Operational Risk Management
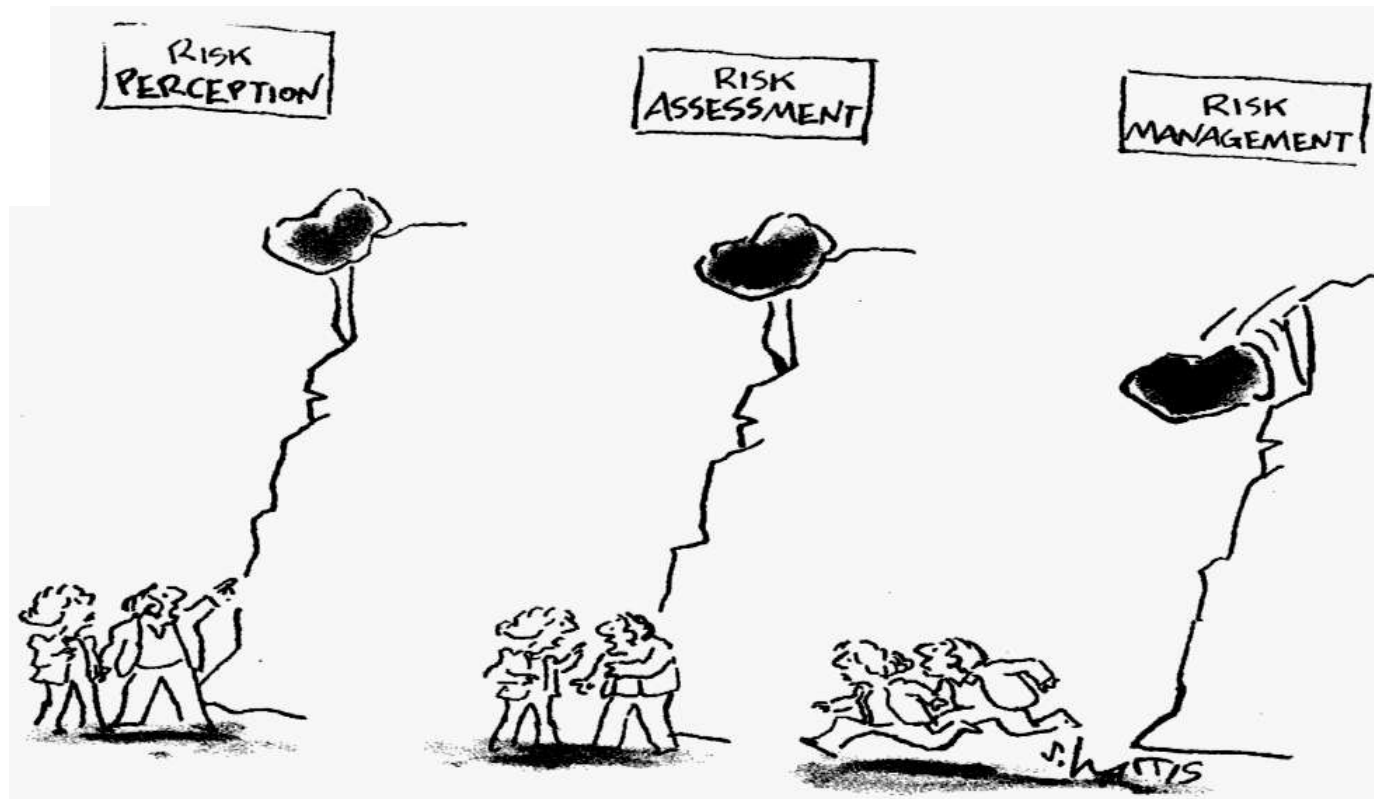## - Short and Simple -

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Adapted from:

- http://www.mcieast.marines.mil/Portals/33/Documents/Safety/OSH/ORM.ppt
- CAP On-line Safety Education ORM Course

Purpose of ORM

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  - enhancing hazard identification in the operational environment in order to eliminate risks or <u>reduce them to an acceptable level</u>
- ORM follows a 5 step sequence, with 3 levels of application
- Closed-loop process applicable to most operational and organizational situations and environments
- Gradually being supplanted by broader concept of generalized Risk Management –
  - Evaluation of Risk/Benefit tradeoffs in all action contexts
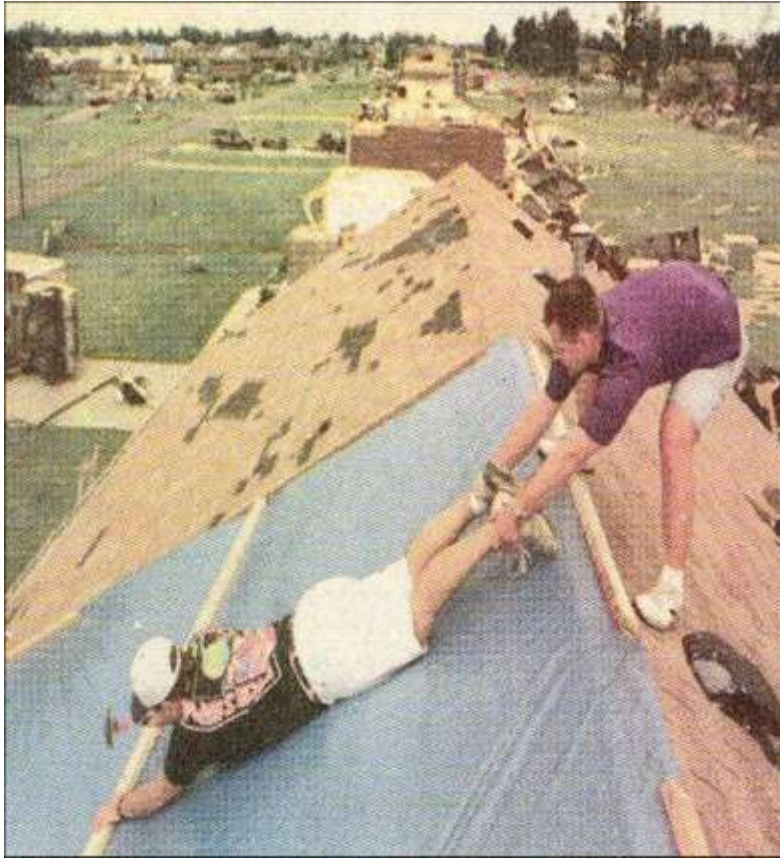
Benefits out-way the risk?

Definitions

- **ORM**
  - The process of dealing with risks associated with operations, which includes risk assessment, risk decision making and implementation of effective risk controls
  - A **_tool_** used to help participants make sound decisions in a logical manner in order to manage IDENTIFIED RISKS
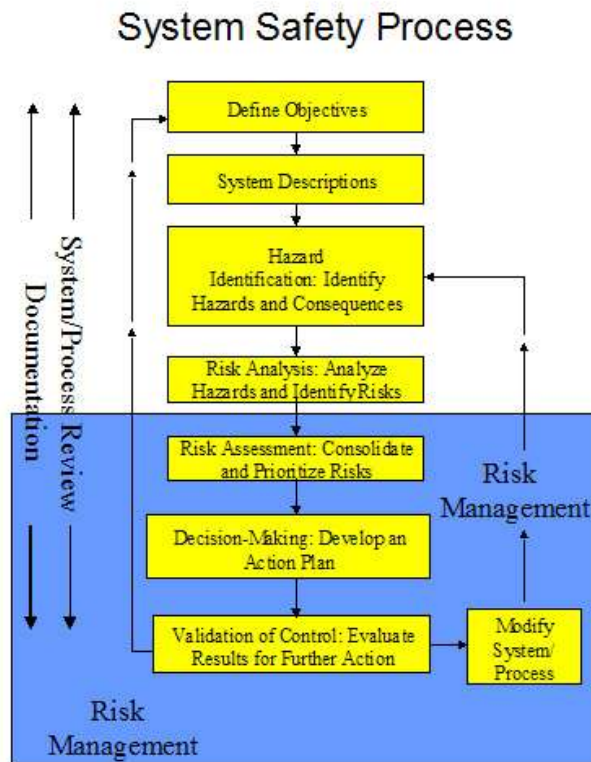
- **Hazard**
  - A condition with the potential to cause personal injury or death, property damage or mission degradation

Definitions (cont.)

- **Probability**
  - The likelihood that a hazard will materialize

- **RISK**
  - Potential loss stemming from a hazard times the hazard's probability and severity

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- Red-Slice Unknowns –

  – The unknowns for which awareness is lacking - not suspected or thought of during the risk assessment process

• The Six Steps of the ORM Process

System Safety Process

1. Identify the hazards
2. Assess the risks
3. Analyze the risk control measures
4. Make control decisions
5. Risk control implementation
6. Supervise and review

Risk Assessment Matrix

RISK ASSESSMENT MATRIX				
Severity				
Likelihood	Negligible	Marginal	Critical	Catastrophic
Frequent				
Probable				*High*
Occasional			*Serious*	
Remote		*Medium*		
Improbable	*Low*			

Severity Scale Definitions	
Catastrophic	Results in fatalities and/or loss of the system.
Critical	Severe injury and/or major system damage.
Marginal	Minor injury and/or minor system damage.
Negligible	Less than minor injury and/or less than minor system damage.

Risk Assessment Matrix

Likelihood Scale Definitions		
Frequent	Individual	Likely to occur often.
	Fleet	Continuously experienced.
Probable	Individual	Will occur several times.
	Fleet	Will occur often.
Occasional	Individual	Likely to occur some time.
	Fleet	Will occur several times.
Remote	Individual	Unlikely to occur, but possible.
	Fleet	Unlikely but can reasonably be expected to occur.
Improbable	Individual	So unlikely, it can be assumed it will not occur.
	Fleet	Unlikely to occur, but possible.

RISK MANAGEMENT INTERGRATION AND THE DECISION MAKING PROCESS

Operations Planning Process

Objectives

Execute Plan

Estimate the situation

Identify Hazards

Supervise

Access Risk of Each Hazard

Risk Management Process

Implement Controls

Make Risk Decisions Develop Controls

Coarse of Action Development

Coarse of Action Decision Brief
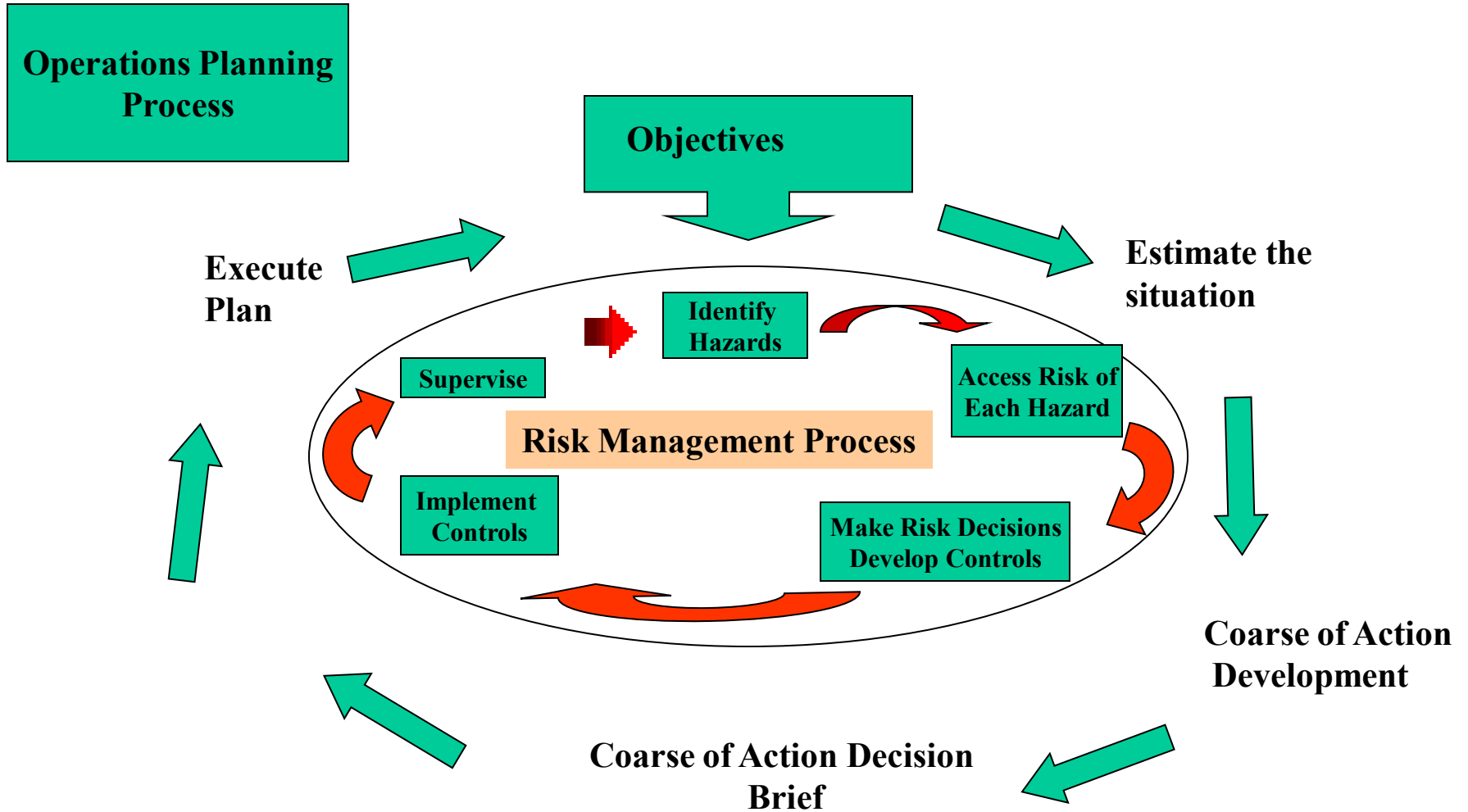
Origin of ORM

- 1978 Bob Firenze, a Navy civilian wrote an article for the Naval Safety Center's Lifeline magazine identifying Risk Management and its benefits in industrial work place.

- 1991 the Army began working ORM into briefs, schoolhouses and Operational Planning. Since then, ORM has become the Army's primary risk reduction process to protect the force. Their goal Is "to make risk management a routine part of planning and executing operational missions".
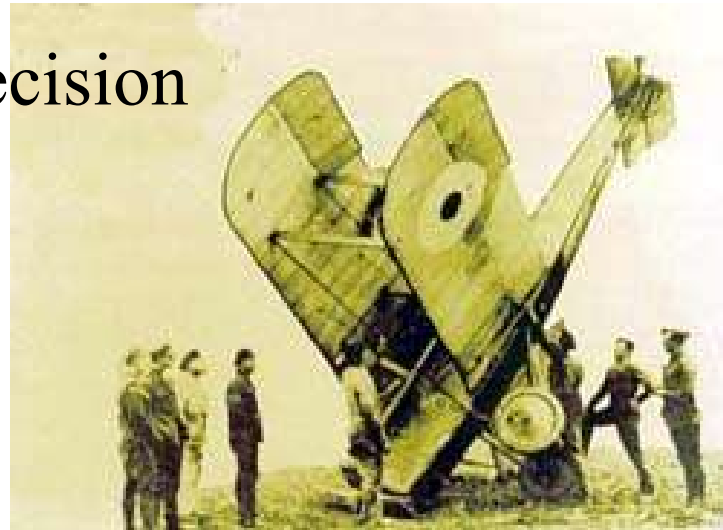
Risk Comparison

TRADITIONAL

Random, Individual Dependent

Common Sense

Uninformed Decision

Reactive

ORM

Systematic

Methodical

Informed

Proactive

Cause Factors

•*Human Error -* **an individual's actions or performance is different than what is required and results in or contributes to an accident.**

•*Material Failure/Malfunction -* **a fault in the equipment that keeps it from working as designed, therefore causing or contributing to an accident.**

•*Environmental Conditions -* **any natural or manmade surroundings that negatively affect performance of individuals, equipment or materials and causes or contributes to an accident.**

Sources of Human Errors

Individual Failure - **Personnel knows and is trained to standards but elects not to follow the standard (self-discipline).**

Leader Failure - **Leader does not enforce known standard.**

Training Failure – **Personnel not trained to known standard (insufficient, incorrect or no training on task).**

Standards Failure - **Standards/procedures not clear or practical, or do not exist.**

Support Failure - **Equipment/material improperly designed to meet performance standards.**

4 Principles "ORM Golden Rules"

1. Accept risk when benefits outweigh the costs

2. ***Accept no unnecessary risk***

3. Anticipate and manage risk by planning

4. Make risk decisions at the right level

3 Levels of Application

- **Time Critical or Ad Hoc**
  - On the run consideration
- **Deliberate / Formal**
  - Application of the 5 Step Strategy
  - Planned well in advance of activity
- **In-depth or Strategic**
  - Complete the 5 Step Strategy with detailed analysis – time/resource intensive, for complex programs with hi "red slice" potential

Benefits out-way the risk?

Risk Control Options

- Engineering
  - ✓New Technology, design, substitute material
- Education
  - ✓Collective/individual training
- Administrative
  - ✓Establishing written programs, limiting exposure
- Physical
  - ✓Barriers, PPE, road guards, warning signs
- Operational
  - ✓Map exercises, rehearsals, pace of operations

Supervise - HOW

- Monitor and Enforce controls
- Use evaluation techniques to look for new hazards
- Examine data/make adjust that are ineffective
- Evaluate effectiveness of controls and revise if necessary

Evaluation Tools

- Spot Checks/Back Briefs
- Audits/Inspections
- Readiness Reports
- Licensing
- Rehearsals
- Certification Procedures

Summary

Enhances operational mission accomplishment

Supports well-informed decision making to implement a Course of Action.

Provides assessment tools to support operations.

Improves decision making skills based on a systematic approach.

ONLINE SITES

- Safety Division; http://hqinet001.hqmc.usmc.mil/sd/documents.htm

- Navy Safety Center; http://www.safetycenter.navy.mil/ashore/marines/default.htm

- Marine Corps ORM site; https://crcapps2.crc.army.mil/ASMIS2/marines/login.aspx?ReturnUrl=%2fASMIS2%2fmarines%2fdefault.aspx

Thank you.

Benefits out-way the risk?