unacceptably high and a different course of action must be chosen. It is prudent to take measures to reduce operational risk to the lowest levels, thus building in a margin of safety to compensate for unforeseen events.

3. Hazard Severity. This portion of the RAC matrix defines the degree in which an event might cause damage. Categories “I” through “IV” capture the level of severity or criticality whereas “I” has the propensity to cause the worst damage and “IV” the least.

a. Category I – The event might cause death or a critical (life threatening) injury; loss of a facility or asset; or grave damage to national interests.

b. Category II – The event might cause a serious injury or illness; significant property damage; or damage to national or service interests.

c. Category III – The event might cause moderate or minor injury or illness; some degree of property damage; or some damage to national, service, or command interests.

d. Category IV – The event will have a negligible effect on personnel; property; or national, service, or command level interests.

4. Mishap Probability. The portion of the RAC matrix captures the likelihood, and frequency, of an event occurring. The descriptors are relatively self-explanatory and are listed as “Likely” to occur, “Probably” will occur, “May” occur, and “Unlikely” to occur.

a. Likely – Likely to occur immediately or within in a short period of time. Expected to occur several times to an individual item or person, or continuously to a group.

b. Probably – Probably will occur in time. Reasonably expected to occur some time to an individual item or person, or continuously to a group.

c. May – May occur in time. Reasonably expected to occur some time to an individual item or person, or several times to a group.

d. Unlikely – Unlikely to occur to an item, an individual, or to a group.

5. Summary. The RAC matrix provides a standardized methodical means in which all users can quickly assess risks associated within a hazard enabling quick, but well discerned assessments. The RAC matrix is not the end state of the ORM process; it is simply an effective tool used to facilitate the planning and decision process.

Tab 135: Operational Risk Management

- a. Does the command have a current copy of MCO 3500.27B, Operational Risk Management (ORM), on hand? MCO 3500.27B
- b. Does the Command have a current copy of WgO 3500.23C? WgO 3500.23C
- c. Has the unit Commanding Officer executed the ORM Program IAW WgO 3500.23C? WgO 3500.23C Para 1.c.
- d. Has the command published or updated existing orders and standing operating procedures with command-specific applications and requirements for ORM? MCO 3500.27B, Para 4.A.(1)(a)
- e. Has the command "institutionalized" ORM IAW WgoO 3500.23C Para 4.b.(1)
- f. Have all personnel received initial (within 30 days of checking into the command) and annual ORM training thereafter? MCO 3500.27B, Para 5.a.
- g. Has the command designated at least one Officer and one senior staff non-commissioned officer as ORM instructor? Did the instructors earn their qualification via approved means? MCO 3500.27B, Para 5.b.; WgO 3500.23C Para 5.e
- h. Does the command apply the principles of Operational Risk Management (ORM) in the planning process for all deployments, operations, and training? NAVMC 5100.1 Para 2003.3, 2004(3) and MCO 3500.27 Para J.2
- i. Does the command safety officer maintain copies of ORM assessments for deployments, operations and training conducted at Squadron sized units? NAVMC 5100.1 Para 2003 and 2004 and MCO 3500.27 Para J. 2
- j. Does the Command maintain and use the "Anymouse" program IAW WgO 3500.23C? WgO 3500.23C Para 4.c.(3)(f)

Comments:

Recommendation:
