



DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND
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IN REPLY TO

NAVSEAINST 5450.27G

Ser 00C3/3095

29 Mar 05

NAVSEA INSTRUCTION 5450.27G

From: Commander, Naval Sea Systems Command

Subj: MISSION, FUNCTIONS AND TASKS OF NAVY EXPERIMENTAL DIVING
UNIT

Ref: (a) NAVSEAINST 5450.28 Series
(b) Support Agreement between NEDU and NSA Panama
City(#N61008-04-035-001)
(c) SECNAVINST 3900.39 Series, Protection of Human
Subjects
(d) OPNAVINST 3150.27 Series, Navy Diving Program
(e) NAVSEA 00C ltr 10560 Ser 00C32/3062 of 26 Jul 2004

Encl: (1) Functions and Tasks of the Navy Experimental Diving
Unit

1. Purpose. To revise the mission, function, and tasks of the Navy Experimental Diving Unit (NEDU), Panama City, Florida. This has been prepared in accordance with the guidance contained in reference (a).

2. Cancellation. NAVSEAINST 5450.27F of 18 Jan 2000

3. Mission. Navy Experimental Diving Unit's mission is to test and evaluate diving, hyperbaric, life support and underwater ship husbandry systems, and procedures and conduct undersea biomedical research and development. Specifically, NEDU ensures that DoD diving equipment and procedures meet operational requirements and established safety standards.

4. Status and Command Relationships. NEDU is a shore activity in an active operational status under a Commanding Officer. NEDU is under the military command and management control of Commander, Naval Sea Systems Command (COMNAVSEASYS COM) as exercised through the Director of Ocean Engineering, Supervisor of Salvage and Diving (SEA 00C).

a. Chain of Command:

Echelon:

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- (1) Chief of Naval Operations
- (2) Commander, Naval Sea Systems Command (SEA 00C)
- (3) Commanding Officer, Naval Experimental Diving Unit

b. Area Coordination: Commander, Naval Region Southeast

c. Local Area Coordination: Officer in Charge, Naval Support Activity, Panama City, Florida.

5. Tenant Relationship. NEDU is a tenant of the Naval Support Activity, Panama City, Florida, and operates under the provisions of reference (b).

6. Functions and Tasks. The functions and tasks of NEDU are described in enclosure (1). These tasks and functions will be performed per references (c) and (d) principally with divers assigned to the unit. The Commanding Officer, NEDU, is ultimately responsible for protecting these divers from injury and for conducting operations in the safest possible manner.

To minimize the hazards of experimental diving, NEDU's Commanding Officer, will ensure that:

a. The diving procedures are conducted in the safest possible manner, consistent with the NEDU mission of Research, Development, Test, and Evaluation of experimental diving techniques. All NEDU test plans involving human subjects or participants will be prepared by the Projects Officer, Task Leader, and Principal Investigator and reviewed by the Task Review Committee. Upon completion, all test plans will be submitted to the Commanding Officer for review and final approval. The Commanding Officer will assign a Human Use Review Committee for all protocols requiring human subjects as defined in reference (c). The tests will be conducted using the best practices for diving and data gathering. During the course of an experimental dive or test, the diver subject shall be at liberty to revoke or withhold consent and to withdraw from the test without prejudice.

b. Participation in experimental diving procedures is voluntary, and acceptance of Permanent Change of Station (PCS) orders to NEDU indicates that divers are volunteers and are participating in experimental diving duty. At times when large numbers of dive subjects are needed or highly specialized

equipment is being evaluated, the Commanding Officer may elect to solicit volunteer dive subjects from other commands on a temporary additional duty basis.

c. In either situation, a voluntary consent form, which is an enclosure of the test plan, will be completed by all divers at the end of the test training period but prior to beginning the test dive. This form will attest to the diver's complete understanding of the test plan, the significance of the data to be obtained from the test, and all hazards of the test. The consent form will also attest to the achievement of a satisfactory training level for the particular experimental dive in which the subject will be participating. By this method, the divers are encouraged to participate in the planning, evolution, and critique of all procedures so that these dives may be conducted in the safest possible manner.

d. Navy diving related biomedical research, when performed at NEDU facilities in cooperation with another organization, will be conducted in accordance with both activities' instructions and procedures for protection of human subjects. However, one activity may grant permission for the research to be conducted under the auspices of the other activity's procedures; this permission must be obtained in writing and concurred with by both organizations.

7. Action. In accomplishing the assigned mission, the Commanding Officer of NEDU will ensure performance of the functions and tasks listed in enclosure (1). Send recommended changes via the chain of command to Commander, Naval Sea Systems Command (SEA 00C).



A. W. LENGERICH
Vice Commander

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**FUNCTIONS AND TASKS OF THE
NAVY EXPERIMENTAL DIVING UNIT**

Functions and Tasks: The specific functions assigned to NEDU are as follows:

- a. Operate and maintain the Ocean Simulation Facility (OSF).
- b. Operate and maintain the Experimental Diving Facility (EDF).
- c. Operate and maintain an environmentally controlled diving test and evaluation tank.
- d. Test and evaluate diving and hyperbaric systems and components during development, prior to introduction for Fleet use and periodically thereafter, as needed, to include both manned and unmanned testing as appropriate.
- e. Conduct diving related biomedical research to include all areas of both DOD and U. S. Navy Diving Programs.
- f. Test and evaluate diving and hyperbaric procedures for possible consideration for inclusion in the U.S. Navy Diving Manual. Such test and evaluation procedures will address equipment, breathing media, operational limits, compression rates, decompression tables, thermal protection and similar life support considerations, both engineering and physiological.
- g. Establish and provide advice to COMNAVSEASYS COM on engineering, human factors and physiological standards for diving and hyperbaric systems.
- h. Maintain and operate a Class One Hundred Thousand clean room to support NEDU facilities, diving systems and RDT&E programs.
- i. Provide technical guidance, assistance and training to U.S. Navy activities on organizational level cleaning procedures for air and oxygen life support systems.
- j. Provide practical saturation diver training when specifically tasked.

Enclosure (1)

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k. Test and evaluate new and unapproved developmental and commercial equipment and consumables as authorized by reference (d). When tested equipment successfully meets evaluation criteria, make recommendations to COMNAVSEASYS COM to authorize it for Navy use by inclusion into reference (e). Maintain historical files of all equipment evaluations. The exemption granted by reference (d) to use non-certified and/or non-approved equipment applies only to the conduct of bona fide experimental or evaluation dives carried out under controlled conditions in support of COMNAVSEASYS COM tasking. All other diving shall use standard Navy equipment and adhere to all requirements of the U.S. Navy Diving Manual and other applicable instructions.

l. Act as a worldwide diving information center and an advisor in diving and hyperbaric treatment and serve as a qualified hyperbaric treatment facility for the U. S. Navy and other Government and civilian agencies.

m. Act as the technical evaluator for diving equipment involved in serious injury and/or fatal diving accidents for the U. S. Navy and other Government and civilian agencies.

n. Maintain a team of personnel qualified in the use of explosives in order to test and evaluate new demolition materials, procedures and new design tools involving underwater explosives useful in ship salvage. Provide on-scene assistance to Fleet units in executing underwater explosive salvage.

o. Provide consultation to and liaison with foreign military activities, including participation in Information Exchange Projects (IEP) and Foreign Military Sales (FMS) support through appropriate NAVSEA channels.

p. Provide technical guidance, consultation, and recommend changes to the U.S. Navy Diving Manual, the Diving and Manned Hyperbaric Systems Safety Certification Manual and other NAVSEA diving related technical publications.

q. Conduct technical evaluation and process diving related PMS Feedback reports forwarded for evaluation by Fleet Technical Support Center, Pacific (FTSCPAC).

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r. Provide support and technical guidance to Naval Undersea Museums in areas of diving equipment and related matters. Including assistance in acquiring, displaying and disseminating diving artifacts and information on matters of interest to the general public related to diving.

s. Provide support services and partnering with Naval Surface Warfare Center Panama City, and Naval Diving and Salvage Training Center.

t. Provide support services and partnering with Naval Submarine Medical Research Laboratory (NSMRL), Naval Medical Research Center and other Bureau of Medicine field activities.

u. Provide research and experience in hyperbaric medicine, diving medicine and physiology by uses of research clerkships to medical students, graduate students, and physicians in conjunction with their respective training programs.

v. Serve as technical authority for Failure Analysis Reports (FARs) program for designated Diving Life Support Equipment. Conduct investigation and trend analysis and provide recommendations to SEA 00C when necessary.

w. In support OF COMNAVSEASYSKOM's Underwater Ship Husbandry Program provide underwater maintenance on-site project management, system and equipment development and testing, and technical advice and consultation.

x. Maintain the U.S. Navy's Saturation Dive System and provide operational support as directed by SEA 00C.