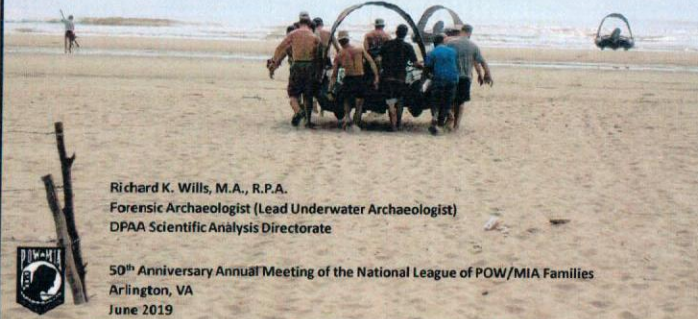





DPAA Underwater Search and Recovery Efforts



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Background

- Roughly 20% of Vietnam War unaccounted-for loss cases occurred over water or at sea. (The ratio of overwater/at-sea unaccounted for cases has since increased due to many loss cases on land subsequently being accounted for.)
- Most of these incidents involve aircraft and aircrews.
- Most occurred in Vietnam, with a few in neighboring countries.
- Most of these incidents occurred in offshore waters, with a smaller number of cases in inland/riverine environments.

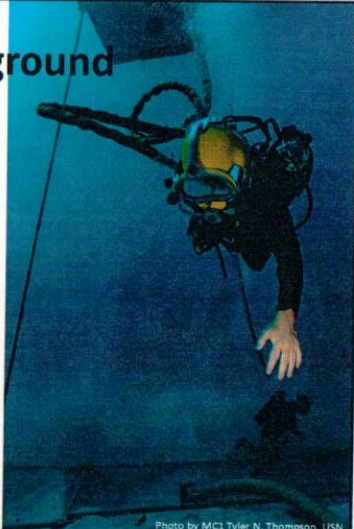





Photo by MCI Tyler N. Thompson, USN

DPAA's Underwater Initiative

- To develop a **capability** that will allow DPAA to address overwater and at-sea loss incidents, and underwater sites.
- To maintain **collaboration** between the scientific, analytical, operational, and other functions needed to support this capability.
- To have the **flexibility** to field either *in-house* capabilities, or leverage *external* resources via tasking other commands, working with contractors, or finding other means of support.








Photo by MCI Tyler N. Thompson, USN

Developing the Cases


Case Development is a Collaborative Effort by:

- Analysts/Historians
- Archaeologists
- Mission Planners
- Detachment Staff
- Other Directorate Staff



Considerations in Developing Cases for Field Activity Include:

- Assessing the specific circumstances of each loss incident
- Analyzing the relative accuracy of reported loss locations
- Determining the depth ranges within each loss area
- Defining the search area size and boundaries
- Establishing the scientific and technical requirements
- Conducting an assessment of environmental conditions
- Determining any specific logistical requirements or restraints
- Addressing areas of multiple cases, as well as isolated case areas



Doing the Fieldwork

- DPAA typically employs a “Phased Approach” for planning and executing underwater field activities.
- The goal of an Underwater Investigation Team (UIT) is to search for and detect a site, survey it, and advance it to an Underwater Recovery Team (URT) activity.

Search an Area

Detect and Evaluate Anomalies

Re-acquire and Test/Survey Targets

Excavate a Site

Investigation | Recovery

Doing the Fieldwork

- Underwater investigations sometimes follow on Leads generated by traditional Investigation Teams (ITs), Research and Investigation Teams (RITs), Detachment staff, or Unilateral Investigation activities. Witnesses may also provide key information at any point in the process.
- If a site is not detected during an underwater investigation, it may be necessary to further define the UIT requirements, and assess whether a supplemental UIT activity might be recommended.


Building the Capability

- Building on with earlier efforts conducted in the 1980s and 1990s, DPAA’s predecessor organizations began developing a dedicated organic underwater capability starting around 2000. The Laboratory particularly recognized the need for a systematic, scientific approach, and developed SOPs and best practices. Since then, the Agency has gradually increased the operational tempo of underwater activities, focusing on cases it can reach, within practical operational limits.

Building the Capability

As of 2019, DPAA maintains billets for the following core underwater-specific positions:

- Four Forensic Underwater Archaeologists
- One Underwater Historian or Analyst
- Two Underwater Planning Officers
- One Agency Diving Officer
- One Agency Master Diver
- Two First Class (Supervisory) Divers
- One Underwater Combat Camera Diver
- Several EOD Divers and Diver Medical Technicians
- One Partnerships & Innovation Underwater Operations Program Manager



Increasing the Capacity

DPAA continues efforts to leverage:

Internal resources.

Military dive units:

- Army Engineer Dive Detachments
- Navy Mobile Diving and Salvage Units (MDSUs)
- Explosive Ordnance Disposal Mobile Units (EODMUs)
- Naval Experimental Dive Unit (NEDU)

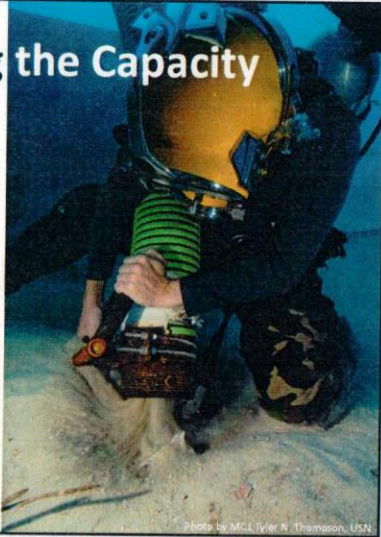




Photo by MCL Tyler N. Thompson, USN

Increasing the Capacity

DPAA continues efforts to leverage:

- Military hydrographic survey resources (Naval Oceanographic Office)
- Military vessel providers (Military Sealift Command, Fleet Task Forces)
- Selected Salvage Equipment (U.S. Navy Supervisor of Salvage)
- Contracted host-nation resources
- Other organizations and resources, through Partnerships and Innovation

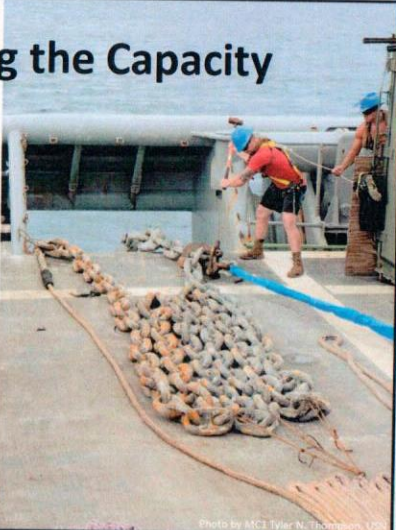








Photo by MCL Tyler N. Thompson, USN

Increasing the Capacity



Vessels used to support past activities in Vietnam.

Increasing the Capacity

- DPAA is continuing to assess and develop more efficient configurations for teams, equipment, and platforms.
- Future operations will likely continue to require a collaborative, multi-layered approach.
- Future operations will also continue to draw upon a diverse arsenal of resources and activity configurations.
- There are presently some practical limitations that must be taken into consideration (operational diving limits, for instance).

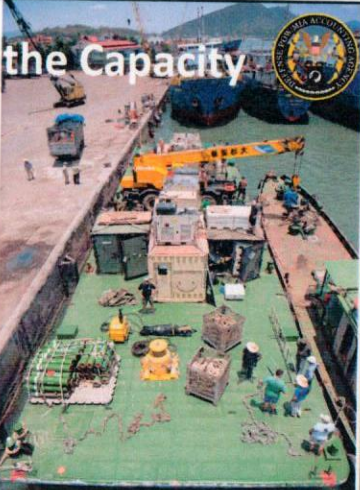




Photo by MCL Tyler N. Thompson, USN



Countering Common Misconceptions

1. *“Underwater sites are too difficult to find.”*


While each case is different based on the specific loss circumstances, we have demonstrated that some of these sites can be detected.



Countering Common Misconceptions

2. *“Underwater sites are too difficult to correlate to a specific loss incident.”*


While it is not always straightforward, we have demonstrated that some underwater wreck sites can be correlated.



Countering Common Misconceptions

3. *“Underwater wreck sites are too scattered or too complex to recover.”*


While some wreck sites can be large, scattered, highly disintegrated, or complex, we have demonstrated that some can be defined and recovered to a reasonable extent.





Countering Common Misconceptions

4. *“Underwater environments will not yield identifiable remains.”*

While each case and site environment is different, we have demonstrated that identifiable remains can be recovered from underwater sites.



Countering Common Misconceptions

5. "Underwater search and recovery efforts are inherently dangerous."

Underwater activities can be conducted safely. Field activities are subject to risk management like any other field activity, and safety is always paramount. Depths and practical diving limits are a consideration.









Photo by Lt. Col. Eddie M. Johnson, USN









Continuing Challenges

- Many wreck sites are likely disintegrated, largely buried, and lie in poor visibility environments.
- The best approach in site detection will likely continue to be via intensive search, survey, and testing, through a combined use of different sensor types - primarily magnetic and acoustic.
- Increasing the level of support by more efficient platforms and sensor suites (autonomous underwater vehicles, for instance), balanced with the need to employ the most appropriate search strategies and methods for each case.



Continuing Challenges

- Variable depth ranges and distances from shore (or unique inland/riverine requirements), versus practical operational limits, as well as what particular capabilities can be fielded.
- Differing interpretations of territorial maritime limits (10 versus 12 nautical miles) and other maritime boundaries.
- Leveraging the best platforms into the appropriate areas (restrictions on U.S. vessels in northern waters).

