

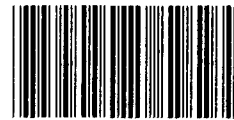
GAO

Report to the Honorable  
Toby Roth, House of Representatives

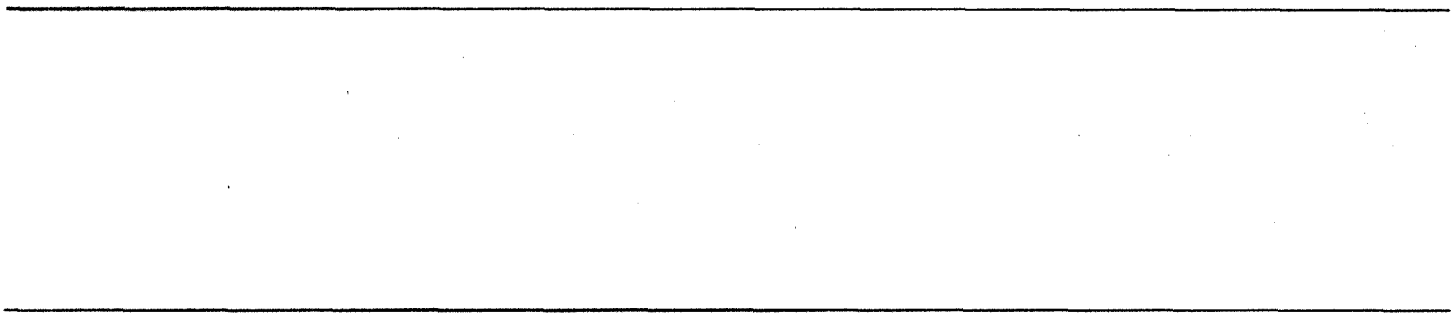
June 1991

# NAVY TRAINING SAFETY

## High-Risk Training Can Be Safer



144300





United States  
General Accounting Office  
Washington, D.C. 20548

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National Security and  
International Affairs Division

B-239352

June 26, 1991

The Honorable Toby Roth  
House of Representatives

Dear Mr. Roth:

In response to your request, we reviewed selected Navy high-risk training courses to assess the progress the Navy has made in improving training safety.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 15 days from its issue date. At that time, we will send copies to the Secretaries of Defense and the Navy. Copies will also be made available to other interested parties on request.

Please contact me at (202) 275-3990 if you or your staff have any questions concerning this report. Other major contributors to this report are listed in appendix VI.

Sincerely yours,

A handwritten signature in cursive script that reads "Paul L. Jones".

Paul L. Jones  
Director,  
Defense Force Management Issues

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# Executive Summary

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## Purpose

On March 2, 1988, a Navy airman recruit died while undergoing high-risk training at the Rescue Swimmer School in Pensacola, Florida. The recruit's death triggered a number of investigations and events that focused on improving safety in the Navy's high-risk training programs. In March 1989, GAO reported to the Wisconsin congressional delegation on the causes and circumstances surrounding the recruit's death.<sup>1</sup>

Congressman Roth requested that GAO follow up on its prior report to determine (1) if the safety deficiencies GAO had previously identified continue to exist in the Navy's high-risk courses and (2) whether high-risk Navy training is as safe as it can be.

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## Background

The Naval Education and Training Command, headed by the Chief of Naval Education and Training, is responsible for all shore-based training of Navy personnel. The Training Command is responsible for over 200 subordinate bases and, through 5 major functional commanders, trains and educates about 800,000 Navy personnel a year in over 3,200 courses. These courses include recruit training, initial skills and skills progression training, team training, some officer accession programs, and various other types of training and education.

About 130 courses in this overall training effort contain segments that have inherent risks, such as water survival/diving, explosive ordnance disposal, special warfare operations, and flight training that expose instructors or students to stressful and sometimes dangerous situations in order to meet the training objectives. These courses have been classified as high-risk training.

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## Results in Brief

In response to its own internal reviews as well as GAO's prior report, the Navy took some initial positive steps to improve internal controls and management oversight of its high-risk training programs. For example, a safety officer was assigned to each high-risk course and the Training Command established the Training Performance Evaluation Board to systematically monitor and evaluate all high-risk training. However, significant weaknesses continue to exist in internal controls and management oversight in the high-risk courses GAO reviewed.

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<sup>1</sup>Navy Training: Safety Has Been Improved, but More Still Needs to Be Done (GAO/NSIAD -89-119, Mar. 7, 1989).

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In some cases, newly established Training Command procedures did not adequately address weak internal controls and management oversight. In others, training activities were not complying with established procedures. Specifically, internal controls are weak in student and instructor screening, administrative processing of students with medical problems, instructor evaluations, and the critique system available to students. Command oversight is deficient in mishap reporting and analysis. Also, current systems do not prevent unapproved and unsafe training procedures from taking place. A recent Navy decision to shorten the length of the course at the two surface rescue swimmer schools has resulted in increased attrition because of more demanding schedules. This decision may compromise the safety of students as well as members of the fleet.

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## Principal Findings

### Weak Internal Controls

Neither students nor instructors are psychologically screened to determine their suitability for high-risk training. Navy medical authorities and training officials believe psychological screening is appropriate, would make high-risk training safer, and can be accomplished with little difficulty.

Some candidates that had not volunteered and others who were physically unfit were assigned to high-risk training. In addition, some candidates who did not have the required physical examination were sent to the schools.

Administrative processing controls are not sufficient to keep medically unqualified personnel out of high-risk training. In most cases, training commands are not following guidance that requires medical personnel to directly notify command personnel of changes in a student's medical status. Some training activities are not evaluating instructors as required. Evaluations on nonclassroom training are not being done in proportion to the amount of time spent in this aspect of training.

The quality and content of student critique forms varies considerably at different training activities. Generally, the forms do not meet existing criteria and do not provide the opportunity to obtain unbiased, specific, information.

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## Inadequate Command Oversight

Mishap reporting was generally poor at the training commands GAO visited. In some cases, training activities had no systems for extended periods of time; in others, only selected mishaps were reported to higher commands and to the Naval Safety Center.

The Naval Safety Center is not evaluating mishaps for significance and trends as required and, with the exception of one review requested by the Training Command, is not providing feedback that could improve safety in high-risk training. Course model managers and safety officers of training courses are likewise not using mishap data provided to them to develop trend and safety-related risk assessments to identify potential high-risk situations.

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## Potentially Dangerous and Unapproved Training Exercises

Most of the activities GAO visited were conducting properly approved training exercises safely, with one exception. The Naval Special Warfare Center, which trains Navy SEALs, was conducting some training that was not approved by higher authorities as a part of the curriculum and some that may involve unacceptable risks to students. Another dangerous exercise had been conducted in the past when it was not an approved part of the curriculum and, according to some special warfare professionals, it did not belong in a basic SEAL course.

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## Shortened Curriculum Could Compromise Safety

The Navy shortened the curriculum of the Atlantic and Pacific Fleet surface rescue swimmer schools from 4 to 3 weeks in an attempt to meet Pacific Fleet requirements for more rescue swimmers. The courses were shortened despite strong opposition from fleet professionals and concerns expressed by a validation team that the shortened course, among other things, would compromise safety by affecting students' proficiency and self-confidence and increasing the risk of training injuries. Initial data supports the validation team's concerns. For example, fleet evaluation teams have observed that rescue swimmers from the 3-week course have displayed reduced ability and proficiency in rescue techniques.

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## Recommendations

GAO recommends that the Chief of Naval Education and Training

- require psychological screening of students and instructors for high-risk training,
- improve the evaluation of instructors and the student critique system,

- enforce administrative processing controls regarding medically unqualified students and monitor compliance in regular inspections,
- improve the mishap reporting and monitoring system,
- direct that potentially dangerous and unauthorized training exercises be eliminated, and
- reconsider the decision to shorten the surface rescue swimmer course.

GAO also recommends the Chief of Naval Operations

- take action to ensure fleet commanders comply with established qualification policies when sending candidates to high-risk training and
- strengthen the oversight role of the Naval Safety Center by requiring all training mishaps be reported to it and the Center play a more active role in analyzing training mishaps.

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## Agency Comments

The Department of Defense provided written comments on a draft of this report. (See app. V.) The Department of Defense generally agreed with GAO's findings, conclusions, and recommendations. The Navy has implemented a number of actions to ensure proper management controls are in place to improve safety within the Naval Education and Training Command.

Department of Defense officials stated that the administrative processing control requiring direct contact between medical authorities and the training activities was found to be impractical for many high-risk courses due to the varied nature of courses, support facilities, and training locations. Instead, the Navy will hold the commanding officer of the training activity responsible for ensuring adequate procedures are in place for tracking student medical status based on local conditions. GAO believes this alternative can be effective and agree with the Navy's intent to have inspection teams monitor this area.

The Navy is reviewing the Surface Rescue Swimmer School curriculum to ensure it meets the needs of Navy Fleet Commanders. Safety considerations are being given the highest priority in the review.

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**Abbreviations**

BUD/S	Basic Underwater Demolition/SEAL
CNET	Chief of Naval Education and Training
DOD	Department of Defense
GAO	General Accounting Office

# Introduction

The Naval Education and Training Command, headquartered at the Pensacola, Florida, Naval Air Station, is responsible for all shore-based training of Navy personnel. (See app. I for a chart of organizational relationships). The Training Command is headed by the Chief of Naval Education and Training (CNET), who is responsible for over 200 subordinate bases and operates with a budget of over \$1 billion a year. Through five major functional commanders CNET trains and educates about 800,000 Navy personnel a year in over 3,200 courses. These courses include recruit training, initial skills and skills progression training, team training, some officer accession programs, and various other types of training and education.

## Inherent Risks in Some Training Objectives

Some kinds of training involve inherent risks. CNET has classified 128 of its 3,200 courses as high risk. These courses contain training segments in which instructors and students face varying degrees of risk due to the nature of the training objectives. Examples are water survival/diving, explosive ordnance disposal, special warfare operations, and flight training. Of the 128 high-risk courses, 67 are voluntary and students are allowed to voluntarily withdraw or “drop-on-request” from the training at any time.

## The Lee Mirecki Incident

In 1988, Airman Recruit Lee Mirecki died while undergoing training in the Pensacola Rescue Swimmer School, one of the high-risk courses. At the request of the Wisconsin congressional delegation, we subsequently investigated the Mirecki incident and, in a March 1989 report,<sup>1</sup> identified various deficiencies that contributed to the death. These deficiencies resulted primarily from weak internal controls and inadequate oversight of high-risk training by higher commands. Our recommendations to correct the deficiencies and the Navy’s actions to address them are contained in appendix II.

## Objectives, Scope, and Methodology

Congressman Roth asked us to follow up on our March 1989 report to determine (1) if the safety deficiencies that we previously identified continue to exist in the Navy’s high-risk courses and (2) whether high-risk Navy training is as safe as it can be.

<sup>1</sup>Navy Training: Safety Has Been Improved, but More Still Needs to Be Done (GAO/NSIAD-89-119, Mar. 7, 1989).

The courses we reviewed were selected from the 67 courses that are voluntary and have a “drop-on-request” policy. We narrowed our selection to 11 courses in the San Diego area and to 20 others in the southeastern United States because many of the high-risk courses were concentrated in these locations and were in session at the time of our review. The Navy’s high-risk training courses are listed in appendix III. The commands we visited and the courses we reviewed are shown in appendix IV.

We analyzed Navy regulations, policies, inspection reports, mishap reports, attrition statistics, and various materials associated with training course curricula. We also interviewed key officials of the Naval Education and Training Command and its subordinate commands, the Naval Safety Center, the Navy’s Bureau of Medicine and Surgery, and private sector experts. At the training sites we visited, we observed high-risk training in progress and interviewed course supervisors, instructors, and students.

We conducted our review from November 1989 to November 1990 in accordance with generally accepted government auditing standards.

# Weak Internal Controls in High-Risk Training

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Although CNET took a number of positive steps in an effort to improve internal controls after the Mirecki incident, as shown in appendix II, internal control weaknesses continue to exist in some high-risk training courses. Significant weaknesses still exist in student and instructor screening, processing controls of students with medical problems, evaluations of trainers, and the course critique system available to students. In some cases, newly established CNET procedures did not adequately address these areas; in others, training commands were not complying with established CNET procedures.

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## Screening of Personnel for High-Risk Courses

Training for high-risk Navy operations entails varying degrees of risk to both trainees and their instructors. Therefore, it is important that screening procedures provide reasonable assurance that only those trainees and instructors who are psychologically and physically qualified be permitted in training for high-risk careers, such as rescue swimmers and Navy SEALs. Otherwise, the risk of mishap-related injury and death increases, and unqualified people may be placed in high-risk occupations in operational Navy units.

Student and instructor screening procedures within the Naval Education and Training Command are not adequate to keep unqualified personnel out of high-risk training courses. At the schools we visited, students were not psychologically screened to determine their suitability for training, and at only one school were instructors interviewed to assess their psychological profile. In addition, contrary to Navy guidelines, we found non-volunteers and physically unqualified personnel being sent to voluntary high-risk training courses.

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## Inadequate Student Psychological Screening

Unlike naval aviators and flight officers, students entering other high-risk occupations are not screened to determine if they are psychologically fit for training conditions. Psychological screening is an important mechanism for reducing the risks associated with the training, particularly in detecting phobias that may be triggered by certain training exercises. For example, Lee Mirecki had a phobia about being held underwater, and in an exercise intended to teach rescue swimmers how to escape from a panicking person, his phobia was activated and he died of a fear-induced heart attack.

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Between October 1989 and April 1990, the Naval Aviation Schools Command<sup>1</sup> flight surgeon referred 16 Naval Aircrewman Candidate School and Aviation Rescue Swimmer School students to the Naval Aerospace Medical Institute for psychiatric evaluations because of problems they experienced in training. Of these students, over 37 percent were found to have various phobias involving height, water, or enclosed places. The conditions these students feared all existed in their training programs. One of the phobic students also was diagnosed as having a chronic, severe personality disorder. Trainees who have phobias or disorders that could be triggered in certain types of training pose a threat not only to their own safety and well-being, but to the safety and well-being of others.

Navy medical doctors, psychologists, and high-risk training course officials told us psychological testing is appropriate and that it would make high-risk training courses safer. A Navy flight surgeon suggested that the best place to accomplish this testing, both operationally and economically, is in recruit training, before a person begins training in a high-risk career field. A psychologist with the Naval Aerospace Medical Institute told us the Institute could develop a psychological screening test that students could complete in about 15 minutes to check for relevant phobias. Naval aviators and flight officers, unlike other students entering high-risk training, are administered an extensive psychological test to determine their suitability for training conditions.

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## **Instructor Psychological Screening Is Deficient**

After the Mirecki incident, the Navy began screening potential instructors through physical examinations, a review of personnel and medical records, and an interview by the commanding officer, executive officer, or department head of the school. If there are any indications of emotional instability, poor judgment or performance, the interviewer can send the applicant for additional psychological evaluation by medical specialists. Otherwise, no psychological evaluation is done.

While all of the eight commands we visited were interviewing potential instructors, only one was trying to determine psychological suitability. The Aircraft Fire Fighting and Rescue School at Millington, Tennessee, asked a Navy psychologist to work with the school's training officer to develop questions that help characterize a person's psychological makeup. The questions are designed to provide insight into motivation,

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<sup>1</sup>The Naval Aviation Schools Command is the parent command of both the Naval Aircrewman Candidate School and the Aviation Rescue Swimmer School.

judgment, honesty and truthfulness, phobias or anxiety, performance under stress, and methods for coping with stress.

## Other Screening Shortfalls

Because of ineffective implementation of policies, students reporting for high-risk training may not be volunteers and, in many cases, do not meet the minimum entry requirements.

In our March 1989 report, we cited a problem with non-volunteers being sent to the Aviation Rescue Swimmer School at the Pensacola Naval Air Station. Although that is no longer a problem at the Pensacola school, it is a problem at the Surface Rescue Swimmer Schools in Jacksonville, Florida, and San Diego, California. CNET requires that all participants in these high-risk courses be volunteers. Fleet ships are required to have a certain number (depending on the size of the ship) of qualified rescue swimmers aboard. According to rescue swimmer school officials, ships in need of rescue swimmers often send non-volunteer personnel to the schools as a matter of expedience rather than seeking qualified volunteers. For example, one student who attrited from surface rescue swimmer training told school officials that he never wanted to be a rescue swimmer. According to the student, he was only at the school because he was ordered to be there and feared the negative consequences of objecting.

The high-risk training courses we examined also require a minimum level of physical fitness as specified in the Catalogue of Navy Training Courses that is circulated to all Navy Commands and units for planning their training requirements. At the surface rescue swimmer schools, for example, students are required to have vision correctable to 20/20, be able to do a certain variety and number of physical exercises, and meet timed run and swim requirements. Enrollees also must have a current physical examination and be recommended by their current commanding officer. Yet fleet commands were sending personnel to the schools who do not meet the requirements.

First-day attrition of students who did not meet the published requirements was a significant problem at the two Surface Rescue Swimmer Schools. For example, from March 1989 to April 1990, 145 out of 417 enrollees (over 35 percent) were dropped from the San Diego school because they did not meet those requirements. At Jacksonville in fiscal year 1989, 123 out of 455 enrollees (about 27 percent) did not meet the

requirements. As a result, they were returned to their previous commands. The schools also returned some students to their sending commands because they did not have current physical examinations.

Officials of both of these schools told us they operate under demanding schedules that do not allow time to administer physical examinations or for build-up or remediation of unqualified trainees. They believe that placing physically unqualified candidates in high-risk training exercises would be inviting disaster.

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## Weak Processing Controls for Students With Medical Problems

Although CNET requires medical authorities to directly notify command personnel of changes in a student's medical status, only one of eight commands was clearly doing so at the time of our review. The other seven commands used various "chit" systems (use of a form signed by medical personnel) for student status changes. Aside from minor differences, each of these systems relied on the student to return the chit to a training official after a medical evaluation. The chits state whether a student is fit for training, not physically qualified, or in a limited duty status.

Relying on students to return chits to training personnel does not constitute direct communication by medical authorities and lends itself to the possibility of a medically unqualified student returning to training by altering or not presenting the chit to command personnel. For example, in one case, a Naval Special Warfare student returned to training without giving training officials a limited duty chit. Because the medical officer did not directly contact an appropriate training official, the student continued training while in an unfit medical condition.

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## Inadequate Evaluation of Instructors

In high-risk training, it is critical that instructors are regularly evaluated in both the classroom and nonclassroom setting to ensure they are conducting training properly and safely. CNET requires evaluations of instructors in classroom (lecture) and nonclassroom (laboratory and field) situations, but these requirements are not always met. Also, the attention devoted to nonclassroom evaluations in the commands we visited was not representative of the time spent in this part of the training.

Two activities conducting training for the Naval Aircrewman Candidate School—the Naval Aerospace Medical Institute's Aviation Physiology Department and the Pensacola Naval Air Station's Weapons Department—were not evaluating instructors at all. These two departments

conduct sessions that could be of very high risk to students. For example, students are placed in a low-pressure chamber to allow them to experience hypoxia,<sup>2</sup> and in other training they fire .38-caliber pistols for familiarization purposes. Carelessness or inappropriate attention to safety in either of these areas could result in serious consequences.

Of the eight commands we visited, five were not evaluating each instructor quarterly as required, although they had established programs to do so. Course officials had not documented the reasons for not doing evaluations and could not explain why they were not done. However, some hypothesized that instructors could have been on leave or not scheduled to teach when evaluations were due. The training director at one command told us they simply did not have a good tracking system, as a result, had a problem scheduling and tracking the evaluations, although they were developing a software program to overcome the problem.

Although evaluation of instructors in a classroom setting is important, evaluation of instructors in a nonclassroom setting is critical given the potential for danger in these situations. These nonclassroom training sessions may involve fighting fires, strenuous in-water or underwater activities, obstacle courses, and jumping out of helicopters to execute rescues. At three of the commands we visited, we were unable to determine whether instructor evaluations were aimed at classroom or nonclassroom activities. At the five remaining commands, nonclassroom evaluations of instructors from March 1988 to June 1990 in the courses we analyzed generally fell short of the time spent in such training. (See table 2.1.)

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<sup>2</sup>Hypoxia is an abnormal condition resulting from a decrease in the oxygen supplied to or utilized by body tissue.



Table 2.1: Comparison of Nonclassroom Instructor Evaluations With Nonclassroom Training Time

Course	Nonclassroom training as a percent of total training time	Nonclassroom evaluations as a percent of total evaluation items
Naval Special Warfare Command:		
Basic Underwater Demolition/SEAL	82.0	0.0
Naval Amphibious School Pacific:		
Diver Second-Class	53.0	5.0
Naval Aviation Schools Command:		
Naval Aircrewman Candidate School	50.2	27.0
Aviation Rescue Swimmer School	75.0	17.5
Naval Air Technical Training Center:		
Aircraft Firefighting and Rescue	70.3	24.0
Explosive Ordnance Disposal Detachment:		
Explosive Ordnance Disposal Assistant	56.8	43.0

## Student Critique Systems Are Flawed

The student critique systems, which can help management identify training and safety weaknesses, were deficient for most of the high-risk training courses we reviewed. The quality and content of the forms varied considerably in each course we examined. However, the feedback forms generally did not meet existing criteria and were not structured to provide unbiased, specific information.

CNET directives provide subordinate commands with guidance for the student critique systems. Currently, CNET requires that each student, regardless of whether he completes training, critique the course and instructors. The critiques, which do not require the student's name, are also supposed to solicit comments on unsafe training conditions or practices.

However, the critique forms at the commands we visited generally did not meet those requirements. With one exception, the forms did not allow students to assess instructors individually, only as a group. Likewise, the forms used in over half of the courses we reviewed did not include safety questions that solicited student comments on unsafe training conditions or practices and did not specify that including one's name on the critique was optional. The forms also did not ask students to evaluate nonclassroom instructor activities.

Current CNET requirements are not sufficient to address concerns we raised in our March 1989 report regarding the critique forms themselves. Student critique forms at three of the eight commands we visited had unbalanced rating scales for answers to questions, using more adjectives with positive connotations than adjectives with negative connotations, which can lead to biased responses. Also, critique forms at five commands used simple yes/no questions, which generally do not provide sufficient information to be useful to managers. Furthermore, these critique forms asked general rather than specific questions. For example, one yes/no type question asked students if the learning objectives were fully explained at the beginning of the training—without listing or allowing comments on individual objectives. Critique forms also included questions about issues students would not have adequate experience in, such as the adequacy of first-aid training, if multi-rescue scenarios were realistic, and if the lifesaving examination was too hard.

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## Conclusions

The Navy's internal controls over certain aspects of high-risk training courses are not adequate to ensure the safety of students and instructors. Among the weaknesses we found were lack of psychological screening of instructors and students, non-volunteers being assigned to voluntary courses, students arriving for training who do not meet minimum entry requirements or do not have a current physical, weak administrative processing controls on students' medical status, instructor evaluations not being performed or not adequately addressing performance in nonclassroom portions of the course, and inadequate student critique systems and forms. Most of these problems are the result of inadequate implementation of CNET policies rather than inadequacies in those policies.

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## Recommendations

We recommend that the Chief of Naval Education and Training

- explore the development of psychological screening devices for all students and instructors in high-risk training to determine their suitability to participate in that training;
- enforce and monitor administrative processing controls aimed at ensuring that a student determined to be medically unqualified for high-risk training cannot re-enter training until cleared by proper medical authorities;
- enforce compliance with CNET requirements to evaluate instructors of high-risk courses quarterly and require training commands to increase

the coverage of their nonclassroom activities in their instructor evaluations; and

- revise student critique form requirements to ensure the forms used in all high-risk training courses are unbiased, ask specific rather than general questions, solicit student feedback on nonclassroom activities, individual instructors, and unsafe training conditions or practices, and can be completed anonymously.

We also recommend that the Chief of Naval Operations direct fleet commands to adhere to the minimum requirements specified in the Catalogue of Navy Training Courses when sending personnel to high-risk training courses, and that they send only volunteers to these courses.

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## Agency Comments and Our Evaluation

The Department of Defense (DOD) generally concurred with our findings, conclusions, and recommendations, and agreed the Navy will take corrective actions as follows.

CNET is investigating two initiatives to accomplish psychological screening for students entering high-risk training. CNET is also developing a psychological screening instrument to assist commanding officers in their assessments of potential instructors for high-risk courses. The Chief of Naval Operations will issue a directive that Fleet Commanders redouble their efforts to ensure all candidates for high-risk courses meet the stated prerequisites.

CNET removed its requirement for direct communication between medical authorities and command officials when a student is determined to be medically unqualified for high-risk training. This action was taken after CNET conducted further evaluation and determined the direct communication requirement was not practical in many cases. However, CNET has issued an instruction that placed the responsibility with the commanding officer to establish procedures to maintain the current medical status of students in the command. CNET's Training Performance Evaluation Board will conduct regular inspections to ensure management controls are sufficient to inform the training activity of all significant changes in student medical status. We believe this alternative can be effective and agree with the Navy's intent to have inspection teams monitor this area.

CNET will issue a new directive requiring that instructors be evaluated in nonclassroom training activities in proportion to the amount of time

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spent in these activities and will use the Training Performance Evaluation Board to enforce evaluation requirements. Also, CNET has prepared a new instruction that contains a revised student critique form for use by all training activities. The new form incorporates resolutions to all of the concerns we expressed.

# Inadequate Command Oversight of High-Risk Training

The Navy's oversight of high-risk training is not adequate to ensure the safety of students and instructors. While instructors and training commands are required to report all mishaps, they frequently do not. Those authorities responsible for analyzing mishap reports to detect unsafe trends, frequently do not. While the Navy has taken positive steps to improve safety reviews and policies, unsafe and unapproved training exercises are still being conducted. Without effective management oversight of high-risk training, managers are unable to learn from mistakes, improve performance, and reduce risks.

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## Reporting and Analyzing Mishaps Are Lax

Reporting and analyzing training mishaps were lax at seven of the eight training activities we visited. Although the Navy has requirements for documenting and submitting information on mishaps, training activities were not always meeting those requirements. Without that information, higher commands and the Naval Safety Center cannot effectively monitor trends that could be the precursor to serious problems in high-risk courses.

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## Inadequate Mishap Reporting

In May 1989, the Chief of Naval Operations distributed a memorandum to all Navy commands that emphasized the importance of mishap reporting, noting that compliance with investigating requirements had not been good. He estimated that 50 percent of reportable mishaps were not being reported and many reports that were submitted lacked sufficient information to be useful for safety analysis and for initiating corrective actions.

The Navy's safety regulation requires mishap investigation reports be submitted to the Naval Safety Center on all incidents meeting certain criteria, such as when an individual loses one or more workdays. The regulation also "encourages" the reporting of all mishaps, "no matter how small, as well as the 'near misses' where only chance prevented a mishap," and requires an "informal" investigation of every mishap.

In addition, CNET requires commanding officers to ensure that all training-related first aid, medical treatment, and lost-time injury incidents are investigated by a qualified safety officer at the training command level. The guidance also requires training activities to record the incidents and report those that meet the Navy criteria to the Naval Safety Center. Quantitative information on mishaps is to be sent to each

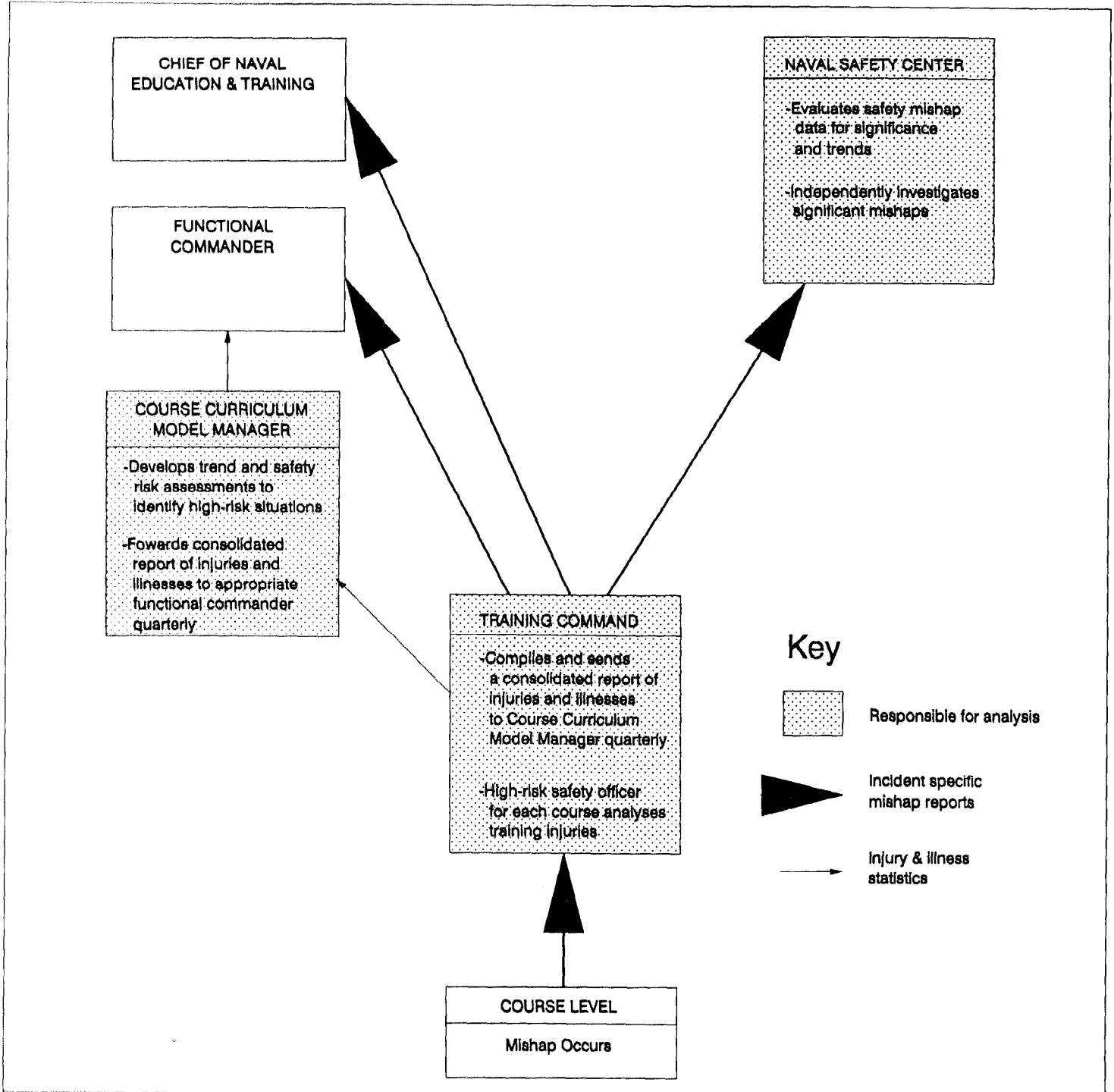
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course curriculum model manager and to the training activities' functional commanders quarterly.<sup>1</sup> Model managers are supposed to use this data to develop trend and safety-related risk assessments to identify potential high-risk situations. Figure 3.1 shows this process.

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<sup>1</sup>Course curriculum model managers are designated for all training courses. They are responsible for developing, reviewing, and revising course curricula.

Figure 3.1: Navy Mishap Reporting System



Despite the emphasis Navy regulations place on reporting mishaps, five of the eight training activities we visited had inadequate systems in place. In some cases, training activities had no mishap reporting systems for extended periods of time; in others, only selected mishaps were reported to higher commands and to the Naval Safety Center. We were unable to determine the extent to which mishaps were not reported because of poor recordkeeping. Higher commands had no system to detect this lack of compliance. However, CNET officials told us that the Training Performance Evaluation Board, which was established to provide CNET with the capability to conduct effective oversight of high-risk training, is monitoring this area and will continue to do so in future safety reviews.

At some training commands, many mishaps were not reported because they did not meet the overall Navy criterion of a missed workday. For example, a significant number of shallow-water blackouts<sup>2</sup> and hypothermia cases that occurred during Basic Underwater Demolition/SEAL (BUD/S) training were not reported because they did not meet the “one lost workday” criterion. Without such data, training commands and the Naval Safety Center cannot determine trends or analyze problem situations in high-risk training.

## Analysis of Mishaps Is Not Being Done

For the most part, those responsible for analyzing mishap information are not doing so. The mishap reporting system requires analysis at three levels: the Naval Safety Center, the course curriculum model manager, and the training command safety officer. Such analysis helps determine, among other things, possible unsafe trends in high-risk training.

The Chief of Naval Operations established the Naval Safety Center to assist him in the prevention of mishaps and in promoting and monitoring safety. Collecting and evaluating mishap information for significance and trends, as well as conducting independent investigations of significant mishaps, are essential parts of the Safety Center’s mission. Yet, with the exception of a special review requested by CNET, we found no evidence the Safety Center has conducted systematic reviews and/or analyses of significant non-aviation training-related mishaps since, and including, the Mirecki incident in March 1988. Although the Naval Safety Center did provide us with data on training injuries within the

<sup>2</sup>A shallow-water blackout occurs when a person reaches the point of unconsciousness while holding his breath underwater.



Training Command, this data was incomplete, inaccurate, and inadequate for trend analysis purposes.

At CNET's request, the Safety Center did review 13 high-risk courses with emphasis on the safety deficiencies we cited in our March 1989 report. In an April 1989 report to CNET, the Safety Center made comprehensive recommendations for improvements in safety policies and procedures. CNET officials told us the extent to which those recommendations have been implemented by individual training activities is still being evaluated by CNET's Training Performance Evaluation Board.

We found no evidence of systematic reviews or analyses of mishap/injury reports by course safety officers or model managers—with one notable exception. The Naval Aviation Schools Command Safety Officer had developed a computerized data base of mishaps in which mishap types and frequencies could be tied to particular training evolutions. Analysis of this data base has led to some changes in training techniques, locations, and equipment, and reduced injuries. Schools Command officials told us they would continue to refine this tracking system to provide even more meaningful data.

On April 4, 1990, CNET issued a revised training safety policy in an effort to improve mishap analysis conducted by subordinate commands. This revision requires high-risk course safety officers to analyze all high-risk training mishaps and injuries to determine if inadequate training procedures, safety precautions, emergency procedures, facilities, or equipment contributed to the mishap/injury.

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## Command Monitoring and Evaluation of High-Risk Training Has Been Improved

Since our previous report, CNET has established the Training Performance Evaluation Board to provide a capability for conducting effective oversight of high-risk training. CNET also revised its training safety policies to more clearly define the responsibilities of subordinate commands.

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## Improved Safety Reviews

The Training Performance Evaluation Board conducts safety reviews of high-risk courses and assesses subordinate commands' compliance with Navy and CNET safety policies. The Board's review teams are comprised of experienced safety personnel who have attended safety-related courses. Since August 1989, the Board has reviewed 72 high-risk courses

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taught at 12 training commands. The Board has identified many instances of noncompliance with Navy or CNET safety policies. Its reviews have resulted in revisions to CNET safety policies and have served as the basis for a quarterly "Lessons Learned" publication distributed to CNET's subordinate commands. Overall, the Board, through its various efforts, has played an important role in improving training safety.

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### Improved Safety Policies

CNET has also developed and published a training safety instruction that clearly establishes the responsibilities of subordinate commands for carrying out safety policies. The instruction requires commanding officers of training activities to

- personally involve themselves in the actual training conducted to a level necessary to ensure appropriate safety standards are in place and functional;
- conduct training in accordance with the approved curricula;
- delete all high-risk training exercises determined to be nonessential for the attainment of training objectives; and
- consistent with risk, assign adequate instructors and safety observers to training sites whenever high-risk training is conducted.

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### Potentially Dangerous and Unapproved Training Exercises

Most of the training commands we reviewed were complying with these new safety directives. However, some training exercises are being conducted that are not a part of the approved curriculum and that may unnecessarily place students at risk.

The BUD/S course taught at the Naval Special Warfare Center in San Diego includes some exercises that may involve unacceptable risks and are not an approved part of the course curriculum. The BUD/S course is the entry Navy SEAL training course. The course is designed to push students to their physical and mental limits. While the Special Warfare Center has taken several actions to improve monitoring and evaluation of training, some problems remain. We identified three such exercises: the pool competency drill, the "jock up" drill, and the Chinese water board torture demonstration.

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### Pool Competency Drill

During the diving phase of the BUD/S course, the Warfare Center conducts a pool competency drill designed to teach students how to identify, analyze, and react to diving problems. During this drill, instructors

impose problems on students; for example, by knocking off their masks and fins or by crimping or tying knots in their air hoses. Students must identify and solve the imposed problem. Sometimes a student cannot undo a knot an instructor tied. In that case, the student is required to remove his equipment and swim to the surface. There is no safety observer in close proximity to students in the water who can give the students air in an emergency situation.

Between July 28, 1989, and March 12, 1990, eight students experienced “shallow-water blackout” during the pool competency drill because they held their breaths too long underwater. Shallow-water blackout, in these cases, refers to unconsciousness due to hypoxia or lack of oxygen. Although these blackouts were reported to the Special Warfare Center’s safety officer and commanding officer, they were not reported to higher commands or to the Naval Safety Center because the blackouts did not meet the overall Navy reporting criterion of a missed workday. However, these incidents did meet other criteria that requires any oxygen deficiency injuries to be reported to the Naval Safety Center. We were unable to determine the number of shallow-water blackouts prior to July 1989, because the Special Warfare Center was not documenting mishaps.

We were told that shallow-water blackouts are not a problem in other Navy diving schools. In those classes, instead of having to surface, a student can get air from a safety observer who stays within arm’s reach.

Diving medical authorities view shallow-water blackout as dangerous because it can lead to an air gas embolism<sup>3</sup> or drowning. Other secondary dangers include pneumonia and pulmonary edema.<sup>4</sup> In light of the dangers, a number of Navy medical diving authorities believe the pool competency drill needs to be thoroughly examined to determine whether procedures need to be modified to reduce the risk of shallow-water blackout. Naval Special Warfare Center officials told us they did not believe that shallow-water blackouts were a significant problem.

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<sup>3</sup>An air gas embolism is the formation of air bubbles in blood vessels that usually rise to the brain, obstructing blood flow to the brain. The obstruction can lead to localized weakness, unconsciousness, and death.

<sup>4</sup>Pulmonary edema is an abnormal accumulation of fluids in the lungs, which results in swelling.

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## The Jock-Up Drill

Another training exercise that may involve unacceptable safety risks is the “jock-up” drill, which involves donning and removing diving equipment. This drill was reportedly designed to remedy poor attitude and performance. During this drill, students must correctly put on and remove their diving gear within a prescribed amount of time. If a student fails to do so on time, the class must complete a set of push-ups. Instructors sometimes require students to do push-ups with their diving tanks on.

The Special Warfare Center’s diving medical officers were not aware that students were doing push-ups with tanks on during the course. They told us that doing so was a safety hazard—given the potential for lower back strain or for the tank stem to hit a student in the back of the head. A draft of the drill’s briefing sheet, which is used by instructors and safety observers, established 50 push-ups as the standard set to be used during the drill. After we brought the medical officers’ concerns to the attention of Warfare Center officials, they limited the exercise to 10 push-ups with tanks on. Instructors also are to check to be certain students’ tank straps are firmly in place while doing push-ups.

The chief diving medical officer told us the degree of supervision present during the drill should prevent injuries from occurring. However, several other medical authorities in the Navy expressed serious reservations about doing any push-ups with tanks on. These authorities pointed to the potential for lower back and head injuries and noted that the overall objective of the drill appeared to be punishment—not skill-building.

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## Chinese Water Board Torture Demonstration

The Chinese water board torture demonstration is another potentially dangerous exercise that has been conducted during BUD/S training in the past, even though it was not an official part of the curriculum. During this exercise, a student is placed on an inclined board with a rag over his face while an instructor pours water over the rag—causing a coughing/drowning sensation. The purpose of the exercise is to simulate prisoner of war treatment. Some experienced special warfare personnel told us the exercise has no place in BUD/S training—training that is specifically designed to provide the basic physical and technical skills essential for a career in naval special warfare. An exercise similar to Chinese water board torture is a part of an advanced survival course where, according to special warfare professionals we interviewed, it more appropriately belongs. In the advanced course, the drill is conducted with a psychologist present at all times to monitor both the instructors and the students.

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Special Warfare Center officials told us they were considering reinstating this exercise and writing it into the curriculum. However, the Chief of Naval Education and Training assured us that the Chinese water board torture demonstration would definitely not be approved for the BUD/S course.

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## Conclusions

Training commands are not reporting mishaps as required, and those responsible for analyzing mishap information also are not fulfilling the requirements. Therefore, CNET is unable to make an informed appraisal of high-risk training courses and remedy existing problems.

While the Navy has improved safety reviews and policies, more needs to be done. The Naval Special Warfare Center was conducting some exercises in its basic SEAL course that are not sanctioned and may involve unacceptable risks.

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## Recommendations

We recommend that the Chief of Naval Operations strengthen the role of the Naval Safety Center by requiring

- training commands to report all high-risk training mishaps that occur in individualized and specialized training and require any type of trained medical attention, regardless of training or work time lost, to the Center and
- the Center to devise a system to analyze high-risk training mishaps for causes and trends and to share the results of these analyses on a regular basis with the Chief of Naval Education and Training.

In addition, we recommend that the Chief of Naval Education and Training

- require subordinate commands to (1) keep thorough and accurate records of all high-risk training mishaps, (2) evaluate them for trends that may indicate unsafe training policies, practices, or equipment, (3) initiate corrective actions when trends indicate they are warranted, and (4) regularly report results of mishap analyses and corrective actions to senior commands;
- have the pool competency drill conducted in the SEAL training examined by medical diving experts to determine the reasons for the relatively high incidence of shallow-water blackouts and revise procedures to reduce the risk of these incidents; and

- direct that any exercises that do not contribute to training objectives, particularly those that appear to involve unacceptable risks, be discontinued, and that all high-risk training evolutions be included in the course curriculum and approved by higher authority before they are conducted.

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## Agency Comments and Our Evaluation

DOD concurred with our findings, conclusions, and recommendations. The Navy has taken or will take corrective actions on our recommendations.

CNET has issued a new instruction that requires training-related first aid and medical treatment incidents be reported to the Naval Safety Center. Also, besides lost-time incidents, training mishaps that result in the termination of the training evolution, as well as near-misses, are reportable. CNET will increase mishap reporting requirements for training activities to include lessons learned from mishap analysis in the quarterly report of training-related injury and illness statistics. The compilation of that report requires training activities to conduct trend analysis of all training-related mishaps. Also, the Chief of Naval Operations has directed that course identification numbers be included in mishap reports in order to facilitate the Naval Safety Center's analyses of trends in high-risk courses.

DOD agreed the BUD/S course includes some exercises that may involve unacceptable risks and are not an approved part of the course curriculum. CNET will request that the Bureau of Medicine and Surgery review the training procedures used in the pool competency drill and make recommendations for improvement. Additionally, CNET has specifically prohibited the Chinese water board torture demonstration. The jock-up drill has now been made a part of the approved curriculum. However, DOD did not address our concern over the potential for lower back and head injuries in the jock-up drill. Since the Bureau of Medicine and Surgery will be examining the pool competency drill, CNET may also wish to have them assess the jock-up drill.

# Shortened Surface Rescue Swimmer Course Could Compromise Safety

## Course Shortened Despite Opposition

Between March and June 1988, a committee of Navy medical and training specialists did an in-depth review of rescue swimmer school training methods and safety procedures to improve safety. As a result of this review, a revised 4-week rescue swimmer curriculum was validated and implemented at the Aviation Rescue Swimmer School in Pensacola, Florida, and the Surface Rescue Swimmer Schools in San Diego, California, and Jacksonville, Florida.

In April 1990, despite these validated curriculum changes, CNET shortened the curriculum of the two surface rescue swimmer schools from 4 to 3 weeks, while leaving the 4-week aviation rescue swimmer school curriculum intact. The change was an effort to meet increased Pacific Fleet requirements for rescue swimmers. However, the decision drew strong opposition from trainers and experienced Navy rescue swimmers.

In documents submitted to CNET, and in our interviews with them, rescue swimmer school officials and instructors opposed shortening the course, saying it would

- not allow adequate time for students to attain the physical conditioning level needed to successfully complete the course, noting that in the past students have come to the surface schools from the fleet in poor physical condition;
- eliminate the capability for remedial training for those students who need special assistance;
- not allow adequate time for students to physically recover from strenuous training activities;
- reduce the amount of time available for practice; and
- increase the pressure and stress on students and instructors.

These officials argued that the combination of these concerns would significantly affect graduates' proficiency and self-confidence and increase the risk of training injuries. They also emphasized that a 3-week course would not produce enough graduates to meet fleet requirements because of the higher attrition that would likely be experienced. Furthermore, in presenting these concerns, officials noted that surface rescue swimmer student critiques indicated an overwhelming desire for more time to allow for better conditioning and more familiarity with the procedures and equipment encountered during the course. Despite these concerns, CNET approved the 3-week curriculum.

The 3-week course was pilot-tested and validated at the San Diego Surface Rescue Swimmer School between April 23, 1990, and May 18, 1990.

The validation results confirmed the concerns expressed prior to approval of the curriculum. On the fourth day of the first validation course, 65 percent of the students were unable to pass the 400-meter “buddy-tow” test.<sup>1</sup> Consequently, the school suspended the class and restructured the curriculum schedule to allow more swim conditioning build-up for the buddy-tow test and to eliminate major swim tests on successive days. On April 30, 1990, the school started a new pilot class made up of the students from the first course who passed the buddy-tow test and five new students. The school completed the pilot course on May 18, 1990. The validation team’s observations and assessment of the pilot course again echoed the concerns expressed by training officials. Specifically, the team noted that:

- The compressed time frame did not accommodate remediation for a failed event, which will most likely result in disenrollment.
- The course was too compressed for students to assimilate the material and master the skills.
- The shortage of instructors combined with the reduction in course length resulted in a high-stress environment, setting up conditions where instructors may be tempted to take unacceptable shortcuts that compromise quality and safety.
- The quality of training had decreased significantly.

In light of these concerns, the validation team recommended to CNET that the course length be extended to at least 18 days and the instructor manning deficiency be corrected. Although CNET is in the process of trying to correct the shortage of instructors, it rejected the recommendation to increase the course length. Consequently, the 3-week course was implemented at both surface rescue swimmer schools.

CNET officials told us they are examining the potential for removing portions of the material from the course curriculum to ease the time pressure. For example, they are considering eliminating the parachute disentanglement portion of the training because only a couple of rescues performed by surface rescue swimmers have involved aircrewmembers.

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<sup>1</sup>In the buddy-tow test, the student must tow another student (simulating a “victim” in the water) by his life preserver for 400 meters in a prescribed time.



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## Early Data Supports Need for Longer Course

As of August 31, 1990, both the San Diego school and the Jacksonville school had completed three 3-week courses. Data from the schools clearly shows in-course attrition has increased. The San Diego 3-week courses experienced an average 31-percent in-course attrition rate compared to an average 25-percent attrition rate for the 4-week courses taught during fiscal years 1989 and 1990. Similarly, the Jacksonville 3-week course experienced a 35-percent in-course attrition rate compared to an average 20-percent in-course attrition rate for the 4-week courses taught during fiscal years 1989 and 1990.

CNET based its decision to shorten the course on being able to increase the number of classes a year from 10 to 13. Presently, the San Diego school is scheduled for 10 classes and the Jacksonville school for 11 classes a year. School officials told us it is impossible to conduct the course more than 11 times a year given holidays, leave, and other factors. Even if the courses could be taught 13 times a year, fleet requirements cannot be met given present graduation rates. Consequently, it appears shortening the course will not satisfy the intended objective of meeting increased fleet requirements.

Rescue swimmer officials and instructors believe the shortened course is producing rescue swimmers of a significantly lower caliber than those who completed the 4-week course. Furthermore, fleet evaluation teams have observed that rescue swimmers from the 3-week course have displayed reduced ability and proficiency in rescue techniques. Graduates of the 3-week course have experienced extreme problems in completing the required rescue during these evaluations.

In their course critiques, graduates of the 3-week course generally said the shortened curriculum did not allow adequate time for physical conditioning, mastering the required skills, or recovering from strenuous exercises. They also reported the shortened course increased the pressure and stress on students and instructors alike.

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## Conclusion

The shortened curriculum for the surface rescue swimmer schools has increased attrition and may compromise training safety. At the same time, the shortened curriculum has not satisfied the intended requirement to provide more rescue swimmers to the fleet.

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## Recommendation

We recommend that the Chief of Naval Education and Training reconsider the decision to shorten the surface rescue swimmer course.

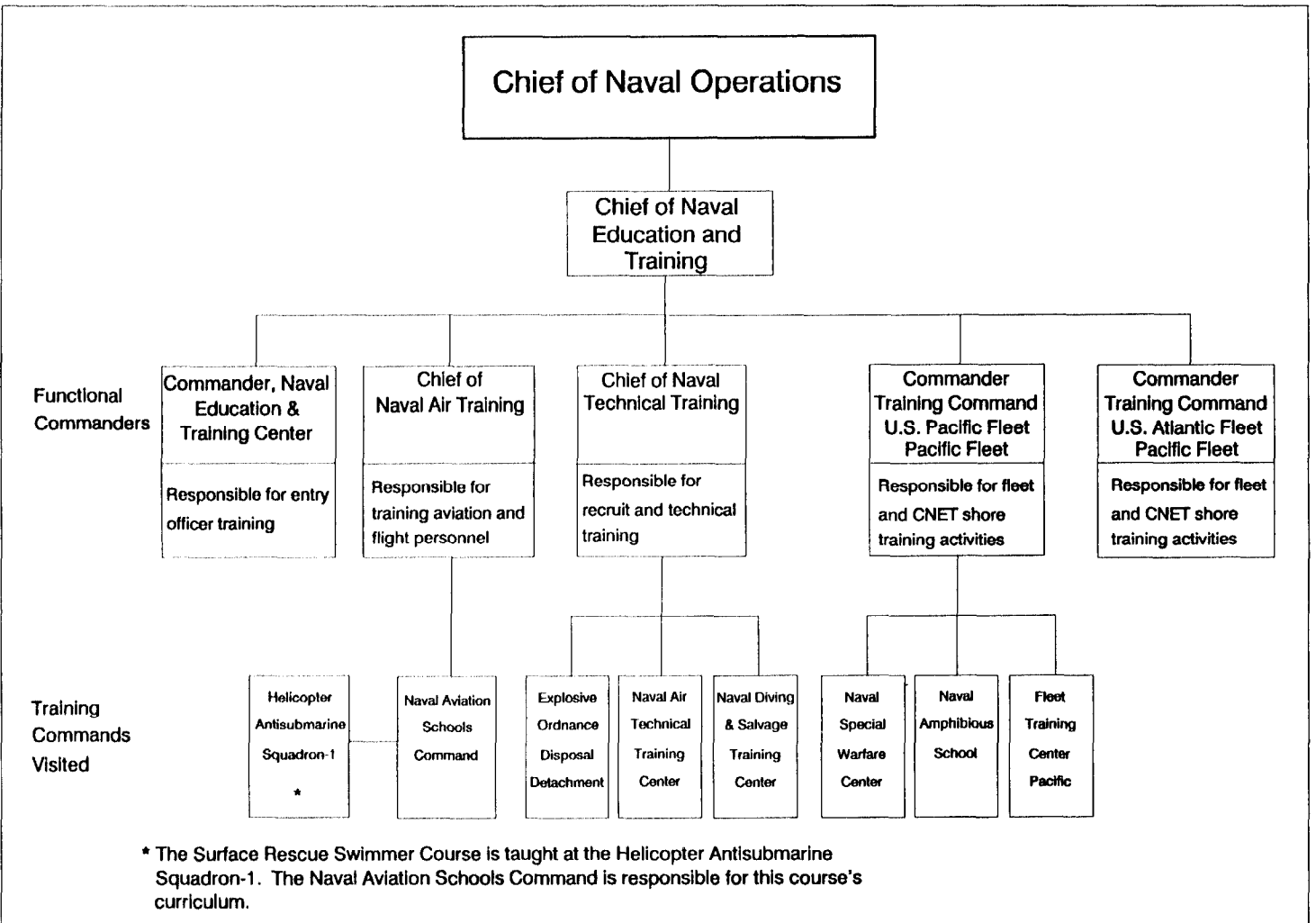
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## Agency Comments and Our Evaluation

DOD agreed that in-course attrition in the Surface Rescue Swimmer courses has been a continuing problem, but stated it did not believe that student safety had been compromised. However, DOD agreed with our recommendation that CNET reconsider the decision to shorten the curriculum of the Surface Rescue Swimmer course. Since our review was completed, CNET has continued to review the course and has deleted some subjects to allow more time for remedial training and recovery from strenuous physical training. As a result of a recent review by the Fleet Commanders-in-Chief, CNET is undertaking a curriculum revision of the course. The length of the revised course, to be implemented in October 1991, has not been determined at this time.



# Navy Training Organizational Relationships



Source: The Naval Aviation Schools Command.

# GAO Recommendations and Reported Navy Corrective Actions

## GAO recommendations

## Reported Navy corrective actions

### Inadequate Drop-on-Request and Training Time-Out Policies

Clarify the way "drop-on-request" and "training time-out" policies are communicated to the students and staff and how students are to signal that they are invoking the policies.

All Naval Education and Training Command activities hosting high-risk courses incorporated drop-on-request and training time-out policies in their curricula and standardized signaling methods to fit the situation.

### Negative Sanctions on Students Who Voluntarily Quit Training

Eliminate the negative sanctions imposed on those who drop out of voluntary training programs because of safety concerns.

New policy prohibited negative sanctions. Policies will continue to be assessed during high-risk course safety reviews.

### Unclear Aviation Anti-Submarine Warfare Enlistment Contract

Clarify the aviation anti-submarine warfare operator enlistment contract to include a better description of the kind of training that is required.

Current anti-submarine warfare operator enlistment contract will be phased out. A new, more in-depth, contract that provides a detailed description of the type of training required was developed. The Navy will provide positive incentives to induce volunteers, and those disenrolled from the rescue swimmer school will be eligible to continue aircrew training.

### Inadequate Mishap Reporting and Safety Investigations

Ensure that schools submit accident/injury reports and safety officers perform independent safety investigations.

Commanding officers of training activities were required to investigate and report all training-related injuries to the functional commanders. By 9/1/89, each high-risk course was required to be assigned a safety officer to conduct independent investigations.

### Attrition and Accident/Injury Information Not Reported

Ensure that training course model managers receive information on attrition and accidents/injuries.

Policy will be revised to ensure attrition and accident/injury information is available to course curriculum model managers. The training activity safety officer's charter will include a responsibility to monitor this data and provide appropriate information to course curriculum model managers.

### Weak Student Critique System

Improve the student critique system to ensure that information is also gathered from students who do not complete training courses and that the student evaluation forms be redesigned to provide useful assessments.

The student critique system was revised and policy clarified requiring drop-on-request attrites to complete critiques. Compliance with the critique requirements will be assessed during high-risk course reviews.

### Inadequate Instructor Screening and Training

Ensure that the selection process for instructors of high-risk courses include an assessment of their suitability for that environment and that instructor training for these courses include preparation on dealing with students in a high-stress/high-risk environment.

Policy revised to require instructor personnel and medical record be reviewed and prospective instructors be interviewed. If this process reveals any question of physical or emotional suitability, the commanding officer will be informed and, if deemed appropriate, he can request formal medical or psychological screening by qualified medical personnel.

(continued)

**Appendix II  
GAO Recommendations and Reported Navy  
Corrective Actions**

<b>GAO recommendations</b>	<b>Reported Navy corrective actions</b>
<b>Students Not Psychologically Screened for Suitability</b>	
Ensure that the student selection process includes some psychological screening of their suitability for high-risk occupations.	With improved safeguards of drop-on-request and training time-out policies and increased instructor training, there is no need for prior student psychological screening. This screening can more accurately be done while students are undergoing instruction.
<b>Lack of Safety Expertise on Safety Review Teams</b>	
Ensure that course safety review teams include personnel with safety expertise.	CNET's Training Performance Evaluation Board safety review team contains members with safety training expertise and any new Board personnel will receive formal training to support future safety reviews.
<b>Deficient Student Tracking Systems</b>	
Ensure that controls on student status changes are sufficient to provide supervisors with a clear indication of what status changes have been made.	CNET's training safety instruction will be revised to direct training activities to establish student medical tracking systems that do not rely on the student as the sole source of command notification.

# Navy High-Risk Training Courses

Course	Number of Locations	
1	Naval Aviation Water Survival Training Program	1
2	Naval Aviation Water Survival Training Program	4
3	Naval Aviation Water Survival Training Program	1
4	Naval Aviation Water Survival Training Program	5
5	Naval Aviation Water Survival Training Program	3
6	Naval Aviation Water Survival Training Program	6
7	Naval Aviation Water Survival Training Program	5
8	Naval Aviation Water Survival Training Program	1
9	Naval Aviation Water Survival Training Program	4
10	Naval Aviation Water Survival Training Program	1
11	Naval Aviation Water Survival Training Program	2
12	Naval Aviation Water Survival Training Program	2
13	Primary Flight Training <sup>a</sup>	1
14	Intermediate Strike Flight Training <sup>a</sup>	1
15	Advanced Strike Flight Training <sup>a</sup>	1
16	Jet Transition Training <sup>a</sup>	1
17	Intermediate Maritime/Helicopter Flight Training <sup>a</sup>	1
18	Undergraduate Helicopter Pilot Training <sup>a</sup>	1
19	Primary/Intermediate Maritime/Helicopter Flight Instructor <sup>a</sup>	1
20	Advanced Maritime Flight Training <sup>a</sup>	1
21	Advanced Strike Flight Instructor Pilot Training <sup>a</sup>	1
22	Intermediate Strike Flight Instructor Under Training <sup>a</sup>	1
23	UHPT Helicopter Flight Instructor Under Training <sup>a</sup>	1
24	Student Naval Flight Surgeon Indoctrination <sup>a</sup>	1
25	Naval Test Pilot School Preparation <sup>a</sup>	1
26	Intermediate Strike E2/C2 Flight Training <sup>a</sup>	1
27	Helicopter Transition Pilot <sup>a</sup>	1
28	Basic Naval Flight Officer Training <sup>a</sup>	1
29	Advanced Naval Flight Officer Overwater Jet Navigation Training <sup>a</sup>	1
30	Advanced Naval Flight Officer Tactical Navigation Training <sup>a</sup>	1
31	Advanced Naval Flight Officer Radar Intercept Officer Training <sup>a</sup>	1
32	Intermediate Naval Flight Officer Training <sup>a</sup>	1
33	Advanced Naval Flight Officer (Jet) Flight <sup>a</sup>	1
34	Basic/Intermediate Naval Flight Officer Instructor Under Training <sup>a</sup>	1
35	Civil Engineering Corps Officer Basic Qualification	1
36	Deep Sea HEO2 Diving Officer <sup>a</sup>	1
37	Basic Diving Officer <sup>a</sup>	1
38	Salvage Diving Officer <sup>a</sup>	1

(continued)

**Appendix III  
Navy High-Risk Training Courses**

<b>Course</b>	<b>Number of Locations</b>
39 Medical Department Diving Officer <sup>a</sup>	1
40 Aviation Preflight Indoctrination <sup>a</sup>	1
41 Aviation Officer Candidate School <sup>a</sup>	1
42 Limited Duty Officer/Chief Warrant Officer Indoctrination <sup>a</sup>	1
43 Direct Commissioned Officer Indoctrination <sup>a</sup>	1
44 5/54 Caliber Rapid Fire Gun Maintenance and Operation	1
45 Gun 5/54 Operations and Maintenance	2
46 Gun Small Arms Familiarization	1
47 20mm Machine Gun Operations and Maintenance	1
48 50 Caliber HB M2 Operations and Maintenance	3
49 Shipboard Small Arms Instructor	1
50 40mm Gun Mount MK 3 Operations	2
51 25mm Gun MK 38 Operations and Maintenance	1
52 40mm MK 19 Machine Gun Operations and Maintenance	1
53 Surface Rescue Swimmer School <sup>a</sup>	2
54 Rescue Swimmer School <sup>a</sup>	1
55 U.S. Naval Rescue Swimmer Instructor <sup>a</sup>	1
56 Naval Aircrewman Candidate School <sup>a</sup>	1
57 Naval Aircrewman Candidate School Instructor Training <sup>a</sup>	1
58 Special Warfare Craft-Light (Sea Fox) <sup>a</sup>	1
59 Small Arms Qualification	1
60 Rigid Inflatable Boat (RIB) Coxswain	1
61 76mm 62 Cal MK 75 Mod O/1 Gun Operation and Maintenance	1
62 5-54 MK 45 Modification O	1
63 Stinger Anti-Terrorist Weapon Gunner (SEAL Modified)	1
64 Explosive Ordnance Disposal Phase I <sup>a</sup>	1
65 Explosive Ordnance Disposal Phase II <sup>a</sup>	1
66 Basic Underwater Demolition/SEAL (BUD/S) <sup>a</sup>	1
67 Submarine Lock-In/Lock-Out <sup>a</sup>	1
68 Free Diving And Buoyant Ascent <sup>a</sup>	1
69 SEAL Delivery Vehicle Operator <sup>a</sup>	1
70 Midshipman Indoctrination and Orientation—Inactive <sup>a</sup>	1
71 Explosive Ordnance Disposal Improvised Explosive Devices <sup>a</sup>	1
72 International Explosive Ordnance Disposal Assistant <sup>a</sup>	1
73 SEAL Weapons System Advanced Operator <sup>a</sup>	1
74 Advanced Access and Disablement <sup>a</sup>	1
75 Standoff Weapons Assembly Operator <sup>a</sup>	1
76 Explosive Ordnance Disposal Assistant <sup>a</sup>	1
77 Explosive Ordnance Disposal Mixed Gas Diving <sup>a</sup>	1
78 Mark 15 Underwater Breathing Apparatus <sup>a</sup>	1

(continued)



**Appendix III  
Navy High-Risk Training Courses**

<b>Course</b>	<b>Number of Locations</b>
79 Military Free Fall-Inactive <sup>a</sup>	1
80 Static Line Jumpmaster-Inactive <sup>a</sup>	1
81 Ram Air Parachute Transition-Inactive <sup>a</sup>	1
82 Medical Deep Sea Diving Technician <sup>a</sup>	1
83 Diver Second Class <sup>a</sup>	3
84 Diver SCUBA <sup>a</sup>	3
85 Diver First Class <sup>a</sup>	1
86 Saturation Diver <sup>a</sup>	1
87 Underwater Construction Technician Basic <sup>a</sup>	1
88 Underwater Construction Technician Advanced <sup>a</sup>	1
89 Water Survival <sup>a</sup>	1
90 Disaster Recovery Training	1
91 Disaster Recovery Training Rescue	1
92 Disaster Preparedness Operations Specialist	1
93 Hull Maintenance Technician Class A	1
94 Damage Control Repair Party Leader	1
95 Damage Control Team Leader	8
96 Submarine Fire Fighting Team Trainer	1
97 Advanced Shipboard Fire Fighting	1
98 General Shipboard Fire Fighting Training	10
99 Shipboard Aircraft Fire Fighting Training	7
100 Air Capable Ship Helicopter Fire Fighting Team Training	8
101 Shipboard Fire Fighting Team Training	8
102 Chemical Biological Radiological (CBR) Defense Basic	1
103 Introduction to Chemical, Biological, and Radiological Defenses	8
104 Senior Enlisted Damage Control	1
105 Submarine Damage Control	5
106 Submarine Damage Control Wet Team Trainer	5
107 Damage Control Class A	1
108 Submarine Fire Fighting Team Training	2
109 Shipboard Chemical, Biological, and Radiological Operations and Training Specialist	1
110 Recruit Fire Fighting	1
111 Naval Aviation Water Survival Training Program Instructor Training <sup>a</sup>	1
112 Air Field Equipment "A" <sup>a</sup>	1
113 Air Field Equipment School "C" <sup>a</sup>	1
114 Shipboard Security Engagement Tactics (Follow-On Training)	1
115 Steelworker Class A	1
116 Utilitiesman Class A	1
117 Construction Electrician Class A	1
118 Equipment Operator	1

(continued)

**Appendix III**  
**Navy High-Risk Training Courses**

<b>Course</b>	<b>Number of Locations</b>
119 Advanced Equipment Operator	1
120 Equipment Operator Water Well Operation	1
121 Blasting And Quarry Operations Equipment Operator	1
122 Blasting Recertification Equipment Operator	1
123 Aircraft Fire Fighting and Rescue Class A <sup>a</sup>	1
124 Aviation Boatswain's Mate (Handling) <sup>a</sup>	1
125 U.S. Navy Master at Arms	1
126 U.S. Navy Security Guard	1
127 Shipboard Security Engagement Tactics	1
128 Shipboard Security Engagement Weapons	1
	212

<sup>a</sup>These courses are voluntary and has a drop on request policy (67 courses).

# Training Commands Visited and Courses Reviewed

Activity	Courses reviewed
Naval Air Technical Training Center, Naval Air Station, Memphis, Millington, Tennessee	Aircraft Fire Fighting and Rescue <sup>a</sup>
Naval Diving and Salvage Training Center, Panama City, Florida	Medical Deep Sea Diving Technician Diver Second Class <sup>a</sup> Scuba Diver <sup>a</sup> Diver First Class Deep Sea HEO2 Diving Officer Basic Diving Officer Salvage Diving Officer Medical Department Diving Officer Water Survival
Naval Diving and Salvage Training Center, Naval Amphibious Base, Coronado, San Diego, California	Diver Second Class <sup>a</sup> Scuba Diver <sup>a</sup>
Naval Special Warfare Center, Naval Amphibious Base, Coronado, San Diego, California	Basic Underwater Demolition/SEAL <sup>a</sup> SEAL Weapon System Advanced Operator SEAL Delivery Vehicle Operator Standoff Weapons Assembly Operator Free Diving and Buoyant Ascent Special Warfare Craft-Light (Sea Fox) Mark 15 Underwater Breathing Apparatus Submarine Lock-In/Lock-Out
Fleet Training Center Naval Station, San Diego, California	Surface Rescue Swimmer School <sup>a</sup>
Helicopter Antisubmarine Squadron-ONE Naval Air Station, Jacksonville, Florida	Surface Rescue Swimmer School <sup>a</sup>
Naval School, Ordnance Detachment Eglin Air Force Base, Florida	International Explosive Ordnance Disposal Assistant <sup>a</sup> Explosive Ordnance Disposal Assistant <sup>a</sup>
Naval Aviation Schools Command Naval Air Station, Pensacola, Florida	Naval Aircrewman Candidate School <sup>a</sup> Aviation Rescue Swimmer School <sup>a</sup> U.S. Naval Rescue Swimmer Instructor Naval Aircrewman Candidate School Instructor Training Naval Aviation Water Survival Training Program Instructor Training School Limited Duty Officer/Chief Warrant Officer Indoctrination Direct Commissioned Officer Indoctrination

<sup>a</sup>These courses were analyzed in detail by us.

# Comments From the Department of Defense

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



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ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301-8000

MAR 29 1991

Mr. Frank C. Conahan  
Assistant Comptroller General  
National Security and  
International Affairs Division  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Conahan:

This is the Department of Defense response to the General Accounting Office (GAO) GAO Draft Report, "NAVY TRAINING SAFETY: High-Risk Training Can Be Safer," dated February 14, 1991 (GAO Code 391119), OSD Case 8608. The DoD generally concurs with the GAO findings and recommendations.

Training safety continues to improve as a result of Navy initiatives in response to efforts by the GAO and internal Navy investigations and reviews. The Navy has implemented a number of actions to ensure proper management controls are in place to improve safety within the Naval Education and Training Command.

The DoD does not share the GAO belief that direct contact between medical authorities and the training activities is necessary in cases where the medical status of the student changes. This was tried and found to be impractical for many high-risk courses, due to the varied nature of courses, support facilities, and training locations. Therefore, it is best to hold the commanding officer of the training activity responsible for ensuring that adequate procedures are in place for tracking student medical status based on local conditions. The Training Performance Evaluation Board provides oversight.

The Navy is reviewing the Surface Rescue Swimmer School curriculum to ensure that it meets the needs of the Navy Fleet Commanders. Safety considerations are being given the highest priority in the review. A revised curriculum should be complete by October 1991.

The detailed DoD comments to the draft report are provided in the enclosure. The DoD appreciates the opportunity to comment on the GAO draft report.

Sincerely,

David J. Berteau  
Principal Deputy

Enclosure

GAO DRAFT REPORT - DATED FEBRUARY 14, 1991  
(GAO CODE 391119) OSD CASE 8608

"NAVY TRAINING SAFETY: HIGH-RISK TRAINING CAN BE SAFER"

DEPARTMENT OF DEFENSE COMMENTS

\* \* \* \* \*

FINDINGS

- **FINDING A: Inadequate Student Psychological Screening.**  
The GAO reported that, although the Chief of Naval Education and Training took a number of positive steps to improve internal controls after the Mirecki incident, internal control weaknesses continue to exist in some high-risk training courses. The GAO found that, unlike naval aviators and flight officers, students entering other high-risk occupations are not screened to determine if they are psychologically fit for training conditions and if they have phobias that may be triggered by certain training exercises. The GAO noted Lee Mirecki had a phobia that was activated in a training exercise, and he died of a fear-induced heart attack.

The GAO reported that, between October 1989 and 1990, the Naval Aviation School Command flight surgeon referred 16 Naval Aircrewman Candidates and Aviation Rescue Swimmer School students for psychiatric evaluations because of problems experienced in training. The GAO found that six, or 37 percent, were found to have various phobias involving height, water, or enclosed places, and one student was also diagnosed as having a chronic, severe personality disorder. The GAO noted that trainees with phobias or disorders pose a threat, not only to their own safety and well-being, but to the safety and well-being of others.

The GAO reported that Navy psychologists, medical doctors, and high-risk training officials indicated that psychological testing is appropriate and that it would make high-risk training courses safer. The GAO also reported that the best place to accomplish the testing was in recruit training, before a person begins training in a high-risk career field. The GAO noted that a psychologist with the Naval Aerospace Medical Institute indicated the Institute could develop a psychological screening test that students could complete in about 15 minutes to check for relevant phobias. The GAO pointed out that Naval aviators and flight officers, unlike other students

Enclosure

Now on pp. 10-11.

entering high-risk training, are administered an extensive psychological test in order to determine their suitability for undergoing training conditions. (pp. 18-20/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The DOD agrees that psychological screening for students entering high-risk training is appropriate. The Chief of Naval Education and Training will further explore the development of psychological screening devices for all students in high-risk training, including Aviation Rescue Swimmer School students, to determine each student's suitability to participate in such training.

Two initiatives regarding student psychological screening are currently under investigation. They are:

1. Recruit psychological screening. The Chief of Naval Education and Training is pursuing a program where the Recruit Training Commands will adapt and administer an existing U.S. Air Force psychological screening test. The test is designed to identify students with potential psychological problems that may cause them to withdraw from training. The U.S. Air Force has had good success with the test and similar success should be possible for the Navy. The test will be implemented fully by the Navy by October 1991.

2. Student psychological screening for high-risk training. A pilot project to develop a psychological screening procedure for Naval Aircrewman Candidate School students is in progress. The Naval Aerospace Medical Institute is collecting data to validate the screening process and develop student success profiles. Once the validation is completed, the Chief of Naval Education and Training will evaluate the results to determine applicability to other high-risk training courses. The Chief of Naval Education and Training will complete the evaluation by March 1992.

● **FINDING B: Instructor Psychological Screening is Deficient.** The GAO reported that, after the Mirecki incident, the Navy began screening potential instructors through (1) physical examinations, (2) a review of personnel and medical records, and (3) an interview by the commanding officer, executive officer, or department head of the school. The GAO found, however, that, unless there are indications of emotional instability (and/or poor judgment or performance), no psychological evaluation is done. The GAO further found that, of the eight commands it visited, all were interviewing potential instructors,

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Now on pp. 11-12.

but only one was trying to determine instructor psychological suitability. The GAO observed the Aircraft Fire Fighting and Rescue School at Millington, Tennessee, asked a Navy psychologist to work with the school training officer to develop questions that help characterize a person's psychological makeup. (p. 20/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The DOD agrees that a more comprehensive screening of instructors for high-risk courses is appropriate. The Chief of Naval Education and Training will develop a psychological questionnaire that will serve as a better screening tool for commanding officers to use in assessing the psychological fitness of a prospective instructor. The questionnaire will be promulgated by July 1991. In addition, the personal interview of the commanding officer or a designated representative will serve as another control in evaluating the fitness of an instructor. In cases where either of these mechanisms identify potential problems, the instructor candidate will either be removed from consideration or be subject to additional clinical psychological screening.

● **FINDING C: Other Screening Shortfalls.** The GAO reported that, because of ineffective implementation of policies, students reporting for high-risk training may not be volunteers and, in many cases, do not meet the minimum entry requirements. The GAO reported that non-volunteers are being sent to the Surface Swimmer Schools in Jacksonville, Florida, and San Diego, California. The GAO found that ships in need of rescue swimmers often send non-volunteers as a matter of expedience, rather than seeking qualified volunteers. The GAO reported that one student, withdrawn from surface rescue school, indicated that he never wanted to be a rescue swimmer and was only at the school because he was ordered to be there and feared the negative consequences of objecting.

The GAO reported that, while high-risk courses require an entry-level of physical fitness, Fleet commands were sending personnel to the schools who do not meet entry requirements. The GAO found that first-day attrition of students not meeting the published requirements was a significant problem at the two Rescue Swimmer Schools. The GAO observed that, from March 1989 to April 1990, 145 out of 417 enrollees (35 percent) were dropped from the San Diego School because they did not meet requirements. The GAO also observed that, at Jacksonville in FY 1989, 123 of 455 enrollees (27 percent) did not meet the entry requirements. The GAO reported that the training schedules do not allow time to administer physical

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Now on pp. 12-13.

See comment 1.

examinations or build-up or remedial training of unqualified trainees, and that placing physically unqualified candidates in high-risk training exercises would be inviting disaster. (pp. 21-22/GAO Draft Report)

**DOD RESPONSE:** PARTIALLY CONCUR. The GAO implies that all 145 Chief of Naval Education and Training courses, which are designated as high-risk are also designated as voluntary. In fact, 51 high-risk courses are not voluntary. Generally, the non-voluntary courses provide high-risk training that is required for all Navy personnel. Examples of such schools are fire fighting, damage control, and small arms training. For Surface Rescue Swimmer School, the Catalog of Navy Training Courses specifies the physical prerequisites and requires the parent command to certify that the member meets them. The Catalog of Navy Training Courses does not, however, state that the training is voluntary.

The Chief of Naval Education and Training will revise the Catalog of Navy Training Courses to require that candidates for the course be volunteers. The April 1991 edition of the Catalog of Navy Training Courses will reflect the fact that the Surface Rescue Swimmer School course is voluntary. The Chief of Naval Operations will also direct, by message, that the Fleet commanders redouble their efforts to ensure all candidates for high-risk courses meet all the stated prerequisites. The message will be sent by May 1991.

- **FINDING D: Weak Processing Controls For Students With Medical Problems.** The GAO reported that only one of eight commands was notifying command personnel of changes in a student's medical status. The GAO found that the other seven commands used a "chit" system for student medical status changes that relied on the student to return the chit to the training official after a medical evaluation. The GAO concluded that this reliance on students does not constitute direct communication with medical authorities and lends itself to the possibility of a medically unqualified student returning to training by altering or not presenting the chit to command personnel. (p. 23/GAO Draft Report)

Now on p. 13.

**DOD RESPONSE:** CONCUR. The Chief of Naval Education and Training Instruction 1500.20B (dated January 16, 1991) requires that commanding officers of training activities:

"Establish procedures to ensure controls regarding changes in student medical status are sufficient to

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provide supervisors/instructors with a clear indication of student fitness, unfitness, or limitation of duty. A student medically evaluated as physically or psychologically unfit or unsuited for training shall be immediately removed from training until medical clearance to return to training is received."

The requirement for direct communications was originated by the Chief of Naval Education and Training. The Training Performance Evaluation Board observed the same noncompliance problems with the previous regulation, which the GAO had cited. That led the Chief of Naval Education and Training to conduct further evaluation and determined the direct communication requirement was not practical in many situations. The revised Chief of Naval Education and Training Instruction 1500.20B removed the requirement for direct communication and placed the responsibility with the commanding officer to establish procedures to maintain the current medical status of the students in the command.

The requirement for direct communication imposed by the Chief of Naval Education and Training was a direct result of a misinterpretation of a section of the previous GAO review, which was conducted following the Mirecki death. The GAO wrote: "We believe a procedure should be formalized requiring telephone communication between Aviation Enlisted Aircrew Training School and Rescue Swimmer School as soon as a student is determined to be medically unqualified." This was the only reference to direct communication. It was limited to direct communication within the Aviation Enlisted Aircrew Training School organization, not between the school and the medical facility. The specific recommendation in the initial GAO report is that the Chief of Naval Education and Training "ensure that controls on student status changes are sufficient to provide supervisors with a clear indication of what status changes have been made." The current Chief of Naval Education and Training Instruction 1500.20B fully complies with the recommendation.

Compliance with policy regarding procedures for tracking student medical status is, and will continue to be, inspected by the Training Performance Evaluation Board of the Chief of Naval Education and Training. The Training Performance Evaluation Board conducts regular inspections of high-risk training activities and ensures all safety directives are followed. The Training Performance Evaluation Board will ensure that management controls are sufficient to inform the training activity of all significant changes in student medical status.

Now on pp. 13-15.

- **FINDING E: Inadequate Evaluation of Instructors.** The GAO reported that requirements for evaluations of instructors are not always met. The GAO further reported that, in the commands it visited, the attention to non-classroom evaluations was not representative of the time spent in this part of training. The GAO found that two activities responsible for sessions of very high risk to students, were not conducting any evaluations of instructors-- (1) the Naval Aerospace Medical Institute's Aviation Physiology Department and (2) the Pensacola Naval Air Station Weapons Department. The GAO further found that five of the eight commands visited were not evaluating each instructor quarterly as required, although they had established programs to do so. The GAO noted that course officials had not documented the reasons for not doing evaluations and could not explain why they were not done. (pp. 23-25/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The Chief of Naval Education and Training uses the Training Performance Evaluation Board to enforce compliance with instructor evaluation requirements and other safety directives. The Training Performance Evaluation Board reports inspection results and recommended corrective action directly to the Chief of Naval Education and Training.

The Chief of Naval Education and Training will promulgate a new directive (Chief of Naval Education and Training Instruction 1500.22) that will require the ratio of instructor evaluations devoted to non-classroom activities to correspond to the amount of non-classroom instruction that is accomplished. The new directive will be promulgated by April 1991.

The Navy agrees that the Pensacola Naval Air Station Weapons Department and the Naval Aerospace Medical Institute Aviation Physiology Department were delinquent on instructor evaluations. The deficiencies will be corrected with evaluations completed on all instructors at both Pensacola sites by May 1991. Continuing compliance with evaluation requirements will be monitored by the Training Performance Evaluation Board and the Naval Aerospace Medical Institute's Aviation Training Model Manager.

- **FINDING F: Student Critique Systems Are Flawed.** The GAO reported that the student critique systems were deficient for most of the high-risk training courses reviewed. The GAO found that the quality and content of the feedback forms varied considerably, did not meet existing criteria, and were not structured to provide unbiased, specific

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information. The GAO found that, with one exception, the critique forms did not allow students to assess instructors individually. The GAO found the following:

- in over half of the courses, the forms did not include safety questions that solicited student comments on unsafe training conditions or practices and did not specify that including one's name on the critique was optional;
- the forms did not ask students to evaluate non-classroom instructor activities;
- critique forms at three of eight commands had unbalanced rating scales for answers with more adjectives with positive connotations than negative, which can lead to biased responses;
- critique forms at five commands used yes/no questions, and general (rather than specific) questions and, as a result, did not provide sufficient information to be useful to managers; and
- critique forms also included questions about issues on which the students were not informed.  
(pp. 26-28/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The Chief of Naval Education and Training has prepared a new instruction (Chief of Naval Education and Training instruction 1540.6D) that contains a revised student critique form for use by all Chief of Naval Education and Training activities. The new form incorporates resolution of all GAO student critique findings. The new instruction, with the revised form, will be promulgated by April 1991.

- **FINDING G: Inadequate Command Oversight of High-Risk Training—Reporting of Mishaps Is Lax.** The GAO reported that the Navy oversight of high risk training is not adequate to ensure the safety of students and instructors. The GAO found that instructors and training commands frequently do not report mishaps. The GAO further found that, despite the emphasis Navy regulations place on reporting mishaps, five of the eight training activities visited had inadequate systems in place. The GAO reported that in some cases, training activities had no mishap reporting systems for extended periods of time, and in others, only selected mishaps were reported to higher commands and to the Navy Safety Center. The GAO noted that it was unable to determine the extent of non-reporting of mishaps because of poor record keeping.

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Now on pp. 15-16.

Now on pp. 19-22.

The GAO also observed that higher commands had no system to detect the lack of compliance. The GAO explained that the Training Performance Evaluation Board was established to monitor this aspect of high-risk training and will continue to do so in future safety reviews. Many mishaps were not reported because they did not meet the overall Navy criteria of a missed workday. The GAO concluded that, without such data, training commands and the Naval Safety Center cannot determine trends or analyze problem situations in high-risk training.  
(pp. 31-35/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The Navy provides specific guidelines for reporting training mishaps to the Naval Safety Center. Besides lost time incidents, training mishaps that result in the termination of the training evolution are reportable. Additionally, near misses are reportable. Near misses would include incidents where there was no termination of training or lost time, but the potential for death, serious injury, or disability existed. A prime example of such an incident is a shallow-water blackout.

In order to analyze trends in high-risk courses, the Naval Safety Center now requires that the course identification number be included in mishap reports. That requirement was effective May 22, 1990, with Change 1 to Chief of Naval Operations Instruction 5102.1C. The revised format was developed specifically to enable the extraction of data for trend analysis of training mishaps.

Additionally, the Chief of Naval Education and Training now requires that training-related first aid and medical treatment incidents be reported to the Naval Safety Center. That requirement was effective January 16, 1991 with the issuance of Chief of Naval Education and Training Instruction 1500.20B. Also, the Chief of Naval Education and Training will increase mishap reporting requirements to require training activities to include lessons learned from mishap analysis in the quarterly report of training-related injury and illness statistics. For multiple site courses, the Course Curriculum Model Manager will be required to consolidate quarterly lessons learned for dissemination to all course sites. The increased requirements will be promulgated by April 1991.

The Training Performance Evaluation Board will continue to emphasize compliance with mishap reporting requirements in the course of their safety reviews.

● **FINDING H: Analysis of Mishaps Is Not Being Done.** The GAO reported that, for the most part, those responsible for analyzing mishap information are not doing so. The GAO found that, with the exception of a special review requested by the Chief of Naval Education and Training, there is no evidence that the Naval Safety Center has conducted systematic reviews or analyses of significant non-aviation training-related mishaps since and including the Mirecki incident in March 1988. The GAO noted that requested Naval Safety Center data on training injuries within the Training Command was incomplete, inaccurate and inadequate for trend analysis purposes. The GAO found no evidence of systematic reviews and/or analyses of accident/injury reports by course safety officers or model managers, with one exception, a computerized data base of mishaps developed by the Naval Aviation Schools Command Safety officer. The GAO concluded that the Chief of Naval Education and Training is unable to make an informed appraisal of high-risk training courses and remedy existing problems. (pp. 36-37/GAO Draft Report)

**DOD RESPONSE:** CONCUR. Recent improvements have, however, been made to insure that mishap analysis is comprehensive. In January of 1991, the Chief of Naval Education and Training began requiring training activities to submit a quarterly report of reportable and recordable training-related illness and injury statistics to the functional command level via the Course Curriculum Model Manager. The compilation of that report requires training activities to conduct trend analysis of all training-related mishaps. For courses that are conducted at more than one site, the Course Curriculum Model Manager will consolidate quarterly lessons learned for dissemination to all course sites.

All formal training-related mishaps are being tracked by the Naval Safety Center. Since May 22, 1990, the course identification number has been required on training mishap reports that are sent to the Naval Safety Center. This course identification number facilitates analysis by allowing mishaps to be identified with a specific course. The Naval Safety Center updated the history of training mishaps from 1980 to present and established categories tailored to track the unique situation in the training establishment.

The Naval Safety Center has also performed trend analysis on several types of mishaps. Reports of the analyses have been provided to those commands involved in that type of training. The following are examples of the types of analysis that have been performed:

- Analysis of five years of U.S. Naval Academy data which vastly improved training safety tracking.
- Analysis of every electronic shock at any Navy training command. Subsequent liaison with the schools has dramatically decreased the frequency of shocks by introducing procedural changes.
- Analysis of back injuries in the mess management specialist rating was submitted to the Naval Amphibious School to assist in efforts to reduce back injuries throughout the Navy.
- Analysis of Seabee initial training pole climbing mishaps. That analysis lead to dramatically reduced incidents of such mishaps.
- Continuing analysis of mishaps by rating. The results of this analysis are provided to the Chief of Naval Education and Training for forwarding to the commands that teach those ratings.

- **FINDING I: Command Monitoring and Evaluation of High-Risk Training Has Been Improved.** The GAO reported that, since its previous review, the Chief of Naval Education and Training has (1) established the Training Performance Evaluation Board to conduct oversight of high-risk training, and (2) revised training safety policies to more clearly define the responsibilities of subordinate commands. The GAO concluded that overall the Board, through its various efforts, has played an important role in improving training safety. The GAO also found that the Chief of Naval Education and Training has also developed and published a training safety instruction that clearly establishes the responsibilities of subordinate commands for carrying out safety policies.  
(pp. 38-39/GAO Draft Report)

**DOD RESPONSE:** CONCUR.

- **FINDING J: Potentially Dangerous and Unapproved Training Exercises.** The GAO reported that, while most of the training commands were complying with the new safety directives, some training exercises are being conducted that are not a part of the approved curriculum and may unnecessarily place students at risk. The GAO found that the Basic Underwater Demolition/Seal course, taught at the Naval Special Warfare Center in San Diego, includes some exercises that may involve unacceptable risks and that are not an approved part of the course curriculum.

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Now on pp. 23-24.

The GAO cited three specific exercises; (1) the pool competency drill, (2) the "jock up" drill, and (3) the Chinese water board torture demonstration. The GAO reported that between July 28, 1989 and March 12, 1990, during the pool competency drill, eight students experienced unconsciousness due to a lack of oxygen. The GAO noted that these incidents were reported to the Special Warfare Center's safety officer and commanding officer, but not to higher commands or the Naval Safety Center, because they did not meet the overall Navy criteria of a missed workday. The GAO reported that during the "jock up" drill students were required to do push-ups with diving tanks on their back. The GAO noted that when this was brought to the attention of the Special Warfare Center officials the practice was limited to 10 push-ups with tanks on. The GAO reported that the Chinese water board torture is not an official part of the curriculum and some special Naval warfare personnel indicated that the exercise has no place in this training course. The GAO concluded that the Navy Special Warfare Center was conducting some exercises in its basic SEAL course that are not sanctioned and may involve unacceptable risks. (pp. 39-45/GAO Draft Report)

**DOD RESPONSE:** CONCUR. For the pool competency drill, the Chief of Naval Education and Training will request that the Bureau of Medicine and Surgery review the training procedure and make recommendations for improvement. The review is expected to be completed by April 1991.

The "jock up" drill is now part of the approved curriculum. A curriculum change was submitted to the Commander, Training Command, U.S. Pacific Fleet, in October 1990, to incorporate the "jock up" drill into the diving phase. Commander, Training Command, U.S. Pacific Fleet, gave verbal approval. Formal written approval will be accomplished by April 1991.

The Chinese water torture board demonstration has been specifically prohibited by the Chief of Naval Education and Training. The Naval Special Warfare Center was directed not to provide the Chinese water torture board demonstration to students under any circumstances by Commander Training Command U.S. Pacific Fleet letter dated November 28, 1990.

Unconsciousness, due to a lack of oxygen, frequently can be attributed to hyperventilation prior to water entry. Schools have been directed by Chief of Naval Operations message (sent November 1, 1990) to discontinue all training that teaches hyperventilation as a means to decrease the urge to breathe.

- **FINDING K: Shortened Surface Rescue Swimmer Course Could Compromise Safety.** The GAO reported that, in April 1990, the Chief of Naval Education and Training shortened the surface rescue swimmer courses from four to three weeks despite concerns voiced by school officials and instructors. The GAO explained that the change was made to meet increased Pacific Fleet requirements for rescue swimmers, despite an in-depth review of rescue swimmer training methods and safety procedures that validated the four-week rescue swimmer curriculum. The GAO noted that the change drew strong opposition from trainers and other qualified Navy rescue swimmers for the following reasons:

- insufficient time to attain necessary physical conditioning level;
- no time for remedial training;
- insufficient time for students to physically recover from strenuous training activities;
- reduced time for practice; and
- increased pressure/stress for students/instructors.

The GAO concluded that these factors would affect proficiency and self-confidence, increase the risk of injury, and result in insufficient graduates to meet fleet requirements because of higher attrition rates.

The GAO found that the validation results of the three-week course confirmed concerns expressed. The GAO reported that the validation team noted that the compressed time frame (1) did not accommodate remedial training and would likely lead to student withdrawal; (2) precluded assimilation of the material and mastery of the skills; (3) produced a high-stress environment, tempting instructors to take unacceptable shortcuts which compromise quality and safety; and (4) significantly decreased the quality of training. The GAO noted that the validation team recommended that the course length be extended to at least 18 days and the instructor manning deficiencies be corrected. The GAO reported that the Chief of Naval Education and Training rejected the recommendation to increase course length, is trying to correct the shortage of instructors, and is examining the potential for removing portions of the course.

The GAO reported that, as of August 31, 1990, the early results of the three-week training show in-course attrition has increased (from 25 to 31 percent in San Diego, and from 20 to 35 percent in Jacksonville). The

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GAO also found the school officials indicated that the course cannot be offered more than 11 times a year because of holidays, leave, and other factors. The GAO noted that the decision to shorten the course was based on being able to increase the number of classes each year from 10 to 13. The GAO also found that, even if the course was taught 13 times a year, fleet requirements would not be met, given present graduation rates. The GAO concluded that the shortened course is producing rescue swimmers of significantly lower caliber, has increased attrition and may compromise training safety. (pp. 47-52/GAO Draft Report)

**DOD RESPONSE:** PARTIALLY CONCUR. Although in-course attrition has been a continuing problem, as the GAO suggests, the inference that student safety was compromised is not correct. Since the time of the GAO observations and the first course change, the Navy has taken additional significant and comprehensive actions with respect to the requirements for the Surface Rescue Swimmers and the nature of the course curriculum. It was found that many course performance and procedural requirements were not required of the Surface Rescue Swimmer. Parachute disentanglement is an example. These areas are being deleted and the curriculum is being adjusted accordingly. The course is currently being revised again, based on the latest Fleet requirements as well as a thorough review of the curriculum. The issue of three-week versus four-weeks course length, is considered secondary to developing a course that meets the needs of the Navy. Safety will be a paramount consideration in the evaluation of the Surface Rescue Swimmer course, as well as all other Navy training courses. The next course revision is targeted for implementation in October 1991, and its length is undetermined at this time.

\* \* \* \* \*

#### RECOMMENDATIONS

- **RECOMMENDATION 1:** The GAO recommended that the Chief of Naval Education and Training explore the development of psychological screening devices for all high-risk training students and instructors in high-risk training, to determine their suitability to participate in that training. (p. 29/GAO Draft Report)

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Now on pp. 29-31.

Now on p. 16.

**DOD RESPONSE:** CONCUR. The DOD agrees that psychological screening for students and instructors involved in high-risk training is appropriate. The Chief of Naval Education and Training will explore the development of psychological screening devices for all students in high-risk training, to determine their suitability to participate in such training. The evaluation will be completed by March 1992. Also, the Chief of Naval Education and Training will develop a psychological questionnaire for prospective instructors of high-risk courses. This psychological questionnaire will serve as a screening tool for the commanding officer to use in determining when a clinical psychological evaluation should be ordered. The psychological questionnaire will be promulgated by July 1991.

- **RECOMMENDATION 2:** The GAO recommended that the Chief of Naval Education and Training enforce administrative processing controls that require direct communication between medical authorities and command officials when a student is determined to be medically unqualified for high-risk training. (p. 29/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The Chief of Naval Education and Training will enforce the requirement (promulgated on January 16, 1991 by the Chief of Naval Education and Training Instruction 1500.20B) that the commanding officer at each training site have adequate procedures in place to track student medical status. Safe training is the goal. Ensuring that students are fit for training medically and psychologically is important to the Navy. The training activity commanding officer is best positioned to develop procedures to track student medical status. Compliance with policy regarding procedures for tracking student medical status is inspected by the Training Performance Evaluation Board of the Chief of Naval Education and Training. Regular inspections of high-risk training activities are conducted and ensures that all safety directives are followed. The Training Performance Evaluation Board will ensure that management controls established by the training activity commanding officer are sufficient to inform the training activity of all significant changes in a student's medical status. This board revisits each high-risk training site approximately once every three years.

- **RECOMMENDATION 3:** The GAO recommended that the Chief of Naval Education and Training enforce compliance with Chief of Naval Education and Training requirements to evaluate instructors of high-risk courses quarterly and require

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Now on p. 16.

Now on pp. 16-17.

training commands to increase the coverage of their non-classroom activities in their instructor evaluations. (p. 29/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The Chief of Naval Education and Training will use the Training Performance Evaluation Board to enforce compliance with requirements to evaluate instructors. The Chief of Naval Education and Training will also promulgate a new directive that will require the ratio of instructor evaluations devoted to non-classroom activities to correspond to the amount of non-classroom instruction that is accomplished. Expected issuance is April 1991.

- **RECOMMENDATION 4:** The GAO recommended that the Chief of Naval Education and Training revise student critique form requirements to ensure that the forms used in all high-risk training courses are unbiased, ask specific rather than general questions, solicit student feedback on non-classroom activities, individual instructors, and unsafe training conditions or practices, and can be completed anonymously. (p. 29/GAO Draft Report)

Now on p. 17.

**DOD RESPONSE:** CONCUR. The Chief of Naval Education and Training has prepared a new instruction that contains a revised student critique form for use by all Chief of Naval Education and Training activities. That form satisfies all the above-listed concerns. The new directive is Chief of Naval Education and Training Instruction 1540.6D, which will be issued by April 1991.

- **RECOMMENDATION 5:** The GAO recommended that the Chief of Naval Operations direct fleet commands to adhere to the minimum requirements specified in the Catalogue of Navy Training Courses when sending personnel to high-risk training courses, and that they send only volunteers to these courses. (p. 30/GAO Draft Report)

Now on p. 17.

**DOD RESPONSE:** PARTIALLY CONCUR. By May 1991, the Chief of Naval Operations will direct that the Fleet commanders ensure that all candidates for high-risk courses meet all the stated prerequisites. Some high-risk courses (such as firefighting and damage control), however, should not require that students be volunteers when universal training is necessary for survival at sea.

- **RECOMMENDATION 6:** The GAO recommended that the Chief of Naval Operations strengthen the role of the Naval Safety Center by requiring training commands to report all

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Now on p. 27.

high-risk training mishaps that occur in individualized and specialized training requiring any type of trained medical attention, regardless of training or work time lost to the Center. (p. 45/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The Chief of Naval Education and Training has required its training activities to report training-related first aid, medical treatment, and lost time mishaps. The requirement became effective on January 16, 1991, with the issuance of Chief of Naval Education and Training Instruction 1500.20B.

In order to analyze trends in high-risk courses, the Naval Safety Center now requires that the course identification number be included in mishap reports. That requirement was effective May 22, 1990 with Change 1 to Chief of Naval Operations Instruction 5102.1C. The format was developed specifically to enable the extraction of data for trend analysis of training mishaps.

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- **RECOMMENDATION 7:** The GAO recommended that the Chief of Naval Operations strengthen the role of the Naval Safety Center by requiring the Center to devise a system to analyze high-risk training mishaps for causes and trends, and to share the results of these analyses on a regular basis with the Chief of Naval Education and Training. (p. 45/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The Naval Safety Center, with publication of Change 1 to Chief of Naval Operations Instruction 5102.1C., dated May 22, 1990, is now equipped to analyze high-risk training courses for mishap trends. The mishap reporting format has been modified to include the course identification number in training mishap reports. When analysis reveals causes and trends, guidance is forwarded by the Naval Safety Center to the Chief of Naval Education and Training. That guidance is then disseminated by the Chief of Naval Education and Training to all appropriate training activities.

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- **RECOMMENDATION 8:** The GAO recommended that the Chief of Naval Education and Training require subordinate commands to (1) keep thorough and accurate records of all high-risk training mishaps, (2) evaluate them for trends which may indicate unsafe training policies, practices, or equipment, (3) initiate corrective action when trends indicate they are warranted, and (4) regularly report results of mishap analyses and corrective actions to senior commands. (p. 46/GAO Draft Report)

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**DOD RESPONSE:** CONCUR. Recent improvements have been made to insure that mishap record-keeping and analysis is comprehensive. In January 1991, the Chief of Naval Education and Training Instruction 1500.20B began requiring training activities to submit a quarterly report of reportable and recordable training-related illness and injury statistics to the functional command level via the Course Curriculum Model Manager. The compilation of that report requires training activities to conduct trend analysis of all training-related mishaps. For courses that are conducted at more than one site, the Course Curriculum Model Manager will consolidate quarterly lessons learned for dissemination to all course sites.

- **RECOMMENDATION 9:** The GAO recommended that the Chief of Naval Education and Training have the pool competency drill, conducted in SEAL training, examined by medical diving experts to determine the reasons for the relatively high incidence of shallow-water blackouts, and revise procedures to reduce the risk of these incidents. (p. 46/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The Chief of Naval Education and Training will request that the Bureau of Medicine and Surgery review the pool competency drill and make recommendations for improvement. This review is expected to be completed by April 1991. Completion dates for course revisions, if any, will be determined after the review is complete.

Unconsciousness due to a lack of oxygen frequently has been found to be attributable to hyperventilation prior to water entry. Schools have been directed to discontinue all training that teaches hyperventilation as a means to decrease the urge to breathe (Chief of Naval Operations message sent November, 1990).

- **RECOMMENDATION 10:** The GAO recommended the Chief of Naval Education and Training direct that any exercises, which do not contribute to training objectives and particularly those that appear to involve unacceptable risks, be discontinued, and that all high-risk training evolutions be included in the course curriculum and approved by higher authority before they are conducted. (p. 46/GAO Draft Report)

**DOD RESPONSE:** CONCUR. The Chief of Naval Education and Training has required that Course Curriculum Model Managers delete all high-risk training exercises determined to be non-essential for attainment of training

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objectives (refer to the DoD response to Finding J for specific details on exercises that are under review). In addition, the Chief of Naval Education and Training has specified that training activities conduct their training in accordance with the approved curricula. Those management requirements are contained in Chief of Naval Education and Training instruction 1500.20B (dated January 16, 1991).

● **RECOMMENDATION 11:** The GAO recommended that the Chief of Naval Education and Training reconsider the decision to shorten the curriculum of the Surface Rescue Swimmer Course. (p. 53/GAO Draft Report)

**DOD RESPONSE:** CONCUR. Since the GAO audit was completed, the Chief of Naval Education and Training has continued to review the Surface Rescue Swimmer Course and some subjects have been deleted in order to allow more time for remedial training and for recovery from strenuous physical training. Nonetheless, the curriculum still requires change as a result of a recent curriculum review by the Fleet Commanders-in-Chief. Accordingly, the Chief of Naval Education and Training is undertaking a curriculum revision for the course. The issue of a three-week or a four-week course length is secondary to meeting the needs of the Navy Fleet Commanders. Safety will be a paramount consideration in the reevaluation of the Surface Rescue Swimmer Course, as well as all other Navy training courses. The length of the course is undetermined at this time. The Navy plans to implement the revised course in October, 1991.

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The following is GAO's comment on the Assistant Secretary of Defense's letter dated, March 29, 1991.

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## GAO Comment

1. We recognize that not all of Chief Naval Education Training's high-risk courses are voluntary. Our review addressed only those high-risk courses that CNET designated as voluntary, with a policy of allowing students to "drop-on-request." Our finding with regard to ensuring that participants are volunteers does not apply to high-risk training courses generally required for all Navy personnel. As DOD pointed out, the Catalogue of Navy Training Courses did not state the Surface Rescue Swimmer School course was voluntary.

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