

USCG

Development Proposal: Tactics, Techniques and Procedures Memo



Presented to: Bill Nagy (G-OPD)

Presented by: Bob Christ, SeaTrepid



**2333 Jones Road
Pottstown, PA 19465 USA
Phone/Fax: (610)469-1730**

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Bill Nagy
USCG G-OPD
2100 Second Street, S.W.
Washington DC 20593-0001
Phone: (202)267-4083

Subject: Proposal for Development of Remotely Operated Vehicle TTP Memo

Mr. Nagy:

Based upon our discussions regarding your needs, attached is SeaTrepid's proposal to develop the above referenced memo for inclusion within your expanded memo on Underwater Port Security Tactics, Techniques and Procedures.

Please feel free to contact me with any questions or concerns.

Sincerely,

Robert D. Christ, Principal

attachment

EXECUTIVE SUMMARY

G-OPD contacted SeaTrepid to assist in development of a Tactics, Techniques and Procedures (TTP) memorandum for Remotely Operated Vehicle (ROV) operations within the USCG fleet. The purpose of this document is to propose the resources needed as well as outline the scope of work necessary for production of the operational segment of the TTP memo.

It is SeaTrepid's understanding that in 2002, USCG purchased three VideoRay Pro II ROV systems for operational evaluation with its newly established MSST units as well as one JW Fishers Sea Otter ROV system. The USCG later expanded this ROV technology commitment to include a fourth VideoRay system as well as acoustical positioning capability for all four VideoRay systems deployed.

The MSSTs have thus far been the primary user of ROV technology in their security and law-enforcement tasks. The purpose of the TTP memorandum is to reduce the deployment tactics and techniques for ROV technology to a format simplifying the operational learning curve at the unit level.

SeaTrepid's proposed scope of work involves the development and writing then operational testing of the procedures of deployment of manufacturer non-specific ROV systems. Along with these procedures training materials will be included as well as PQS, JQR and items for implementation of skills to field operations personnel. The final product is expected to be included within an operational memorandum published by G-OPD for a scheduled October, 2004 publication date.

The USCG has stated its intention to further the move to robotics for the underwater inspection tasks. The end product of this mission is the initial codification of standard operating procedures for deployment of this technology to the USCG fleet.

I. Summary of the ROV program to-date

A. Initial Purchase of Three VideoRay Pro II systems

USCG (through G-OPD) purchased 3 VideoRay systems in late 2002. These systems were distributed to Chesapeake, VA (MSST 91102), Galveston, TX (MSST 91104) and Boston, MA (STA Boston) for a 6 week evaluation period. Factory Initial Training was provided by VideoRay/SeaTrepid for these three locations at Groton, CT on March, 2003. The systems then spent 6 weeks during early to mid-2003 in field for trials. The Galveston and Boston units were then transferred to San Pedro, CA (MSST 91103) and to Seattle, WA (MSST 91101) for an additional 6 week trial period. VideoRay/SeaTrepid Initial Training was provided for those locations in Alameda, CA in May, 2003. The West Coast systems then spent another 6 weeks during mid-2003 in field for trials.

The three VideoRay Pro II systems remaining in the field after the initial training were located at MSST San Pedro, MSST Chesapeake and MSST Seattle.

B. Acoustical Positioning Training and Deployment of fourth VideoRay Pro II System

USCG (through G-OPD) then purchased three VideoRay Acoustical Positioning system enhancements (The "Universal Positioning System") for the systems currently in the field plus another VideoRay Pro II with acoustical positioning system for the Galveston, TX unit (MSST 91104). Delivery/Training dates and POC's for each location were as follows:

San Pedro, CA (MSST 91103) – September 2003 (POC ET2 Smith)
Galveston, TX (MSST 91104) – November 2003 (POC ET1 Pipkins)
Seattle, WA (MSST 91101) – November 2003 (POC ET1 Fairall)
Chesapeake, VA (MSST 91102) – December 2003 (POC BM1 Gibson)

II. Proposed Scope of Work SeaTrepid's Inclusion within TTP Memo

SeaTrepid proposes the following steps to develop a manufacturer non-specific ROV Standard Operating Procedures (SOP) and remote underwater inspection task memorandum:

1. Draft a listing of anticipated tasks requiring use of an ROV system.
2. Draft a proposed set of techniques for deployment based upon the author's experiences.
3. Test these techniques with use of a variety of USCG personnel (both experienced and inexperienced ROV operators), ROV models and deployment platforms in a realistic environment at a USCG-specified location.
4. Revise those techniques based upon the testing and inputs from personnel in the field.
5. Develop a basic text on ROV and underwater inspection operations.
6. Develop a suggested set of TTP for deployment of this technology.
7. Develop training materials as well as PQS/JQR standards for field personnel.
8. Reduce to report form for submission.

III. Proposed Outline of Final Report

The final report deliverable to G-OPD is slated for inclusion into a G-OPD published memorandum on Underwater Port Security Tactics, Techniques and Procedures. The end product should be a non-technical SOP targeted to an entry-level field operations specialist on a basic step-by-step format. The substance of the report will be encapsulated within the operations section of the G-OPD memorandum. A few sections of explanation will be needed for the basics of ROV operations, basic theory of acoustic positioning (so as to properly interpret the outputs

from the equipment) and basic underwater navigation. The proposed outline for the final report is as follows:

1. Basics of ROV operations
2. Basics of Acoustic Positioning
3. Basics of Underwater Navigation (low/medium/high visibility and/or current, day/night operations, around structures and enclosed structure penetrations)
4. Basics of underwater designs of items to be inspected (ships, moorings, anchors, piers, etc.)
5. SOPs for each operation including:
 - Ship Hull Inspections
 - Pier Inspections
 - Underwater Obstructions
 - Internal Ballast Tank Inspections
 - Other non-standard operations
6. Basic Servicing and Troubleshooting of ROV systems
7. Training Syllabus
8. Classroom presentations for instructor
9. Test Questions and Answers
10. PQS and JQR Standards

IV. USCG Resources Needed for this Operation

SeaTrepid anticipates the need for the following USCG resources at a location of USCG's choosing:

1. Access to a USCG land-mobile vehicle (a general transport van) for testing of shore-based deployment of underwater inspections
2. Access to USCG response boat(s) [along with operational staffing] to test boat-deployed inspections
3. Access to docked and anchored larger vessels to test deployment of on-vessel-deployed inspections
4. Access to a variety of operations-level personnel for determination of those best suited for operating the equipment
5. Access to USN CSS report on ROV Deployment for Vessel Security
6. Publication Standards for USCG Training Materials

V. Anticipated Timeframe for Issuance of Report

SeaTrepid anticipates this report to be completed within seven weeks of the issuance of the contract. An approximate schedule would be as follows:

- Weeks 1 & 2 – Issuance of an exact schedule based upon the location of testing, issuance of testing protocols and completion objectives, scheduling of equipment and personnel, drafting of suggested TTP for each operation with review/approval of all above by G-OPD
- Weeks 2 & 3 – Beginning of field testing based upon schedule and steps approved by G-OPD
- Week 4 – Drafting of results from operational testing
- Week 5 – Field rework of issues identified in the first field tests
- Week 6 – Development of Training Syllabus, Training Materials, PQS and JQR
- Week 7 – Concluding of final report and circulation of draft to G-OPD
- Week 8 – Issuance of final report

VI. Pricing of This Contract

SeaTrepid's standard pricing is based upon a Time and Expenses structure. This entire project will be completed with the services of a SeaTrepid ROV Specialist, technical report writer and an independent technical illustrator. Pricing will be on a day rate of \$980/day (based upon a 8-hour workday) plus direct expenses as delineated below.

Details of pricing assumptions are as follows:

40 hours	Development of Schedule, Writing Techniques/Protocols and Coordination with USCG personnel
120 hours	Field Work at USCG location (15 days)
80 hours	Development and Writing of Training Syllabus, Training Materials, PQS and JQR
40 hours	Drafting of final report for circulation to G-OPD
32 hours	Travel to/from USCG location
16 hours	Proposal Generation and Pre-Contract Award Meetings
328 hours	Total or 41 days

Pricing

\$40,180	41 days at \$980/day
\$3,500	Services of Illustrator for inclusion into final report
\$4,000	Rental of ROV platforms (5 days x 4 platforms at \$200/day)
\$1,200	Freight Costs for ROV platforms to/from Pottstown, PA
\$4,500	\$300/day Per Diem for 15 days in field
\$375	3 Round Trip Mileage (at IRS Rate of \$.365) to USCG Headquarters plus tolls
\$2,250	Airfare for 3 field trips to USCG locations
\$56,005	Total Estimated Cost to Produce TTP Report