

CHAPTER 5

Dive Program Administration

5-1 INTRODUCTION

5-1.1 Purpose. The purpose of this chapter is to promulgate general policy for maintaining and retaining command smooth diving logs, personal diving logs, personal diving records, diving mishap reports, and failure analysis reports.

5-1.2 Scope. The record keeping and reporting instructions outlined in this chapter pertain to command smooth diving logs, individual diving logs, personal diving records, diving mishap reports, and failure analysis reports.

5-2 OBJECTIVES OF THE RECORD KEEPING AND REPORTING SYSTEM

There are five objectives in the diving record keeping and reporting system.

1. Establish a comprehensive operational record for each diving command. The Command Smooth Diving Log is a standardized operational record prepared in accordance with established military practice. This record establishes the diving history for each diving command and constitutes the basic operational record requirement under normal, uneventful circumstances.
2. Gather data for safety and trend analysis. Information about current diving operations conducted in the Navy, the incidence of Hyperbaric Treatments, and diving mishaps is provided to the Naval Safety Center through the Diving Reporting System and by message as required in OPNAVINST 5100.19C Section A-6. This information enables the Safety Center to identify safety-related problems associated with operating procedures and training.
3. Provide data for a personal record. OPNAVINST 3150.27 (series) requires each diver to maintain a personal diving log/history.
4. Report information about diving mishaps and casualties in accordance with the requirements of OPNAVINST 5100.19C Section A-6. Complete and accurate information enables the command to take appropriate action and prevent reoccurrence.
5. Report information about equipment deficiencies to the responsible technical agencies through the Failure Analysis Report (FAR) system.

5-3 RECORD KEEPING AND REPORTING DOCUMENTS

The documents established to meet the objectives of the record keeping and reporting system are:

- Command Smooth Diving Log (Figure 5-1a and Figure 5-1b)
- Dive Reporting System (DRS)
- Diver's Personal Dive Record (diskette or hard copy)
- Diving Mishap/Hyperbaric Treatment/Death Report, Symbol OPNAV 5102/5
- Diving Mishaps reported in accordance with OPNAVINST 5100.19 Series Appendix A-6
- Equipment Accident/Incident Information Sheet (Figure 5-2a and Figure 5-2b)
- Diving Life Support Equipment Failure Analysis Report (FAR) for MK 20 AGA, MK 21 surface-supplied diving system, and open-circuit scuba (NAVSEA Form 10560/4) (Figure 5-3)
- Failure Analysis Report for MK 16 UBA (NAVSEA Form 10560/1) (Figure 5-4) or Failure Analysis or Inadequacy Report for MK 25 (LAR V).

5-4 COMMAND SMOOTH DIVING LOG

The Command Smooth Diving Log is a chronological record of all dives conducted at that facility or command. It contains information on dives by personnel attached to the reporting command and dives by personnel temporarily attached to the command, such as personnel on TAD/TDY.

Dives conducted while temporarily assigned to another diving command shall be recorded in the host command's Smooth Diving Log. Additionally, record the dive in the Dive Reporting System (DRS) of the host command.

The OPNAVINST 3150.27 (series) requires commands to retain the official diving log for 3 years. The minimum data items in the Command Smooth Diving Log include:

- Date of dive
- Purpose of the dive
- Identification of divers and standby divers
- Times left and reached surface, bottom time
- Depth
- Decompression time
- Air and water temperature
- Signatures of Diving Supervisor or Diving Officer

5-5 RECOMPRESSION CHAMBER LOG

The Recompression Chamber Log is the official chronological record of procedures and events for an entire dive. It is mandatory that all U.S. Navy diving activities maintain a Recompression Chamber Log. The shall shall be legibly maintained in a narrative style. The Diving Officer, Master Diver, and Diving Supervisor shall review and sign the log daily or at the end of their watches. The

U.S. NAVY COMMAND SMOOTH DIVING LOG



Start Date _____

End Date _____

This log must be maintained in accordance with the *U.S. Navy Diving Manual*, Volume 1, (NAVSEA).

Figure 5-1a. U.S. Navy Diving Log (sheet 1 of 2).

COMMAND SMOOTH DIVING LOG								
Date		Geographic Location				Air Temp (°F)		
Equipment Used			Dress			Wave Height (ft)		
Breathing Medium			Platform			Water Temp (°F)		
Breathing Medium Source						Current (kts.)		
Depth of Dive (fsw)			Bottom Type			Bottom Vis (ft)		
Diver	LS	RB	LB	RS	TBT	TDT	TTD	Sched Used
Purpose of Dive, Tools Used, etc.						Repet Group		
						Surface Interval		
						New Repet Group		
						RNT		
Dive Comments								
Signature (Diving Supervisor)								
Signature (Diving Officer/Master Diver)								

Figure 5-1b. U.S. Navy Diving Log (sheet 2 of 2).

EQUIPMENT ACCIDENT/INCIDENT INFORMATION SHEET

GENERAL

Unit point of contact _____ Position _____

Command UIC _____ Date _____ Time of occurrence _____

EQUIPMENT (indicate type of all equipment worn/used) Contributing factor _____

UBA: SCUBA _____ MK21 _____ MK20 _____

MK 16 _____ LAR V _____

Other (specify) _____

Suit type: Dry _____ Wet _____ Hot water _____

Other dress: Gloves _____ Booties _____ Fins _____

Mask _____ Snorkel _____ Knife _____

Weight belt (indicate weight) _____

Depth gauge _____ Last calibration date _____

Buoyancy compensator/life preserver: _____

Inflated at scene: _____ Partially _____ Operational _____

Inflation mode: Oral _____ CO₂ _____ Independent supply _____

Cylinders: Number worn _____ Size (cu ft) _____ Valve type _____

Gas mix _____ Aluminum _____ Steel _____

Surface pressure: Before _____ After _____

Regulator: _____ Last PMS date _____ Functional at scene? _____

Submersible pressure gauge: _____ Functional at scene? _____

CONDITIONS Location _____

Depth _____ fsw Visibility _____ ft. Current _____ Knots sea state _____ (0-9)

Air temp _____ °F Water temp: at surface _____ °F at depth _____ °F

Bottom type (mud, sand, coral, etc.) _____

DIVE TIME

Bottom _____ Decompression _____ Total dive time _____

Was equipment operating and maintenance procedure a contributing factor?

(Explain): _____

Is there contributory error in O&M Manual or 3M System?

(Explain): _____

OTHER CONTRIBUTING FACTORS _____

Figure 5-2a. Equipment Accident/Incident Information Sheet.

EQUIPMENT ACCIDENT/INCIDENT INFORMATION SHEET

Pertaining to UBA involved, fill in blanks with data required by items 1 through 9.

MK 21 ↓	MK 20 MOD 0 ↓	SCUBA ↓	MK 16 ↓	MK 25 ↓	OTHER ↓
1. Number of turns to secure topside gas umbilical supply:					
		N/A	N/A	N/A	
2. Number of turns to secure valve on emergency gas supply (EGS):					
		Reserve Up/Down	N/A	N/A	
3. Number of turns to secure gas supply at mask/helmet:					
		N/A	Mouthpiece Valve: Surface _____ Dive _____	Mouthpiece Valve: Surface _____ Dive _____	
4. Number of turns to secure gas bottle:					
N/A	N/A	Air Bottle _____	O ₂ _____ Diluent _____	O ₂ Bottle _____	
5. Bottle Pressure:					
EGS ____ psig	EGS ____ psig	____ psig	O ₂ ____ psig Diluent ____ psig	____ psig	
6. Gas Mixture:					
Primary % _____ EGS % _____		N/A	Diluent N ₂ O ₂ _____ HeO ₂ _____	N/A	
7. Data/color of electronic display:					
N/A	N/A	N/A	Primary _____ Secondary _____ _____ _____	N/A	
8. Battery voltage level:					
N/A	N/A	N/A	Primary _____ Secondary _____	N/A	
9. Condition of canister:					
N/A	N/A	N/A			

Note: If UBA involved is not listed above, provide information on separate sheet.

Figure 5-2b. Equipment Accident/Incident Information Sheet.

FAILURE ANALYSIS REPORT			
(See SS600-AH-MMA-010 for Information Concerning Use of This Form)			
Disposition: Maintain the Original of This Form in Auditable Fashion With the UBA for the Entire Period Between NAVSEA Certification Surveys. Forward Copies 1-3 (Self-Mailers) to the Addressee as Shown on the Bottom Right-Hand Corner and Back of the Forms.			
1. NAME OF REPORTING ACTIVITY	UNIT IDENTIFICATION CODE	2. REPORT CATEGORY (Check Applicable Block) <input type="checkbox"/> SAFETY <input type="checkbox"/> ROUTINE	3. REPORT SERIAL NUMBER
	6. UBA SERIAL NUMBER	7. POINT OF CONTACT FOR ACTIVITY	4. DATE DISCOVERED
5. DEFICIENCY CATEGORY (Check One) <input type="checkbox"/> EQUIPMENT <input type="checkbox"/> PUBLICATION	8. UBA SERIAL NUMBER	AUTOVON NO. ()	COMMERCIAL NO. ()
8. REASON FOR REPORT (Check applicable Block)			
<input type="checkbox"/> FAILURE / FAILURE SUSPECTED OR MALFUNCTION <input type="checkbox"/> DAMAGE DUE TO IMPROPER MAINTENANCE / OPERATION / TEST <input type="checkbox"/> DAMAGE ON DEFECTIVE ON RECEIPT <input type="checkbox"/> OTHER (Explain in Item 15) <input type="checkbox"/> WHEN DISCOVERED (Check Applicable Block) <input type="checkbox"/> PMS <input type="checkbox"/> DURING OPERATIONS <input type="checkbox"/> OTHER (Explain Here or in Item 15) <input type="checkbox"/> PREDIVE <input type="checkbox"/> POSTDIVE <input type="checkbox"/> OTHER (Explain Here or in Item 15)			
10. SYSTEM, SUBSYSTEM, OR COMPONENT(S) AFFECTED			
11. REENTRY CONTROL FORM NO. (Attach Copy)			
12. DESCRIPTION OF FAILURE / TROUBLE / DISCREPANCY			
13. CAUSE OF FAILURE / TROUBLE / DISCREPANCY, IF KNOWN			
14. CORRECTIVE ACTION TAKEN			
15. COMMENTS OR RECOMMENDATIONS FOR PREVENTION OR ELIMINATION OF PROBLEMS			
<hr/> <hr/> <hr/> <hr/>			
16. SIGNATURE OF PREPARER	RANK / RATE	DATE SIGNED	17. SIGNATURE, APPROVING OFFICIAL
			RANK / RATE
			DATE APPROVED

NAVSEA 10560/1 (12-84)

Figure 5-4. Failure Analysis Report. (NAVSEA Form 10560/1).

Recompression Chamber Log must be retained for 3 years after the date of the dive. The minimum data items in the Recompression Chamber Log include:

- Date of dive
- Purpose of the dive
- Identification of diver(s)/patients(s)
- Identification of tender(s)
- Time left surface
- Time reached treatment depth
- Time left treatment depth
- Time reached stop
- Time left stop
- Depth/time of relief
- Change in symptoms
- Recompression chamber air temperature (if available)
- Oxygen and Carbon Dioxide % (if available)
- Medicine given
- Fluid administered
- Fluid void
- Signatures of Diving Officer, Master Diver, or Diving Supervisor

5-6 DIVER'S PERSONAL DIVE LOG

Although specific Navy Divers Personal Logbooks are no longer required, each Navy trained diver is still required to maintain a record of his dives in accordance with the OPNAVINST 3150.27 series. The best way for each diver to accomplish this is to keep a copy of each Diving Log Form in a binder or folder. The Diving Log Form was formerly called DD Form 2544, 3150, or 9940, but is now generated by the Diver Reporting System (DRS) software. The record may also be kept on a personal floppy disk. These forms, when signed by the Diving Supervisor and Diving Officer, are an acceptable record of dives that may be required to justify special payments made to you as a diver and may help substantiate claims made for diving-related illness or injury. If an individual desires a hard copy of the dives, the diver's command can generate a report using the DRS or by submitting a written request to the Naval Safety Center.

5-7 DIVING MISHAP/CASUALTY REPORTING

Specific instructions for diving mishap, casualty, and hyperbaric treatment are provided in Section A-6, OPNAVINST 5100.19 Series. The Judge Advocate General (JAG) Manual provides instructions for investigation and reporting procedures required in instances when the mishap may have occurred as a result of procedural or personnel error. Diving equipment status reporting instructions related to diving accidents/incidents are specified in this chapter.

5-8 EQUIPMENT FAILURE OR DEFICIENCY REPORTING

The Failure Analysis Report (FAR) system provides the means for reporting, tracking and resolving material failures or deficiencies in diving life-support equipment (DLSE). The FAR was developed to provide a rapid response to DLSE failures or deficiencies. It is sent directly to the configuration manager, engineers, and technicians who are qualified to resolve the deficiency. FAR Form 10560/4 (stock number 0116-LF-105-6020) covers all DLSE not already addressed by other FARs or reporting systems. For example, the MK 21 MOD 1, MK 20 MOD 0 mask, and all open-circuit scuba are reportable on this FAR form; the UBAs MK 16 and MK 25 are reportable on a FAR or a Failure Analysis or Inadequacy Report (FAIR) in accordance with their respective technical manuals. When an equipment failure or deficiency is discovered, the Diving Supervisor or other responsible person shall ensure that the FAR is properly prepared and distributed. Refer to paragraph 5-10 for additional reporting requirements for an equipment failure suspected as the cause of a diving accident.

The one-page FAR form (Figure 5-3) consists of an original and three copies. The completed original is maintained in the Command FAR Log; the copies are mailed to CSS (Code 2510), NAVSEA (Code 00C3) and NEDU (Code 03).

5-9 U.S. NAVY DIVE REPORTING SYSTEM (DRS)

The Dive Reporting System (DRS) is a computer-based method of recording and reporting dives required by the OPNAVINST 3150.27 (series), and replaces reporting on DD Form 2544. The computer software provides all diving commands with a computerized record of dives.

The DRS makes it easy for commands to submit diving data to the Naval Safety Center. The computer software allows users to enter dive data, transfer data to the Naval Safety Center, and to generate individual diver and command reports. The DRS was designed for all branches of the U.S. Armed Services and can be obtained through:

Commander, Naval Safety Center
Attention: Code 37
375 A Street
Norfolk, VA 23511-4399

5-10 ACCIDENT/INCIDENT EQUIPMENT INVESTIGATION REQUIREMENTS

An *accident* is an unexpected event that culminates in loss of or serious damage to equipment or injury to personnel. An *incident* is an unexpected event that degrades safety and increases the probability of an accident.

The number of diving accidents/incidents involving U.S. Navy divers is small when compared to the total number of dives conducted each year. The mishaps

that do occur, however, must receive a thorough review to identify the cause and determine corrective measures to prevent further diving mishaps.

This section expands on the OPNAVINST 5100.19 (series) that require expeditious reporting and investigation of diving related mishaps. The accident/incident equipment status reporting procedures in this chapter apply, in general, to all diving mishaps when malfunction or inadequate equipment performance, or unsound equipment operating and maintenance procedures are a factor.

In many instances a Diving Life Support Equipment Failure Analysis Report (FAR) may also be required. The primary purpose of this requirement is to identify any material deficiency that may have contributed to the mishap. Any suspected malfunction or deficiency of life support equipment will be thoroughly investigated by controlled testing at the Navy Experimental Diving Unit (NEDU). NEDU has the capability to perform engineering investigations and full unmanned testing of all Navy diving equipment under all types of pressure and environmental conditions. Depth, water turbidity, and temperature can be duplicated for all conceivable U.S. Navy dive scenarios.

Contact NAVSEA/00C3 to assist diving units with investigations and data collection following a diving mishap. 00C3 will assign a representative to inspect the initial condition of equipment and to pick up or ship all pertinent records and equipment to NEDU for full unmanned testing. Upon receiving the defective equipment, NEDU will conduct unmanned tests as rapidly as possible and will then return the equipment to the appropriate activity.

NOTE **Do not tamper with equipment without first contacting NAVSEA/00C3 for guidance.**

5-11 REPORTING CRITERIA

The diving and diving related accident/incident equipment status requirements set forth in this chapter are mandatory for all U.S. Navy diving units in each of the following circumstances:

- In all cases when an accident/incident results in a fatality or serious injury.
- When an accident/incident occurs and a malfunction or inadequate performance of the equipment may have contributed to the accident/incident.

5-12 ACTIONS REQUIRED

U.S. Navy diving units shall perform the following procedure when a diving accident/incident or related mishap meets the criteria stated in paragraph 5-11.

1. Immediately secure and safeguard from tampering all diver-worn and ancillary/support equipment that may have contributed to the mishap. This equipment should also include, but is not limited to, the compressor, regulator,

depth gauge, submersible pressure gauge, diver dress, buoyancy compensator/ life preserver, weight belt, and gas supply (scuba, emergency gas supply, etc.).

2. Expeditiously report circumstances of the accident/incident by message (see OPNAVINST 5100.19 (Series) for format requirements) to:
 - NAVSAFECEN NORFOLK VA//JJJ// with information copies to CNO WASHINGTON DC//N873// COMNAVSEASYS COM WASHINGTON DC//00C// and NAVXDIVINGU PANAMA CITY FL//JJJ//.
 - If the accident/incident is MK 16 related, also send information copies to PEO MINEWAR WASHINGTON DC//PMS-EOD// and NAVEODTECHDIV INDIAN HEAD MD//70//.
 - If the accident/incident is MK 25 (LAR V) related, also send information copies to COMNAVSEASYS COM WASHINGTON DC//PEO EXW PMS 325//.
 - If the accident/incident occurs at a shore based facility (NAVFAC), also send information copies to NFESC EAST COAST DET WASHINGTON DC//00CE//.
3. Expeditiously prepare a **separate, written report** of the accident/incident. The report shall include:
 - A completed Equipment Accident/Incident Information Sheet (Figure 5-2a)
 - A completed Accident/Incident Equipment Status Data Sheet (Figure 5-2b)
 - A sequential narrative of the mishap including relevant details that might not be apparent in the data sheets
4. The data sheets and the written narrative shall be mailed by traceable registered mail to:

Commanding Officer
Navy Experimental Diving Unit
321 Bullfinch Road
Panama City, Florida 32407-7015

Attn: Code 03, Test & Evaluation
5. Package a certified copy of all pertinent 3M records and deliver to NAVSEA/00C3 on-scene representative.

- NOTE** Call NAVSEA/NEDU/NAVFAC with details of the mishap or incident whenever possible. Personal contact may prevent loss of evidence vital to the evaluation of the equipment.
- 5-12.1** **Technical Manual Deficiency/Evaluation Report.** If the accident/incident is believed to be solely attributable to unsound operating and maintenance procedures, including publications, submit a NAVSEA (user) Technical Manual Deficiency/Evaluation Report (TMDER) and request guidance from NEDU to ascertain if shipment of all or part of the equipment is necessary.
- 5-12.2** **Shipment of Equipment.** To expedite delivery, scuba, MK 16 and EGS bottles shall be shipped separately in accordance with current DOT directives and command procedures for shipment of compressed gas cylinders. Cylinders shall be forwarded in their exact condition of recovery (e.g., empty, partially filled, fully charged). If the equipment that is believed to be contributory to the accident/incident is too large to ship economically, contact NEDU to determine alternate procedures.

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