



**NAVFAC P-1045
MARCH 2013**

**PRE-SURVEY OUTLINE BOOKLET
FOR SHORE-BASED U.S. NAVY
SURFACE SUPPORTED DIVING SYSTEMS**

System Name: _____

System Location: _____

**SYSTEM CERTIFICATION AUTHORITY, CODE OFP
NAVAL FACILITIES ENGINEERING COMMAND
1322 PATTERSON AVENUE, SUITE 1000
WASHINGTON NAVY YARD, BLDG 36
WASHINGTON, DC 20374-5065**



PSOB ADMINISTRATIVE INFORMATION

System Name: _____

BLDG # & Location: _____

MANUFACTURER: _____

SERIAL NUMBER: _____

ACTIVITY / COMMAND: _____

CODE: _____

TYPE COMMANDER: _____

ADDRESS: _____

The responsibility to act as the sponsor, as defined by NAVSEA 22-521-AA-MAN-010, is held by:

Command / Activity / Organization

PSOB Prepared By: _____

Name, Title and Organization

Signature

Date

Sponsor Approval: _____

Name, Title and Organization

Signature

Date

NAVFAC SCA Approval: _____

Name, Title and Organization

Signature

Date

REVISIONS

No.	Prepared By	Date	Approved By	Date	Approved by SCA	Date

REVISING THE PRE-SURVEY OUTLINE BOOKLET

- ◆ A new PSOB should be submitted when a new system certification, a re-certification, or a continuation of certification is requested.
- ◆ A PSOB should be revised when changes are made to the system during the tenure of certification. A change is an action effecting a certified system that requires an update to the information reflected in the PSOB. All changes will be annotated in the record of changes.

When the tenure of certification nears expiration, and a continuance of certification is requested, amending selected pages of the PSOB is normally required. These amendments will ensure that the PSOB reflects the latest information pertaining to the system. Submit PSOB, with the most current information, 90 days prior to on-site survey unless negotiated between the SCA and applicant. The pages and times normally requiring revision are as follows:

1. Administration Information - Complete Revision Block.
2. Record of Changes - List all modifications to system since last PSOB revision.
3. Page 9 & 10 - Inspections and Tests (Current Period):
 - Item VII
 - A. Provide Status.
 - B. Provide Date and Results.
 - C. Provide Date and Results.
 - D. Provide Date and Results.
 - E. Provide Latest Dates.
 - F. This item will require revision only if permanently installed hoses have been changed.
4. Pages 11, 12, & 13 - Operation and Maintenance Procedures:
 - Item VIII
 - A. If OPs / EPs have been changed since approval by NAVFAC SCA enter the Serial Number and date of letter authorizing change.
 - B. List any outstanding feedbacks remaining open.
 - C. Enter appropriate “quarter after overhaul number”.
 - D. Enter total number of RECs issued during the last on-site visit.
5. Pages 14 & 15 - On-Site Survey - These pages will be revised by the SCA during the On-Site Survey.
6. Page 16 - Operational Demonstration - This page would require revision only if the diving command wishes to increase the maximum certified depth limit of the system.

ABOUT THIS ELECTRONIC DOCUMENT

- ◆ The static portions of this document, i.e. page structure and text outlining requirements, are imbedded as headers and footers. The imbedded text appears to be in the background and looks gray.
- ◆ It is advisable to use this document while viewing it in the page layout display. Click View menu and select page layout.
- ◆ The user input portions of this document are formatted with text boxes. A text box resides around each area that requires user input. When the user needs to enter text, clicking the area will activate a text box.
- ◆ The last pages of this document are continuation sheets. If the user is unable to enter all of the requested information in the text box, the continuation sheets should be utilized. The Item number and letter shall be clearly identified on each continuation sheet AND the page number of the continuation sheet shall be referenced in the response column across from the requirement.

RECORD OF CHANGES

REV. NO.	DATE	PAGE NO.	ITEMS CHANGED (LTR)	ENTERED BY

ITEM I: EQUIPMENT IDENTIFICATON			
REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
<p>A. Identify the types of standard Navy surface supported diving equipment employed as listed in Diving Equipment Authorized for MILITARY Use NAVSEA00C AMU List – NAVSEA 00C Instruction 10560.2D or class certified.</p> <p>B. Identify any types of surface supported diving equipment used that are not listed in NAVSEA 00C AMU List or class certified.</p> <p>NOTE: Authorization to use non-approved diving equipment must be obtained by CNO waiver. See OPNAVINST 3150.27 for additional information.</p>			<p>A.</p> <p>B.</p>

For SCA use only: Date and Initial

* Use Continuation Sheets as necessary

ITEM II: OPERATING PARAMETERS			
REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
<p>A. Describe the most demanding diving operations contemplated for each type of equipment used. Include number of divers to be supported concurrently with each type (include standby divers), maximum depth of dives, and maximum bottom time requirements.</p> <p>B. Provide air/gas required and available for each equipment listed, including air/gas for decompression. Provide pressure requirements and actual manifold pressure available for each equipment listed. Provide calculations for both primary and secondary systems.</p> <p>NOTE: Include here a summary only of air/gas required and available. Supporting calculations should be provided in Appendix A. Air/gas available must be equal to or greater than air/gas required for both quantity (volume) and pressure.</p>			<p>A.</p> <p>B.</p>

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* Use Continuation Sheets as necessary

ITEM III: SSDS AIR SUPPLY SYSTEM			
REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
A. Provide drawing number(s) of schematic diagram of systems that furnish air to the divers, showing all compressed air sources, controls, and processing equipment. Indicate operating parameters such as pressure and volume for appropriate components. Include date drawing was validated and list NAVFAC approval information.			A.
B. Provide drawing number(s) of detailed plans of air piping covered in schematic diagram.			B.
C. Provide air compressor identification and characteristics.			C.
D. Provide compressed air processing equipment identification and characteristics. (Filters, separators, dryers, regulator, CO monitor make and model numbers, etc.)			D.

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* Use Continuation Sheets as necessary

ITEM III: SSDS AIR SUPPLY SYSTEM (Continued)

REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
E. Provide air storage vessel (flasks and volume tank) identification and characteristics (ASME, MILSPEC, DOT). Include serial number, floodable volume, MAWP etc.			E.
F. Identify diver's primary air supply and describe procedures for shifting to secondary air supply.			F.
G. Identify demands placed on compressed air systems other than supplying divers. Will this demand be used during diving operations? If so, show that this demand will not degrade system performance or cleanliness.			G.

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* Use Continuation Sheets as necessary

ITEM IV: SSDS MIXED GAS/OXYGEN SUPPLY SYSTEM			
REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
A. Provide drawing numbers of schematic diagram of system(s) that furnish divers' mixed gas/oxygen, showing all storage flasks, controls, and processing equipment. List NAVFAC approval info.			A.
B. Provide drawing numbers of detailed plans of the mixed gas/oxygen system covered in the schematic diagram.			B.
C. Provide mixed gas/oxygen transfer pump identification(s) and characteristics.			C.
D. Provide mixed gas/oxygen processing equipment identification and characteristics (filters, gas mixing console, etc.)			D.
E. Identify divers' normal mixed gas/oxygen supply and describe procedures for supplying "emergency air" to divers.			E.

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ITEM IV: SSDS MIXED GAS/OXYGEN SUPPLY SYSTEM (Continued)

REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
F. Identify demands placed on mixed gas/oxygen systems other than supplying divers.			F.
G. Provide mixed gas/oxygen flask identification by serial number, size, pressure, and MIL-SPEC (MIL-F-22606, DOT, etc.), and date of last Recertification test. Include serial number, bank/rack/pressure, spec, hydro./UT date, due date, system.			G.

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ITEM V: ELECTRICAL SYSTEM SUPPORTING DIVING OPERATIONS

REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
<p>A. Provide drawing number of schematic diagram of electrical circuits that support diver and diver handling system communications, life support monitoring systems.</p> <p>B. Describe all lighting arrangements for night diving operations (include underwater and deck lighting).</p>			<p>A.</p> <p>B.</p>

For SCA use only: Date and Initial
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ITEM VI: DIVER HANDLING SYSTEM			
REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
A. Describe diver handling system.			A.
B. Provide equipment identification and characteristics (include type/size of lifting cables).			B.
C. Provide working loads.			C.
D. Identify emergency diver handling modes.			D.

For SCA use only: Date and Initial

* Use Continuation Sheets as necessary

ITEM VII: INSPECTIONS AND TESTS (Current Period)			
REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
A. Provide status report of known material deficiencies or departures for diver equipment and support systems.			A.
B. Report date and results of last handling system load and brake inspection.			B.
C. Report date and results of last pressure/leak integrity test of air, mixed gas, and oxygen piping systems.			C.
D. Provide date and results of latest air purity and oxygen/mixed gas purity test.			D.
E. Provide criteria for determining necessity for cleaning air, mixed gas, and oxygen systems and procedures for such cleaning.			E.
F. Report the manufacturer, manufacturer's part number, working pressure, test pressure, and burst pressure data for all flexible hoses permanently installed in the system. Include interconnecting hoses used as flex pipe (permanent installed flex hose – REC required).			F.

For SCA use only: Date and Initial

* Use Continuation Sheets as necessary

ITEM VII: INSPECTIONS AND TESTS (Current Period) (Continued)

REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
<p>G. For initial construction systems or redesigned systems being re-certified upon completion of major overhaul:</p> <p>1. Provide results of operational flow tests conducted in accordance with NAVFAC approved test procedures.</p> <p>2. Provide results of operational pressure tests conducted in accordance with NAVFAC approved test procedures.</p> <p>H. Provide date and results of last gas storage vessel inspection and indicate criteria used (e.g. NAVFAC TM-CHENG/05-010-SCA or applicable DOT regulations).</p>			<p>G.</p> <p>1.</p> <p>2.</p> <p>H.</p>

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* Use Continuation Sheets as necessary

ITEM VII: INSPECTIONS AND TESTS (Current Period) (Continued)			
REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
<p>I. Provide for all diving hoses:</p> <ol style="list-style-type: none"> 1. Military specification or manufacturer and manufacturer's hose I.D. number 2. Date of manufacture 3. Length in feet 4. Internal diameter 5. Last hydrostatic test date 6. Hydrostatic test pressure 7. Hydrostatic burst test—date and pressure 8. Results of applicable visual inspections and coupling pull tests conducted. <p>NOTE: If this information is kept in a command hose log, simply note "hose data maintained in command hose log and will be available for review by SCA during onsite survey"—otherwise, provide the information for each hose in the PSOB.</p> <p>J. Indicate if support systems contain silicone aluminum bronze (SAB) nuts and if so, provide date of last system wide inspection and any findings. DMS:R 171326Z AUG 04 COMNAVFACENGCOM WASHINGTON DC DIVING ADVISORY 04-08: INSPECT ASHORE HYPERBARIC SYSTEMS FOR PRESENCE OF SILICON ALUM BRONZE UNION NUTS:</p>			<p>I.</p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5. 6. 7. 8. <p>J.</p>

For SCA use only: Date and Initial
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ITEM VIII: OPERATIONS AND MAINTENANCE INSTRUCTIONS			
REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
<p>A. Provide operating and emergency procedures for the overall diving system and indicate that they have been:</p> <ol style="list-style-type: none"> 1. Validated by the diving staff. 2. Approved by NAVFAC. <p>B. Provide PMS instructions for the overall diving system. Ensure MIPs and MRCs are provided for:</p> <ol style="list-style-type: none"> 1. Compressors 2. Flasks 3. Volume Tanks 4. Filters 5. Moisture Separators 6. Diving equipment outfits 7. Diver Communications 8. Regulating/Reducing Valves 9. System Gauges 10. System Valves 11. Relief Valves 12. Diver's breathing gas piping 13. System Flexible Hoses 14. Diver stage 15. Diver consoles 16. Diver hoses 17. Divers' hot water boiler 18. Diving system electrical interface 19. Strainers 20. Underwater Lights 			<p>A.</p> <ol style="list-style-type: none"> 1. Date Validated: <p>Validated By:</p> <ol style="list-style-type: none"> 2. NAVFAC Approval Letter Serial Number: <p>NAVFAC Approval Letter Date:</p> <p>B. <u>List Applicable Maintenance Index Page Numbers</u></p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.

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ITEM VIII: OPERATION AND MAINTNENACE PROCEDURES (Continued)

REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
<p>C. List all PMS related deficiencies and all PMS feed backs submitted since last certification. (Include all MRCs not performed as required or as scheduled.)</p>			<p>C.</p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5. 6. 7. 8. 9.
<p>D. List by "Quarter after overhaul number" the PMS quarterly Schedule in effect at the time of the on-site survey. For systems or equipment not covered by PMS list applicable maintenance instruction and submit the maintenance program to SCA for review.</p>			<p>D.</p>
<p>E. List by short title all Reentry Control (REC) procedures issued since last certification. Provide local REC instructions and any applicable procedures available for review by SCA during on-site survey.</p>			<p>E.</p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5. 6. 7. 8. 9.

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ITEM VIII: OPERATIONS AND MAINTENANCE PROCEDURES (Continued)

REQUIREMENT	STATUS		RESPONSE *
	RCVD #	APVD #	
E. Continued			E. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25.

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ITEM IX: ON-SITE SURVEY (Note: Request Survey via Sponsor to NAVFAC)			
REQUIREMENT	STATUS		NOTES
	INSP*	APVD #	
<p>Note: This item is performed by the System Certification Authority.</p> <p>A. Inspection of material condition of diver equipment and support systems.</p> <p>B. Verification of accessibility to vital equipment: 1. Vital valves, components, and gages 2. Communications equipment 3. Electrical power</p> <p>C. Verification of conformance to "as built" drawings.</p> <p>D. Verification of material identification and control (i.e., records versus hardware).</p> <p>E. Review of reentry control records.</p> <p>F. Review of fabrication, construction, and assembly procedures/records.</p> <p>G. For initial construction or refurbished systems review of test plans/procedures/records for fabrication, construction, and assembly.</p>			<p>A.</p> <p>B.</p> <p>C.</p> <p>D.</p> <p>E.</p> <p>F.</p> <p>G.</p>

* For SCA use only: Date Inspected and Initial

For SCA use only: Date Approved and Initial

ITEM IX: ON-SITE SURVEY (Note: Request Survey via Sponsor to NAVFAC) (Continued)

REQUIREMENT	STATUS		NOTES
	INSP*	APVD #	
H. Review for proof and performance test procedures/records (i.e., leak tests, hydrostatic tests, operational tests, etc.).			H.
I. Review of system cleaning procedures and records.			I.
J. Review of current system air sampling results.			J.

* For SCA use only: Date Inspected and Initial

For SCA use only: Date Approved and Initial

ITEM X: OPERATIONAL DEMONSTRATION DIVE (For SCA Use Only)			
REQUIREMENT	STATUS		NOTES
	INSP*	APVD #	
A. Name of SCA or designated representative.			A.
B. Date of demonstration dives.			B.
C. Type of diving equipment used.			C.
D. Names of diving officer, diving supervisor and divers, including level of qualification.			D.
E. Maximum depth achieved 1. Air dive 2. Mixed Gas dive (if applicable)			E. 1. 2. Mixed Gas Type _____ Max Depth _____
F. How was the depth verified?			F.
G. Total bottom time			G.
H. Manifold pressure during dive 1. Maximum 2. Minimum			H. 1. 2.
I. General comments			I.

* For SCA use only: Date Inspected and Initial

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This _____ system has been found to be operationally functional and postdive inspection verifies that no condition exists or has developed as a result of this operational demonstration which could be dangerous or impair the satisfactory operation of this system.

Signature and Date

APPENDIX A: SUPPORTING AIR / OXYGEN CALCULATIONS

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ITEM __: CONTINUATION SHEET

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