Professional Development Short Course On:

Advanced Undersea Warfare

Instructor:

Capt. James Patton
Commodore Bhim Uppal

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SUBMARINE JOINT STRATEGIC CONCEPTS FOR 21st CENTURY

- GAIN AND SUSTAIN BATTLE FORCE ACCESS
- DEVELOP AND SHARE KNOWLEDGE
- PROJECT POWER WITH SURPRISE FROM CLOSE IN
- DETER AND COUNTER WEAPONS OF MASS DESTRUCTION
LITTORAL WARFARE
WAR COLLEGE FUTURES GAMING

• NAVAL WAR COLLEGE - NEWPORT, RI
  – ‘GLOBAL’ SERIES

• ARMY WAR COLLEGE - CARLISLE, PA
  – ARMY AFTER NEXT SERIES
  – ARMY TRANSFORMATION WAR GAME SERIES

• AIR UNIVERSITY - MAXWELL AFB
  – ‘GLOBAL ENGAGEMENT’ SERIES
**RED-NAVAL/MARITIME**

**INPORT PASCHI:**
- 2 DDG, 2 FFG

**COMMAND-ACTIVATED MINEFIELD**
- 5 KILOS IN PRE-PREPARED “BASTIONS”

**INTEGRATED GLCM/TBM/SAM GULF OF ISLAM “EXCLUSION” SYSTEMS**

**MANY ARMED PATROL BOATS/SMALL CRAFT DISPERSED THROUGH GoI**

**TORPEDO LAUNCHERS ON ISLANDS**

**CRUISE SHIP/MERCHANT W/SOF/SUPPLIES VICINITY CYPRUS, “STRING” OF CLORINE-BEARING SHIPS ENROUTE SUEZ**

**CRUISE SHIP/MERCHANT W/SOF VICINITY DIEGO GARCIA**
RED-NAVAL/MARITIME

• **D-DAY/D-DAY (+) ACTIONS**

• ATTACK BLUE NAVAL VESSELS IN GoI AS DIRECTED; CONSIDER MINISUB/SOF WITH LIMPET MINES IF ANCHORED OR IN PORT

• KILOs/DDGs/FFGs ATTACK BLUE HVU(s) AS DIRECTED. COORDINATE TO GREATEST EXTENT POSSIBLE WITH GLCM/TBM ATTACK. KILOs AFTER FIRING MOVE TO ALTERNATE BASTION

• NH4NO3 SHIPS PROCEED TO ASSIGNED TARGETS AND DETONATE AS DIRECTED

• APPROPRIATELY LOCATED MERCHANT SHIP WITH LOAD OF COMMERCIAL CLORINE SCUTTLE IN SUEZ CANAL ON ORDER

• INDIAN OCEAN CRUISE SHIP DECLARE “MAYDAY” AND ENTER DIEGO GARCIA FOR ASSAULT AS DIRECTED
RED-NAVAL/MARITIME

• ACTIONS COMPLETED JUST PRIOR TO D-DAY

• D-30; SCHEDULES ARRANGED TO HAVE “STRING” OF 6 COMMERCIAL SHIPS LOADED WITH INDUSTRIAL CLORINE TO BE SEQUENTIALLY PASSING THROUGH SUEZ CANAL FROM D+0 THROUGH D+6

• D-10; CRUISE SHIP UNDERWAY W/2 MARINE BRIGADES ENROUTE MED

• D-9; CRUISE SHIP UNDERWAY W/2 MARINE BRIGADES/80 SOF ENROUTE INDIAN OCEAN

• D-5; KILOs LEAVE PORT AND OSTENTATIOUSLY ENTER GoI; CONDUCT “BREAK TRAIL” EFFORTS AND PROCEED THROUGH SoH TO GoO BASTIONS

• D-3; AFTER EXTENSIVE INDIAN OCEAN EXERCISES, 2 DDGs, 2 FFGs ENTER PASNI, PAKISTAN FOR PORT VISIT

• D-1; CRUISE SHIP ENTERS AL LADHIQIYAH, MARINE BRIGADES SEIZE PORT FACILITIES WHEN DIRECTED ON OR ABOUT D+2

• D-1; NIR ANNOUNCES EXISTANCE OF MINEFIELD, ACTIVATES IT, PROMISES FREEDOM OF PASSAGE TO “INNOCENT PASSAGE”, AND DIRECTS ALL “FOREIGN” WARSHIPS TO LEAVE FOREVER IN 24 HOURS

• D-1; NIR MISCELLANEOUS NAVAL CRAFT AND ARMED BOATS DISPERSE THROUGHOUT GoI
RED-NAVAL/MARITIME

• DESIRED END STATE

  • GULF OF ISLAM FREE OF ANY FOREIGN WARSHIPS
  • SIGNIFICANT DAMAGE HAS BEEN DONE TO BLUE NAVAL FORCES
  • WORLD OPINION ACCEPTS CONCEPT OF GoI BEING A NIR “MARE NOSTRUM”, TO INCLUDE LEGITIMACY OF COMMAND-ACTIVATED MINEFIELD IN SoH
  • NIR RETAINS “ENOUGH” NAVAL/MARITIME STRENGTH FOR SECURITY PURPOSES IN GoI AND TO CONTINUE NECESSARY COMMERCE
RED-NAVAL/MARITIME

• ACTIONS COMPLETED DURING PRECEDING YEARS
  • COVERT CONSTRUCTION OF COMMAND-ACTIVATED MINEFIELD IN SoI
  • COVERT IMPLANTATION OF ACOUSTIC MONITORING SYSTEM IN SoI
  • COVERT CONSTRUCTION OF 15 KILO (SS) BASTIONS ALONG GoO
  • CONSTRUCTION OF INTEGRATED COASTAL GLCM/TBM/SAM SYSTEM
  • INSTALLATION OF REMOTE WAKE-HOMING TORPEDO LAUNCHERS ON OFFSHORE ISLANDS WITH “COVER” AS AIDS TO NAVIGATION
  • ESTABLISH PATTERN OF OUT-OF-AREA OPERATIONS BY SURFACE WARSHIPS - INCLUDING PORT VISITS IN PAKISTAN AND ELSEWHERE
  • ESTABLISH PATTERN OF KILO (SS) JOINT OPERATIONS TOGETHER IN GoI
  • ESTABLISH PATTERN OF CRUISE SHIP OPERATION IN MED AND I.O.
  • ESTABLISH PATTERN OF INDUSTRIAL CHLORINE IMPORTS BY SHIP
  • STOCKS OF FOOD AND OTHER SUPPLIES STORED IN RENTED FACILITIES AT LADHIQIYAH, SYRIA, DURING PREVIOUS FEW MONTHS
REMOTE OPERATED WAKE-HOMING TORPEDO LAUNCHERS
PREPARED KILO BASTION SITES
TYPICAL KILO “BASTION” (1 OF 15)

KILO SS WITH HF ACOUSTIC/F/O LINK ASHORE

GLCM/TBM/SAM BATTERY

PASSIVE-ACOUSTIC SENSOR NET F/O LINKED ASHORE

ASW MINE BELT F/O LINKED ASHORE

10 MILES
“SCUD” AND TEL
WAKE-HOMING TORPEDOES
ANTI-SHIP CRUISE MISSILES

- **AIR-LAUNCHED**
  - EXOCET, HARPOON, ETC.

- **GROUND-LAUNCHED**
  - SILKWORM, ETC.

- **SURFACE-SHIP LAUNCHED**
  - SS-N-16, PENQUIN, ETC.

- **SUBMARINE-LAUNCHED**
  - SS-N-24 SANDBOX, HARPOON, ETC.
ASCM ATTACKS
ASCM FROM FAST PATROL BOAT
ASCMs ON WORLD MARKET
ANTI-SHIP MINES

• MOORED
  – CONTACT
  – INFLUENCE

• BOTTOM
  – INFLUENCE
    • MAGNETIC
    • ACOUSTIC
    • PRESSURE
A Third World Submarine Perspective

• Why developing nations desire submarine forces
• Background on starting a Submarine Force
  – Missions
  – Selection
  – Specifications
  – OP Areas
• Assessment of worldwide submarines on the market
• Indian Submarine Force Infrastructure Concepts
• Training and patrol work-ups
• Platform comparisons
• Sonar Detection ranges
• Tactics
Why Developing Nations Desire Subs

- Developing nations desire submarine forces because they:
  - Are the most effective weapons platform for expenditure ("cheapest platform for the military mission")
  - Provide greater flexibility
  - Counter surface ASW forces effectively
  - Are multi-mission platforms (ASUW, Special Forces, I&W, ASW)
  - Are covert (and deployable without political ramifications)
  - Do not require supporting escorts
## Submarine Forces

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## “Typical” Sonar Detection Ranges

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<td>12-15*</td>
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<tr>
<td>20 kt warship</td>
<td>8-10</td>
<td>18*</td>
<td>14</td>
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<td>30 kt warship</td>
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<td>20</td>
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<tr>
<td>Snorkeling SS</td>
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<td>8-10*</td>
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* Best detection in category
Range is in nautical miles
Tactical Procedures

• In preparation for “war Patrol” the shipyard will change the screws
• The ship will depart during the night
• Outside of harbor the submarine will submerge and commence patrol
• On patrol, the boat will stay deep all day and snorkel at night
• While on patrol all officers keep watch
• Patrol philosophy is EMCOM
• Battery in not allowed to go below 80%
• The normal sonar tactic is to place the sonar above the layer
  – Going to PD is an instant detection
• Choice of attack lies with the submarines
• The threat to the submarine in by an ASW helo with dipping sonar
Tactics: Approach and Attack

• Screen penetration
  – Get ahead of BG
  – Below layer
  – Acquire sonar picture
  – Go slow
  – Let screen escorts
  – Select weapon and fire

• Minelaying
  – Time speed for two knots
  – Keep a good navigation plot
Assessment of third world Submarine Threat

• Modern subs & weapons will continue to proliferate in the third world

• Modern SS of today is a capable adversary
  – Quiet: Battery/Snorkeling
  – Torpedoes are lethal
  – Submerged endurance
  – Training & readiness are key

• Future more capable third world submarines
  – Additional quieting
  – Advanced Torp/ASCMS
  – Increased submerged endurance using AIP
  – Crew proficiency / infrastructure projection forces
Assessment of third world Submarine Threat (Cont.)

• Various factors complicate ASW OPs in third world
  – Difficult environment
  – Restricted OP area/zero PIM
  – Combat damage sensitivity
  – "Home field" advantage

• A few third world Subs can pose a serious threat to power projection forces
  – Consequences of a successful third world sub attack can be catastrophic
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• Your employees may attend all or only the most relevant part of the course.
• Our instructors are the best in the business, averaging 25 to 35 years of practical, real-world experience. Carefully selected for both technical expertise and teaching ability, they provide information that is practical and ready to use immediately.
• Our on-site programs can save your facility 30% to 50%, plus additional savings by eliminating employee travel time and expenses.
• The ATI Satisfaction Guarantee: You must be completely satisfied with our program.

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• Signal Processing & Information Technology
• Sonar & Acoustic Engineering
• Spacecraft & Satellite Engineering

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