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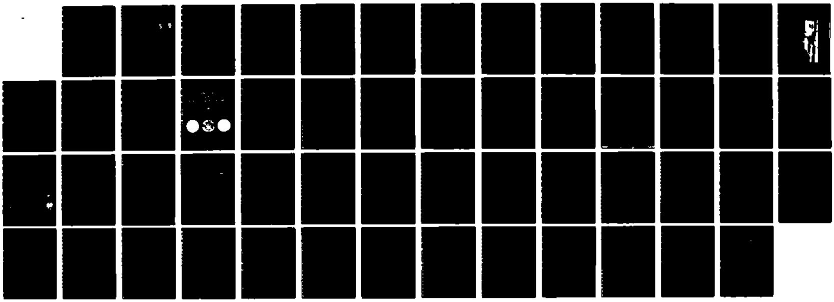

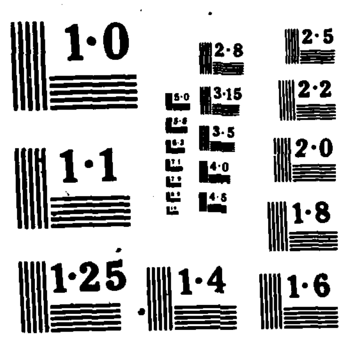

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AD-A168 456

PROJECT EXECUTION PLAN

FOR THE NEAR SHORE SURVEY

SOCAL ASW RANGE

(SOAR)

FPO-1-85 (8)

by

Keith Cooper

1985

approval
CHESNAVFACENGCOM
Code FPO-1

approval
UCT-2

OCEAN ENGINEERING
AND CONSTRUCTION PROJECT OFFICE
CHESAPEAKE DIVISION
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The Southern California Acoustic Range (SOAR) is designed to provide a 100 square mile Anti-Submarine Warfare training range in 4500 feet of sea water west of San Clemente Island, California. SOAR will provide accurate tracking of air, surface and submerged targets. (Con't)

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The Chief of Naval Operations tasked NAVAIR to from a team for the planning and execution of SOAR. The Naval Underwater Systems Center (NUSC) has been assigned as the Technical Direction Agent who in turn has tasked the Chesapeake Division of Naval Facilities Engineering Command (CHESDIV), Ocean Engineering and Construction Project Office, Code FPO-1, with the near shore survey portion of the project.

This plan is a working document that details the mobilization, execution and demobilization of an underwater survey of the near shore area of SOAR. The purpose of the survey is to provide geotechnical and environment data for the shore landing for underwater cables. The results of the survey will provide (a) a basis for environmental factors required for cable design; (b) geophysical data for cable location; (c) data necessary for the Naval Ocean Systems Center (NOSC) to support an environmental impact statement, and (d) provide the near shore portion of the total range survey, of which the offshore survey will be completed by NUSC.

NOSC, in conjunction with NAVOCEANO will conduct a survey of the offshore SOAR area. The survey descried herein will complement the offshore survey to provide data necessary primarily for cable design and installation.

Table of Contents

SECTION 1. INTRODUCTION

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The survey will be conducted in two parts ~~as follows~~:
(a) a diver cable inspection of two existing cables, and
(b) an hydrographic survey of bathymetry, sub-bottom profile, side-scan sonar and current meter data.

NOSC, in conjunction with NAVOCEANO will conduct a survey of the offshore SOAR area. The survey described herein will complement the offshore survey to provide data necessary primarily for cable design and installation. Refer to figure 1.

SECTION 2. PROGRAM MANAGEMENT

The overall program manager for the SOAR Project is the Director, Range Instrumentation Division (AIR-630) of the Naval Air Systems Command. AIR-6303 is the Head of the Sea Range Projects Branch. Within this branch, the Underwater Systems Engineer (AIR-6303F) is responsible for the management and execution of the Project. NUSC has been assigned as the Technical Direction Agent (TDA) for the project.

NUSC, as TDA, will provide technical direction to the surveys. The in water portion will be managed by CHESNAVFACENGCOM, Code FPO-1. Code FPO-1 will be supported by Underwater Construction Team Two, and NOSC, San Diego, as shown in figure 2.

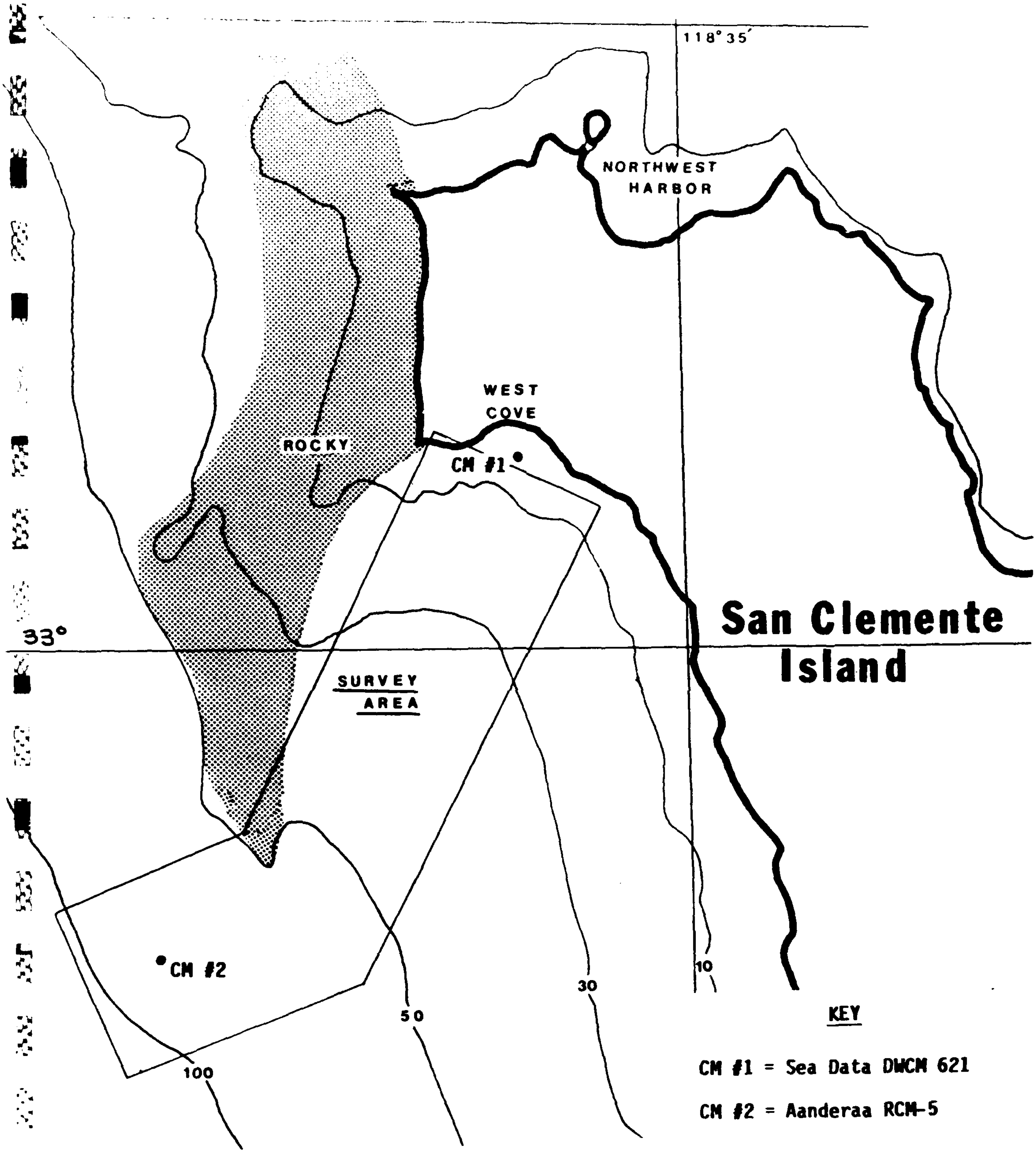

Figure 1
Near Shore Survey Area

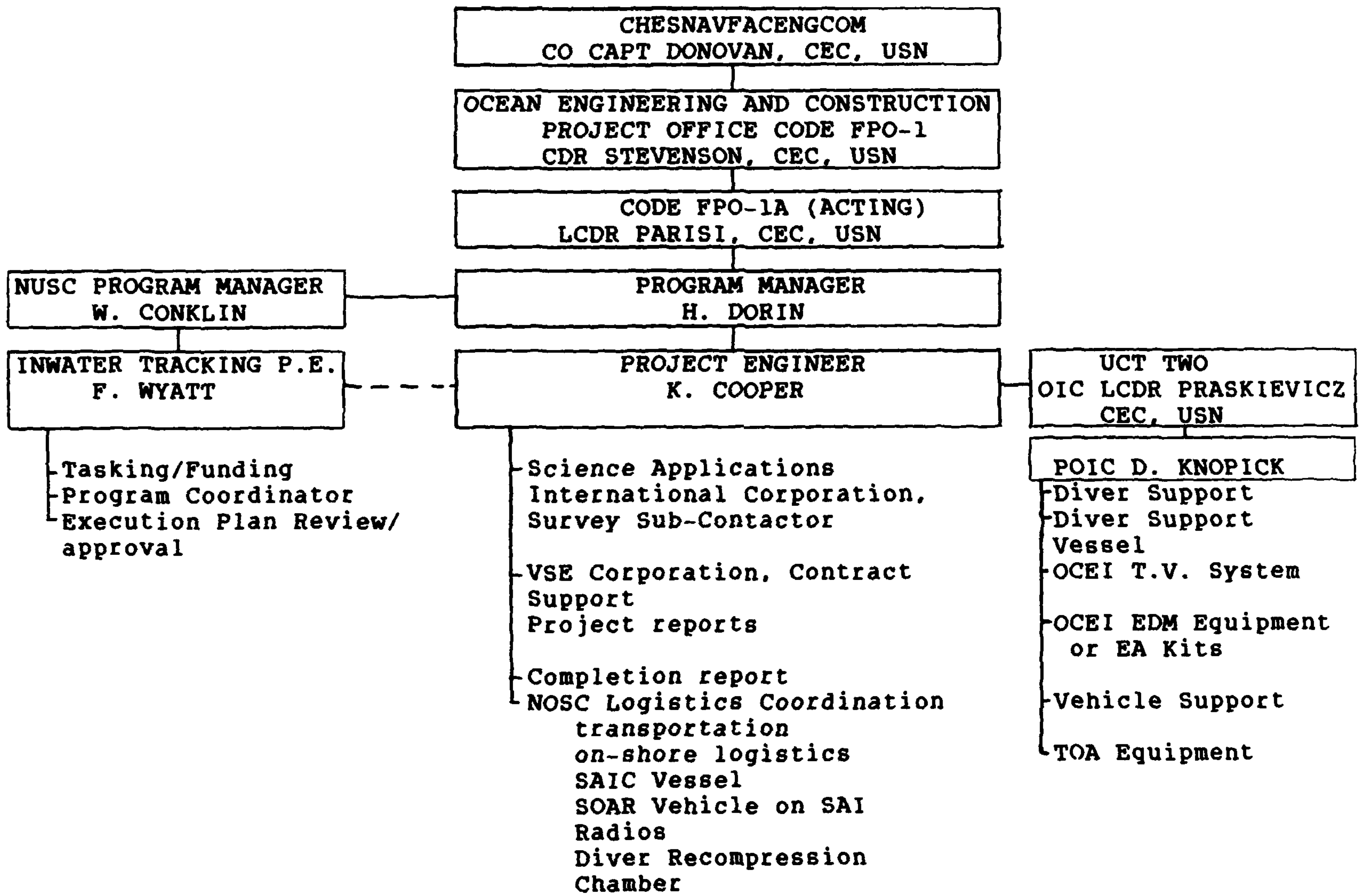

Figure 2
Program Management

SECTION 3. PROJECT SCHEDULE

General Project Schedule - major tasks

April 22	Mobilization of TRB at NOSC. Installation of SAIC Equipment.
April 23	Air transport of survey team to SCI, TRB transit to SCI, Barge transport of UCT-2 Equipment to set up navigation stations on SCI.
April 24	Start SAIC hydrographic survey
April 29	UCT-2 personnel transit to SCI
April 30	Start diver survey
May 1	Complete hydrographic survey
May 2	Demobilization of TRB at NOSC
May 9	Complete diver survey
May 13	Transportation of UCT-2 personnel to San Diego
May 15	Barge transit of UCT-2 equipment to San Diego

SECTION 4. PROJECT OPERATIONS

This plan is organized in two parts to document each phase of the survey.

1. NEAR SHORE DIVER SURVEY

The near shore diver survey area is shown in figure 3, Near shore Cable Route, As-Built.

Underwater Construction Team Two (UCT-2) will conduct the diver survey in accordance with the established procedures of appendix A.

Divers will also conduct a survey of sub bottom conditions using a water jet probe. The probe will be connected to surface a water pump by a flexible hose. Each probe location will be surveyed by UCT-2 as shown in Appendix 1. The depth of probe, subjective diver comments and location will be recorded in the survey log. The diver probe inspection will be conducted throughout the West Cove area. Probe sites will be selected based upon the results of the hydrographic survey.

The hydrographic survey will locate the areas of exposed rock towards shore to a depth of approximately 20 ft of seawater. The exact depth will be determined by weather conditions and the depth requirements of the TRB. UCT-2 will be required to conduct a fine grain survey of exposed rock in very near shore area, i.e. that area not covered by the hydrographic survey. Exposed rock will be located as defined in appendix 1.

Bottom samples of rock will be collected by UCT-2 for analysis by the Naval Civil Engineering Laboratory (NCEL), Code L42, Port Hueneme, CA. Ten samples, approximately one cubic foot in size, will be collected throughout the diver survey area. The location and depth of each sample will be recorded in the survey log, and tagged to the sample. UCT-2 will deliver the samples to NCEL. Five sand samples will be recovered and delivered for analysis in a similar manner.

UCT-2 will use geotechnical tools developed by the Naval Civil Engineering Laboratory (NCEL POC Ms. Barbara Johnson, Code L42) to gather sea floor data. Tools will include an impact corer, miniature standard penetration tester, rock classifier and jet probe. The location and use of each tool will be determined on site based upon hydrographic survey data.

UCT-2 will conduct reconnaissance diver survey's of Eel Point and Seal Cove. Each dive will be conducted for the purpose of providing information on optional cable landing areas. Photographs and/or underwater TV will be obtained.

2. HYDROGRAPHIC SURVEY

CHESDIV has contracted Scientific Applications International Incorportated (SAIC) to conduct a hydrographic survey of the near shore area of West Cove extending to the 100 fathom curve. The survey will utilize the following data resources:

(a) side look sonar
(b) sub bottom profiler
(c) bathymetric recording fathometer
(d) precise navigation
(e) current meters

The hydrographic survey is divided into four tasks; Mobilization/ Demobilization, Field Operations, Current Meter Rotations and Retrieval, and Data Analysis and Reporting. These tasks are presented below.

TASK 1 - MOBILIZATION/DEMOBILIZATION

This task requires the acquisition, checkout, calibration where required, shipping and installation aboard NOSC provided TRB Vessel of the following systems:

Sidescan sonar/ sub-bottom profiler system

Winch, slip-rings and 600 meters of armored cable

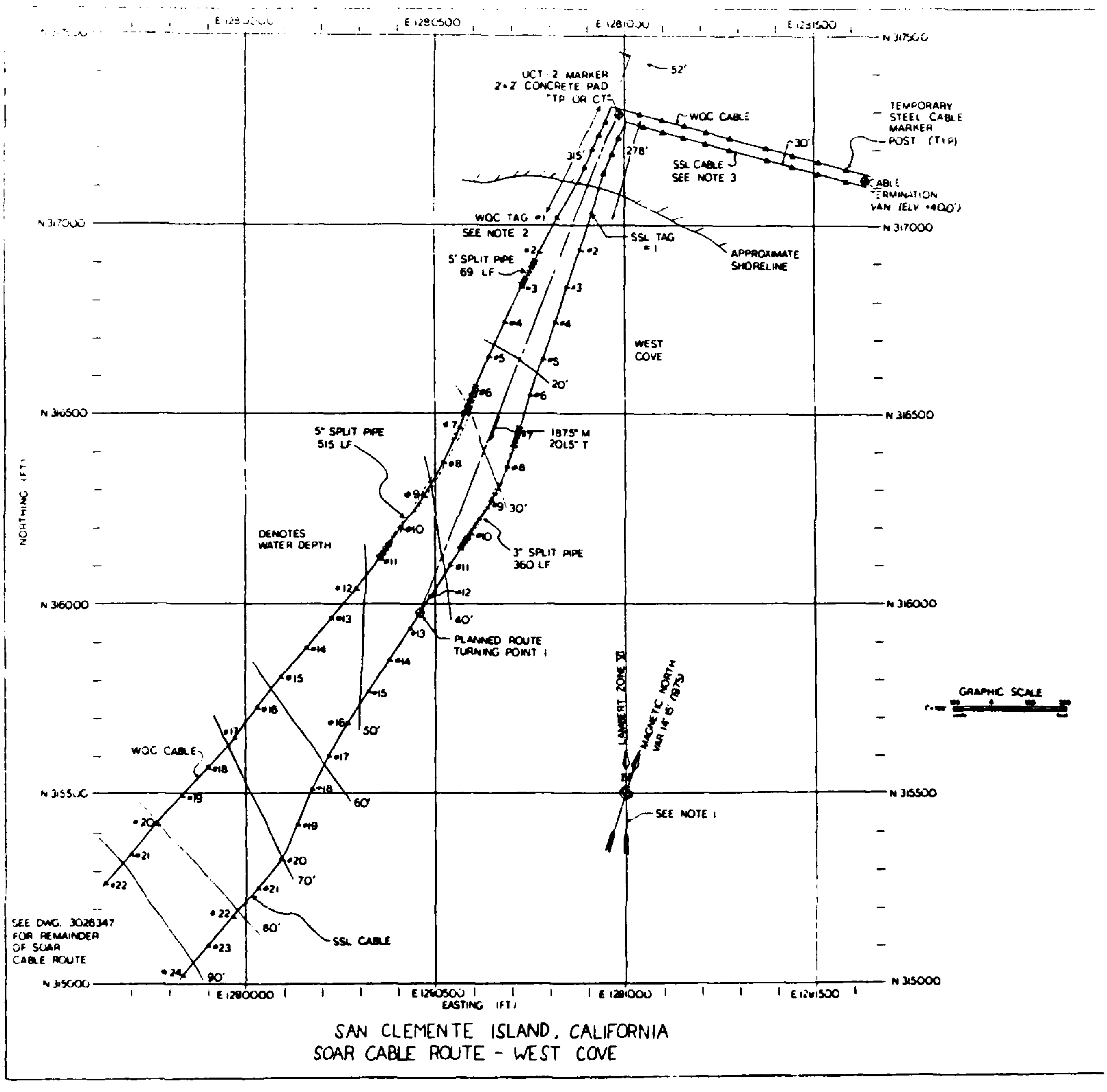

Figure 3

Near-Shore Cable Route, As-Built

Two Sea Data Model 621 Direction Wave current meter with temperature and strain gage pressure or equivalent

Fabrication of current meter moorings

One Del Norte Trisponder line-of-sight positioning system consisting of a Model 540 Digital Distance Measuring Unit, Master Transponder and three remote transponder

One 24 kHz Edo fathometer system with a Model 261C depth digitizer

One complete SAIC navigation computer system consisting of an HP 9920 computer, printer, plotter, disk drives, and operating software

Round trip shipping of all the above equipment - Newport, RI to San Diego, CA

TASK 2 - FIELD OPERATIONS

This task commences after completion of installation and checkout of all systems aboard the TRB at NOSC San Diego and consists of:

- o Round trip vessel transit time from San Diego

- o Current Meter Operations

  Two current meters will be deployed in the study area at the approximate positions shown in Figure 1.

  The near shore current meter in West Cove will be a Sea Data Model 621 Directional Wave Current Meter (DWCM) or equivalent that will be rigidly attached to a bottom-mounted framework. The current meter will be deployed in 30-40 ft of water or less and it is recommended that divers inspect the installation after deployment and prior to retrieval. Several markers will be used for locating the DWCM.

  The offshore current meter will be a DWCM and will be deployed in a depth of 100-110 ft of water. This bottom mounted current meter mooring will consist of an anchor clump (railroad wheel), a Benthos Acoustic release, the current meter and sufficient buoyancy (glass spheres) to maintain a vertically rigid mooring.

INTEGRATED SURVEY SYSTEM (ISS)

SAIC

FIGURE 1-1

Figure 4
SAIC Navigation Equipment

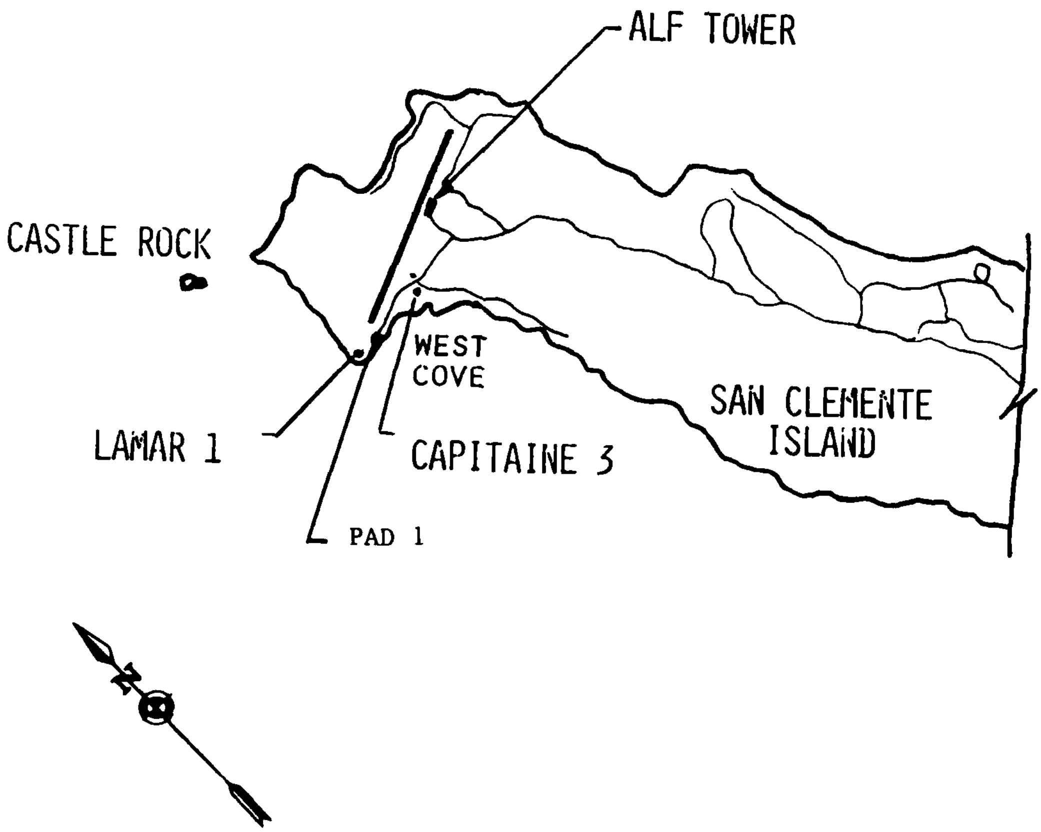

Figure 5

Navigation Shore Stations

Both current meters will be deployed immediately upon arrival at the operating area. Each current meter will be retrieved and redeployed at the completion of the bathymetry/side scan/sub-bottom surveys, or upon completion of the NUSC transponder installation project being conducted during the some time period. This will provide a three week time series of current velocity and wave information that can be used for planning purposes.

Current meters will be installed by SAIC from the NOSC provided TRB. UCT-2 divers will recover and re-install current meters at the end of their two week period, or SAIC will re-install after the NUSC project.

o Side Scan/Sub-bottom Survey (SS/SB) Operations

The Side Scan/Sub-bottom survey will be conducted over the area shown in Figure 1. A line spacing of 200 meters will be used with a side scan sweep of 300 meters (150 m port, 150 m starboard), providing 150% coverage of the bottom for development of the side scan mosaic. The survey will be comprised of about 30 lines run parallel to the bottom gradient. Vessel speed during the survey will be about 2 knots.

o Bathymetry Survey

The bathymetry survey will be conducted over the same area as the SS/SB survey, except that a line spacing of 50 meters will be used. The bathymetry survey will be conducted at a speed of 5-7 knots, depending on wave conditions. The survey will be perpendicular to the bottom gradient covering the entire area. Survey lines will be run from about the 3 fm line at West Cove to the 100 fm line.

o Survey Navigation Control

All field operations will be conducted under the control of the SAIC navigation system and all data will be recorded for subsequent processing and analysis. Figure 1 shows the integrated survey system. For this application, however, the Winchester disk and trackball will not be used and the color monitor will be replaced with a standard monochrome monitor that will be used a helmsman aid for survey guidance.

Survey navigation stations will be established as shown in figure 5. Survey station data is provided as follows:

"LAMAR 1"	N 33° 55' 55.19"	W 118° 36' 13.12"
	E 1278 554.83	N 316 921.68
"CAPITANE 3"	N 33° 01' 2.97"	W 118° 35' 23.13"
	E 1282 827.48	N 317 612.03
"PAD 1	N 33° 00 54.598"	W 118° 36'05.769"
	E 1279 178.97	N 316 847.76

TASK 3 - CURRENT METER ROTATION AND RETRIEVAL

The current meters deployed during TASK 2 will be serviced 2 months after initial deployment and retrieved at the end of 6 months. This task includes:

- o Preparation and shipping current meter and release
- o Round trip travel for SAIC personnel between Newport and San Diego.
- o Retrieval and emplantment of current meters
- o A one day weather contingency period

TASK 4 - DATA ANALYSIS AND REPORTING

The fourth task for this program consists of analysis and reporting on the geophysical data and current meter data.

The geophysical data analysis and reporting will consist of:

- o Reconstruction of bathymetry survey tracks
- o Development of a sounding and contour chart (scale of chart to be determined)
- o Preparation of a sediment thickness chart to same scale as bathymetry chart
- o Recommended cable route(s) to avoid potential obstructions
- o A final report on results of geophysical observations will be provided following completion of the survey operations.

The current meter data retrieved from the units will be processed and listed in order to assess overall quality and at the end of the 6 month deployment, will be merged into a complete time series and analyzed to produce the following products:

- o Velocity as a function of time (stick plot)
- o Average maximum velocities
- o Statistics, mean, variance
- o Wave statistics

The current velocity and wave data will be presented in several interim reports, one month after each servicing period, and a final report will be delivered two months after completion of the 6 month deployments.

OCEANOGRAPHIC CABLE INSPECTION PROCEDURES

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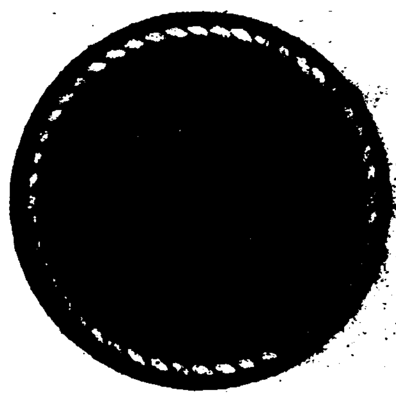


APPENDIX A

TABLE OF CONTENTS

I SUMMARY/PRIORITIES

This handbook presents the required data and suggested method for inspection of all oceanographic cables at U.S. Naval Facilities throughout the world. These inspections have two purposes: (1) to locate and repair any areas of potential cable failure, and (2) to provide a base of information for planning of emergency cable repairs. The detachment Chief Petty Officers In Charge (CPOICs) and Petty Officer In Charge (POIC) should keep this second purpose in mind when answering the questions in Section IV.

The ultimate customer, the Naval Electronic Systems Command, has prescribed specific goals for these inspections. In priority order, they are:

(1) Visual inspection and damage report,

(2) Cable track survey,

(3) Photos of damage,

(4) Onsite support information,

(5) Shore panoramas, and

(6) Underwater photos.

II SURVEY METHOD

The determination of the location of the cable is second only in importance to the visual inspection of the cable. Therefore, both the land and subsurface portion of the survey must be done accurately. Both surveys will be completed using triangulation checked by electronic distance measuring (EDM) equipment.

A. Shore Survey

A1. New Benchmarks: Sufficient benchmarks should be established such that all of the cable out to a depth of at least 100 feet of Seawater (FSW) is visible from two benchmarks.

In most cases, this can be done with two positions. Benchmark locations should be determined by the detachment POIC with the following points in mind:

(1) Visibility of the cable track from the position;

(2) Distance from other benchmarks (needs to be great enough for triangulation, approximately .75 mile); and

(3) Accessibility of position during different weather and tide conditions.

The following method will be used to establish new benchmarks:

(1) On Rock - Mark locations with a 6-inch by 6-inch metal plate (stainless steel, brass or bronze). An engraved X in the center of the plate will mark the exact location of the benchmark. Plates should have the date on which it was installed and an identifying letter or number engraved on it, along with the words "For Information Call 202-433-3881." The plate may be fastened to the rock using small rock bolts (3/8-inch by 6-inch) after suitable holes are drilled in the rock using a hand star drill. An alternate method is to use lead masonry anchors driven into holes drilled into the rock. The plate could then be secured by standard hex bolts.

(2) On Soil - Mark location with a steel stake driven 3 to 4 feet into the ground. An 8- to 10-inch diameter concrete pad, 18 inches deep, should be poured around the stake to ensure the position is securely marked. Stake should protrude 2 to 3 inches above the ground level. A metal plate as described above placed in a concrete base is also sufficient.

(3) In Sand - No benchmarks should be placed in sand due to instability of the position and the fact that drifting sand may cover even a permanently placed mark.

After the benchmarks have been physically constructed, their position must be determined as detailed in section A2.

A2. Existing Benchmarks: If the site has been previously inspected, permanent benchmarks should have already been established. In this case, they should be checked to see that they are still in good condition and still provide the required range of visibility. If so, then all that is required is to confirm their positions.

The method used to determine the position of the benchmark is very similar to the method for determining the position of float balloons that is later described in section B3. The position is determined using triangulation with the theodolite set on one point and the transit set on another. The two instruments should be set on permanent fixed points easily seen and returned to. From each point, the surveyor must see both the other point and the benchmark in question. The fixed points to be used, in order of preference, are:

(1) Permanent Government benchmarks such as USGS or State grid;

(2) Specific corner of the T-building; e.g., "2-feet north of northeast corner of T-building;" and

(3) Specific portion of large permanent object; e.g., "2-feet south of southern leg of antenna No. 3."

When the instruments are set up on any two points, right angles should be turned to the benchmark using the line between as a baseline. A distance measurement will also be taken using the EDM unit from one point to the benchmark and between the two points.

This should be repeated for all benchmarks.

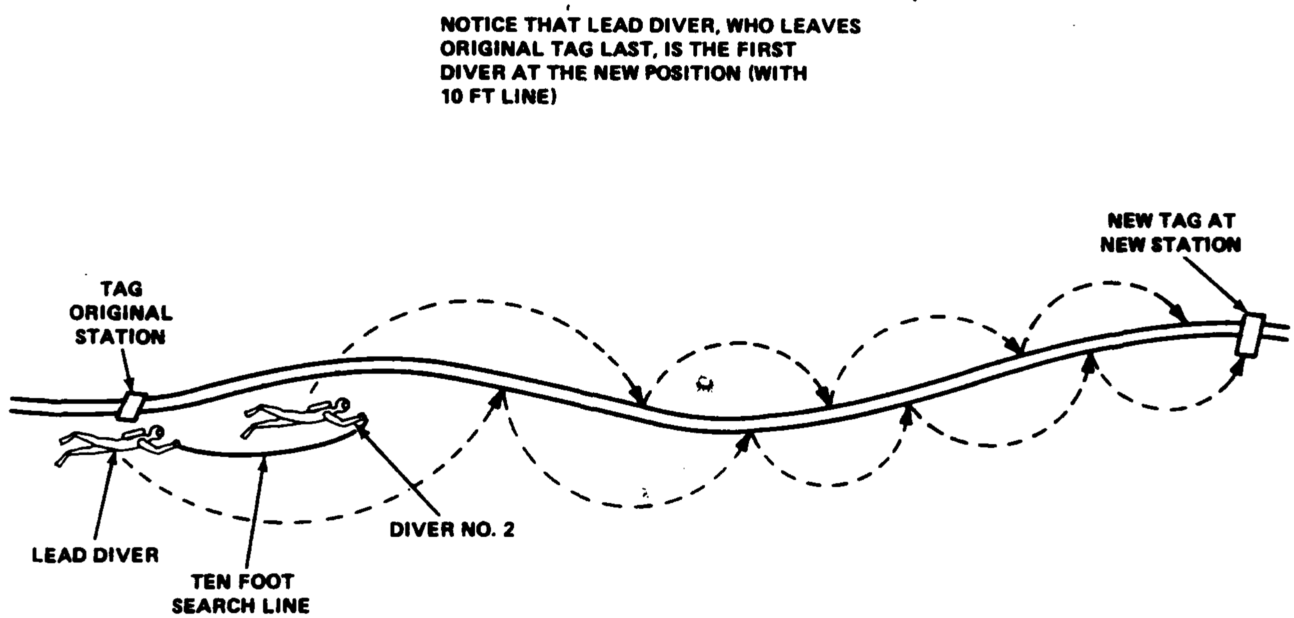
B. <u>Underwater Survey</u>

The goal of the underwater survey is to determine the position and depth of the cable at 100-foot intervals and be able to relate these charted positions back to the cable. The cable will be surveyed using the standard method of attaching floats along the cable track and triangulating in the floats from the shore. The floats will be placed initially at 100-foot intervals if practicable out to a depth of 100 FSW. The 100-foot interval and 100 FSW figures are provided as guidance. If the total cable length out to 100 FSW is extremely long, then the interval may be increased. If there is reason to believe that damage may be occurring to the cable in depths greater than 100 FSW, then that area of cable should be inspected.

B1. <u>Establishing Stations - Cable Visible</u>. In all portions of the track where the cable is visible, a permanent brass tag will be placed at each of the 100-foot stations. These tags, shown in figure 1, will be provided by CHESDIV in packages of 1 to 60.

Along with attaching the tags at each station, a reading of the depth, bottom type, and water visibility will be recorded. The depth reading will be taken with the depth gauge placed on top of the cable. This information is numbered and recorded on a slate provided for this purpose. Should the cable be more than 3 feet off the bottom, both the bottom depth and the cable depth will be recorded.

The exact method of interval determination will be left up to the detachment POIC as long as they meet the criteria of every 100 feet . The following method is suggested. Intervals will be established and marked first by using a 10-foot searching line. Divers will stretch out the line and "leap frog" past each other as shown in figure 2. This will allow the divers to stay within a safe distance at all times. At each 100-foot station, the divers join together to attach the tag, and take, and record the required data. After all the tags are attached, the divers then return and assist in triangulating the points.



B2. Cable Buried in Bottom. If the cable appears to be buried in the bottom for its entire length, the assumed path of cable will be searched out to a depth of at least 60 FSW. This will be done to see if the cable appears at some short lengths at certain spots. If the cable appears, its position will be surveyed, and the standard depth/visibility information taken. If the cable does not appear, the area which was searched and the search method should be noted. The bottom type and slope should also be noted. The NCEL cable locator instrument should be used as much as possible.

It should be noted that in cases where the cable is buried only 6 inches or less between the bottom, its path may be followed by probing the bottom with a knife or rod.

B3. Triangulation Method. After the tags have been attached (or in the case of a totally buried cable, after the divers are in position), the positions of each station and object of interest must be surveyed. This will be done using a K&E theodolite/EDM unit and a transit to doublecheck the reading. The theodolite/EDM unit will be set up on a previously established land benchmark and will give an angle and a distance, enough to locate the float. The transit will be set up on a second benchmark and set an angle for each float.

As the Pulse Range EDM unit must have a special reflective target to site in on, a small boat, such as a Zodiac, must assist the surveyors. A dive team will be deployed towing a single float with enough line to reach the surface at the deepest depth. At each previously tagged station, the divers will stop, plum the float, and give a previously established signal, such as 4 pulls on the float. The Zodiac team will then run up and hold the EDM target over the float. The Zodiac team will report over the radio that it is ready for siting and call out the number of the station. They will hold this position until both the theodolite crew and transit crew report they have the site, each repeating the station number to avoid confusion. The Zodiac crew then signals the divers to proceed to the next station by tugging on the float.

This procedure should also be repeated at positions of notable cable damage as noted in section III.

The POIC should check to ensure that the number of points sited by the surveyors is EXACTLY the same number of points previously marked by the divers on the slate. If not, then the procedure must be repeated. That is, if the divers marked 52 tags plus one armor damaged point on the slate for a total of 53 points to be surveyed, then the surveyors must site 53 points. If only 51 points are sited, then there is no way to determine which points were missed.

This method is shown on figure 3. Note that all angles are right turned angles. Both the transit and the theodolite use the line between them as a baseline. If they can not use this baseline for some reason, it should be specifically noted in the survey data.

All data will be marked on the forms shown in figure 4. Data will be plotted BEFORE LEAVING THE SITE to ensure that it is accurate. Should the information from the theodolite/EDM unit and the transit not match, that portion of the survey will be repeated.

III CABLE CONDITION

Along with the cable track, the cable condition is to be recorded, paying particular attention to areas of potential failure. In general, the location of any condition will be given as best as possible in relation to the numbered tags or floats; e.g., "20 feet seaward of tag 10" or " 30 feet shoreward of float 8". The exact location of particular conditions should be surveyed as described in section B3. Table 1 lists all conditions which should be watched for and recorded and specifies those conditions which must have their location surveyed. Table 2 lists the measurements which are required at certain conditions.

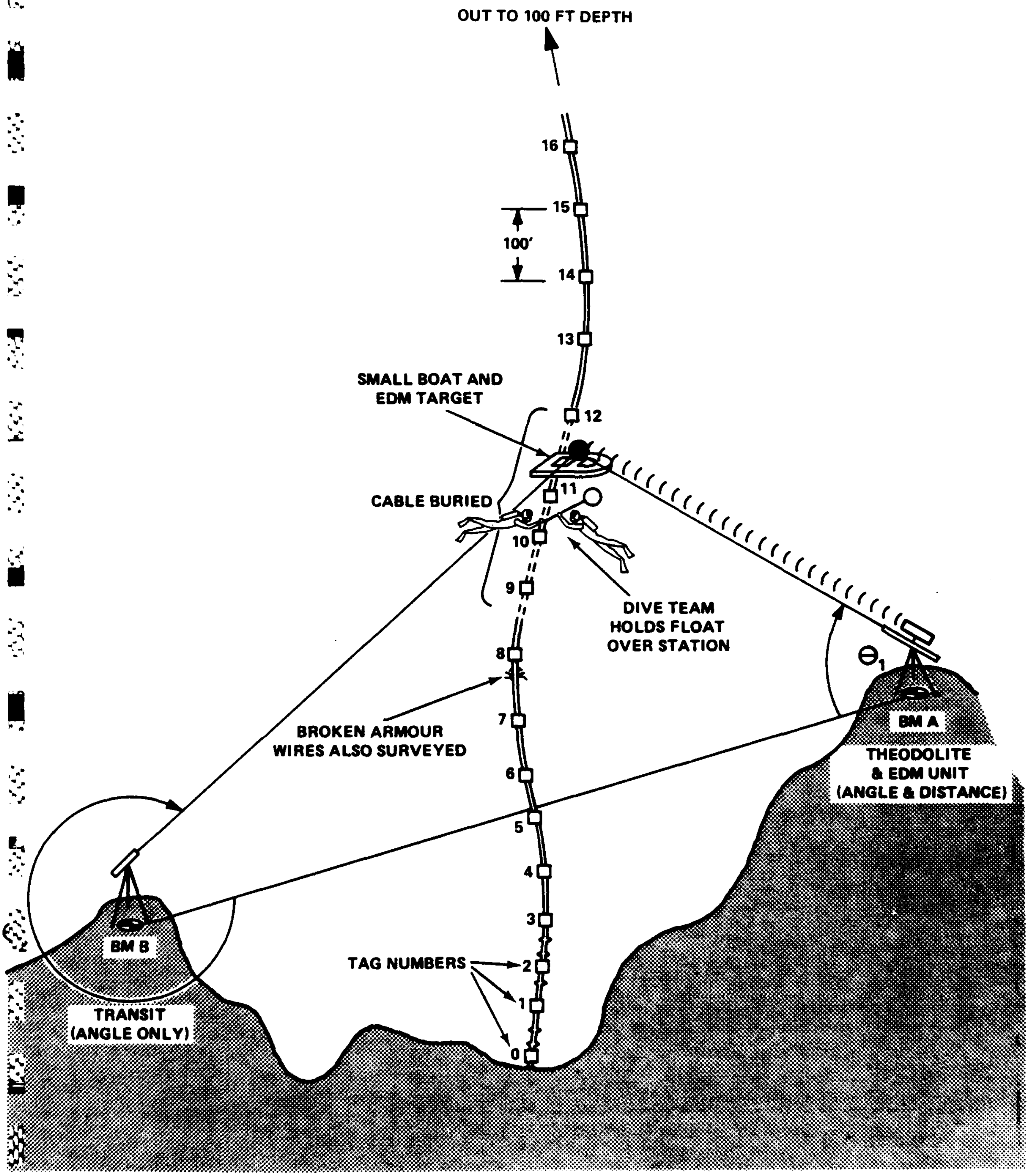


FIGURE 3. TRIANGULATION CABLE SURVEY METHOD

SURVEY DATA REPORT

page ____ of ____

cable __________

THEODOLITE ON BENCHMARK ____________ BASELINE ___________

TRANSIT ON BENCHMARK ____________ BASELINE ___________

SITE NUMBER	OBJECT	THEODOLITE ANGLE	DISTANCE	TRANSIT ANGLE	DEPTH	BOTTOM TYPE	VIS

OBSERVATIONS - (INCLUDE LOCATION)

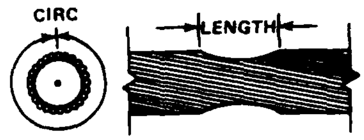
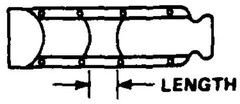
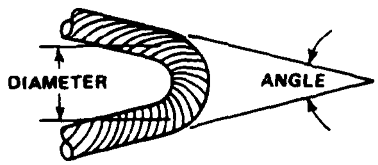
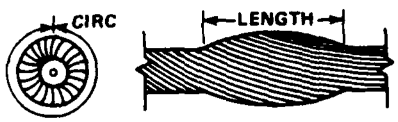
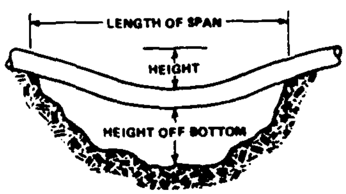
FIGURE 4. Survey Data Report

TABLE 1. Matrix of Observations - Cable Inspection Survey - Observation of Condition of Cable System

	Cable	Abrasion Protection System	Immobilization System	Cathodic Protection System	Environment	Junctions Terminations of Cables
	1. *Extensive damage to outer coating	1. Deterioration of abrasion protection material (corrosion or abrasion)	1. Missing or bent fasteners	1. Missing or damaged anodes	1. Evidence of major wave action	1. Termination cable stopper
	2. *Deterioration of armor wires	2. Loose nuts and bolts	2. Long spans without fasteners	2. Overall reduction of size	2. Presence of natural or man-made debris	2. Condition of termination
	3. *Broken armor wires	3. Missing nuts and bolts	3. Deterioration of clump anchors or fasteners	3. Pitting of anode	3. Evidence of seismic action	3. Damage to wire or outer armor termination or junction
	4. *Broken cable	4. Evidence of non-wave induced loads	4. Movement of anchor	4. Amount of marine growth	4. Evidence of local fishing	4. Sharp bends kinks
	5. *Sharp bends	5. *Missing or separated sections	5. Movement of cable between fasteners	5. Poor contact of anodes	5. Abrupt change in amount of marine growth in area of cable	
	6. *Suspensions	6. Amount of marine growth	6. Loose fasteners	6. Condition of "jumpers"	6. Erosion or accretion of sediment along cable	
	7. *Kinking or birdcaged armor	7. *The end of the split pipe protection	7. Uncovering of Trenches	7. Inorganic fouling of anode	7. Presence of ice scour tracks	
	8. *Protruding cable core		8. Missing concrete or rock overburden on trenches			
	9. *Buried cable		9. Damaged or missing rock bolts or U-rods			
	10. Amount of marine growth					
	11. Evidence of non-wave induced loads					
	12. Large deviation from expected track of cable					

*Exact position should be surveyed

TABLE 2. Measurements Required

Discrepancy	Tolerance	Measurement to be taken	Illustrations	Photo Required
Broken Armor Wires	0	Number of wires	NA	Yes
Abrasion of a. Cable	+5%	Circumference	a. 	Yes
b. Split Pipe	+5%	Length	b. 	
c. Rock	+5%	Width Length	c. NA	
Corrosion	NA	NA	NA	Yes
Bends/ Kinks	+5%	Diameter or Angle subtended		Yes
Missing/ loose split pipe	0	Number of sections loose	NA	Yes as appropriate
Missing/ loose nuts	+5%	Number of bolts		Yes as appropriate
Birdcaged armor Wire	+5%	Circumference Length		Yes
Suspension	+5%	Length of span Height Height off bottom		Yes

IV ONSITE SUPPORT

The questions listed below should be answered to aid in the planning of future operations. When answering these questions keep in mind what information you would like to know if you were in home port planning an emergency repair.

A. Equipment

(1) What is the closest source and availability of vehicles for transport of personnel and gear?

(a) Type____________________

(b) Location________________

(c) Contact_________________

(d) Phone No.______________

(2) What is the source and availability of heavy construction equipment such as forklifts, cranes, bulldozers, etc.?

(a) Type ____________________

(b) Location _________________

(c) Contact __________________

(d) Phone No. ________________

(3) What is the source and availability of small craft?

(a) Type ____________________

(b) Location _________________

(c) Contact __________________

(d) Phone No. ________________

(4) Are there any barges or ships available that could be converted into construction platforms?

(a) Type ____________________

(b) Location _________________

(c) Contact ______________

(d) Phone No. ______________

(5) Is portable electrical power generation equipment available?

Type:

(a) AC _____Volts _____Capacity _____Hz _____Fuel Type _____

(b) DC _____Volts _____Capacity _____Hz _____Fuel Type _____

(c) Location ______________

(d) Contact ______________

(e) Phone No. ______________

(6) Can survey equipment (theodolites, transits, stadia rods, chains) be obtained locally?

(a) Location_______________

(b) Phone No._____________

B. General Services

(1) Is Government messing and berthing available at the facility?

(a) Capacity____________________

(b) Hours of Operation _________

(c) Distance from facility______

(d) Can special arrangements be made for other hours________

(2) Are civilian local facilities available for messing and berthing?

(a) Capacity ____________________

(b) Hours ______________________

(c) Distance from facility ______

(d) Cost ____________________

(e) Phone No. ____________________

(3) Is there a Public Works at the site?

(a) Contact ____________________

(b) Phone No. ____________________

(4) Is there a SIMA at or near the site?

(a) Contact ____________________

(b) Phone No. ____________________

(5) Are commercial machine shops and stores in the area?

Name(s) ____________________ Dis'ances ____________________

(if list is numerous, a reference to the local phone directory will suffice)

(6) Where can the nearest medical aid be obtained?

(a) Contact ________________

(b) Address ________________

(c) Phone No. ________________

(7) Are there other military units in the area?

(a) Service ________________

(b) Location ________________

(c) Phone No. ________________

(d) Distance ________________

(8) To whom would you go to purchase something onsite?

(a) Contact ______________

(b) Phone No. ______________

C. Diving Services

(1) Is there a military diving unit nearby?

(a) Location ______________

(b) Distance ______________

(c) Phone No. ______________

(d) CO ______________

(e) MDV ______________

(2) Are there commercial dive shops in the area?

(a) Name ______________

(b) Address ________________

(c) Distance ________________

(d) Phone No. ________________

(3) Are HP breathable air compressors available?

(a) Location ________________

(b) Type ____________________

(c) Capacity ________________

(4) Are LP breathable air compressors available?

(a) Cost ___________________

(b) Contact ________________

(c) Phone No. ______________

(5) Is there an SAR Unit in the area Helicopter Service?

(a) Location ________________

(b) Contact ________________

(c) Phone No. ________________

(d) Distance ________________

(6) Where is the nearest Navy recompression facility?

(a) Type ____________________

(b) Capacity ________________

(c) Location ______________________

(d) Phone No. ______________________

(e) Diving Medical Officer Available _______

(f) Distance ______________________

(g) Most expedient means of transportation ________________

(h) Estimated time by auto/time by air ___________

(i) Current certification ______________________

(j) Certified by ______________________________

(k) Oxygen capacity ___________________

D. Transportation

(1) Where is the nearest commercial air terminal?

(a) Location _______

(b) Distance _______

(2) Are rental cars available?

(a) GSA ________

(b) Other________

(3) Where is the nearest military air terminal?

(a) Location________

(b) Distance________

(4) Where is the nearest port? Are special permits needed?

(a) Location ________

(b) Distance ________

(c) Is site visited by MSC shipping? How often ____________

(5) Must equipment be trucked long distances?

(a) Road Conditions/Type ____________

(6) How are access roads to the site? What is the best means of transporting heavy equipment to the beach?

E. Operations

(1) Is there system repair material stored at the site?

(a) Type (cable, split pipe, etc.) ________

(b) How much __________

(2) Is a building or area available from which to base operations?

(a) Location __________

(b) Distance from cable landing pt______________

(c) Contact ___________

(d) Phone No.__________

(e) Is heat and power available at the building?_________________

(3) Can gear and equipment be stowed on the beach? Where?

(4) Is there ready access to the water so that a LARC-type amphibious vehicle can be used? Where?

(5) Is fuel available onsite?

Diesel_____Civilian or DOD Source______Distance from beach_____

Gas________Civilian or DOD Source______Distance from beach_____

(6) Are there any restrictions on use of radios for communications? What frequencies are available?

(7) Where is the nearest weather unit for day to day forecasts?

Contact ________________________

Phone No._______________________

(8) Is there a published historical weather document for the area? If so, enclose a copy.

(9) Are there seasonal variations on the beach?

F. Current Personnel

Identify the following billets by name and phone number:

(1) Commanding Officer (NAVFAC)________________________

(2) Executive Officer (NAVFAC)________________________

(3) Operations Officer________________________

(4) Public Works or Maintenance Officer________________________

(5) Supply Officer________________________

(6) Transportation Officer________________________

(7) U.S. Naval Liaison Officer (if any)________________________

(8) AT&T Representative ______________________________

A copy of the facility and/or base phone directories should be included with the completion report.

V SHORE PANORAMAS

A photograph of the terrain surrounding the cable landing site will be taken to provide personnel some familiarity with the area. This will be done by taking a series of overlapping photos which will produce a 360 degree panoramic view of the site from a benchmark. A flag or similar marker will be placed at each benchmark prior to photographing the area. The Det OIC will ensure that each roll of film is marked as to the contents and date taken both externally and by photographing a slate with this information. A tripod should be used for taking these photographs to ensure sufficient overlapping and good picture quality. A wide angle lens may be employed to reduce number of photos required.

VI RESPONSIBILITIES

A. CHESNAVFACENGCOM is responsible for:

(1) The overall inspection program management including all funding;

(2) Issuing the Inspection Handbook and any corrections/additions to it;

(3) Issuing completion reports within 90 days of inspection;

(4) Accepting all inspection data as correct before leaving the site;

(5) Debriefing of NAVFAC CO/XO;

(6) Supplying area and security clearances for all CHESDIV personnel along with berthing and messing arrangements;

(7) Supplying necessary diving credentials to Underwater Construction Team (UCT) supervisor for any CHESDIV diving personnel onsite;

(8) Manufacturing and providing to the UCTS the cable marking tags;

(9) Manufacturing and providing to the UCTs the diver slates for data gathering; and

(10) Hand-carrying all film and videotape from the inspection.

B. The UCT is responsible for:

(1) All onsite operations except as excluded above,

(2) Providing all data listed in the Inspection Handbook to the CHESDIV representative on the last day of the inspection in a correct readable format,

(3) Ensuring that personnel onsite are trained in the use of the K&E/EDM gear, the theodolite, and the cable tracking device,

(4) Supplying security and area clearances for UCT personnel along with berthing and messing arrangements, and

(5) Bringing to the site:

(a) all inspection personnel,

(b) all diving equipment required to inspect cable to 100-foot depth,

(c) transit and tripod,

(d) drafting equipment (for checking survey data),

(e) Pulse Ranger EDM gear and EDM target,

(f) floats and required line,

(g) tags (provided by CHESDIV earlier),

(h) land cameras, film, and tripod,

(i) Zodiac,

(j) three radios for triangulation,

(k) data gathering slates provided by CHESDIV,

(l) tie wraps of various sizes for tying tags to cable (12 inches or longer, at least 60 ea), and

(m) materials for establishing benchmarks.

VII DATA FORMAT

At the completion of the inspection, the POIC of the detachment will provide the CHESDIV representative with the below listed information. The CHESDIV representative is responsible for ensuring that the information meets all criteria before leaving the site.

A. Location information on benchmarks; i.e., two angles and two distances for every benchmark plus detailed description to position from which angles were taken.

B. Survey and underwater inspection form filled out as shown in figure 4. Due to classification requirements, DO NOT write the site location on the form. A separate form should be filled out for each cable.

C. All photos taken. All undeveloped film will be tagged externally and a slate will be photographed within the roll to show date taken and contents.

D. The answers to all onsite support questions listed in Section IV. This can be done either by xeroxing the pages of section IV and filling in the blanks or by answering each question on a separate sheet and referring to the questions by number. For example; "C.2.(a) The Dive Shoppe."

E. A list of all inspection personnel.

F. If the CHESDIV representative was not onsite throughout the entire inspection, a brief diary with one or two line summaries of each day's actions.

Obviously, the CHESDIV representative should make every effort to assist the POIC in obtaining this data and exchange this data with him throughout the inspection. The above requirements are not meant to isolate CHESDIV and UCT personnel or to have them communicate only on the last day. It merely itemizes the information required for the report.

VIII COMPLETION REPORT OUTLINE

The completion report will consist of the following sections:

A. Location/Description Summary describing the general location of the facility, the number of personnel, number of buildings, and general type of terrain (1/2 to 1 page).

B. Inspection Log: brief diary of inspection (1/2 to 1 page).

C. Inspection Report Summary: describing in general terms the findings of the inspection (1/2 to 3 pages), including sea and weather conditions during inspection. Photos of any significant damage found will be included.

Appendix A. Answers to all onsite support questions including base directory and weather information if available.

Appendix B. All survey information including angles and distances to all cable stations. A drawing showing the benchmarks and their relative position to the reference points.

Appendix C. Shore panoramas.

Encl (1) Unclassified chart of cable track showing cable track out to one mile off shore with benchmarks and their locations shown. Include list of angles and distances taken. WILL NOT show latitude or longitude or name of site. Will only reference CHESDIV report number.

The report will be classified in accordance with OPNAVINST S5513.5A.

IX INSPECTION SCHEDULE

Each site and detachment makeup will dictate the schedule of the inspection and the detachment POIC will make decisions as required. The following is a basic schedule.

Day	Action
1	Arrive onsite, begin setup of equipment. Check with supply on material arrival. Verify emergency checklist.
2	Complete setup of equipment, establish new benchmarks, and determine location of existing and new benchmarks. Brief CO/XO.

3	Complete benchmark survey. Divers install station tags and take depth readings along cable. Inspect condition of cable. Take required data at each station.
4	Repeat cable inspection for other cables if more than one are onsite.
	Attach float balloons at each station and survey in location of cable.
5-6	Gather local site data required by Section IV.
7-8	Equipment breakdown and shipment. Debrief CO/XO.

Each inspection should take 1-to-2 weeks depending upon site condition and number of cables.

END

DTIC

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