



Commandant  
United States Coast Guard

2100 Second Street, S.W.  
Washington, DC 20593-0001  
Staff Symbol: G-MSE-1  
Phone: 202-267-2997

COMDTINST16010.3

COMMANDANT INSTRUCTION 16010.3

Subj: RISK-BASED DECISION-MAKING

- Ref: (a) Commandant’s Letter # 16010 15 JAN 97 on Risk-Based Decision-Making  
 (b) Business Plan for Marine Safety and Environmental Protection & G-M Business Plan Goals, COMDTINST 16000.26 (series)  
 (c) Operational Risk Management, COMDTINST 3500.3  
 (d) G-M Guidelines for Risk-Based Decision-Making 2<sup>nd</sup> edition

1. PURPOSE. This Instruction expands and reinforces the use of Risk-Based Decision-Making (RBDM) methodologies in support of the Coast Guard’s Marine Safety and Environmental Protection program. It supercedes reference (a) and enhances and integrates current initiatives to develop a more effective program that provides benefits across all aspects of the organization. It outlines and describes programs, tools and data that will help units further apply risk-based approaches to Coast Guard activities. This Instruction introduces the second edition of the Risk-Based Decision-Making Guidelines as a resource to assist with the application of RBDM.
2. ACTION. Area and district commanders (m) and all units having marine safety and environmental protection responsibilities are encouraged to use the Risk-Based Decision-Making Guidelines to more fully integrate RBDM into their day to day operations and activities. Commandant (G-MSE) will support and aid field and Headquarters units in the execution of this Instruction.
3. DIRECTIVES AFFECTED. None.

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4. BACKGROUND. Risk assessment and risk management are daily activities for Coast Guard personnel involved in the Marine Safety and Environmental Protection programs. A major aspect of these decisions involves using discretion to focus efforts. Often, these decisions regarding risks must

be made under uncertain conditions and without the best possible information. Applying RBDM techniques to these issues produces, obtains, structures, and presents information in a way to better facilitate decisions and focus actions. RBDM organizes and augments the decision-making process by clarifying tradeoffs, consequences, uncertainties, benefits and risks so that decision makers can make more informed choices. Units have already adopted this approach to classify the state of risk in their port on a daily basis to aid in planning and preparedness. Other units are applying RBDM techniques to better consider special marine events and to evaluate requests for permanently moored vessels or other marine structures. The RBDM approach has also been used to evaluate safety equivalencies between various compliance methods. RBDM techniques have proven effective in evaluating port-wide risk levels, identifying high-risk areas and developing risk management approaches to reduce the risks associated with both the current state and anticipated changes to a waterway. Finally, RBDM techniques have been applied to prioritize unit activities from a business planning perspective.

- a) Risk is essentially the product of the consequences of an event and its probability of occurring; RBDM is a way of evaluating and addressing the potential unwanted outcomes of an incident. The Risk-Based Decision-Making Guidelines are designed to further supplement the various RBDM methods already being used. The Guidelines provide a structured method to clearly document and communicate the decision making process to others, so that decisions reached using this process are rational, defensible and supportable. Using RBDM does not reduce the authority or responsibility of the Coast Guard in these matters, nor does it limit the broad discretion available to decision-makers. As detailed in reference (b), the Marine Safety and Environmental Protection Directorate (G-M) has established risk-based decision-making as a capability goal and as a strategy for achieving Business Plan performance goals for the entire program.
- b) In 1997, the first edition of the Risk-Based Decision-Making Guidelines was released. That introduction to RBDM methods was a limited success. Based on comments from the field units, and numerous field trials conducted by the Research and Development Center, the initial version of the Guidelines has been thoroughly updated and revised. Results from these efforts have been collected and used to improve the applicability and usability of the revised Guidelines to better address the needs of marine safety field units.

5. DISCUSSION. It is the policy of the Marine Safety and Environmental Protection Program to use RBDM to enhance decision-making and ensure progress in achieving our organizational goals. Developing and expanding RBDM leads to a superior understanding of the maritime system, which allows for better control. From developing program goals and priorities, to deciding resource allocation issues, to developing regulations, all aspects of marine safety and environmental protection benefit from the resultant enhancement in decision-making. Supportable decisions allow for an optimal use of existing resources with less second-guessing. They also provide for a more defensible budget, with an ability to translate funding needs into expected decreases in fatalities, injuries, pollution, and property damage. Applying the principles of RBDM

improves our ability to quickly identify and evaluate the critical tasks necessary to carry out our marine safety and environmental protection responsibilities most effectively. The end goal is to achieve a culture in which the expertise of field personnel is applied through a more uniform risk-based approach to improve decision-making and planning throughout the organization.

- a) This Instruction does not replace or duplicate reference (c). Rather it complements the Operational Risk Management (ORM) policy by expanding RBDM beyond ORM's internal Coast Guard focus to address the wider sphere of the entire maritime industry. ORM features a few simple models, tools, and checklists that concentrate primarily on tactical situations within Coast Guard missions and activities. It uses a set of models and tools that are simple to apply due to the narrow scope.
  - b) Alternatively, RBDM focuses on the much broader scope of marine safety and environmental protection. The complexity and scope of these issues require more tools, and those that are more powerful and can consider a much wider range of issues and viewpoints.
6. **SCOPE.** This document outlines the technical, management, and organizational issues, as well as highlighting the policies, principles, and techniques necessary to further implement and integrate RBDM into the daily operation and long range planning of the Marine Safety and Environmental Protection programs.
7. **RISK PRINCIPLES.** The following guiding principles will help ensure a consistent and comprehensive approach to the use of risk in increasing safety and improving readiness. Adherence to these principles maximizes the return to the Coast Guard on its investment in an RBDM approach.
- a) Risk assessment will form a cornerstone of decision-making at all levels across the Coast Guard marine safety and environmental protection activities, and will be integrated into the earliest possible stages of planning.
  - b) Both headquarters and field offices will follow a consistent approach in their risk analyses to ensure that decisions are made fairly and rationally.
  - c) All units having marine safety and environmental protection responsibilities will have ready access to the basic tools and principles of RBDM through broad dissemination and web hosting of the 2<sup>nd</sup> edition of the Risk-Based Decision-Making Guidelines, reference (d).
  - d) Risk assessments at all levels will employ as wide a range as necessary of stakeholder involvement (e.g., Harbor Safety Committees, etc.). The assessments will use expert judgements and best available data to support decision-making. This will include, when appropriate, sources of expertise and data outside the Coast Guard.
  - e) Risk management decisions will weigh both the costs and benefits (in terms of lives saved, pollution prevented, money and other measures) of proposed solutions to develop the most effective means of controlling risks.

- f) The goals, assumptions and conclusions of risk assessments and risk management will be clearly communicated to all affected parties.
8. PROCEDURES. There are a number of areas where expanded use of a risk-based approach is advantageous in the evaluation of Coast Guard management and operations. These areas include business planning and budgeting; regulations, standards, and compliance; waterborne management; occupational health and safety; engineering and logistics. Specifically, the tools contained in reference (d) will support decisions related to prevention issues (including port and waterway operations and vessel and facility inspections) as well as preparedness and response considerations.

The risk-based approach may be used to:

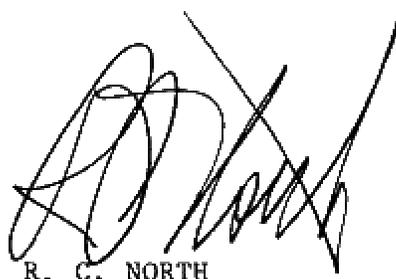
- a) Forecast risks and determine the most efficient use of resources through the targeting of operational controls and enforcement efforts for maximum readiness;
- b) Identify and implement the most cost-effective risk reduction options available for any maritime safety or port and waterway security issue;
- c) Make better informed equivalent-level-of-safety determinations for vessel and facility standards;
- d) Facilitate casualty investigations by providing a structured approach to identifying root causes of mishaps;
- e) Identify and mitigate risks before an accident occurs;
- f) Conduct threat and vulnerability assessments in support of port and waterway security missions to better manage security risks; and
- g) Pursue risk-based regulatory reform to minimize regulatory burden while improving the overall safety of the maritime industry.

Specific guidance on the use of formal RBDM techniques and numerous worked example applications are provided in the Risk-Based Decision-Making Guidelines (reference (d)).

9. IMPLEMENTATION. Reference (b) describes a “Develop, Deploy, and Execute” strategy, to further integrate RBDM throughout the program. This Instruction initiates the “Deploy” phase of our strategy. Commandant (G-M) staff will (on a continuing basis) set funding priorities, establish policy, develop tools, and provide overall guidance and “as-needed” assistance on the use of risk analysis. This includes extensive support on the nuts-and-bolts aspects of performing risk assessment, risk management and risk communication. Commandant (G-M) staff will work with both headquarters and field offices to further deploy and use risk analysis tools, methods, and procedures, which will be gradually refined and expanded to suit specific needs. The feedback from the field offices will, in turn, provide information to Commandant (G-M) staff for continuous improvement and further development of risk capabilities as well as refinement of

funding priorities and policies. The following section details the steps that will be undertaken to implement a risk-based approach to Marine Safety and Environmental Protection missions.

- a) Commandant (G-M) in coordination with Training Center Yorktown will develop and implement a risk training and education program to instruct headquarters and field personnel in the theory and practice of effective risk-based decision-making. The newly developed risk training materials will be incorporated into existing training programs for Coast Guard personnel. The purpose will be to further raise awareness, increase proficiency, and create a mindset and a commitment to further identify and manage risk at every level in every marine safety and environmental protection activity.
- b) Area and district commanders (m) and all units having marine safety and environmental protection responsibilities should take advantage of additional training as necessary to develop proficiency in the use of RBDM processes and seek to further exploit RBDM approaches in day to day operations and activities where appropriate.
- c) Commandant (G-MSE) will provide support from technical experts in risk analysis, to aid in policymaking, budget prioritization and coordination with other Coast Guard activities and external organizations such as other Department of Transportation administrations, U.S. government agencies, academia and industry. The risk support will also include assistance to headquarters and field offices in developing, utilizing and improving risk analysis tools and risk management and communication techniques.



R. C. NORTH  
ASSISTANT COMMANDANT FOR MARINE SAFETY  
AND ENVIRONMENTAL PROTECTION