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Naval Mine Warfare

Operational and
Technical Challenges
for Naval Forces



Naval Mine Warfare Operational And Technical Challenges For Navel Forces

**U. S. Military, Department of Defense
(DoD), U. S. Navy, U. S. Government**

Naval Mine Warfare Operational And Technical Challenges For Navel Forces:

Naval Mine Warfare National Research Council, Division on Engineering and Physical Sciences, Naval Studies Board, Committee for Mine Warfare Assessment, 2001-10-19 Sea mines have been important in naval warfare throughout history and continue to be so today They have caused major damage to naval forces slowed or stopped naval actions and commercial shipping and forced the alteration of strategic and tactical plans The threat posed by sea mines continues and is increasing in today s world of inexpensive advanced electronics nanotechnology and multiple potential enemies some of which are difficult to identify This report assesses the Department of the Navy s capabilities for conducting naval mining and countermining sea operations *Naval Mine Warfare* Committee for Mine Warfare Assessment, Naval Studies Board, Commission on Physical Sciences, Mathematics, and Applications, Division on Engineering and Physical Sciences, National Research Council, 2001-10-03 Sea mines have been important in naval warfare throughout history and continue to be so today They have caused major damage to naval forces slowed or stopped naval actions and commercial shipping and forced the alteration of strategic and tactical plans The threat posed by sea mines continues and is increasing in today s world of inexpensive advanced electronics nanotechnology and multiple potential enemies some of which are difficult to identify This report assesses the Department of the Navy s capabilities for conducting naval mining and countermining sea operations Naval Mine Warfare National Research Council, Division on Engineering and Physical Sciences, Naval Studies Board, Committee for Mine Warfare Assessment, 2001-09-19 Sea mines have been important in naval warfare throughout history and continue to be so today They have caused major damage to naval forces slowed or stopped naval actions and commercial shipping and forced the alteration of strategic and tactical plans The threat posed by sea mines continues and is increasing in today s world of inexpensive advanced electronics nanotechnology and multiple potential enemies some of which are difficult to identify This report assesses the Department of the Navy s capabilities for conducting naval mining and countermining sea operations **Naval Mine Warfare. Operational and Technical Challenges for Naval Forces** ,2001 U S naval forces are organized trained and equipped to engage in the full spectrum of military operations in the deep sea the littorals or inland Yet today sea mines in the hands of hostile forces are a growing threat to mobility as evidenced in the Gulf War To meet the threat of the proliferation and ever increasing sophistication of sea mines the Department of the Navy has adopted an integrated approach to countermine warfare that attempts to balance dedicated special purpose forces and organic multimission general purpose forces capabilities intended to leverage emerging technological opportunities As with other warfare areas the mine warfare community also must deal with limited resources and legacy systems These constraints complicate the process of defining the optimal long term strategic balance between dedicated and organic assets the transition path to achieving the objective and the technological capabilities and underlying research and development needed to meet those objectives Naval mine countermeasures MCM programs for countermine warfare employ a mix of undersea

surface and airborne systems including special warfare marine mammal and explosive ordnance disposal units The resulting capabilities together with support from other command control communications computing intelligence surveillance and reconnaissance C4ISR systems are intended to provide the naval forces with minefield intelligence surveillance and reconnaissance ISR to facilitate minefield avoidance minefield clearance mine neutralization and mine and obstacle removal and destruction Their operational utility depends also on access to key environmental data and modeling and simulation systems

Combat Divers Michael G. Welham, 2023-01-19 The full visual history of the special forces combat diver from World War II to the present day Combat divers are an elite within an elite Every special forces combat diver is required to pass selection twice first into the elite military unit and then a combat diving qualification The combat dive units themselves are tiny and the operations highly classified The role of a military diver is inevitably a lonely and a dangerous one whether clearing mines or striking from the sea against enemy held targets Fully illustrated with rare and unusual images Combat Divers reveals their little known yet fascinating operations from Dutch Special Forces combat divers covertly operating against Somali pirates to the actions of Soviet Spetsnaz divers in Swedish territorial waters during the Cold War It also examines how the most famous units such as the US Navy SEALs and the Royal Navy's SBS are currently operating and adapting to threats in a multitude of theatres Combat Divers gives an insight into specialist kit and vehicles presently used and equipment that is being developed and trialed throughout the world Covering a variety of kit from dry deck shelters to mini submarines and swimmer delivery vehicles former Royal Marines Commando Michael G Welham draws on his own extensive diving experience to reveal exactly how this equipment is used by special forces dive teams As their kit and equipment constantly evolve so does the nature of their work and even the team element Combat Divers also details the first female combat divers and includes their own first hand accounts about their groundbreaking roles within their respective units to create a fascinating history of these elite special forces operatives

[The Operational Effects of Mine Warfare](#) ,1999 This paper demonstrates that naval mines are a threat to the operational commander and that there are actions he can take to reduce the operational effects of mine warfare The first section demonstrates that mine warfare is a pertinent problem for the operational commander by examining three principle relationships It examines the history of mine warfare from an operational perspective warfare in the context of operational art and mine warfare in the context of the U S Navy and U S Marine Corps service visions The second part of the paper explores the Mine Countermeasures MCM concept of operations the difficulties countering the mine problem with recommendations to minimize the operational effects and lastly the future of mine warfare in the context of Joint Vision 2010 and beyond This paper shows that the operational commander can minimize the operational effects of mine warfare by preventing mining maintaining surveillance minimizing maneuver space requirements requesting MCM forces early in crisis using creative schemes of maneuver and exploiting the miner's resource and environmental limitations

[Government Reports Announcements & Index](#) ,1995-11 [21st Century Complete Guide](#)

to Naval Mine Warfare Department of Defense, U. S. Navy, U. S. Government, 2017-06-02 Seven unique U S Navy documents provide a thorough guide to naval mine warfare with information on modern mine countermeasures MCM marine mammal systems the use of dolphins and sea lions organic MCM Avenger class SQQ 32 Sonar SLQ 37 SLQ 38 SLQ 48 V MH 53E Sea Dragon Helicopters explosive ordnance disposal littoral combat ship LCS methods of actuation USMC Shallow Water Mine Countermeasures and much more The History of the Sea Mine and its Continued Importance in Today s Navy David Bushnell has become known as the father of mine warfare As a student at Yale University he worked on the development of underwater explosives In his research he discovered that gunpowder could be exploded underwater During the American Revolution Bushnell was authorized to design a sea mine usually referred to as a torpedo by Bushnell to be used against the British fleet 21st Century U S Navy Mine Warfare Ensuring Global Access and Commerce In February 1991 the Navy lost command of the sea the North Arabian Gulf to more than a thousand mines that had been sown by Iraqi forces Mines severely damaged two Navy warships and commanders aborted an amphibious assault for fear of even more casualties Spurred on by this experience the Navy has taken consistent aggressive and focused action to ensure that it is prepared for all future mine events Solving the Mine Countermeasures Problem A Matter of Focus and Priority This document reviews mine countermeasure operations and how they impact on current national security and national military strategies as well as service doctrine Shallow Water Mine Countermeasure Capability for USMC Ground Reconnaissance Assets As the Marine Corps looks to the future with its concept of expeditionary maneuver warfare EMW shallow water mines remain a show stopper to the Corps forcible entry requirement With limited Naval assets available MAGTF commanders are still dependent on Marine ground reconnaissance assets for amphibious reconnaissance of potential beach landing sites to include the detection of shallow water mines The Operational Effects of Mine Warfare This paper demonstrates that naval mines are a threat to the operational commander and that there are actions he can take to reduce the operational effects of mine warfare The first section demonstrates that mine warfare is a pertinent problem for the operational commander by examining three principle relationships Sweeping Changes for Mine Warfare Controlling the Mine Threat This report proposes that the U S Navy deter and if necessary combat potential minelayers by pursuing a pro active offensive mine warfare strategy Central to this proposed strategy is the development acquisition and use of Remote Controlled RECO mines It is argued that given the historical problems the United States has had in the area of naval mine warfare a strategy aimed at the aggressive deterrence of enemy mine laying be embraced so as to project forces ashore in future amphibious operations Inadequate Mine Countermeasure Systems and Capabilities for Future Amphibious Operations When a one thousand dollar mine can severely damage a one billion dollar ship it is time to do something about it Edney The significance of mines to naval operations has been recognized in modern warfare For example during the Korean War the Chief of Naval Operations Admiral Forrest P Sherman observed before an amphibious assault on Wonsan When you can t go where you want to when

you want to you haven't got command of the sea And command of the sea is a rock bottom foundation for all our war plans We've been very submarine conscious and air conscious Now we're getting mine conscious **Naval Mines in the 21st Century** U. S. Military, Department of Defense (DoD), U. S. Navy, U. S. Government, 2017-04-14 This unique book examines the current challenge of defending against sea and naval mines With the end of the Cold War NATO countries have embarked on transformation initiatives within their militaries to address the new security realities of the 21st century One of the realities that has not changed is the threat posed by sea mines Global proliferation of sea mines both older variants and advanced new designs has continued to grow and presents a unique challenge to maritime security NATO naval forces must be prepared to counter the danger posed by mines to shipping both civilian and military and to ensure that vital sea lines of communication SLOCs strategic chokepoints throughout the world commercial ports and naval bases remain open and uncontested as they find themselves participating in more security operations at home and abroad There are two main questions that this paper seeks to address The first concerns the threat With major advances in military technology and changes to doctrine is there really a sea mine threat that could pose a significant challenge to today's navies NATO naval forces are the most sophisticated and technologically advanced in the world Yet the first Gulf War in 1991 taught us that even relatively inexpensive and unsophisticated sea mines can have catastrophic effects on our capital ships The low cost ease of use and tactical effectiveness of sea mines make them a very potent threat even to modern navies Thus to adequately answer the question of threat I will consider the problem of proliferation mine technologies and employment and methods to counter the threat This leads to the second major question Are NATO members adequately developing their MCM capability to meet the threat of sea mines While it is true that NATO MCM forces are among the best there are some notable shortfalls in capability development even as these countries push to develop new systems This paper will analyze the new programs and initiatives that are shaping NATO's mine warfare community and discuss whether and how these programs are addressing the threat This thesis argues that in an era where expeditionary warfare and thus command of the littorals is the central strategic requirement for naval forces mine warfare must remain a primary warfare discipline and must continue to be properly resourced and developed to face the mine challenge of the 21st century

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United States Naval Mine Warfare Plan, Third Edition, Fiscal Year 1996-1997 Programs, 1997 The Third Edition of the Mine Warfare Plan 1 Explains how U S Naval Forces will conduct mine warfare operations 2 Assesses our mine warfare strengths 3 Identifies capability shortfalls 4 Outlines our initiatives for providing the mine warfare capabilities our naval forces will require in the 21st century The Mine Warfare Plan also includes summaries of mine warfare technologies and the associated programs designed to meld these new technologies into the operational environments

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