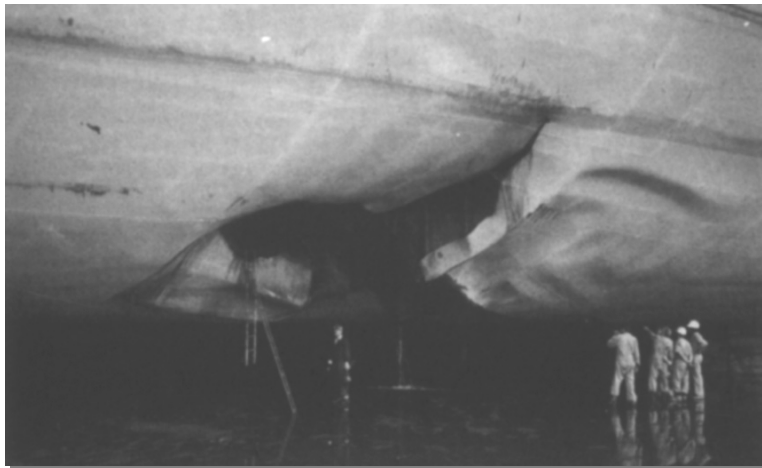


A New Direction: Naval Mines and Underwater IEDs in US Ports and Waterways



**MINWARA Panama City
7-10 May 2007**

**Scott C. Truver, PhD
Center for Security
Strategies and
Operations
SCTruver@gdit.com**



THE THREAT IS REAL!

UNCLASSIFIED

SCT/CSSO/GDIT2007

Today's Agenda...

- **Address the terrorist threat of mines and underwater IEDs to US maritime security in ports and waterways**
- **Examine Federal, State, and Local strategic and policy frameworks for comprehensive and coordinated approach**
 - ❑ **USCG and USN “National Fleet” Concept**
- **Discuss current operational and tactical capabilities to counter terrorist mining threat**
 - ❑ **Traditional MCM might not suffice**
- **Identify a “way ahead” for domestic MCM**



THE THREAT IS REAL!

A "Threat-Rich" Environment



Why Attack US Waterways?

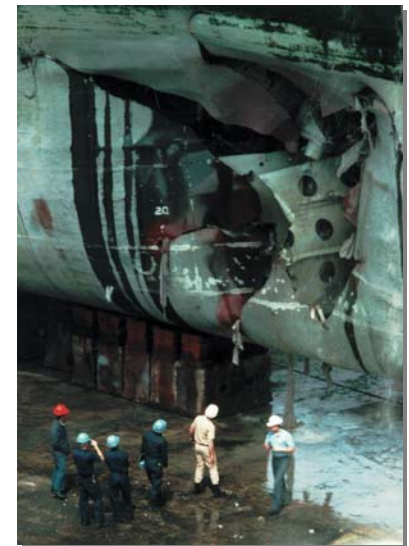
- **Spectacular effects**
 - ❑ Sink ships...kill people...
- **Economic/Political effects**
 - ❑ Damage US economy...90+% US trade transits US ports
 - ❑ Direct and indirect impacts...
2002 West Coast strike cost \$1.9B/day
 - ❑ Wall Street/insurance industry jitters?
 - ❑ Discredit US Government
- **Military effects**
 - ❑ Frustrate/delay naval ops during crises and conflicts
- **The GWOT includes home waters, too!**



THE THREAT IS REAL!

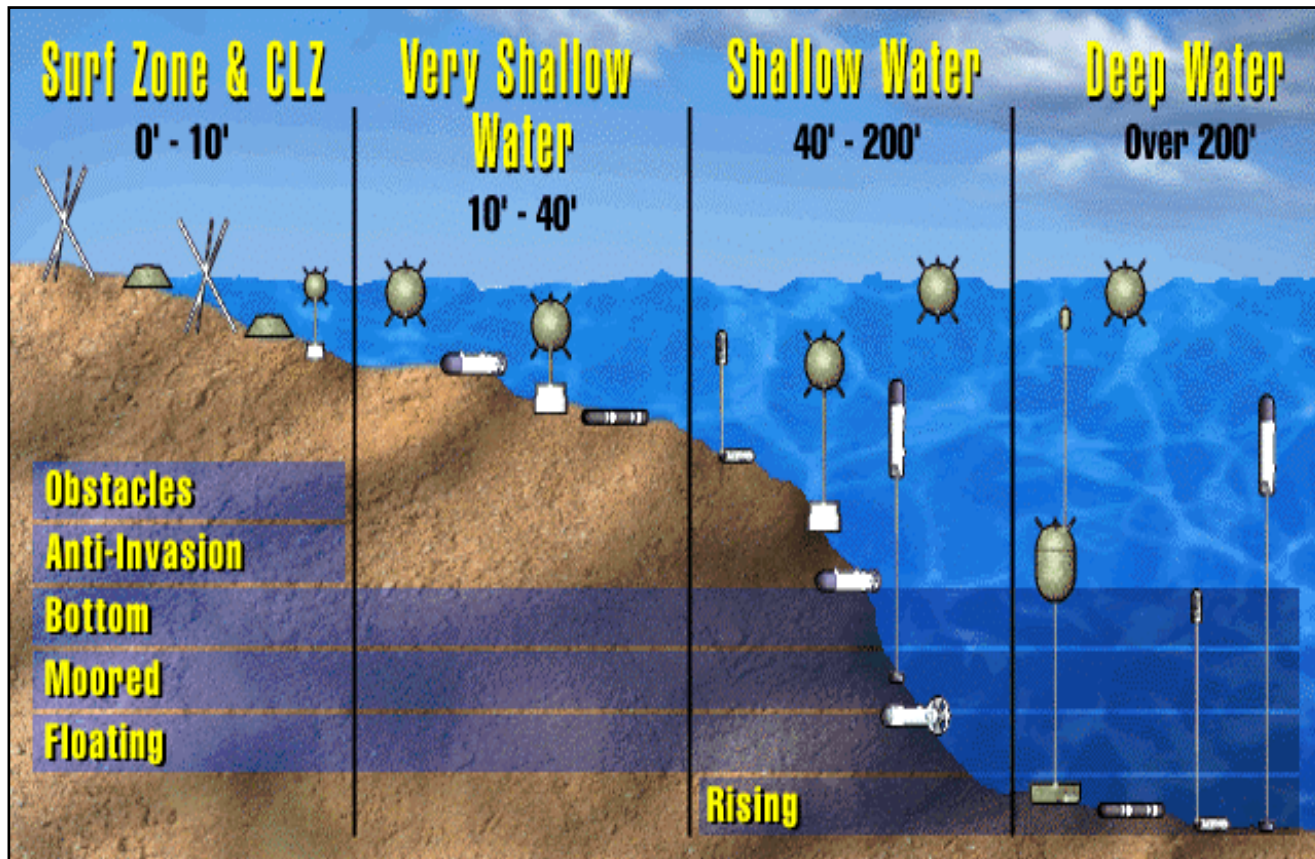
Why Mines and UWIEDs?

- Are cheap, easy to acquire or build
- Can be deployed by submarines, surface warships, small craft, commercial vessels, pleasure boats, aircraft and helicopters
- Range from a few pounds to several tons of high explosive
- Have a variety of firing mechanisms – remote control/command, contact, magnetic, acoustic, seismic, pressure or combinations of some or all
- Are very difficult to detect, identify, and counter once in the water
- Are very effective with tactical and strategic – even if only psychological – effects... just a few can have desired impact
- Are the ultimate “asymmetric” weapons!



THE THREAT IS REAL!

A Broad-Spectrum, Global Threat



Assured access is a linchpin of both our naval and national security strategies. Our first priority must be improving our near-term capabilities, but it is also important to keep an eye on our long term vision of mine warfare.... Given the growing threat to our fleet and the current state of technology, we are fools if we don't.

**ADM Robert J. Natter, USN
Commander, U.S. Atlantic
Fleet Fleet Forces
Command
USNI Proceedings
January 2003**

250,000+ weapons of 300+ types in the hands of 50+ navies worldwide – 30+ countries produce and 20+ countries export – capable of attacking strategies as well as ships and subs...



THE THREAT IS REAL!



The US Navy Knows All Too Well!

Number of Attacks

16

14

12

10

8

6

4

2



PIRATE



PRINCETON



STARK



TRIPOLI



HIGBEE



COLE

PRINCETON
TRIPOLI
S.B. ROBERTS
WARRINGTON
WESTCHESTER COUNTY
BARTON
E.G. SMALL
WALKE
MANSFIELD
BRUSH
SARSI
PARTRIDGE
PLEDGE
PIRATE
MAGPIE

STARK

LIBERTY

LIBERTY

COLE

MINE	MISSILE	TORPEDO	AIRCRAFT	SMALL BOAT
------	---------	---------	----------	------------

Terrorist	2000
Iraq	1991
Iran	1987-1988
Israel	1967
Vietnam	1969-1973
Korea	1950-1952

Since the end of WW II mines have damaged or sunk four times more US Navy ships than all other means of attack!



THE THREAT IS REAL!

Terrorist Use of Mines...

*Those who cannot
remember the past
are condemned
to repeat it.*

George Santayana
1906

- In addition to US Navy experiences, mines used in numerous “peacetime” crises, from October 1946 when two RN warships struck Russian mines in **Corfu Channel**...to **Contras** mining Corinto harbor in 1984...to Persian Gulf “Tanker War”...to the **Tamil Tigers** attacking Sri Lankan government ships and commercial vessels
- The “**Patriotic SCUBA Divers**” mine crisis, January 1980 during Soviet Grain Embargo, showed that a “terrorist” threat of mining could stop all shipping
 - ❑ Phone call from the “Patriotic SCUBA Diver(s)” claimed to have placed a mine in the Sacramento River
 - ❑ Required four days of mine hunting by USS *Gallant* (MSO-489) to determine the channel was safe: *Hoax!*
 - ❑ The economic impact of merchant vessel “lay-days” was estimated in the hundreds of thousands of dollars



THE THREAT IS REAL!

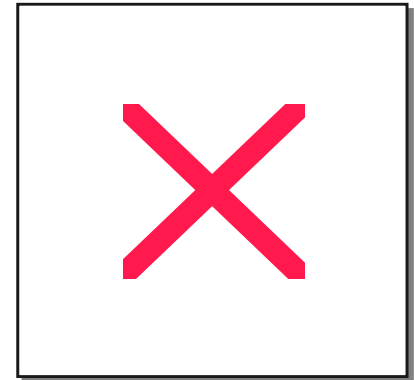
Two More to Consider...

➤ “Mines of August” 1984

- ❑ Mines as weapons of maritime terror underscored in summer and early fall 1984 by Libyan naval personnel using the ferry *Ghat* to roll off “99501” mines in the Red Sea and Gulf of Suez
- ❑ As many as 19 ships reported damage from underwater explosions, which generated a multinational MCM response: Egypt, Great Britain, France, Italy, the Netherlands, Soviet Union, and United States provided support
- ❑ Only one new mine was recovered and rendered-safe by Royal Navy divers – a Soviet design unknown in the West: *Surprise!*

➤ **Floating IED** in Lake Ponchartrain, 21 April 2004

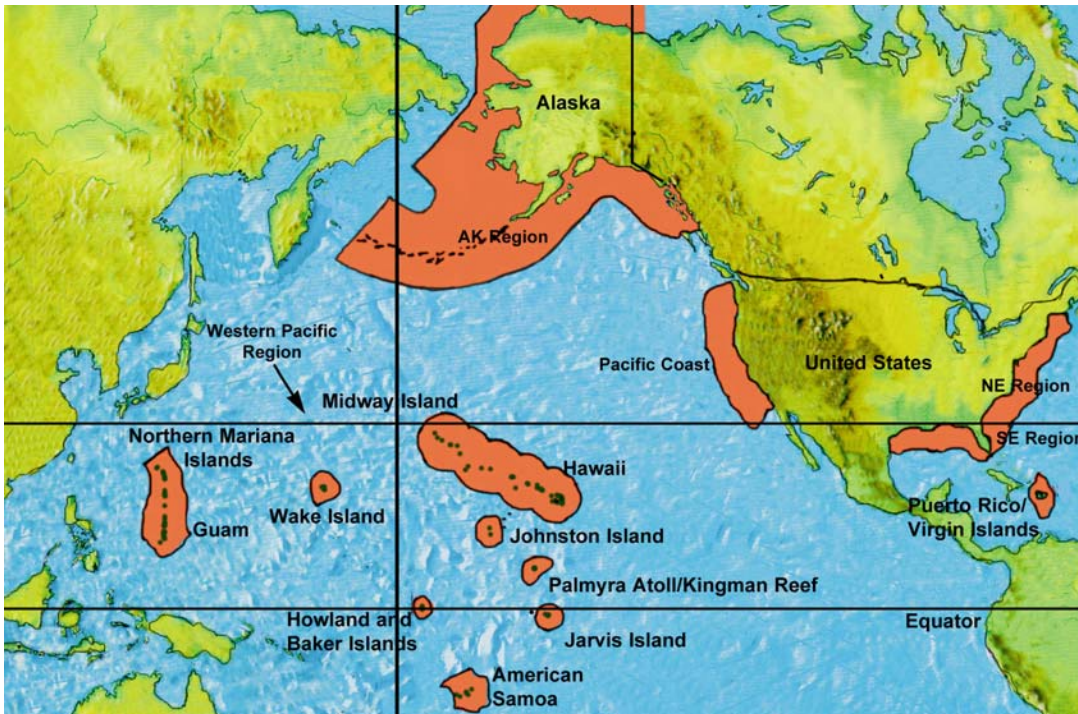
- ❑ Tugboat operator spotted suspicious floating bag
- ❑ USCG called and CG contacted Jefferson Parish bomb squad, which fished bag out of the water
- ❑ Bomb had explosives in plastic pipes and timer wrapped in trash bags...**possibly targeting presidential hopeful Senator John Kerry** scheduled for trip on Lake
- ❑ Bomb squad neutralized IED with water cannon



THE THREAT IS REAL!

“Tyranny” of US Geography:

- 95,000 miles of coastline
- 3.5 million nmi² territorial seas and EEZs
- Inland waterways and Great Lakes
- Thousands of merchant and fishing vessels... millions of recreational craft...
- 361 ports of interest
 - ❑ 15-17 with strategic military/economic value
 - ❑ No two ports are alike, vary by geography, channels, navigation markers, bathymetry, winds, tides, currents, bottom sediment, turbidity, “infrastructure” – cables, pipelines, piers...
- Who’s in charge and can deal with threat?
 - ❑ USN...USCG?
 - ❑ Local bomb squads?
 - ❑ Department of Natural Resources police?
 - ❑ Police/fire department divers?



THE THREAT IS REAL!

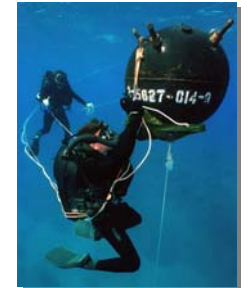
Complex Policy and Operational Framework



THE THREAT IS REAL!

MCM in US Ports and Waterways?

- The best MCM is preventing weapons from getting into the water in first place...or knowing where they might be: **Maritime Domain Awareness!**
- What we know...don't know...
 - ❑ Intelligence on terrorists and weapons is key
 - ❑ “Q-Route” surveys and change detection
 - Refrigerators do look like mines!
- Focus USN capabilities on domestic threat
 - ❑ Mine hunting, mine sweeping
 - ❑ MCM “Triad” of Helicopters, Ships, EOD/NSCT, plus marine mammals and autonomous systems
- Other federal, regional, state, and local authorities and agencies
 - ❑ Who “owns” the limpet on the commercial vessel or pier?
 - ❑ Is it Homeland Security or Homeland Defense or both?



THE THREAT IS REAL!

Strategic/Operational Frameworks

- **Strong focus on securing maritime domain: Maritime Transportation Security Act 2002...National Strategy for Maritime Security 2005...**
- **Roles and responsibilities at federal level clear:**
 - ❑ **USCG/DHS Lead Federal Agency for MHLS**
 - ❑ **FBI/DoJ LFA for terrorism...BATFE LFA for explosives**
 - ❑ **USN/DoD LFA for MCM expertise, platforms, systems**
- **Operational level needs some work**
 - ❑ **National Response Plan, National Incident Management/Command Systems provide going-in framework**
 - ❑ **Domestic MCM requirements in DHS/DoD plans?**
 - ❑ **USN/USCG developing MCM ConOps under Maritime Operational Threat Response (MOTR) Planning**
 - ❑ **Regional, state, local, and commercial partners must be closely integrated**
 - ❑ **Multi-agency C4ISR architecture needed for each port within overall MHLS/MDA context – JHOC**



THE THREAT IS REAL!

USCG/USN Relationships

➤ USCG COTP crucial to MUWIED defense as local Federal Maritime Security Coordinator...

- ❑ Establishes Port Maritime Security Plans
- ❑ Conducts Area Security Assessments
- ❑ Develops Area Maritime Transportation Plans
- ❑ Has C3 responsibilities and authorities for MHLS incidents
- ❑ Provides vital “bridging function” between DoD/USN and regional/state/local/commercial partners
- ❑ But has no capabilities – or desire! – to conduct MCM Ops



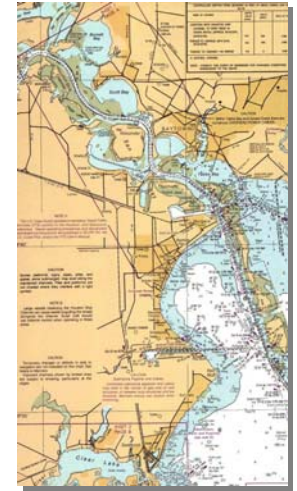
➤ USCG/USN National Fleet Construct

- ❑ DoD/DHS MoA in place for USCG “TACON” of USN forces in MHLS incidents
- ❑ Teach new “DOG” old – and new – tricks? Deployable Operations Group could be USCG’s “First-Responders” to M/UWIED incident in advance of USN MCM assets
- ❑ Expand concept to regional/state/local/commercial partners – Domestic “1000-Ship Navy/GMPI” for specialized skills



THE THREAT IS REAL!

Intel Prep of the Environment



- **IPE critical for effective and timely MCM response**
 - ❑ Strategic, operational, tactical intel about terrorist threat
 - ❑ Local environmental awareness for MCM plans and ops
- **For each port/waterway assessed as a likely target:**
 - ❑ Up-to-date data in hard-copy and digital formats: Monthly too expensive but good? Yearly insufficient but affordable?
 - ❑ Port geography, infrastructure, environmental and oceanographic factors, clutter and known “NOMBO” contacts for change detection
 - ❑ Who has already? How good for MCM tactical ops? Where are gaps and how to fill? Who should collect, maintain, disseminate? NOAA, USN/Oceanographer, Corps of Engineers, USCG, state/local agencies, local pilots, SEA GRANT colleges, environmental groups, industry...?
- **Revisit Cold-War “port-breakout” model for key ports?**
 - ❑ “Q-Route” surveys and channel conditioning
 - ❑ Who does? USN/USNR, USCG, NOAA, port authorities, contractors?
- **MCM IPE not cheap but compare to GWOT at \$15B/month... \$110B for moon base...or \$50B+ economic impacts...**



THE THREAT IS REAL!

Domestic MCM Operational Issues

- **Ensure response plans and ConOps are in place for each key port/waterway BEFORE threat materializes, then...**
 - ❑ Train...exercise...collect data...plan...refine ConOps...train...
 - ❑ Build on RAN/RN/USN experiences in Umm Qasr 2003, recent exercises (e.g., Lead Shield III 2005), and wargames
- **Where can we sweep and where must we hunt?**
 - ❑ Constrained air/water space and infrastructure
 - ❑ “Blow In Place” when feasible
 - ❑ Recover/raise and render-safe?
- **Issues if not near Norfolk or San Diego**
 - ❑ Transit times to respond...maintenance upon arrival?
 - ❑ Physical security of AMCM helos at nearby airports and SMCM vessels in commercial berths
 - ❑ “Hotel” support for crews and support people and maintenance support for platforms and systems if crisis goes long
 - ❑ Where’s “TPFDD” for domestic MCM response?



THE THREAT IS REAL!

What's Needed Now...

- **Include mines and UWIEDs in risk assessments**
 - ❑ What's the probability of a terrorist MUWIED attack...real or hoax?
 - ❑ What are most likely targets?
 - ❑ What are the likely and extent of consequences from a terrorist mine attack...real or hoax?
- **Address the policy and operational-level needs before first "flaming datum"**
 - ❑ What are the real operational requirements?
 - ❑ What are the real priorities?
- **Get industry involved with technology and systems solutions**
 - ❑ Modify LCS MCM suite for confined areas
 - ❑ New systems – USV "Guinea Pig Sweeps" – to fill in capabilities gaps
- **Complacency kills! As will arrogance!**

*He who defends
everything
defends nothing.*

Frederick II Prussia
1712-1778



THE THREAT IS REAL!

Mine and UWIED Conscious... Beginning Last Week!

“Torpedoes [mines] are not so agreeable when used by both sides; therefore, I have reluctantly brought myself to it. I have always deemed it unworthy of a chivalrous nation, but it does not do to give your enemy such a decided superiority over you.”



**RADM David G. Farragut
March 1864**

“...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 plenty submarine-conscious and air-conscious. Now we're going to start getting mine-conscious – beginning last week.”



**ADM Forrest Sherman
October 1950**

“...I believe there are some fundamentals about mine warfare that we should not forget. Once mines are laid, they are quite difficult to get rid of. That is not likely to change. It is probably going to get worse, because mines are going to become more sophisticated.”



**ADM Frank B. Kelso, II
October 1991**



THE THREAT IS REAL!

A MINE IS...



...A TERRIBLE THING THAT WAITS!