U.S. Department of
Homeland Security
United States
Coast Guard

SAFETY AND ENVIRONMENTAL HEALTH MANUAL

COMDTINST M5100.47

U.S. Department of Homeland Security
United States Coast Guard

Commandant
United States Coast Guard

2100 2nd Street, SW
Washington, DC 20593-0001
Staff Symbol: G-WKS
Phone: (202) 267-1883

COMDTNOTE 5100
08 SEP 2003

COMMANDANT NOTICE 5100

CANCELLED:
08 SEP 2004

Subj: CH-9 TO SAFETY AND ENVIRONMENTAL HEALTH MANUAL, COMDTINST M5100.47

1. PURPOSE. This Notice publishes CH-9 to the Safety and Environmental Health Manual, COMDTINST M5100.47. Intended users of this directive are all units which maintain the Manual.

2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, and assistant commandants for directorates, Chief Counsel, and special staff offices at Headquarters shall ensure compliance with the provisions of this Notice. Internet release authorized.

3. DIRECTIVES AFFECTED. Public Pool Guide, COMDTINST M6200.7, is cancelled.

4. SUMMARY OF CHANGES. Chapter 4, Occupational Health, was completely updated. Changes include updates to the Occupational Medical Surveillance and Evaluation Program to reflect the current program and additional guidance on industrial hygiene and thermal stress. Chapter 5, Environmental Health, was completely updated and is a combination of the old chapters on pest management and sanitation practices. This chapter updates policies on pesticide use and provides additional guidance on habitability and swimming pools, spas, wading pools, and training tanks. Enclosure 3, Medical Officer's Report, was updated with current forms to be used during a mishap investigation.

5. PROCEDURES. No paper distribution will be made of this Notice. Official distribution will be made via Coast Guard Directives System CD-ROM and website at: http://cgweb.uscg.mil/g-c/g-ccs/g-cit/g-cim/directives/welcome.htm or http://www.uscg.mil/ccs/cit/cim/directives/welcome.htm. Message notification will announce changes and effective dates.

DISTRIBUTION – SDL No. 140

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NON-STANDARD DISTRIBUTION:

a. Remove and insert the following pages:

Remove:	Insert:
Table of Contents p. i thru v	Table of Contents p. i thru iv, CH-9
Chapter 4	Chapter 4, CH-9
Chapters 5 and 6	Chapter 5, CH-9
Enclosure 3	Enclosure 3, CH-9

/s/
JOYCE M. JOHNSON
Director of Health and Safety

Encl: (1) CH-9 to Safety and Environmental Health Manual, COMDTINST M5100.47

U.S. Department of Transportation
United States Coast Guard

Commandant
United States Coast Guard

2100 Second Street, SW
Washington, DC 20593-0001
Staff Symbol: G-WKS-4
Phone: (202) 267-6863
Fax: (202) 267-4355

COMDTNOTE 5100
26 NOV 2002

COMMANDANT NOTICE 5100 CANCELLED: 25 NOV 2003

Subj: CHANGE-8 TO SAFETY AND ENVIRONMENTAL HEALTH MANUAL, COMDTINST M5100.47

1. PURPOSE. This Notice publishes revisions to the Safety and Environmental Health Manual, COMDTINST M5100.47. Intended users of this directive are all units which maintain the manual.

2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, and assistant commandants for directorates and special staff offices at Headquarters shall ensure compliance with the provisions of this Notice. Internet release authorized.

3. SUMMARY OF CHANGES. These changes incorporate the new E-Mishap System into the Manual, eliminates the requirement to report off duty class D mishaps, and modifies mishap classifications in order to allow the E-Mishap System to automatically calculate the appropriate mishap classification.

4. DISTRIBUTION. No paper distribution will be made of changes to this Manual. Official distribution will be made via Coast Guard Directives System CD-ROM and the Department of Transportation website at: http://isddc.dot.gov/. An updated electronic version of the entire Manual, changes, and announcement of ALCOASTs are available via the Commandant (G-WK) Publications and Directives website at: http://www.uscg.mil/hq/G-W/g-wk/g-wkh/g-wkh-1/Pubs/Pubs.Direct.htm. Message notification will announce changes and effective dates.

DISTRIBUTION – SDL No. 140

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B		8	20	2	12	6		10	10	10	10	20	5	20	2	1	20	20	20	1	5	1	3	1	1	1
C	10	8	1	6	3	3	1	1	1		12	1	1		1		1	1		1	1	1	1		1	1
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NON-STANDARD DISTRIBUTION:

5. PROCEDURES. Remove and insert the following pages:

Remove	Insert
Chapter 3, CH-7	Chapter 3, CH-8
Encl (6), CH-5	Encl (6), CH-8
Encl (9), CH-5	Encl (9), CH-8
Encl (15)	Encl (15), CH-8

/s/
W. J. WILKINSON
Acting Director of Health and Safety

Encl: (1) CHANGE-8 to Safety and Environmental Health Manual, COMDTINST M5100.47

U.S. Department of Transportation
United States Coast Guard

Commandant
United States Coast Guard

2100 Second Street, S.W.
Washington, DC 20593-0001
Staff Symbol: G-WKS
Phone: (202) 267-1883

COMDTNOTE 5100
5 JUL 2002

COMMANDANT NOTICE 5100

CANCELLED:

Subj: CH-7 TO SAFETY AND ENVIRONMENTAL HEALTH MANUAL, COMDTINST M5100.47

1. PURPOSE. This Notice publishes revisions to the Safety and Environmental Health Manual, COMDTINST M5100.47. Intended users of this directive are all units which maintain the manual.

2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, and assistant commandants for directorates and special staff offices at Headquarters shall ensure compliance with the provisions of this Notice.

3. SUMMARY OF CHANGES. This document contains changes to the Commandant's Safety Board process in Chapter 3 of the Safety and Environmental Health Manual. It formalizes the process between the approval of the Final Decision Letter and the actual release of the Final Action Message. The Table of Contents has been updated to reflect this change. CH-7 has been bar-marked.

4. PROCEDURES. No paper distribution will be made of changes to this Manual. Official distribution will be made via Coast Guard Directives System CD-ROM and the Department of Transportation website at: http://isddc.dot.gov/. An updated electronic version of the entire manual, changes, and announcement of ALCOASTs are available via the Commandant (G-WK) Publications and Directives website at: http://www.uscg.mil/hq/G-W/g-wk/g-wkh/g-wkh-1/Pubs/Pubs.Direct.htm. Message notification will announce changes and effective dates.

DISTRIBUTION – SDL No. 139

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C	10	8	1	6	3	3	1	1	1		12	1	1		1		1	1		1	1	1	1		1	1
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NON-STANDARD DISTRIBUTION:

a. Remove and insert the following pages:

Remove	Insert
Chapter 7, p. 3-13 thru 3-20	Chapter 7, p. 3-13 thru 3-20, CH-7
Table of Contents. p. i and ii	Table of Contents, p. i and ii, CH-7

T.W. ALLEN
CHIEF OF STAFF

Encl: (1) CH-7 to Safety and Environmental Health Manual, COMDTINST M5100.47

U.S. Department of Transportation
United States Coast Guard

Commandant
United States Coast Guard

2100 2nd Street, SW
Washington, DC 20593-0001
Staff Symbol: G-WKS
Phone: (202) 267-1883

COMDTNOTE 5100
FEBRUARY 28, 2002

COMMANDANT NOTICE 5100

CANCELLED:
FEBRUARY 27, 2003

Subj: CH-6 TO SAFETY AND ENVIRONMENTAL HEALTH MANUAL, COMDTINST M5100.47

1. PURPOSE. This Notice publishes revisions to the Safety and Environmental Health Manual, COMDTINST M5100.47. Intended users of this directive are all units that maintain the manual.

2. APPLICATION. The policies and procedures in this manual apply to all Coast Guard facilities and personnel. This manual promulgates internal guidance intended to promote efficiency and consistency in public service above and beyond the requirements of law or regulation. Any obligations discussed flow only to the Coast Guard. Coast Guard personnel are expected to exercise good judgment in performing the functions discussed. The Coast Guard retains the discretion to deviate from or change this guidance without notice. This Manual creates no duties, standards of care, or obligations to the public and should not be relied upon as a representation by the Coast Guard as to the manner of proper performance in any particular case outside of the Coast Guard.

3. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, and assistant commandants for directorates and special staff offices at Headquarters shall ensure compliance with the provisions of this Notice.

4. SUMMARY OF CHANGES. These documents are substantially revised and must be completely reviewed. The Table of Contents has been updated to reflect this change. CH-6 has been bar-marked. The following is a summary of major change areas:

   a. The Safety and Environmental Health Manual, COMDTINST M5100.47 Chapter 1 "Safety and Environmental Health Program" shifts the paradigm for the Coast Guard's safety and environmental health program from one primarily rooted in compliance to one that emphasizes the concept of managing risks before mishaps occur. Other improvements in this change include uniform methods of categorizing risks and using safety checklists, implementation of a process for identifying service-wide safety priorities, and improved descriptions of information resource and training responsibilities.

   b. Chapter 2, "Aviation Safety Program," has been completely rewritten to reflect changes in both the Coast Guard Aviation Safety Program and the Coast Guard Safety And Environmental Health

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Program. The revised Chapter 2 formalizes many of the interim and informal procedures currently used in the Aviation Safety Program, including but not limited to, the Flight Safety Officer selection process, non-flight related air station safety duties and responsibilities, procedures governing the mishap voice and data recorders, aviation specific mishap reporting requirements, Headquarter level recurring Aviation Safety Standardization Visits and the evolving maintenance resource management program.

c. Enclosure (5), FORMAT AND DIRECTIONS FOR THE COAST GUARD AVIATION MISHAP MESSAGE provides an updated format for the aviation mishap messages and reflects the new labor rate of $18 per hour.

d. Enclosure (18), ASSIGNING SAFETY AND HEALTH RISK ASSESSMENT CODES (RAC), has been added to the Safety and Environmental Health Manual.

5. PROCEDURES. No paper distribution will be made of changes to this Manual. Official distribution will be made via Coast Guard Directives System CD-ROM and the Department of Transportation website at: http://isddc.dot.gov/. An updated electronic version of the entire Manual, changes, and announcement ALCOASTs are available via the Commandant (G-WK) Publications and Directives website at: http://www.uscg.mil/hq/G-W/g-wk/g-wkh/g-wkh-1/Pubs/Pubs.Direct.htm. Message notification will announce changes and effective dates.

a. Remove and insert the following pages:

Remove:	Insert:
Table of Contents	Table of Contents, CH-6
Chapter 1	Chapter 1, CH-6
Chapter 2	Chapter 2, CH-6
Enclosure (5) p. 1,2	Enclosure (5) p. 1,2, CH-6
	Enclosure (18), CH-6

6. SPECIAL INSTRUCTIONS. Authority, responsibility, and additional sections and paragraphs in Chapter 1 are specifically referenced by other chapters in the Manual. With CH-6, the alphanumeric sequence is no longer valid. As the entire Manual is currently under revision, the specific section and paragraph references in other chapters will not be corrected at this time, but will be corrected when that chapter is revised. In the interim, any reference to a specific section in Chapter 1 by another chapter of the Manual should be considered only a reference to Chapter 1 without a section number. The information is still there but under a different section or paragraph alphanumeric designation.

JOYCE M. JOHNSON
Director of Health and Safety

Encl: (1) CH-6 to Safety and Environmental Health Manual, COMDTINST M5100.47

U.S. Department of Transportation
United States Coast Guard

Commandant
United States Coast Guard

2100 2nd Street, SW
Washington, DC 20593-0001
Staff Symbol: G-WKS
Phone: (202) 267-1883

COMDTNOTE 5100

27 JUN 2001

COMMANDANT NOTICE 5100

CANCELLED:

Subj: CH-5 TO SAFETY AND ENVIRONMENTAL HEALTH MANUAL, COMDTINST M5100.47

1. PURPOSE. This Notice publishes revisions to the Safety and Environmental Health Manual, COMDTINST M5100.47. Intended users of this directive are all units which maintain the manual.

2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, and assistant commandants for directorates and special staff offices at Headquarters shall ensure compliance with the provisions of this Notice.

3. SUMMARY OF CHANGES. This document is substantially revised and must be completely reviewed. The following list is a summary of major change areas:

   a. The Safety and Environmental Health Manual, COMDTINST M5100.47 Chapter 3 "Mishap Response, Investigation, and Reporting" consolidates instructions for Aviation, Shore, and Vessel mishaps from the previous Chapters: 2 "Aviation Safety Program," 3 "Shore Facility Mishap Reporting," 8 "Vessel Safety Program." All other portions of existing Chapters 2 and 8 remain in effect.

   b. A Mishap Response Flow Chart (Figure 3-1) has been added to summarize the process and reference applicable sections for all types and classes of mishaps.

   c. The Personal Casualty Report process has been referenced in Chapter 3 as certain mishap events require both it and the Mishap Report process to be applied.

   d. Additional clarifications/requirements/changes have been made in:

      (1) Definition of Mishap Events
      (2) Mishap Classifications
      (3) Mishap Type (Operational Mode)

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C	10	8	1	6	3	3	1	1	1		12	1	1		1		1	1		1	1	1	1		1	1
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NON-STANDARD DISTRIBUTION:

(4) Mishap Verbal Notification Requirements
(5) Mishap Reporting Deadlines and Distribution
(6) Mishap Analysis and Investigation Process
(7) Message Formats and Distribution
(8) Mishap Report Message (MISREP)
(9) Mishap Analysis Board (MAB)
(10) Mishap Analysis Report (MAR) Format and Distribution
(11) Commandant's Safety Board

e. Mishap Messages are to include the statement:

////////////

Remove:	Insert:
Table of Contents p. i thru v	Table of Contents p. i thru iv, CH-5
Chapter 2, p. 2-9 thru 2-38	Chapter 2, p. 2-9 thru 2-10, CH-5
Chapter 3	Chapter 3, CH-5
Chapter 8, p. 8-9 thru 8-34	Chapter 8, p. 8-9, CH-5
Enclosure (2)	Enclosure (2), CH-5
Enclosure (4)	Enclosure (4), CH-5
Enclosure (5)	Enclosure (5), CH-5
Enclosure (6)	Enclosure (6), CH-5
Enclosure (9)	Enclosure (9), CH-5
Enclosure (10)	Enclosure (10), CH-5
Enclosure (13)	Enclosure (13), CH-5
Enclosure (14)	Enclosure (14), CH-5
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JOYCE M. JOHNSON
Director of Health and Safety

Encl: (1) CH-5 to Safety and Environmental Health Manual, COMDTINST M5100.47

U.S. Department of Transportation

United States Coast Guard

Commandant
U. S. Coast Guard

2100 Second Street, S.W.
Washington, DC 20593-0001
Staff Symbol: G-KSE-2
Phone: (202) 267-6440

COMDTNOTE 5100

3 JAN 1995

COMMANDANT NOTICE 5100

CANCELLED: JAN 2 1996

Subj: CH-4 to COMDTINST M5100.47, SAFETY AND ENVIRONMENTAL HEALTH MANUAL

1. PURPOSE. This notice publishes revisions to Commandant Instruction M5100.47, Safety and Environmental Health Manual. Intended users of this directive are all units which maintain the manual.

2. ACTION. Area and district commanders; commanders of maintenance and logistics commands; commanding officers of headquarters units; Commander, Coast Guard Activities Europe; Commander, Coast Guard Activities Far East; and chiefs of offices and special staff divisions at Headquarters shall ensure compliance with the provisions of this notice.

3. SUMMARY OF CHANGES. This revision includes several new shore facility fire safety policy changes. Revised material is denoted by a vertical line.

   a. Section 9-F-3(c)(5) has been corrected to specify a standard for training fire department personnel in hazardous material response and operations.

   b. Section 9-F-3(c)(6) has been rewritten to require adherence to national fire code standards during facility construction and renovation.

   c. Section 9-F-3(d)(1) has been rewritten to make establishment of a Coast Guard unit MOU for fire protection on Coast Guard facilities an option rather than a mandatory requirement.

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C	10	8	1	6	3	3		1	1	1	12	1	1		1	1	1	1		1	1	1	1			1
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d. Section 9-F-3(d)(3) describes the unit's responsibility to invite the local fire department to the Coast Guard facility to conduct pre-fire planning.

e. Section 9-F-3(d)(4) has been rewritten to clarify fire brigade limitations and training requirements.

f. Section 9-G changes the name of the pre-fire plan to fire bill to avoid confusion with a fire department's pre-fire plan.

g. Section 9-I-2 has been rewritten to require the documentation of fire safety inspections.

4. PROCEDURES.

a. Remove pages 9-9 and 9-10, CH-2, and insert new pages 9-9, 9-9A, 9-10, and enclosure (17), CH-4.

b. Enclosure (17) is available as a Document Designer file via E-mail from Commandant (G-KSE-2). Forward E-mail request for Enclosure (17) to W.SEABROOKS/G-KSE or J.KARCHER/G-KSE.

Alan M. Steinman

ALAN M. STEINMAN
Chief, Office of Health and Safety

Encl: (1) CH-4 to COMDTINST M5100.47
(2) Sample Fire Protection Memorandum of Understanding for Coast Guard Units (COMDINST M5100.47, Enclosure (17))

U.S. Department of Transportation
United States Coast Guard

Commandant
U. S. Coast Guard

2100 Second St. S.W.
Washington, DC 20593-0001
Staff Symbol: G-KSE
Phone: (202) 267-1883

COMDTNOTE 5100

COMMANDANT NOTICE 5100 CANCELED:

Subj: CH-3 TO COMDTINST M5100.47, SAFETY AND ENVIRONMENTAL HEALTH MANUAL

1. PURPOSE. This notice publishes revisions to Commandant Instruction M5100.47, Safety and Environmental Health Manual. Intended users of this directive are all units which maintain COMDTINST M5100.47.

2. ACTION. Area and district commanders; commanders, maintenance and logistics commands; commanding officers of Headquarters units; Commander, Coast Guard Activities Europe; and chiefs of offices and special staff divisions at Headquarters shall ensure compliance with the provisions of this notice.

3. BACKGROUND.

a. As a cost-cutting measure, the maintenance of the computerized Coast Guard Mishap Reporting (MISREP) System was recently transferred from the Volpe National Transportation System Center to Coast Guard Maintenance and Logistic Command Atlantic. The system also was reconfigured to improve data analysis. Data fields were assessed for their utility to the safety program, specifically loss causation modeling and system safety analyses. As a result, several previously required fields were eliminated, other fields were modified to eliminate ambiguous record entries, and new fields were added to capture details important to the Safety and Environmental Health Program.

DISTRIBUTION - SDL No. 131

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NON-STANDARD DISTRIBUTION: B:c MLCs (6 extra)

b. Commandant (G-KSE) also reviewed problems units have had with executing mishap reporting procedures. This included evaluating: the time needed to properly complete a report, the need for different reporting formats, and the process of reporting mishaps, especially field unit use of Address Indicator Groups 4923 and 4934. As a result, time requirements have been standardized, the number of reporting formats have been reduced, and the reporting process and MISREP routing instructions have been revised.

4. SUMMARY OF CHANGES. Revised material is denoted by a line in the outer margin. Editorial changes are not marked.

a. Sections 3-I, 8-K, and 8-L refer to enclosure (6) for submitting both preliminary message notifications and MISREPs. Simplified reporting and clearer requirements are provided for Class C and D mishaps. Submission times are standardized. Field unit authorization to use AIG 4923 and AIG 4934 has been terminated. Class A and B MISREP submission responsibility has been shifted to the formal mishap analysis board. Better distinction is made between MISREP and Mishap Analysis Report (MAR).

b. Section 8-S has been corrected to require the submission of Class D MISREPs to Commander (k), Maintenance and Logistics Command via the chain of command. Better distinction is made between MISREP and MAR.

c. Enclosure (6) has been rewritten to identify specific tasks of the reporting and reviewing officials, clarifies reporting requirements for both MISREP and preliminary message notification, and provides formats for submitting both types of reports.

d. Enclosure (14) has been eliminated. Preliminary message notifications shall follow instructions provided in enclosure (6).

5. PROCEDURES. Remove and insert the following pages:

Remove	Insert
Pages iii thru v	Pages iii thru v, CH-3
Pages 3-9 thru 3-12	Pages 3-9 thru 3-12, CH-3
Pages 8-13 thru 8-32	Pages 8-13 thru 8-34, CH-3
Enclosure (6)	Enclosure (6), CH-3
Enclosure (7)	Enclosure (7), CH-3
Enclosure (8), Pages 1-2	Enclosure (8), Pages 1-2, CH-3
Enclosure (8), Pages 11-12	Enclosure (8), Pages 11-12, CH-3
Enclosure (14)	Enclosure (14), CH-3 (vacant)

6. REQUIRED REPORTS. New format and submission requirements for Mishap Reports (MISREPs), RCN 5100-1, are described in Enclosure (6).

ALAN M. STEINMAN
Chief, Office of Health and Safety

Encl: (1) CH-3 to COMDTINST M5100.47

U.S. Department of Transportation

United States Coast Guard

Commandant
U. S. Coast Guard

2100 Second St. S.W.
Washington, DC 20593-0001
Staff Symbol: G-KSE
Phone: (202) 267-1883

COMDTNOTE 5100

01 DEC 1992

COMMANDANT NOTICE 5100 CANCELED: 31 MAY 1993

Subj: CH-2 to COMDTINST M5100.47, Safety and Environmental Health Manual

1. PURPOSE. This notice publishes revisions to Commandant Instruction M5100.47, Safety and Environmental Health Manual.

2. SUMMARY OF CHANGES. This revision includes several new Chapters and Enclosures. Revised material is denoted by shaded text. New sections are not shaded. Editorial changes are not marked.

   a. Section 3-F, Naval Safety Center Support is deleted.

   b. Paragraph 3-I-2, describing the Commandant's Vessel Safety Board (CVSB) is deleted.

   c. Paragraph 4-D-4 contains a revised definition for occupational exposure.

   d. Paragraph 4-H-3, describing the overall requirements of the OMMP is added.

   e. Section 4-I, describing the use of hearing protective devices is rewritten.

   f. Section 4-J, which prescribes responsibilities of all levels of command for the OMMP is rewritten.

   g. Chapter 8, Vessel Safety Program is added.

DISTRIBUTION - SDL No. 130

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NON-STANDARD DISTRIBUTION: B:c MLCs (6 extra)

2. h. Chapter 9, Shore Facility Fire Safety is added.

   i. Chapter 10, Traffic Safety is added.

   j. Enclosure (2), Mishap Investigating, Reporting and Endorsement Precautions is rewritten.

   k. Enclosure (13), Precept for Commandant's Vessel Safety Board is added.

   l. Enclosure (14), Format for Preliminary Vessel/Firearms Message report is added.

   m. Enclosure (15), Sample Group Pre-Mishap Plan is added.

   n. Enclosure (16), Sample Mishap Analysis Kit is added.

3. ACTION. Remove and insert the following pages:

REMOVE:	INSERT:
Pages i to iii	Pages i to v, CH-2 (contents)
Pages 1-1 to 1-2	Pages 1-1 to 1-2, CH-2
Chapter 3	Chapter 3, CH-2
Chapter 4	Chapter 4, CH-2
	Chapter 8, CH-2
	Chapter 9, CH-2
	Chapter 10, CH-2
Enclosure (2)	Enclosure (2), CH-2
Enclosure (9)	Enclosure (9), CH-2 (vacant)
Enclosure (10)	Enclosure (10), CH-2 (vacant)
	Enclosure (13), CH-2
	Enclosure (14), CH-2
	Enclosure (15), CH-2
	Enclosure (16), CH-2

Michael Hudgins

MICHAEL HUDGINS
Chief, Office of Health and Safety

Encl: CH-2 to COMDTINST M5100.47, Safety and Environmental Health Manual

U.S. Department of Transportation
United States Coast Guard

Commandant (G-KSE)
United States Coast Guard

MAILING ADDRESS:
Washington, DC 20593-0001
(202) 267-2963

COMDTNOTE 5100

11 MAR 1991

COMMANDANT NOTICE 5100 CANCELLED: 11 SEP 1991

Subj: CH-1 to COMDTINST M5100.47 (series), Safety and Occupational Health Manual

1. PURPOSE. This change implements CG-4903, USCG Employee Hazard Report form and CG-4905, USCG Hazardous Conditions Log, and provides instructions for their use.

2. SUMMARY. The USCG Employee Hazard Report form has been created to enable Coast Guard personnel and employees to report suspected unsafe or unhealthful conditions in the workplace. The USCG Hazardous Conditions Log shall be used by commands as a uniform tracking tool to prioritize and manage hazard abatement. CG-5082, Hazardous Condition Notification form, is unchanged. The Safety and Health Hazard Abatement Data System (SHHADS) shall continue to be used at the unit level with MLC assistance as needed.

3. ACTION. Remove and insert the following pages:

Remove	Insert
Page iii (table of contents)	Page iii, CH-1
Enclosure (1)	Enclosure (1), CH-1
Pages I-3 thru I-4 (index)	Pages I-3 thru I-4, CH-1

4. FORMS AVAILABILITY. Forms CG-4903, USCG Employee Hazard Report and CG-4905, USCG Hazardous Conditions Log are authorized for local reproduction from attached samples. Form CG-5082, Hazardous Condition Notification is available from Supply Center Brooklyn, SN 7530-01-GF2-5480, U/I (SE).

Michael Hudgins

MICHAEL HUDGINS
Chief, Office of Health and Safety

Encl (1): CH-1 to COMDTINST M5100.47 (series)

DISTRIBUTION - SDL No. 129

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COMDTINST M5100.47

24 APR 1990

COMMANDANT INSTRUCTION M5100.47

Subj: Safety and Environmental Health Manual

1. PURPOSE. This manual sets forth the Coast Guard safety and environmental health policy and the elements of the Coast Guard Safety and Environmental Health Program, assigns responsibilities for the implementation of those elements and specifies the safety and environmental health standards that are to be applied within the Coast Guard.

2. DIRECTIVES AFFECTED. COMDTINST M5100.29 is cancelled.

3. DISCUSSION. Major changes to this manual are summarized below:

   a. Reflects the changes to Coast Guard organization that have occurred over the last several years in Headquarters and the field, e.g., creation of the new Office of Health and Safety (Commandant (G-K)), the Safety and Environmental Health Division (Commandant (G-KSE)) and the maintenance and logistics commands.

   b. New chapters on Coast Guard Pest Management, Sanitation Practices and Coast Guard Radiological Health have been added.

   c. The Medical Officer's Report forms and instructions have been revised.

   d. Instructions for preparing or providing data for the Coast Guard Mishap Report system has been revised.

   e. The Sound Level Survey Report (CG-5139) and USCG Industrial Hygiene Workplace Monitoring Report (CG-5386) forms have been revised.

DISTRIBUTION—SDL No. 129

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NON-STANDARD DISTRIBUTION:

*B:c MLCs (6 extra)

4. ACTION. Area and district commanders, commanders of maintenance and logistics commands, unit commanding officers, and Commander, CG Activities Europe shall ensure compliance with the provisions of this manual.

5. FORMS AND REPORTS. Order forms identified for use in this manual from Coast Guard Supply Center Brooklyn per procedures in the Catalog of Forms (COMDTINST M5213.6 series) unless local reproduction is authorized by this manual. Reports required by this manual are:

   a. USCG Industrial Hygiene Workplace Monitoring Report (CG-5386) (RCN-5103-1).

   b. Sound Level Survey Report (CG-5139) (RCN-5103-2).

Michael Hudgins

MICHAEL HUDGINS
Chief, Office of Health and Safety

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RECORD OF CHANGES			
CHANGE NUMBER	DATE OF CHANGE	DATE ENTERED	BY WHOM ENTERED
CH-1	11 MAR 91	22 SEP 93	Hsc W.R. Leonard
CH-2	1 DEC 92	22 SEP 93	Hsc W.R. Leonard
3	9 DEC 93	2 MAR 94	J.J. Chuba
4	3 JAN 95	10 MAY 95	J.J. Chuba

CHAPTER 1 SAFETY AND ENVIRONMENTAL HEALTH PROGRAM

A. Policy.

1. The Coast Guard's policy is to provide Coast Guard personnel and their families safe, healthful places to work and live and to comply with applicable safety and health laws, regulations and directives. Individuals have a responsibility for their own safety and health. Commands are responsible for the safety and health of assigned members, dependants in Coast Guard housing, all persons aboard their facility and those who may be affected by their operations. Maintenance and Logistics Commands provide safety and health support to all commands in their areas of responsibility.

2. The Coast Guard's fundamental safety and environmental health principle, applicable at every level in the organization and for every mission or activity, is to continually manage the safety and environmental health risks confronting Coast Guard personnel in their professional and private lives to acceptable levels and never to accept unnecessary risks. This principle will be applied by identifying hazards, assessing their risk and controlling risks to acceptable levels, consistent with the mission or activity being performed. Reducing risks will benefit individual members and all levels of the Coast Guard organization by preserving mission readiness and by reducing fatalities, the incidence of injury and disease, and the loss of property.

B. Mission. The mission of the safety and environmental health support program is to ensure the safety and health of Coast Guard personnel, to preserve Coast Guard material resources, and to protect public lives and property from endangerment by Coast Guard operations. The program will accomplish these goals by establishing safety and environmental health policies, enforcing those policies, and providing certain resources necessary for implementing those policies.

C. Purpose. The purpose of this Manual is to promulgate safety and environmental health policies, standards and guidelines and define safety and environmental health responsibilities.

D. Scope. Safety and environmental health policies, standards and guidelines in this Manual apply to:

1. Coast Guard active duty military personnel, on and off-duty.

2. Coast Guard appropriated and non-appropriated fund civilian personnel, on-duty and/or on Coast Guard property.

3. Coast Guard Reserve personnel on active duty, active duty for training or inactive duty for training.

4. All Coast Guard afloat and ashore facilities and aircraft.

5. Coast Guard Auxiliary personnel and facilities under orders.

6. Dependents of Coast Guard military personnel on Coast Guard owned or leased property.

7. Non-appropriated fund activities and facilities.

8. Contractors performing Coast Guard work on government facilities. Although contractors are primarily responsible for providing safe working conditions for their employees and ensuring compliance with OSHA regulations, the Coast Guard has overall administrative responsibility for its facilities and is responsible, under Executive Order 12196 (EO 12196) and in accord with the Occupational Safety and Health Act, to take reasonable steps to correct, or to require the correction of, hazards of which it could reasonably be expected to be aware.

E. Authority.

1. EO 12196, Occupational Safety and Health Programs for Federal Employees, requires the Coast Guard to maintain a safety and occupational health program in accordance with the Occupational Safety and Health Act of 1970 for civilian employees (Occupational Safety and Health Administration (OSHA) 29 CFR 1960 Basic Program Elements for Federal Employees). Although Coast Guard military personnel and uniquely military equipment, systems, and operations are not covered by the Executive Order and OSHA, military personnel performing operations and activities not uniquely military, e.g., industrial activities, are included in the program by direction of the Commandant as provided in this Manual. (See also 1.G for futher explanation of OSHA's relationship.)

2. The Coast Guard and Coast Guard personnel are subject to Executive Orders; Federal laws, regulations and directives; and certain state and local laws and ordinances.

F. General Program Description.

1. The fundamental safety and environmental health risk management process is a subset of the Coast Guard's overall risk management policy described in Operational Risk Management, COMDTINST 3500.3. It focuses on the identification of hazards to Coast Guard lives, health, missions and property; evaluation, categorization and determination of confidence level of identified risks; and the control or abatement of the risks to an acceptable level, consistent with the mission. Risk management is a continual process and is primarily an individual and unit responsibility, facilitated, where necessary, and monitored by safety and environmental health professionals. The three primary steps of the safety and environmental health risk management process are:

a. Identification of Hazards. The essential first step of the safety and environmental health risk management process is the identification of all hazards that threaten personnel, mission and property under a unit's cognizance. Hazards may be identified by observation at the unit or similar unit or by analysis of prior performance.

b. Risk Assessment. Risk assessment is a two-part process:

(1) Risk Evaluation. Risks may be evaluated by measurement, estimation by experienced personnel or comparison to historical data. Risk evaluation determines the probability a hazard may precipitate a mishap and the mishap's likely severity in terms of injuries, health effects and property damage.

(2) Risk Categorization.

(a) Unabated risks shall be categorized with a risk assessment code (RAC) that reflects a combination of the probability and likely severity of a mishap determined during the risk evaluation process. There shall be five levels of risk, described by RACs One through Five, with RAC One being the highest risk category and RAC Five being the lowest:

1. RAC One. An immediate and serious hazard that is likely to result in death or permanent total disability if not controlled. RAC One risks demand immediate cessation of the operation and abatement of the hazard.

2. RAC Two. A hazard requiring immediate control through the use of engineering controls, administrative procedures/work practices, or personal protective equipment (PPE). If feasible or practical, the hazards should be abated as soon as possible or within six months.

3. RAC Three. A hazard requiring control through the use of engineering controls, administrative procedures/work practices, or PPE. If feasible or practical, the hazards should be abated within the normal unit work cycle or engineering cycle.

4. RAC Four. A lesser risk requiring continuing surveillance to ensure the risk does not increase. Abatement is not required unless conditions change and require re-evaluation.

5. RAC Five. A negligible risk. Abatement or surveillance not required.

(b) RACs are determined using the criteria and charts contained in Enclosure (18) of this Manual. The estimated probability of a hazard leading to a mishap is determined using Charts 1 or 2 and the estimated severity of that mishap is determined using Chart 3. The risk assessment code is then found at the intersection of the probability and severity levels on Chart 4.

c. Risk Control. Risk control is the process of developing and implementing measures to control each risk. The preferred priority is (1) engineering controls; (2) administrative procedures/work practices (e.g. training, procedures, signs); (3) the use of personal protective equipment or combinations of these measures. Interim controls may have to be implemented and maintained to control risk until more permanent controls can be established and the risk abated. Risk control is the overall goal of the safety and environmental health risk management process.

2. Safety and Environmental Health Risk Management Tools and Processes. Safety and environmental health risk management is an on-going process and principles that should become part of the organizational culture. However, there are certain formal tools available for use by units to manage risks and for superiors in the chain of command to oversee risk management activities. They include:

a. Unit Profile. A unit profile is a description of a unit's physical environment, its personnel, its activities and its operations, prepared to facilitate support and oversight of the unit's safety and environmental health risk management processes. Unit profiles are prepared, maintained and updated by the supporting MLC. The profile shall include:

(1) Names and telephone numbers of key safety personnel.

(2) Description of physical plant.

(3) Description of all processes and operations involving recognized hazards.

(4) Operations, Evolutions and Functions Matrix (if available).

b. Coarse Risk Analysis. A coarse risk analysis is a tool for assessing the risks associated with a specific operation, process, item of equipment, or facility, using specialized software, trained risk assessors and experienced subject matter experts. Coarse risk analyses will normally be conducted on special risks identified by Headquarters program managers, safety and environmental health professionals or units and as designated by the Safety and Environmental Health Coordinating Board (SEHCB) or MLC (k)s. MLC personnel shall conduct the coarse risk with the assistance of subject matter experts from the field and/or higher echelons. The coarse risk analysis will categorize the risks associated with the operation being analyzed by assigning a risk assessment code, and it will determine a confidence level for the risk assessment categorization. It will suggest methods to control each risk, e.g., training, engineering controls, personal protective equipment, and administrative controls. Commandant (G-WKS) may specify a standard process and/or tools for conducting coarse risk analyses.

c. Detailed Risk Analysis. Detailed risk analysis is a careful investigation of a specific and often unique operation, process or facility that requires in-depth analysis to assess risks, e.g., a particular industrial process. Industrial hygienists, safety and occupational health specialists and managers or environmental health officers will conduct detailed risk analyses.

d. Unit Safety and Environmental Health Committees. Unit Safety and Environmental Health Committees are established to assist the Safety Officer in managing unit risks by identifying hazards, assessing risks and controlling risks. All units, except those units subordinate to a Group or MSO, shall have a unit safety and environmental health committee. Group or MSO subordinate unit representatives shall be included in Group or MSO safety and environmental health committees or shall, with permission of the Group or MSO, conduct unit-level safety and environmental health committees and forward minutes to the Group or MSO. Note: It is essential that parent and subordinate commands communicate and coordinate in policy and committee actions.

e. Unit Inspections. See section 1.F.3.a. of this Manual.

f. Special Emphasis Programs. Commandant (G-WKS) may direct measures to identify, assess or control specific risks including but not limited to:

(1) Aviation.

(2) Afloat Units.

(3) Environmental Health.

(4) Marine Safety

(5) Traffic.

(6) Firearms.

(7) Fire.

(8) Human Factors.

(9) Occupational Exposures.

g. Operational Risk Management (ORM). Although ORM describes a decision-making process that is primarily geared for tactical operations, its processes are general enough for use by personnel involved in all Coast Guard activities, on and off duty. It contains some simple, easy-to-use risk assessment tools that may be applicable for non-operational safety and environmental health activities.

h. Safety and Environmental Health Checklists. Checklists designed for use by unit personnel are available via the intranet on the MLC (kse) websites to assist units in identifying safety and environmental health hazards and program deficiencies. Separate checklists are designed for afloat and shore-based units. They are divided into sections, all of which may not be applicable for a particular unit. Most checklist items are self-explanatory and do not require access to reference material or extraneous documentation. The checklists form an excellent foundation for annual and semiannual formal inspections or anytime a unit may wish to evaluate its safety and environmental health programs.

i. Employee Hazard Reporting. Employees, being the most familiar with their workplaces and processes, are often the most knowledgeable of their associated hazards. To take advantage of this intimate knowledge to identify hazards and, ultimately, control risks, employees are encouraged to report hazards and are protected from any retaliation that may arise as a consequence. Coast Guard units shall provide ample work time to report hazards and no Coast Guard member, employee, or contractor shall take adverse action against any person for reporting perceived hazards. Though employees are first encouraged to resolve the issue through the chain of command, reports of hazards may be made verbally, in writing or electronically via e-mail or a reporting template at either MLC's website

3. Program Oversight and Monitoring.

a. Unit Inspections. Safety and environmental health are individual and unit responsibilities. The individual member and unit, therefore, are both responsible for identifying hazards, and the unit is primarily responsible for monitoring compliance with safe practices. Unit inspections are one of the tools the unit shall use to perform these functions. There are two types of unit inspections:

(1) Routine Inspection. Supervisory personnel may conduct routine inspections in conjunction with material inspections or other normal workplace inspections. The objective is to identify physical hazards, such as missing guards, blocked exits, damaged electrical cords, etc. and take corrective actions.

(2) Formal Unit Safety Inspection. Formal unit safety inspections are comprehensive, detailed inspections of a unit's safety and environmental health risk assessment processes as well as its spaces and equipment. The formal unit safety inspection shall be conducted at least once each year for all workplaces or more frequently at the discretion of the commanding officer or officer in charge. More frequent inspections shall be conducted in workplaces where high hazard operations and equipment may cause an increased risk of mishap, injury or occupational illness due to the nature of the work performed.

(a) Performed by unit personnel qualified to recognize hazards, evaluate risks and recommend general abatement procedures, e.g., trained Unit Safety Coordinator, Safety Petty Officer or Safety Officer. Units with no personnel trained to perform inspections may request assistance from cognizant MLC (k).

(b) Detailed inspection of machinery, spaces, procedures, and unit programs.

(c) Compliance-based inspection using appropriate sections of the unit safety and environmental health checklists promulgated by Commandant (G-WKS).

(d) Includes all spaces assigned to the unit and all processes conducted by the unit. Office spaces, shops, Coast Guard owned housing, vessels, aircraft, grounds, remote detachments, etc., of every unit shall be inspected.

(e) Formal inspections may be done in small components or in conjunction with other inspections over time as long as they are identified as SEH inspections (or findings having SEH implications); corrective action is taken; and the results are documented.

b. Unit Safety and Environmental Health Risk Assessment Survey. Responsible MLCs shall periodically audit unit level safety and environmental health programs. A major objective of MLC (kse) unit visits shall be implementation and support of risk management processes in all unit operations. Unit safety and environmental health surveys shall include the following items, if appropriate to the unit's mission and facilities:

(1) Review and update of unit profile.

(2) Review of unit mishap history, outstanding hazard reports, hazardous condition notifications, and reports of previous safety and environmental health surveys.

(3) Review of unit's report of most recent completion of standard safety and environmental health checklists.

(4) Review of effectiveness of unit's safety and environmental health risk management program.

(5) Review of targeted program effectiveness, e.g., operational risk management (ORM), hazard communication program, respiratory protection program, etc.

(6) Assessment of unit's extent of integrating ORM concepts into key daily activities and processes and into the unit safety and environmental health program, including a review of compliance with requirements of Team Coordination Training, COMDTINST 1541.1.

(7) Assessment of effectiveness of previously identified safeguards.

(8) Assistance to unit with problems revealed by checklists, mishaps, etc.

(9) Assistance with training.

(10) Detailed risk analyses, if required.

(11) Spot or targeted inspections to determine overall program effectiveness.

(12) Assignment of risk assessment codes for all identified risks.

(13) Preparation of a written report of findings and recommendations within 30 days to be provided to the Commanding Officer, with copies to the next higher level in the chain of command to Commandant (G-WKS) and to other commands that may be responsible for controlling or eliminating identified risks.

c. Headquarters MLC Safety and Environmental Health Program Evaluation. Commandant (G-WKS) shall evaluate MLC safety and environmental health support programs every two years. The program evaluation shall include but not be limited to:

(1) Compliance with the requirements of this Manual.

(2) Fundamental framework for providing safety and environmental health risk management support and oversight to units in their areas of responsibility.

(3) Unit safety and environmental health risk assessment surveys.

(4) Safety and environmental health data management systems.

(5) Safety and occupational health analyses for planning proposals and engineering designs.

(6) Incident response support.

(7) Special emphasis programs.

(8) Ad hoc assistance to field units.

d. Safety and Environmental Health Coordinating Board. The Safety and Environmental Health Coordination Board shall be comprised of the Chief, Office of Safety and Environmental Health (G-WKS); the Chief, Aviation Safety Division (G-WKS-1); the Chief, Shore Safety and Environmental Health Division (G-WKS-2); the Chief, Human Factors Division (G-WKS-3); the Chief, Afloat Safety Division (G-WKS-4); the Chiefs, Safety, Environmental Health, and Food Service Branches, MLC Atlantic and Pacific. The Chief, Office of Safety and Environmental Health shall chair the Coordinating Board. The Board will discuss and evaluate matters of safety and environmental health interest, charter committees to study specific issues and prioritize safety and environmental health issues.

G. Occupational Safety and Health Administration (OSHA).

1. Executive Order 12196 (followed by 29 CFR 1960 Basic Program Elements for Federal Employees) apply to Coast Guard civilian employees and to operations, equipment and systems that are comparable to those of industry in the private sector such as vessel, aircraft and vehicle repair, overhaul, and modification; construction; supply services; civil engineering; medical services and office work. They apply to all working conditions of Coast Guard civilian employees except those involving uniquely military equipment, systems, and operations. Uniquely military workplaces include cutters and aircraft. Uniquely military operations include activities such as search and rescue and the operation of cutters and aircraft. Although exempted from OSHA standards by the Occupational Safety and Health Act of 1970 and Executive Order 12196, Coast Guard military personnel, except where engaged in uniquely military operations, shall also comply with and units shall enforce OSHA standards where practicable or utilize alternate occupational safety and health standards that are as stringent as OSHA standards. OSHA shall be authorized to conduct announced or unannounced inspections and evaluations at Coast Guard sites employing civilian personnel engaged in other than uniquely military activities. Except for uniquely military workplaces and operations or those where only military personnel are employed, OSHA's inspectors and evaluators are authorized to:

   a. Enter, without delay, during regular work hours, any building, installation, facility construction site, or other area, workplace or environment where work is performed by Coast Guard civilian employees or contract employees.

   b. Inspect and investigate, during regular working hours and at other reasonable times, all pertinent conditions, structures, machines, devices, equipment and materials.

   c. Privately question any civilian employee, any supervisory employee and/or any official in charge.

   d. Formally report on unsafe conditions encountered by civilian employees.

2. Employee Rights. The Occupational Safety and Health Act guarantees civilian employees and employee representatives the following rights:

   a. Access to copies of Coast Guard standards, procedures and injury and illness statistics.

b. Right to report unsafe or unhealthful working conditions to appropriate officials and to have their name kept confidential, if requested.

c. Right to assist in conducting safety and health inspections.

d. Right to request, anonymously if desired, inspection of any work area alleged to possess unsafe of unhealthful conditions.

e. Right to appeal, through the chain of command to Commandant (G-WK) and ultimately to Commandant (G-CCS) if they disagree with the disposition of unsafe or unhealthful conditions.

f. Right to appeal to the Office of Federal Agency Safety and Health Programs, Occupational Safety and Health Administration, Department of Labor, 200 Constitution Avenue, NW, Washington, DC 20210, if all means of resolving an alleged unsafe or unhealthful condition within the Coast Guard have been exhausted.

Note: Agency safety and health programs must have provisions for responding to employees reports of unsafe or unhealthful working conditions and the Secretary of Labor encourages employees to use agency procedures as the most expeditious means of achieving abatement of hazardous conditions. It is recognized, however, that employee reports may be received directly by the Secretary.

g. Right to be protected from discrimination, restraint, interference, coercion, or reprisal as a result of participation in risk management processes.

H. Safety and Environmental Health Risk Management Standards.

1. Coast Guard Instructions and Directives. Coast Guard safety and environmental health instructions and directives shall prescribe Coast Guard safety and environmental health risk management processes, activities and standards and shall have precedence over all other standards. Coast Guard instructions may incorporate nationally recognized consensus standards as well as standards or instructions from other agencies, e.g., Department of Defense, by reference.

Note: For civilian employees, the more stringent of Coast Guard or OSHA standards will apply.

2. Federal Laws and Regulations. Federal laws and regulations, where applicable, govern the Coast Guard. Coast Guard instructions and directives shall meet or exceed compliance with Federal laws and regulations. Although military personnel and uniquely military operations are exempted from OSHA jurisdiction by Executive Order 12196, OSHA standards contained in Title 29 of the Code of Federal Regulations shall apply to Coast Guard operations and functions and to all personnel, where practicable, including operations, equipment and systems that are comparable to those of industry in the private sector such as vessel, aircraft and vehicle repair, overhaul, and modification; construction; supply services; civil engineering; medical services and office work.

3. Consensus Standards. Numerous associations, institutes and organizations publish consensus standards and codes designed to codify safe practices or designs within an industry or field of employment. Examples of these organizations include the American National Standards Institute (ANSI), National Fire Protection Association (NFPA), American Conference of Governmental Industrial Hygienists (ACGIH), NSF International, the National Institute for Occupational Safety and Health (NIOSH) and others. The National Technology Transfer and Advancement Act of 1995 (Public Law 104-113) requires Federal agencies to adopt consensus standards where practicable. Consensus standards may be made mandatory by reference in a Coast Guard directive or, in the event no Coast Guard directive or standard exists, shall be used as guidelines and standards of good practice.

4. Specific Service-wide Standards. The following standards are adopted for service-wide use:

   a. Exposure Limits. Threshold limit values (TLV) refer to airborne concentrations of substances or to energy intensities to which it is believed that nearly all workers may be repeatedly exposed 8 hours per day, 40 hours per week, day after day without adverse effect. These values, determined and published by the American Conference of Governmental Industrial Hygienists (ACGIH), are based on the most current toxicological data and workplace experience available and provide exposure guidelines. OSHA Permissible Exposure Limits (PEL), as published in 29 CFR 1910.1000, are federal standards and thus the law. OSHA PELs or ACGIH TLVs, whichever is more stringent, shall be considered the Coast Guard workplace standards for exposure to chemical substances and physical energies, except as specifically addressed in current Coast Guard directives. Unprotected Coast Guard personnel shall not be exposed to hazardous chemical substances or physical energies exceeding these limits.

b. Ventilation Design. Ventilation systems used for the control of hazardous materials in the work environment shall be designed in accordance with requirements of the most recent edition of the Industrial Ventilation Manual published by ACGIH, and OSHA standards published in 29 CFR 1910. Air flow and air capacity specifications for these systems shall be those cited in the Industrial Ventilation Manual.

c. Noise Standard. For Coast Guard, and in accordance with the ACGIH TLV, continuous noise levels at or above 85 dBA Time-Weighted Average (TWA) and impact noises exceeding 140dBA are considered hazardous. Noise exposures shall be calculated using a 3 dBA exchange rate. See section 1.P.24 of this Manual for the definition of TWA.

I. Safety and Environmental Health Organizational Roles and Responsibilities.

1. Department of Transportation. The Department of Transportation has delegated most Coast Guard safety and environmental health responsibilities to the Commandant. The Department acts as an intermediary between the Department of Labor and OSHA on most safety and environmental health matters. The Department also requires all DOT operating administrations to participate in the DOT Safety Council, a forum for promoting the safety of DOT employees and the public. Normally, the Director of Health and Safety, (G-WK), represents the Coast Guard at the DOT Safety Council, with support from (G-WKS).

2. Commandant.

a. Designated Agency Safety and Health Official (DASHO). The Chief of Staff (G-CCS) is the Designated Agency Safety and Health Official for the Coast Guard and is responsible for:

(1) Developing and promulgating safety and environmental health risk management and operational risk management policy.

(2) Establishing safety and environmental health risk management standards for equipment, systems and operations that are military unique or for which OSHA or appropriate consensus standards do not exist.

(3) Providing adequate resources to support safety and environmental health risk management policy and processes.

(4) Implementing procedures for evaluating the effectiveness of safety and environmental health and operational risk management processes throughout the Coast Guard.

b. Support Program Director for Safety and Environmental Health Risk Management. The Director of Health and Safety (G-WK) is the support program director for safety and environmental health risk management, and is responsible for assisting the Chief of Staff (G-CCS) in carrying out the DASHO duties.

c. Support Program Manager for Safety and Environmental Health Risk Management. The Chief, Office of Safety and Environmental Health (G-WKS) is the support program manager for safety and environmental health risk management, and is responsible for:

(1) Providing staff support to the Chief of Staff (G-CCS) and the Director of Health and Safety (G-WK) in managing safety and environmental health and operational risks, including:

(a) Developing safety and environmental health risk management policy.

(b) Managing the safety and environmental health portion of the AFC56 training account and selected special emphasis training, including assessing and defining training requirements, curriculum development and specific course quota management.

(c) Convening Class A and B Mishap Analysis Boards, when warranted, and managing the mishap analysis process.

(d) Collecting and analyzing risk management data.

(e) Participating in the programming, planning and budgeting process to obtain or reallocate safety and environmental health risk management resources.

(f) Conducting special studies and evaluations, including but not limited to prototype or unique equipment, processes, operations and procedures.

(g) Managing special emphasis areas, including but not limited to:

1. Aviation safety

2. Marine safety

3. Environmental health

4. Fire safety

5. Traffic safety

6. Human factors

7. Afloat safety

8. Occupational Medical Surveillance and Evaluation

(h) Forming partnerships and alliances to leverage resources and maximize risk management effectiveness.

(i) Conducting Headquarters MLC Safety and Environmental Health program evaluations and special inspections.

(j) Reviewing major acquisition planning proposals and participating on matrix design and configuration control boards. (Includes acting as a voting member on all cutter and boat Configuration Control Boards.)

(k) Providing specialized expertise to field units.

(l) Representing or providing support to Coast Guard representatives to the DOT Safety Council.

(m) Convening the Safety and Environmental Health Coordinating Board.

(n) Establishing safety and environmental health priorities and coordinating efforts to address them.

3. Area and District Commanders. Area and district commanders are responsible for:

   a. Practicing operational risk management for all operations under their operational control.

   b. Complying with responsibilities for supporting Operational Risk Management as described in Operational Risk Management, COMDTINST 3500.3.

   c. Implementing unit level risk management at Area and District Headquarters.

   d. Ensuring compliance, by units within their chains of command, with Coast Guard safety and environmental health directives, as implemented by the designated regional safety and health manager.

4. MLC Commanders. MLC Commander (k) are Chief, Health and Safety and provide oversight and resources for the Safety and Environmental Health Program within their area of responsibility.

5. MLC Support Program Manager for Safety and Environmental Health Risk Management. The Chief, Safety and Environmental Health, MLC (kse), is designated the regional safety and health manager and is responsible for providing the necessary support and direction to implement an effective safety and environmental health program at all districts, area units and headquarters units located within their organizational and geographic area of responsibility. These responsibilities include, but are not limited to:

   a. Developing a framework to support Area, MLC and District units, and headquarters units without full time safety and health staff in meeting their safety and environmental health program responsibilities.

   b. Preparing and maintaining unit safety and environmental health profiles as described in section 1.F.2.a. of this Manual.

   c. Conducting unit safety and environmental health risk assessment surveys, as outlined in section 1.F.3.b. of this Manual, for: (a) Area units on behalf of the Area Commander; (b) district units on behalf of district commanders; and (c) headquarters units on behalf of Commandant (G-CCS). Unit safety and environmental health risk assessment surveys shall be conducted:

(1) Annually for high-risk units, including Area Cutters, Integrated Support Commands, Marine Safety Offices, buoy tenders, air stations and the Yard.

(2) At least triennially for all other units. More frequent risk assessment surveys may be necessary at units with high personnel turnover or short tours of duty to ensure program continuity.

e. Providing safety and environmental health risk management advice and facilitating the integration of operational risk management, as necessary.

f. Implementing and maintaining a hazardous condition notification (HCN) tracking database meeting the requirements of enclosure (1) to this Manual.

g. Implementing and maintaining an employee hazard reporting procedure and log meeting the requirements of enclosure (1) to this Manual.

h. Implementing and maintaining a mishap investigation and reporting database meeting the requirements of Chapter 3 to this Manual.

i. Implementing and maintaining an industrial hygiene sampling database meeting the requirements of enclosure (8) to this Manual.

j. Reviewing engineering designs to ensure compliance with safety and environmental health laws and regulations.

k. Conducting detailed safety and environmental health risk assessment surveys and studies as described in section 1.F.2.c. to this Manual.

l. Reviewing employee hazard notices and investigating these notices when necessary.

m. Providing technical assistance to units on request.

n. Managing safety and environmental health training programs specified by Commandant (G-WKS), including quota management, slate preparation, vendor selection and management. See section 1.N to this Manual.

o. Nominating issues of highest safety and environmental health priorities.

p. Providing a representative to the Safety and Environmental Health Coordinating Board when convened by Commandant (G-WKS). See Section 1.F.3.d to this Manual.

6. Group or MSO Commanders. Group or MSO commanders are responsible for:

a. Ensuring that safety and environmental health and operational risk management processes are utilized to reduce and maintain risks at acceptable levels throughout the group.

b. Complying with responsibilities for supporting Operational Risk Management as described in Operational Risk Management, COMDTINST 3500.3.

c. Ensuring compliance with the applicable Federal and Coast Guard safety and environmental health standards and regulations of section 1.H. to this Manual.

d. Appointing a unit Safety Officer, normally the Executive Officer, and if warranted, a Unit Safety Coordinator. See sections 1.J.3. and 2.J.5. to this Manual.

e. Implementing a group safety and environmental health risk management framework covering all subordinate units in accordance with this Manual, including but not limited to:

(1) Group and subordinate unit safety and environmental health training as outlined in section 1.N. to this Manual.

(2) A group safety and environmental health committee consisting of at least the group safety officer, group safety coordinator and representatives from all group units. See section 1.F.2.d. to this Manual.

(3) Specific hazard related programs, e.g., respiratory protection, confined space, hazard communication, covering all group units where the specific hazards exist.

(4) Conducting hazard assessments and providing all appropriate personal protective equipment.

(5) Coordination of MLC support to group units. See section 1.I.4. to this Manual.

(6) Conducting annual and semi-annual inspections of the group and subordinate units as described in Section 1.F.3.a. to this Manual.

(7) Investigation of group and subordinate unit mishaps and review of unit mishap reports as outlined in Chapter 3 to this Manual.

7. Unit Commanding Officers. Headquarters unit commanding officers and unit commanding officers and officers in charge not subordinate to a Group or MSO shall be responsible for:

a. Ensuring that safety and environmental health and operational risk management processes are utilized to reduce and maintain risks at acceptable levels throughout the command.

b. Complying with responsibilities for supporting Operational Risk Management as described in Operational Risk Management, COMDTINST 3500.3.

c. Ensuring compliance with applicable Federal and Coast Guard safety and environmental health standards and regulations of section 1.H. to this Manual.

d. Appointing a unit Safety Officer, normally the Executive Officer, and, if warranted, a Unit Safety Coordinator. See sections 1.J.3. and 1.J.5. to this Manual.

e. Implementing a unit safety and environmental health risk management program, including but not limited to:

(1) Unit safety and environmental health training as outlined in section 1.N. to this Manual.

(2) A unit safety and environmental health committee consisting of at least the unit safety officer, unit safety coordinator and representatives from the unit. See section 1.F.2.d. to this Manual.

(3) Specific hazard related programs, e.g., respiratory protection, confined space, hazard communication, covering all group units where the specific hazards exist.

(4) Conducting hazard assessments and providing all appropriate personal protective equipment.

(5) Coordination of MLC support to the unit. See section 1.I.4. to this Manual.

(6) Conducting annual (or more frequent if required) inspections of the unit as described in Section 1.F.3.a. to this Manual.

(7) Investigation of unit mishaps and review of unit mishap reports as outlined in Chapter 3 to this Manual.

8. Supervisors and Managers. Supervisors and managers of other employees shall:

a. Apply applicable risk management processes to reduce and maintain safety and environmental health and operational risks at acceptable levels, both on and off duty

b. Seek additional guidance from superiors in the chain of command when risks associated with a mission seem unnecessary or exceed the commander's intent.

c. Ensure their employees are provided adequate training on the hazards and operations of their work processes and equipment.

d. Conduct daily walk-through of active work areas, where feasible.

9. Individual Members and Employees. Individual members and employees shall:

a. Apply applicable risk management processes to reduce and maintain safety and environmental health and operational risks at acceptable levels, both on and off duty.

b. Seek additional guidance from the superiors in the chain of command when risks associated with a mission seem unnecessary or exceed the commander's intent.

c. Comply with applicable Federal and Coast Guard safety and environmental health standards and regulations.

J. Safety and Environmental Health Personnel. The following personnel will support the safety and environmental health program:

1. Commandant (G-WKS) shall be staffed with personnel to support the safety and environmental health responsibilities of Commandant (G-CCS) and (G-WK).

2. MLC (kse) shall be staffed with personnel to support the safety and environmental health responsibilities of the MLC commander, including:

a. MLC Personnel. MLC personnel manage MLC safety and environmental health programs, provide advice to units, conduct safety and environmental health risk assessment surveys and unit support visits and other duties necessary to support the safety and environmental health responsibilities of the MLC commander.

b. MLC Detached Safety and Environmental Health Officers (SEHO). Detached safety and environmental health officers shall be sited remote from the MLC's at Integrated Support Commands to provide convenient and timely safety and environmental health services to the field. Detached officers shall make their services available to units in their geographic area of responsibility in accordance with the following priorities:

(1) Support of Marine Safety units.

(2) Support of respective ISC commander.

(3) Support of Area units.

(4) Support of District units.

(5) Support of Headquarters units.

(6) Other requested support and consultation work in their respective geographic areas of responsibility.

(7)

c. Safety and Environmental Health (SEH) Technicians. SEH Technicians are senior Health Services Technicians or Marine Science Technicians collocated with SEHOs. They shall assist the SEHOs in providing convenient and timely safety and environmental health services to the field.

3. Unit Safety Officers. Commanding officers and officers in charge appoint unit Safety Officers. Coast Guard Regulations specify that executive officers or XPOs shall be designated in writing as safety officers of afloat units. Except for aviation units and units subordinate to groups, shore unit executive officers and XPOs shall also be designated in writing as the unit's safety officer. Safety officers shall be responsible to the commanding officer or officer in charge for carrying out the unit safety and environmental health risk management processes in accordance with this Manual and MLC policies. Group safety officers shall be designated as the safety officer for all subordinate units and have cognizance over safety and environmental health matters for subordinate units.

4. Aviation Safety Officers. The terms aviation safety officer and flight safety officer are synonymous. Each aviation command shall have an assigned or appointed flight safety officer to advise and assist the commanding officer in matters pertaining to aviation safety, and particularly to manage the command's risk management processes. Specific duties of the aviation safety officer as well as the application procedure and qualification requirements are described in Chapter 2 of this Manual.

5. Unit Safety Coordinators. At units not subordinate to a group and assigned no primary duty safety petty officer, at least one unit safety coordinator (USC) shall be appointed to assist the safety officer in carrying out the unit safety and environmental health risk management processes in accordance with this Manual. Groups may direct subordinate units to assign unit safety coordinators to assist the group safety officer in carrying out his/her safety and environmental health risk management duties. USCs shall attend the Unit Safety Coordinator Course, G-KSE-060, before or as soon as possible after designation as a USC.

6. Preventive Medicine Technicians Assigned to a Clinic. Independent duty preventive medicine technicians (PMT) are Health Services Technicians specially trained to provide environmental health services, including water and waste water management, food service sanitation, thermal stress management, hearing conservation, and pest management. Independent duty PMTs are assigned to selected clinics and are available to provide services to units served by the clinic.

7. Primary Duty Safety Petty Officers. Marine Science Technicians have been assigned to selected units to assist the safety officer in carrying out the unit safety and environmental health risk management processes.

8. Industrial Hygienists. Industrial hygienists are civilian employees in the GS-690 series or military officers trained in the science and art of recognition, evaluation and control of environmental factors or stresses arising from the workplace which may cause sickness, impaired health or significant discomfort or inefficiency. Industrial hygienists are assigned to Commandant (G-WKS), MLCs, the Yard and other units with significant environmental health risks.

9. Safety and Occupational Health Specialists and Managers. Safety and Occupational Health Specialists and Managers are civilian employees in the GS-018 series or military officers assigned full-time safety and environmental health duties. They are assigned to Commandant (G-WKS), MLCs, or other units with relatively high risks.

10. Safety and Occupational Health Coordinators. Safety and occupational health coordinators are military personnel assigned to Marine Safety Offices who, as a collateral duty, manage risks inherent in the marine safety programs and especially to manage risks at marine safety and environmental incidents.

K. Safety and Environmental Health Information Resource Management. Information is an essential element of risk management programs. Safety and environmental health managers rely on internet resources, compliance checklists, data and automated systems to identify historical hazards, determine occupational disease and mishap trends, comply with Federal law, evaluate and quantify risks, manage abatement and control programs, archive information on occupational exposures, monitor units for compliance with safety and environmental health program directives, assess the effectiveness of control and abatement measures, determine costs of mishaps and occupational disease, and distribute information to users. Units and commands may use locally developed automated tools, and a number of automated systems have been developed for Coast Guard-wide use, including:

1. Mishap Data System. The Mishap Data System provides a means of reporting accidental injury, illness and property damage and analyzing mishap data.

2. Hazardous Condition Notification Systems (HCN). HCN provides a means of reporting and monitoring safety and environmental health hazards reported by employees or discovered through the risk assessment processes.

3. Industrial Hygiene Management Information System (IHMIS). IHMIS provides a means to collect and analyze chemical and physical energy exposure data and hazardous material data.

4. Hazardous Material Information and Reporting System (HMIRS). HMIRS provides units with hazardous materials information and management processes. HMIRS is available on compact disk (vessels only) and via the Internet.

5. Unit Safety and Environmental Health Checklists. These checklists are guides to be used by safety officers, unit safety coordinators and others for evaluating safety and environmental health programs and identifying safety and environmental health hazards.

6. Aviation Incident and Accident Tracking System (AVIATRS). AVIATRS is a system for reporting and tracking aviation and aviation-related mishaps, recommendations and corrective actions.

7. Occupational Medical Surveillance and Evaluation Program (OMSEP). The Occupational Medical Surveillance and Evaluation Program (OMSEP) utilizes a database to catalog exposure and medical examination data on members enrolled in OMSEP.

8. Unit Profile Database. Section 1.F.2.a. of this Manual describes the unit profile. The unit profile database captures and contains information on unit safety and health personnel and descriptions of unit operations and processes.

9. Other Internet Resources. The Internet has provided wide access to internal Coast Guard instructions and safety information. The MLC (kse) and Commandant (G-WK) websites provide safety and environmental health information and policies. External to the Coast Guard, other Federal agencies and private organizations provide regulatory information, consensus standards, guidance and recommended practices. OSHA, NIOSH, ACGIH, EPA, DOT, ANSI, NFPA, and DoD Service Safety Centers are just some examples.

L. Field Inputs to Program Revision. Field units are encouraged to provide constructive comments and suggestions to improve safety and environmental health risk management processes. Forward recommendations through the chain of command to Commandant (G-WKS).

M. Waivers. This instruction prescribes safety and environmental health risk management processes for use Coast Guard-wide. In unusual circumstances where the provisions of this instruction may be impossible or impractical or in instances where commands may wish to implement and evaluate locally developed processes with the objective of improving the Coast Guard's safety and environmental health program, the Commandant may consider waiving specific portions. Commands shall forward all requests for waivers through the chain of command and via the respective MLC to Commandant (G-WKS), specifying the item(s) of the instruction covered by the request, accompanied by a description of the requested alternative, a justification for the request and the requested time period, not to exceed two years.

N. Training. Training is considered an integral part of any safety and environmental health risk management program. Training, whether formal or informal, is a prerequisite to recognizing hazards, assessing risks and controlling them. Safety and environmental health training ranges from brief on the job training by supervisors or more experienced co-workers to lengthy formal training schools. Formal training responsibilities include:

1. Headquarters (G-WKS) training responsibilities shall include the following:

   a. Establishing courses and promulgating course descriptions in COMDTNOTE 1540 located on the Training Quota Management Center (TQC) website.

   b. Collecting and analyzing training course requirements from the MLC (kse)s.

   c. Prioritizing quota requests.

   d. Participating in G-WTT AFC56 Prioritization Panel to secure quotas and funding for safety and environmental health courses.

   e. Managing certain courses directly and supervising MLC course management.

2. MLC (kse) training responsibilities include the following:

   a. Advising Commandant (G-WKS) of emerging training requirements.

   b. Collecting training course requirements from field activities.

c. Collating and summarizing field training requirements and advising Commandant (G-WKS) of field training needs necessary to manage the Coast Guard-wide training program.

d. Managing individual courses, including contracting with vendors, selecting students, initiating orders via the appropriate training management systems or by preparing slates, approving substitutions and monitoring course applicability and quality.

e. Providing instructors and training at field units as required.

3. Unit training responsibilities include the following:

a. Providing general safety and environmental health training, e.g., motor vehicle safety, respiratory protection, hazard communication for workplace materials, operational risk management, etc., as an integral part of the command safety program.

b. Requesting training support from the MLC (kse) as needed.

c. Requesting specific safety and environmental health Class C training courses for members as required for their assigned duties.

d. Documenting attendance at required training courses, including dates, topics, length, instructor(s), and syllabus or other source of topic instruction, in a manner that permits ready review of training status.

O. Definitions.

1. Annual Unit Safety Inspection. A comprehensive, detailed inspection of a unit's safety and environmental health programs, spaces and equipment by a person or persons trained in the recognition, evaluation and control of risks.

2. Coarse Risk Analysis. A method of analyzing and assessing risks using trained facilitators, experienced subject matter experts and software tools.

3. Consensus Standards. Consensus standards are standards and codes developed by knowledgeable personnel of a profession, industry or discipline and published by an association, institute or organization to codify safe practices or designs. Consensus standards may be made mandatory by reference in a Coast Guard directive or, in the event no Coast Guard directive or standard exists, shall be used as guidelines where applicable.

4. Designated Agency Safety and Health Official (DASHO). The DASHO is the individual who is responsible for the management of the safety and health program within an agency, and is so designated by the head of the agency in accordance with the provisions of 29 CFR 1960.6 and Executive Order 12196.

5. Detailed Risk Analysis. A careful investigation of a specific operation, process, facility or piece of equipment to assess risks.

6. Employee. Any person employed or required to work for the Coast Guard, including members of the Coast Guard Reserve and Coast Guard Auxiliary when performing Coast Guard activities, without regard for compensation.

7. Formal Unit Safety Inspection. An inspection performed at least annually (or semi-annually for high risk operations) by unit or MLC personnel qualified to recognize hazards, evaluate risks and recommend general abatement procedures, e.g., trained Unit Safety Coordinator or MLC safety professional. The formal unit safety inspection includes all machinery, spaces, procedures, and unit programs, using appropriate sections of the unit safety and environmental health checklists promulgated by Commandant (G-WKS). High hazard operations and equipment shall be inspected more frequently.

8. Hazard. Any real or potential condition that could cause death, injury or occupational illness to personnel; damage to or loss of property; or mission degradation.

9. Headquarters MLC Safety and Environmental Health Program Evaluation. A biennial evaluation of an MLC's safety and environmental health support program and risk management processes by Commandant (G-WKS).

10. High Hazard Operations and Equipment. Workplaces where there is an increased risk of mishap, injury, or occupational illness due to the nature of the work performed. These workplaces may be determined by regulatory requirements, Coast Guard instruction or procedures, consensus standards, recommended practices, guidance, and individual command hazard identification. Such workplaces include those conducting refueling and heavy industrial operations; using heavy equipment; and using, handling or storing significant quantities of hazardous materials. Specific operations including but not limited to extensive confined space entry, hot work, working aloft, material and weight handling and machinery operation may fall into this category. Even climatic conditions may influence this determination. What may be routine in warm climates may present higher hazards in cold climates.

11. Industrial Hygiene. The science and art devoted to the anticipation, recognition, evaluation and control of those environmental factors or stresses arising from the workplace which may cause sickness, impaired health and well-being, or significant discomfort and inefficiency, or which could adversely affect the Coast Guard's mission capability.

12. Inspection. A comprehensive survey of all or part of a workplace in order to detect safety and environmental health hazards.

13. Mishap. An unplanned, unexpected, or undesirable event or series of events resulting in death, injury, occupational illness, or damage to or loss of materiel. For civilian employees, any occupational illness or injury reported on a Form CA-1 or CA-2 to the Office of Worker's Compensation, Department of Labor, is a recordable mishap and shall be reported via the Mishap Reporting System.

14. Operational Risk Management. A continuous, systematic process of identifying and controlling risks in all Coast Guard operations and activities by applying appropriate management policies and procedures as described in Operational Risk Management, COMDTINST 3500.3. This process includes detecting hazards, assessing risks, and implementing and monitoring risk controls to support effective, risk-based decision-making

15. Probability. The likelihood that a specific event will occur.

16. Risk. The chance of personnel injury or death and/or property damage or loss. Risk is generally a function of the probability that a hazard will lead to an undesirable event and the likely severity of that event.

17. Risk Assessment. The systematic process of evaluating the level of risk associated with a hazard, categorizing the risk and assigning a confidence level to the categorization.

18. Risk Assessment Code. A code that describes a risk as being in one of five categories according to its severity and probability.

19. Risk Management. The systematic process of maintaining risks at acceptable levels. Some risks are inherent in everyday life and the Coast Guard mission, but risks without a commensurate return in terms of real benefits are to be avoided. The GENERAL risk management process includes hazard identification, risk assessment and risk control or abatement. Control or abatement of safety and environmental health risks is the objective of the Coast Guard's safety and environmental health program.

20. Routine Inspections. Inspections performed by unit personnel, possibly in conjunction with material inspections, to identify safety and environmental health hazards.

21. Safety Professionals. Safety and Occupational Health Specialists and Managers, Industrial Hygienists and military officers trained in those disciplines whose primary duties include oversight or support of risk management activities.

22. Severity. The expected consequences of an event in terms of injury, damage or impact on mission.

23. Special Emphasis Programs. Programs implemented to control a specific group of risks, e.g., aviation, vessels, environmental health, fire and traffic.

24. TWA (Time-Weighted Average). The average concentration of a chemical substance or physical energy measured or calculated for an 8-hour workday and 40 hour workweek.

25. Uniquely Military. Military equipment, systems and operations that are unique to the national defense mission such as military vessels, aircraft, weapons, operations of cutters and aircraft, search and rescue operations, associated research and development activities, and operations under emergency conditions. Operations, equipment and systems that are comparable to those of industry in the private sector such as vessel, aircraft and vehicle repair, overhaul, and modification; construction; supply services; civil engineering; medical services and office work are not uniquely military.

26. Unit Profile. A unit profile is a description of a unit's physical environment, its personnel, its activities and its operations, prepared by MLC personnel to facilitate support and oversight of the unit's safety and environmental health program.

27. Unit Safety Coordinator. Member assigned collateral duties by unit to assist in unit safety programs. Unit Safety Coordinator shall attend Unit Safety Coordinator training

28. Unit Safety and Environmental Health Committee. A committee to assist the unit safety officer in identifying and controlling safety and environmental health risks.

29. Unit Safety and Environmental Health Risk Assessment Survey. A periodic audit of unit level safety and environmental health risk management processes by the responsible MLC.

30. Workplace. The physical location where Coast Guard work is performed. Workplaces include shore facilities, vessels, aircraft, and anywhere on land or water not owned by the Coast Guard where Coast Guard military or civilian personnel are required to perform Coast Guard work.

CHAPTER 2. AVIATION SAFETY PROGRAM

A. Policy. The Coast Guard's overall safety policies, principles, goals, authorities, responsibilities and organization are defined in Chapter 1.

B. Goal. The goal of the Aviation Safety Program is to improve and support the operational readiness of aviation units by conserving human resources, equipment and other resources through a reduction in aviation mishaps. To accomplish this objective, this chapter sets forth the organization, responsibilities, requirements and procedures for promoting Coast Guard aviation safety.

C. Scope.

1. This chapter covers the basic tenants and philosophies of aviation safety along with the organization and responsibilities of the Aviation Safety Program.

2. To aid the Flight Safety Officers (FSO) in completing their duties, certain topics have been placed in separate chapters and enclosures. Chapter 3 provides guidance on mishap response, investigating and reporting. Enclosure (2) provides guidance on the Mishap Analysis Report (MAR) format and review process. The Medical Officer's Duties are covered in enclosure (3). Enclosure (4) outlines the procedures governing the Mishap Analysis Board (MAB). Enclosure (5) contains the Aviation Message Format used for reporting Class C, D and E mishaps. Enclosure (10) discusses the concept of safety privilege and confidentially. Enclosure (13) covers how to determine the cost of mishap damage.

3. The Aviation Safety Program is responsive to all aspects of Coast Guard aviation operations, including the Air Auxiliary Safety Program. The program provides for specific responsibilities, program organization and management, as well as procedures for reporting, investigating and reviewing aviation mishaps. This Chapter is a working reference for aviation commands and only aviation safety is discussed.

D. Commitment to Safety. Safety must be an integral part of all Coast Guard aviation activities. Each individual connected with aviation operations, whether in an operational or supporting role (e.g., aircrew, scheduling, maintenance), contributes directly to the effectiveness of the aviation safety program. All members must commit to a personal responsibility of safeguarding themselves; their fellow crewmembers and the property entrusted to their care. For aviation safety to be truly effective, safety must be a pervasive notion supported by leadership throughout Coast Guard aviation. The leadership and responsibility for the safety program must originate from top level managers at headquarters and follow the chain-of-command down to each individual in the field. Each level of command shall amplify the message of safety and enforce the rules and standards.

E. Risk Management. Operational Commanders, Commanding Officers of air stations and cutters with embarked aircraft, and aircraft commanders are continuously making operational mission decisions. As a mission progresses, each individual must

continually reassess the mission's urgency and benefits so as to balance the risks involved. The safety of the aircrew and aircraft must always be one of the primary considerations integrated into the fabric of aviation mission planning and execution. Operational Risk Management, COMDTINST 3500.3 (series) and Chapter 1 of this manual cover Risk Management.

F. Organization and Responsibilities. The Aviation Safety Program is organized to function through the chain-of-command. The Commandant promulgates policy and sets program requirements. Units implement the program at the operating level, supplementing policy and guidance with unit plans, instructions and supervision. The following safety staffs are established to oversee and support the administration of the program.

1. Headquarters.

a. The functions of Commandant (G-WK) and (G-WKS) are described in Chapter 1 of this Manual.

b. Commandant (G-WKS-1), the Aviation Safety Division, operates under the cognizance of Commandant (G-WKS).

(1) (G-WKS-1) is responsible for developing, coordinating, reviewing and implementing the policies, procedures and standards for the Aviation Safety Program. The Division shall also monitor and evaluate unit program implementation.

(2) Specific duties of Commandant (G-WKS-1) in managing the Coast Guard-wide Aviation Safety Program include:

(a) Develop, recommend and monitor safety program policies and procedures for implementation by Aviation Platform and System Managers, Facility Managers and Operational Commanders (Area, District and unit commanding officers).

(b) Ensure Directorate Chiefs, Program Managers and Operational Commanders (Area, District and unit commanding officers) are kept fully informed of aviation safety policies and programs.

(c) Review standards and guidelines of federal, state and civil aviation organizations relating to aviation safety. Evaluate the applicability, suitability and feasibility of Coast Guard adoption, including the related impact on field units.

(d) Interface with other program managers to ensure aviation safety is given primary consideration in all aviation decision making processes. Ensure that system safety, risk assessment and risk management are incorporated as an integral part of decision making

processes.

(e) Serve as Program Manager for Crew Resource Management (CRM) and Maintenance Resource Management (MRM). Regularly review and analyze aviation risks for policy adjustments to facilitate risk management and loss control. Develop and promote integration of risk management and loss control information into operational safety programs such as CRM, Operational Risk Management (ORM) and MRM.

(f) As force manager for Flight Safety Officers (FSO) billets. Oversee and coordinate selection, assignment and training of FSO's in coordination with the Aviation Assignment Officers (CGPC-opm) and the units. Mentor FSO's throughout all career stages.

(g) Oversee, coordinate and track safety training for commanding officers, FSO's and other aviation personnel. Develop safety courses as required. Track FSO and Accident Investigation Specialist (AIS) course completions and Mishap Analysis Boards (MAB) assignments.

(h) Maintain liaison with other military safety centers and civilian aviation safety organizations. Authorize dissemination of Coast Guard mishap information to other services (U. S. and Foreign) to enhance mishap prevention efforts. Exchange mishap information with other agencies and organizations having similar aircraft, equipment and missions to share information and research new avenues of risk management and loss control.

(i) Conduct unit recurring Aviation Safety Standardization visits of air stations to garner and share best practices, evaluate unit safety posture and gain feedback on Commandant (G-WKS-1) performance.

(j) Advise and assist responsible program managers to correct deficiencies.

(k) Develop, direct and implement special emphasis programs to address specific problem or issues to reduce mishaps and enhance loss control efforts.

(l) Participate as a member of the Aircraft Configuration Control Board (ACCB).

(m) Recommend policies and procedures to protect the public from possible hazards of Coast Guard aviation activities.

(n) Ensure all mishaps are investigated to determine the causes and corrective actions needed to correct hazards and prevent future mishaps. Convene and appoint Commandant MAB investigations of major aviation mishaps and other incidents as deemed necessary.

(o) Provide a WKS-1 Advisor for on-site guidance and support during the initial setting up of the mishap investigation.

(p) Support and monitor MAB activities until the final report, causes and recommendations are complete.

(q) Monitor and assist the chain of command in the Mishap Analysis Report (MAR) review and endorsement process.

(r) Coordinate the activities of the Commandant's Aviation Safety Board (CASB). Review MAB reports and coordinate CASB review. Prepare and submit CASB findings and recommended final action for aviation mishaps to the Chief of Staff for approval. Prepare approved G-CCS final action findings for dissemination.

(s) Maintain the **Av**iation **I**ncident and **A**ccident **Tr**acking **S**ystem (AVIATRS) and the **R**ecommended **A**ction **T**racking **S**ystem (RATS) databases. AVIATRS is a master file of Coast Guard aviation mishap reports. RATS tracks all aviation-safety related recommendations and corrective actions.

(t) Produce and publish the annual aviation safety report and other mishap statistical presentations. Provide mishap statistics to support unit aviation safety programs.

(u) Maintain the master files of all Coast Guard aviation MAR's.

(v) Review and process all Freedom of Information Act (FOIA) requests for Coast Guard aviation mishap information.

(w) Analyze aviation mishap data to determine aviation mishap patterns, and trends. Recommend changes to policies, practices, training, procedures or equipment

based on results. Widely disseminate aviation safety mishap data, information and other safety information to improve operational performance and promote loss control.

(x) Monitor all mishap recommendations and corrective action until completed. Advise and assist responsible organizations or offices to correct actual or potential conditions that could adversely affect aviation safety.

(y) Initiate and sponsor research and development projects, acquisition of equipment and enhancements to training and procedures that promote loss control and improve operational safety in the future. Review and coordinate initiatives of other agencies for use by the Coast Guard.

(z) Provide advice and technical assistance to the Auxiliary National Safety Director and District Auxiliary Aviation Safety Officers as needed on Coast Guard specific safety and aviation issue.

(aa) Coordinate with Coast Guard Auxiliary staff and appropriate Program Managers to assist with the management of the Auxiliary Aviation Safety Program. Maintain Auxiliary aviation mishap statistics. Participate in the review and recommendation process regarding changes to the program.

2. The Commandant's Aviation Safety Board (CASB) is composed of officers on the Commandant's staff having special knowledge of aviation operations, aeromedicine, engineering and safety. Commandant (G-WKS-1) is responsible for convening Mishap Analysis Boards (MAB) for investigating mishaps. Commandant (G-WKS-1) and the CASB (the offices of Commandant (G-OCA), (G-SEA) and (G-WKH) will determine if an MAB should be appointed and the composition of the MAB. The CASB is responsible for the review of all significant (generally Class A and B) aircraft mishaps, as well as selected aviation mishaps and other aviation safety issues. The CASB is charged with the following duties:

a. Convening mishap investigations and analysis of other incidents when appropriate. These may be Class C, D or E mishaps or other situations deserving further evaluation to prevent future mishaps. The CASB will determine the review and endorsement process for these investigations.

b. Reviewing all aviation significant Mishap Analysis Reports of formally convened MAB's and forwarding recommended final actions to the Chief of Staff.

c. Submitting recommendations for Commandant action on safety,

operational and engineering policies, procedures and materiel to enhance loss control and prevent recurrence of mishaps. The CASB shall also make specific recommendations for additional local action when recommended action appears inadequate.

d. Act as an advisory board on matters pertaining to flight safety and other issues at the request of any CASB member.

e. Monitoring Coast Guard aviation operations and support functions to ensure effective risk management and safety policies are incorporated and integrated as essential components of successful mission accomplishment.

3. Area and District Commanders. Area and district commanders shall ensure that the provisions of this program are implemented. These commands shall also review and endorse aviation mishaps investigations of their subordinate commands as directed by Commandant.

4. Aviation Units and Afloat Commands with Aviation Resources.

a. The Commanding Officer (CO) of aviation units and afloat commands with aviation resources embarked are responsible for establishing and implementing a vigorous Aviation Safety Program. The effectiveness of the program is determined largely by the CO's interest and efforts. Effective aviation safety requires continuous command emphasis and leadership example. Experience has shown that a strong command mishap prevention policy will reduce aircraft mishap potential and thereby enhance overall mission effectiveness. Each aviation unit should have a Flight Safety Officer and when possible a Flight Surgeon to assist the commanding officer in implementing the Aviation Safety Program.

b. The Executive Officer (XO) organizationally is the unit's most senior safety representative. The XO shall act as the chair of the unit Health and Safety Board and supervisor of the Safety Department Head.

c. Each aviation command shall have an assigned Flight Safety Officer to advise and assist the commanding officer in planning, implementing and coordinating the unit's Aviation Safety Program. The Flight Safety Officer's unique position in relation to the unit commanding officer must not preclude close liaison with other officers, especially with the executive officer. At units with 20 or more pilots assigned, an Aviation Safety Department shall be established and the Department Head shall not be assigned other major collateral duties. Units with less than 20 pilots are encouraged to establish an Aviation Safety Department and may assign the Department Head other collateral duties. Other collateral duties shall be kept to a minimum and should avoid any possible conflicts of interest, such as operational scheduling or maintenance release authority of aviation resources. Duties of the

Flight Safety Officer include:

(1) Act as the CO's representative and advisor on all aviation safety matters.

(2) Report to the CO at least monthly regarding the unit's safety posture.

(3) Act as a member of the unit's safety and health committee. If applicable, represent unit at host facility safety and health committee.

(4) Liaison with support facility (e.g., other agency host facility) on aviation safety matters and to consolidate mishap prevention programs.

(5) Distribute aviation safety literature to ensure it receives widest readership possible and that all hands have access to it. Consideration should be given to publishing a unit newsletter.

(6) Manage a unit safety incentive/suggestion program stressing individual achievement.

(7) Coordinate and present aviation safety training.

a. Periodic aviation equipment/clothing inspections.

b. Survival training for unit personnel.

c. Egress training.

d. Safety training for line personnel.

e. Physiological training.

f. Operational Hazard Training. (See section H.4)

(8) Submit to the command, at least annually, a written Unit Aviation Safety Survey covering all phases of the unit's aviation operations. (See paragraph G.3 for survey details).

(9) Ensure completion of aviation mishap reports according to Enclosure (5). Monitor and report to the CO, progress of corrective actions.

(10) Maintain files of unit and other mishap reports. It is recommended that an aviation safety trend analysis be conducted, and presented to the commanding officer on a regular basis. An annual compilation and review of mishaps and trends can be included in the aviation safety survey. (Contact Commandant (G-WKS-1) for mishap statistics and other data from AVIATRS.)

(11) Update and **annually exercise** the unit's Pre-Mishap Plan. Consider conducting alternating tabletop and field exercises of

pre-mishap plan.

(12) Maintain and periodically inventory the unit aircraft crash investigation kit.

(13) Recommend the composition of the unit Permanent Aviation Mishap Analysis Board to the command.

(14) Maintain an aircraft mishap analysis study kit for members of the Unit Permanent Mishap Analysis Board.

(15) Conduct annual training for the Unit Permanent Mishap Analysis Board members. Placing particular emphasis on protection of the crash site and wreckage, photographic documentation crash site hazards and collection of all pertinent logs and records.

(16) Administer a unit-level anonymous reporting program for identifying unsafe conditions.

(17) Act as a member of the unit's Flight Standards Board at the discretion of the command.

(18) Review, distribute and publicize appropriate and timely information contained in safety supplements to aviation manuals.

(19) Perform other functions, as the situation and environment demand to further the aviation safety program at the unit level.

d. A Unit Permanent Mishap Board shall be assigned at each air station. Members of the board, as appointed in the unit pre-mishap plan, must be thoroughly familiar with procedures and requirements before a mishap occurs. Each member should have a working knowledge of the Safety and Environmental Health Manual, COMDTINST M5100.47 (series), relevant directives and aircraft mishap analysis procedures. Investigative action by the unit permanent mishap board should be limited to securing and protecting the mishap site and gathering records and files.

(1) The unit's Pre-Mishap Plan shall provide guidance to ensure the effective completion of the numerous time-critical tasks required as a result of a major mishap. Permanent Mishap Board members and their alternates must be clearly identified in the Pre-Mishap Plan. Their respective duties must be delineated **prior** to the mishap.

(2) If the CASB delegates a significant mishap investigation to the unit, employment of the Unit Permanent Mishap Board should be considered. Commandant (G-WKS-1) can arrange for supplemental members (i.e. Standardization Team member, Flight Surgeon, etc.) and technical assistance, if requested.

e. The Deployed Flight Safety Officer (DFSO) shall be an aviation officer designated by the parent command and assigned to the deployment. Designation should be based upon professionalism, judgment and maturity. If more than two pilots are deployed together, the senior aviator shall not normally be assigned as the DFSO. If the DFSO is not a formally designated Flight Safety Officer, the unit FSO shall train the DFSO to effectively handle routine safety matters. The DFSO duties shall include the following:

(1) Advise the deployment senior aviator, and as appropriate, vessel commanding officer or the operational commander on all matters concerning aviation safety.

(2) Prepare aviation mishap reports for review by the senior aviator. The vessel commanding officer or the operational commander may release reports.

(3) Ensure the deployed unit has adequate Pre-Mishap and Salvage Plans.

(4) Conduct aviation related safety training for the deployed unit's personnel with emphasis on shipboard or deployed unit emergency procedures.

f. The Flight Surgeon shall assist the command in aeromedical aspects of aviation safety. When a flight surgeon is not assigned, the unit commanding officer shall arrange to procure locally the services of such personnel. Specific training requirements for the Flight Surgeon are covered in the Coast Guard Air Operations Manual, COMDTINST M3710.1 (series). All Flight Surgeons, should:

(1) Be thoroughly trained in human factors evaluation, medical pre-mishap planning, medical investigation of aviation mishaps, and their role as a member of the Unit Permanent Mishap Board and an MAB.

(2) Be appointed in writing as a member of the Unit Permanent Mishap Board.

(3) Participate in unit pre-mishap planning.

(4) Participate fully in the investigation and reporting of physiologic hazards, human factor hazards or any other hazard with aeromedical implications.

(5) When requested, immediately perform physical examinations and laboratory studies on individuals involved in an aviation mishap from any military service.

(6) Participate in all salvage efforts whenever recovery may include human remains.

(7) Participate fully in assigned mishap investigations and all deliberations of the MAB.

g. The Senior Aviator (Deployed) shall advise the commanding officer of the host vessel or the operational commander of the deployment, on matters concerning aviation safety. This is in addition to the responsibilities defined in the Shipboard-Helicopter Operational Procedures Manual, COMDTINST M3710.2 (series).

h. The Ground Safety Officer (GSO) shall be the command's advisor and representative on all OSHA and ground safety matters. The GSO shall complete the Unit Safety Coordinator Course (G-KSE-060). The Ground Safety Officer role can provide grooming towards progression to the unit FSO. While not under the purview of the Aviation Safety Program or this Chapter, duties of the GSO include:

(1) Liaison with District, MLC and Commandant (G-WKS-2) for guidance in administering and managing the ground safety program.

(2) Developing a written unit safety program which paralleling the MLC Shore Safety Program.

(3) Administering the safe driver and traffic safety programs.

(4) Administering office, home off-duty and recreational safety programs.

(5) Administering and managing the hazardous materials program (if not assigned to another collateral duty officer).

(6) Investigating, reporting and tracking non-aviation mishap reports and submitting the required Mishap Reports (MISREPs).

(7) Administering and managing programs to implement OSHA and Commandant regulations and directives related to safety and environmental health.

(8) Coordinating with the FSO on the areas where flight and ground safety overlap.

(9) Coordinating and providing unit safety and occupational health training and awareness.

(10) Conducting annual unit safety inspections as described in Chapter 1 of this Manual.

(11) Identifying reporting and correcting unsafe and unhealthy work practices and conditions.

(12) Coordinating the Occupational Medical Surveillance and Evaluation Program with the MLC.

(13) Reviewing and assisting in the development of emergency plans and procedures.

(14) Coordinating with the host command on ground safety issues where appropriate.

(15) Other areas (where applicable) that the GSO should have cognizance and oversight are

(a) Ground support equipment.

(b) Maintenance and repair shop activities.

(c) Fire suppression and protection.

(d) Hazardous condition identification and reporting.

(e) Explosive proof equipment and facility wiring.

(f) Respiratory protection program.

(g) Confined space testing program.

(h) Hearing and sight conservation program.

i. The Salvage Officer, normally assigned from the Aviation Engineering Department, shall maintain the unit Salvage Plan and regularly inspect the salvage gear.

(1) The Salvage Officer should work closely with the Mishap Investigation Board to document damages that may occur during salvage. The recovery and salvage of a mishap aircraft are the responsibility of the reporting custodian (normally the Commanding Officer of a Coast Guard aviation unit or Coast Guard cutter with a deployed helicopter).

(2) The Aeronautical Engineering Maintenance Management Manual, COMDTINST Ml3020.1 (series) further defines specific command, district, area and headquarters responsibilities for the various elements of the salvage/recovery effort. It also contains a list of reference material pertaining to helicopter salvage and recovery.

(3) Headquarters support is available for coordinating assistance from other services or agencies, technical information, exceptional funding requirements, etc., which are beyond the capability of the individual unit or district.

j. Safety Petty Officers (SPO). Commands are encouraged to assign appropriate Petty Officers as SPOs for individual shop spaces. SPOs will provide safety leadership and monitor safety practices among all levels of maintenance and non aviation activities. SPOs should present a sound safety role model and does not necessarily have to be the senior shop petty officer. Selection of the proper individuals for safety

positions is critical to the success of the Aviation Safety Program. Individuals must be open to new ideas and easily approachable by both junior and senior personnel. Additional safety training courses for SPOs is highly recommended and can be coordinated though the MLC's.

G. Audits and Inspections.

1. Commandant (G-WKS-1) Unit Recurring Aviation Safety Standardization Visits. A member of the Aviation Safety Division staff will visit each aviation unit every three years to examine the Aviation Safety program at the operating level. At units where the CO is on a two-year assignment cycle, the visits should be biennial. Larger units or special situations may dictate more frequent visits. Assistance will be provided to the unit FSO in developing and/or maintaining the unit's Aviation Safety Program.

   a. These visits provide the units with direct feedback on the relative health of the unit's safety program, serve as a forum to garner and share best aviation safety practices and indicate the effectiveness of the support and guidance of Commandant (G-WKS-1).

   b. The Aviation Safety Division representative shall out brief the unit CO and provide safety training if coordinated in advance.

   c. To facilitate frank discussion of the unit safety posture, a written report of the visit results shall be returned directly to the unit.

2. MLC Inspections. MLC personnel shall make periodic unit inspections. These inspections will concentrate on environmental, occupational safety and health, facility safety and in general, ground safety concerns. The Program Manger for shore safety and environmental Health is Commandant (G-WKS-2).

3. Unit Aviation Safety Surveys. A detailed Unit Aviation Safety Survey shall be conducted whenever the commanding officer directs and at least annually. This all-encompassing report from the FSO to the CO should act as a "State of the Unit Safety" report. This survey is an in-depth audit of all phases of the unit's operations involving aviation safety. The survey should include; areas of mishap and hazard potential; causes and corrective actions relating to recent mishaps; operational hazards; status of training, proficiency and standardization; effectiveness of quality control; adequacy of supervision, personnel, safety equipment or ground facilities; dissemination of safety literature; physiological and psychological aspects pertaining to aviation safety. It should also include a unit personnel opinion poll of the unit's safety posture and a comparison to prior years. Instances of noncompliance, intentional or not, with prescribed practices or instructions should be included. The results of the survey shall be recorded and submitted to the Commanding Officer, who shall prescribe required corrective action. The FSO shall monitor corrective action and report uncorrected items in subsequent surveys.

H. Unit Training.

1. Pre-Mishap Training. The unit's Pre-Mishap Plan shall provide guidance ensuring effective completion of the numerous time-critical tasks resulting from a major mishap. Permanent Mishap Board members and their alternates must be clearly identified in the Pre-Mishap Plan. Their respective duties must be delineated **prior** to the mishap. The following training should be accomplished **annually**:

   a. Permanent Mishap Board members and their alternates should receive annual training on their responsibilities after a mishap. The training should emphasize preservation of evidence, proper mishap documentation, mishap site hazards, post mishap responsibilities/duties and notification priorities. Unit-level Mishap Board member duties should not normally involve extensive mishap investigation.

   b. The Pre-Mishap Plan should be exercised or practiced annually by simulating a mishap and then accomplishing all the resulting required actions. It is recommended the unit alternate between tabletop and field drills to exercise the plan. Unit response and the Plan's effectiveness should be evaluated. Units are encouraged to periodically activate the pre-mishap plan to investigate Class C, D and E mishaps as a means of accomplishing annual training.

2. Safety Stand Down. At least annually, each aviation unit should discontinue their regular work routine for at least one workday to focus on safety procedures and concerns. This training should include topics applicable to all hands as well as specialized training for specific groups. Using speakers from outside the command will increase the effectiveness of the training. The stand down may coincide with normal post holiday or end of summer; "back-in-the-saddle" safety programs are scheduled as desired by the command. This venue may be appropriate for garnering input and/or reporting on the unit's Aviation Safety Survey.

3. Aircrew Flight Training. Realistic training within the bounds of safety is essential to the successful completion of aviation missions. Coast Guard pilots and aircrew must maintain sound knowledge of operational hazards, emergency procedures and aircraft systems, along with a high level of psychomotor skills to operate complex platforms safely and successfully. Effective and focused use should be made of precious training time (both in the air and in the simulator) to maximize the benefit to both individual and crew performance.

4. Operational Hazard Awareness Training. An operational hazard is any condition that affects or may affect the safety of Coast Guard aircraft, personnel or equipment. Commanding officers shall ensure that local operational hazard awareness training is incorporated into the unit training program to instill personal awareness and reduce mishap potential. This

training shall be provided to all pilots and aircrew members on initial assignment to the unit and annually thereafter, per the Coast Guard Air Operations Manual, COMDTINST 3710.1 (series). Emphasis shall be given to operationally or geographically unique hazards. Operational hazard awareness training should include, but is not limited to the following:

a. Weather services and facilities.

b. Aircraft maintenance or inspection.

c. Aircraft ground support services.

d. Operation and maintenance of airfield, cutter facilities and services.

e. Navigation aids (en route and approach facilities).

f. Procedures, techniques and instructions in management of air traffic.

g. Regulations, procedures or policies published by FAA, ICAO, DOD and the Coast Guard.

h. Aviation publications and/or procedures (including aircraft flight and maintenance manuals).

i. Aviation operations areas (e.g., low level wires, remote landing sites, high density traffic areas, etc.) within the local flying and deployed locations.

j. Aircraft and aircrew survival equipment for local operating areas and deployed locations.

k. Other applicable areas (e.g., risk management, mission tasking and mission planning).

5. Cockpit Resource Management (CRM) Training. Human error mishaps account for approximately 80% of aviation mishap losses in the Coast Guard. CRM training is a valuable tool aimed at reducing human error mishaps by improving individual and crew performance.

a. CRM training courses concentrate on improving individual performance and teamwork (crew) skills by emphasizing the following objectives:

(1) Determining and analyzing ones own personality traits as they relate to aircrew interaction and problem solving.

(2) Improving personal and crew communication skills.

(3) Developing and improving participation as an individual and crewmember in a positive and assertive manner.

(4) Developing and enhancing individual and crew situational awareness skills.

(5) Identifying hazardous trends and attitudes through analysis of past human error mishaps.

(6) Presenting a risk management methodology that can help individuals and crews identify and prevent or mitigate hazardous situations.

b. CRM Training Schedule.

(1) Initial Coast Guard CRM training (two-day course) will be completed within three years of assignment to pilot or aircrew status and recorded in the aircrew member's training record and the AMMIS database. Initial training may be completed by ATC Mobile, the "A" school in ATTC Elizabeth City, North Carolina or at the C-130 Transition Course. The three-year initial training window allows unit flexibility and new aircrew members an opportunity to obtain actual operational experience prior to CRM initial training.

(2) Refresher CRM training is required biennially. Refresher training is now part of the annual pilot proficiency course curriculum at ATC Mobile. C-130 pilots (and some aircrew) receive their refresher training in conjunction with their annual proficiency course. Most enlisted aircrew attend CRM refresher training during the unit's ATC Mobile Standardization Visit. Unit FSO's receive re-certification training to teach the CRM Refresher Course.

(3) Aviation personnel failing to complete the CRM Initial Course or CRM Refresher Course on schedule shall request a waiver in writing from Commandant (G-OCA) prior to continuing operational flying. Upon Commandant (G-OCA) approval, the individual may continue to fly subject to the conditions of the waiver.

6. Maintenance Resource Management (MRM) Training. Maintenance errors contribute to approximately 20% of DOD and commercial aviation mishaps. The Coast Guard's aviation maintenance error rate is equivalent 20-22%, with associated mishap cost total over $850,000 annually. Many factors such as decreased experience levels, operational tempo, and cannibalization may impact mishaps rates. The losses are unacceptable and place our crews at risk. MRM has proven highly effective in the private sector and applies contemporary human factors knowledge to the aviation maintenance arena. Commercially provided MRM training and a CG MRM test program at several CG air stations yielded positive feedback.

a. A Coast Guard tailored MRM program, developed from commercial and DOD material, is being implemented Coast Guard-wide. The goal is to implement this program at all air stations by the end of March 2002.

b. Consistent with unit feedback, it will be taught by "the Coast Guard's own" petty officers/CPO's and use real Coast Guard mishap case studies.

c. The nature of course material delivery (i.e., MRM principles covered each month or in its entirety during a one day stand down) is at the discretion of the Unit.

I. Flight Safety Officer (FSO) Selection/Assignment. Commandant (G-WKS-1) will select prospective FSO's and/or trainees based on the recommendation of the unit commanding officer and needs of the service. Normally, a prospective FSO will not be trained until designated as an Aircraft Commander and selected for an FSO position. An aviator with a flight safety designation from another service may apply for designation once qualified as a Coast Guard Aircraft Commander. Multiple tour FSO's can expect additional specialized training for refresher and/or continuing education purposes.

1. Application Procedures. Commandant (G-WKS-1) will screen FSO applicants. Applications should be made early (preferably the fall prior to desired FSO assignment), as there can be a considerable delay for FSO school openings. Application letters should be submitted to Commandant (G-WKS-1) via the CO. Include the following information:

a. Present pilot designation, aircraft type. If not yet an Aircraft Commander (AC), expected AC syllabus completion date.

b. Year of Commission and source.

c. Previous education and degree(s) held.

d. Safety background, experience or training. (If assigned as GSO, duties completed and accomplished should be noted.)

e. Expected rotation date from unit.

f. Aviation experience, flight hours in type.

g. Prior service aviation qualifications.

h. Personal reasons for requesting a safety career. Take some time composing this section; it serves as a main discriminator between applicants.

2. Commanding Officers Endorsement. Each application for FSO must be endorsed by the applicant's command. The strength of the command endorsement is often the final determining factor for FSO selection. Commanding Officers endorsements shall be based on:

a. Judgment. Superior judgment is more critical than superior aviation skills.

b. Proficiency and Experience. The applicant's experience and ability as an aviator should be sufficient to establish and maintain credibility as a

safety role model to aircrew and pilots.

c. Interpersonal Skills. Applicant should have good rapport with fellow officers and enlisted personnel. The Officer should be patient, tactful and possess outstanding personal communication skills.

d. Remaining Tour Length. In most circumstances, applicants will be expected to act as the unit FSO for a minimum of two years following designation.

3. Assignment Officer Interaction. FSO applicants should note "FSO application" in their E-resume and include rank order of desired FSO billets from the shopping list.

J. Accident Investigation Specialist (AIS). Fully qualified FSO's, with at least two years as a unit FSO, are eligible for the AIS designation following completion of additional mishap investigation courses. AIS minimum requirements include Commandant (G-WKS-1) approved courses in the following areas:

1. Human Factors.

2. One of the following investigative courses:

a. Aircraft or Helicopter Accident Investigation or Aircraft Crash Survival (Basic)

b. Aircraft Engine Accident Investigation or Aircraft Crash Survival (Advanced)

3. Aircraft Accident Photography is recommended.

K. Mishap Cockpit Voice and Data Recorders. The majority of Coast Guard aircraft have mishap recorders. Due to the nature of the data that is captured, aviation engineering has requested that these devices be used, under certain circumstances, to assist in maintenance troubleshooting activities. When a non-Class A or B mishap occurs, where maintenance related data captured on the recorders could be of value, the following procedures shall be followed to ensure the process and system are safeguarded:

1. Contact Commandant (G-WKS-1) and (G-SEA) for authorization to remove the unit from the aircraft. Commandant (G-WKS-1) and (G-SEA) will consult with AR&SC to determine the need to remove the recorder. Figure 2-1 should be used for requesting download of recorders.

2. Only the CO can authorize aircraft flight without a mishap recorder.

3. AR&SC will download the data portion only from the recorder to conduct the necessary analysis. If audio downloading is required to check for ambient noises or to conduct frequency analysis, permission must be received from Commandant (G-WKS-1).

NOTE: Raw flight data and animations made solely from flight recorder data are not exempt from public release, provided they do not contain privileged safety information (e.g., MAB

opinions, speculation or conclusions). While transcripts of the relevant portions of the cockpit voice recorders are not exempt from public release, the actual cockpit voice recordings and the names of the individuals whose voices are captured may be safeguarded due to privacy concerns and thus not disclosed.

Figure 2-1
VOICE AND/OR FLIGHT DATA RECORDER DOWNLOAD REQUEST MESSAGE

P ######Z MON 01
FM COGARD AIRSTA SAMPLE
TO: COMDT COGARD WASHINGTON DC//G-WKS/G-OCA/G-SEA//
INFO: COGARD AR SC ELIZABETH CITY NC//APPROPRIATE ACFT PLM/EISD//
BT
UNCLAS FOUO //N03750//
SUBJ: VOICE AND/OR FLIGHT DATA RECORDER DOWNLOAD REQUEST
1. AIR STATION: _____
2. AIRCRAFT TYPE: _____; CGNR_____.
3. BRIEF EVENT DESCRIPTION (DO NOT INCLUDE PRIVILEGED INFORMATION):
_____.
4. REASON FOR DOWNLOAD REQUEST: (MISHAP INVESTIGATION; MAINTENANCE TROUBLESHOOTING; TRAINING)_____
5. REQUESTED PARAMETERS:
   A. _____
   B. _____
   C. _____
   D. _____(EXPAND AS NEEDED)
6. COCKPIT VOICE RECORDING IS/IS NOT BEING REQUESTED.
7. CURRENT LOCATION OF RECORDER:_____
8. AIRSTA REQUESTOR:
   A. RANK/NAME:
   B. TELEPHONE NUMBER:
   C. MAIL ADDRESS:
BT
NNNN

L. Near Midair Collisions and Midair Collisions. Near midair and midair collisions are extremely hazardous situations requiring special reporting procedures. The Coast Guard Air Operations Manual, COMDTINST M3710.1 (series) provides supplemental information to the reporting requirements listed below:

1. A near midair collision is an incident where the possibility of collision occurs when an aircraft passes within 500 feet proximity of another aircraft

(excluding normal formation or air intercept flights). Near midair incidents should be treated and reported as Flight-Related Class D mishaps.

2. A serious near midair collision (as defined in the Coast Guard Air Operations Manual, COMDTINST M3710.1 (series) is an incident where the possibility of collision occurred (aircraft pass within 500 feet proximity) and:

   a. Either aircraft took violent evasive measures.

   b. Known or suspected injury, however slight, occurs to occupants of either aircraft.

   c. Significant attention is expected from the press.

   d. Pilot or crewmember of either aircraft felt there was a possible collision hazard between two or more aircraft.

   e. Another organization may take administrative action.

3. Serious near midair incidents shall be reported as soon as practical to Commandant (G-OCA) or Coast Guard Headquarters Command Center (G-OPF) by telephone. A Class D Flight-Related mishap message shall be sent within 72 hours.

4. Midair collisions, regardless of the amount of injury or damage, shall be reported immediately to Commandant (G-WKS-1) and (G-OCA) or Coast Guard Headquarters Command Center (G-OPF) via telephone. An aviation mishap message shall be submitted within 12 hours of the incident. Commandant (G-WKS-1) and the CASB will determine if a Mishap Analysis Board is to be convened.

5. Treat significant incidents involving TCAS (Traffic Collision Avoidance System) as Flight-Related Class D mishaps.

6. The pilot shall make an immediate voice report to the nearest FAA communication facility of any near midair or midair collision as defined by the Airman's Information Manual. See the Coast Guard Air Operations Manual, COMDTINST M3710.1 (series) for reporting requirements.

M. Aviation Mishap Class C, D and E Investigation and Reporting. Guidelines and procedures for major (Class A and B) mishap response, investigation and reporting are covered in Chapter 3 and Enclosures (2), (4), (5) and (13). The following is specific guidance on investigating and reporting Aviation mishap Class C, D and E and other unit conducted mishap investigations. When any mishap occurs, it is necessary to investigate and analyze the mishap thoroughly. In this way, all mishap cause factors can be identified and full use made of lessons learned from the event. It cannot be over-emphasized that safety review and communication of mishap events (or potential events) is focused solely upon improving procedures and/or equipment and preventing future mishaps. Such review is not meant to punish, criticize or embarrass the personnel involved. Full, uninhibited exchange of information and communication of safety information is essential if safety efforts are to effectively evolve and proactively meet changing operation needs.

1. Reporting Class C, D and E Aviation Mishaps. Mishap messages are one of the most important avenues available to spread the word and keep safety awareness alive. The aviation mishap message is more than just a means of reporting an event for entry into the AVIATRS database. Each message helps raise service-wide safety awareness and increases mishap prevention.

   a. Aviation Class C, D and E mishaps are reported using the aviation mishap format in Enclosure (5). Enclosure (5) contains a line-by-line explanation of the message format and the list of choices used in the message format. Aviation mishap messages are maintained in the **AV**iation **I**ncident and **A**ccident **TR**acking **S**ystem (**AVIATRS**).

   b. The Aviation Class D mishaps can be used to report hazards. Hazards vary according to the severity of damage and/or injury they are **expected** to cause and the **probability** of that severity occurring. Hazard reports often have no or little property damage associated with them. Hazard reports are intended to eliminate hazards and have three purposes:

      (1) To report a hazard and the remedial action taken or recommended, so others may take similar action.

      (2) To report a hazard so another organization may determine appropriate corrective action.

      (3) To document a reoccurring hazard.

   c. The reporting custodian shall normally be the appointing and convening authority for Class C, D and E mishaps. A written convening order is not required. Verbal instructions to conduct an analysis followed by submission of the required mishap report are satisfactory.

      (1) Depending on the circumstances, unit mishap boards usually consist of one to three unit personnel. Member(s) need not be senior to the individuals involved. A Flight Surgeon or Medical Officer should be assigned to mishap investigations for incidents involving personnel injuries or human factor events.

      (2) Units are encouraged to periodically activate the Unit Pre-mishap plan and have the Unit Permanent Mishap Board investigate Class C, D and E mishaps as a training exercise.

   d. Commanding Officer's Endorsement/Comments. The CO shall review the mishap message to evaluate the circumstances surrounding the mishap and indicate recommends or corrective actions needed to correct the deficiencies and prevent similar mishaps. The CO should comment on cause factors and other aspects of the mishap. Comments should address human factor issues involved in the mishap.

e. Supplemental mishap messages for Class C, D and E mishaps are always acceptable. Supplemental messages should be sent when not all the required information is available at the time of initial reporting. This is strongly encouraged in those cases where the Aviation Safety Program is better served by getting the initial word out to the field in a timely manner. A supplemental message can be sent when the rest of the information is available. The overriding concern is to alert the field of a possible hazard in a timely manner (use Enclosure (5)).

NOTE: Do not list names or social security numbers of personnel involved in the mishap in any aviation mishap message.

2. Mishap Response and Reporting Deadlines. Timely mishap reporting is important so operational commanders, program managers and support managers can effectively investigate and analyze causal factors and take corrective action to prevent further mishaps.

   a. Class C aviation mishaps shall be reported by mishap message to Commandant (G-WKS-1) within 14 working days of the mishap (information to AIG 8907).

   b. Class D and Class E aviation mishaps shall be reported by mishap message to Commandant (G-WKS-1) within 21 working days of the mishap (information to AIG 8907).

   c. Meeting the above deadlines ensures that mishap prevention information reaches the field in a timely manner. Careful thought should be given when requesting a delay beyond the above deadlines. Supplemental messages are preferred, rather than **delaying the message until all information is available.**

   d. If deadlines cannot be met. The unit should request an extension from Commandant (G-WKS-1) either by telephone or email.

3. Delays. Do not delay reporting a mishap or sending a preliminary message for lack of information. If complete information is not available provide as much information as possible and send a progress/supplemental message when the other data becomes available.

NOTE: Delaying a Class C, D or E mishap message for cost data is not desired. This defeats the purpose of the aviation mishap message reporting system. A good approximation of cost is usually sufficient with a follow-up telephone call to Commandant (G-WKS-1).

4. Authorized AIG. AIG 8907 is the authorized AIG for safety of flight and aviation mishap messages. Commanding Officers of operational units should readdress relevant mishap messages to deployed crews. Include follow-on endorsements from the parent command, as appropriate.

5. Class C, D and E Formal Mishap Analysis Boards. If deemed appropriate, Commandant (G-WKS-1) or the CASB will be the appointing authority and will determine the MAB's composition and endorsement chain. These boards

may vary in composition according to the seriousness and complexity of the mishap. Such an analysis may be conducted in lieu of, or in addition to, the regular mishap analysis.

NOTE: The CASB may or may not appoint a MAB to investigate any incident regardless of the Class or amount of damage.

6. Extent of Investigation Efforts. The extent of investigation efforts should be tailored to the complexity and severity of each mishap. Factors influencing the scope of an investigation include severity of injury, extent of the property loss, probability of adverse public reaction, and future mishap potential. The convening authority determines the depth of investigative effort required for each mishap and the type and the composition of the Mishap Analyses Board to be assigned.

N. Hosting the MAB and Mishap Site Safeguarding. The Mishap Unit or unit nearest the mishap, if other than the mishap unit, will be designated as the host for the MAB. The unit will provide support, including; emergency medical care, clerical and other personnel as required; office space with secure storage capability; communications; transportation; specialized clothing; and other action necessary to minimize injury and damage, including:

1. Firefighting, rescue, medical support, other disaster control activities including limiting the exposures to hazardous materials.
2. Assisting rescue activities and investigators from other governmental agencies working on the scene.
3. Activating the unit permanent mishap board to protect and preserve vital evidence pending the arrival of the Commandant MAB. (See paragraph F.4.d for unit permanent mishap board responsibilities.)
4. Protecting the wreckage site until the arrival of the Commandant's MAB.
5. If wreckage falls into populated areas, determination will be made whether prompt removal is the best course of action. In questionable cases, consult with Commandant (G-WKS-1).
6. Providing a flight surgeon or medical officer to assist in the rescue of survivors and the recovery of human remains.

O. Other Reports and Requirements Associated with Mishaps. Often, when a mishap occurs, other Coast Guard directives also require reports. This duplicate reporting requirement arises because the results of the mishap analysis and the content of the mishap report may not be used as the basis of adverse personnel action against individuals. This paragraph points out other topics or requirements that are frequently addressed after a mishap occurs. Interested parties should refer to the current edition of Directives, Publications and Reports Index, COMDTNOTE 5600 (series) and current editions of specific directives to ensure that they are meeting all requirements. The Coast Guard Administrative Investigations Manual, COMDTINST M5830.1 (series) contains a comprehensive summary of these investigations and reports.

NOTE: In the case of casualty reports and NOK notification, 24-hour time limits are usual. These reports are NOT the responsibility of the President. Knowledge of their existence is helpful but MAB members need not get involved in the preparation of any report other than the Mishap Analysis Report.

1. Legal Investigations. Instructions, requirements, and procedures for legal investigations are contained in the Coast Guard Administrative Investigations Manual, COMDTINST M5830.1 (series) and the Claims and Litigation's Manual, COMDTINST M5890.9 (series).

2. Procedures for claims against the Government are contained in Claims and Litigation's Manual, COMDTINST M5890.9 (series).

3. Procedures for claims in favor of the Government are contained in Claims and Litigation's Manual, COMDTINST M5890.9 (series).

4. Procedures for property loss claims by Coast Guard personnel are contained in Claims and Litigation's Manual, COMDTINST M5890.9 (series). Also, see the Property Management Manual, COMDTINST M4500.5 (series) for loss of government property.

5. Investigations involving the National Transportation Safety Board and/or Federal Aviation Administration shall be conducted by mutual agreement between the various agencies involved.

6. Fatalities and Critical Injuries Notifications.

   a. Procedures for notification of next of kin are contained in the Personnel Manual, COMDTINST M1000.6 (series).

   b. Procedures for notification of the Commandant are contained in Personnel Manual, COMDTINST M1000.6 (series).

   c. Procedures for release of names to the public are contained in the Personnel Manual, COMDTINST M1000.6 (series) and the Public Affairs Manual, COMDTINST M5728.2 (series).

   d. Funerals, survivor benefits, and other information are contained in Personnel Manual, COMDTINST M1000.6 (series) and the Decedent Affairs Guide, COMDTINST 1770.1 (series).

P. Investigating Potential Criminal Acts (Including Sabotage). If the MAB suspects that the mishap was caused by misconduct, they must immediately suspend the investigation and report the supporting facts and evidence to Commandant (G-WKS). Commandant (G-WKS) under consultation with Commandant (G-LGL) and (G-LMI) will determine whether the safety investigation should be terminated and an appropriate criminal investigation initiated. Even if the safety investigation is terminated, MAB members must NOT disclose any privileged information to the criminal investigators.

1. If the determination is made to terminate the safety investigation, the senior member shall give all nonprivileged material to the criminal investigators and

provide the names of all known witnesses including those already interviewed by the MAB. This list shall indicate whether those already interviewed were promised confidentiality. The MAB president will ensure all privileged information is safeguarded and preserved. The safety investigation of specific issues may continue, but shall be subordinate to the nonsafety investigation.

2. If the criminal investigation concludes that the mishap is the result solely of a criminal act, a safety investigation will not be conducted. If a criminal act did not occur, or it appears that causes apart from the criminal act were involved, Commandant (G-WKS) will determine whether the MAB should continue its investigation.

CHAPTER 3 MISHAP RESPONSE, INVESTIGATION AND REPORTING

A. Scope. This chapter provides requirements and guidance for response, investigation and reporting of Coast Guard mishaps.

B. Mishap Definition. Any unplanned, unexpected or undesirable event causing injury, occupational illness, death, or property damage/loss.

C. Policy. All Coast Guard mishaps will be investigated and reported in accordance with the requirements of this chapter.

D. Action. Use the Figure 3-1 flowchart located on page 3-2 of this Manual, together with the appropriate sections of this chapter, to determine whether a reportable mishap has occurred and to determine the appropriate unit response, investigation and reporting responsibilities. The Coast Guard's E-Mishap System, accessed at http://cgweb.lant.uscg.mil/KDiv/kseMISREP/Default.asp, is the preferred method of reporting. However, units without access to the online system or who wish to continue using message traffic may report via the message system.

E. Pre-Mishap Planning. Each unit shall develop a pre-mishap plan to organize an effective unit response to mishaps, especially major mishaps. Although the plan does not need to be a separate unit instruction, it should be separate and distinct. One way of accomplishing this is inclusion as a portion of whatever method the unit uses to document required actions (e.g. Standing Orders, Standard Operating Procedures, and/or Operational Bills). Because of the limited resources and response capabilities of smaller units, Groups and Marine Safety Offices shall establish pre-mishap plans, which cover mishaps for units that report to them. A sample unit pre-mishap plan is provided in enclosure (15) to this Manual.

1. Pre-mishap plans are the main planning tool for reducing the debilitating effects of a major mishap.

2. To remain a viable tool, pre-mishap plans must be reviewed and exercised at least annually to ensure accuracy and unit familiarity.

3. A good plan provides simple, easy to use checklists to ensure key personnel are knowledgeable concerning their duties following a mishap. Permanent Unit Mishap Analysis Board members, and their alternates, must be clearly identified in the pre-mishap plan. Their respective duties must be delineated prior to the mishap. Members should be identified by position or billet and not by name.

4. Pre-mishap plans distribute tasks and resources for:

   a. Notification of the chain of command.

   b. Rescue and emergency medical care of personnel.

   c. Minimizing injury and property damage, including secondary or subsequent mishaps.

Mishap Response Flow Chart

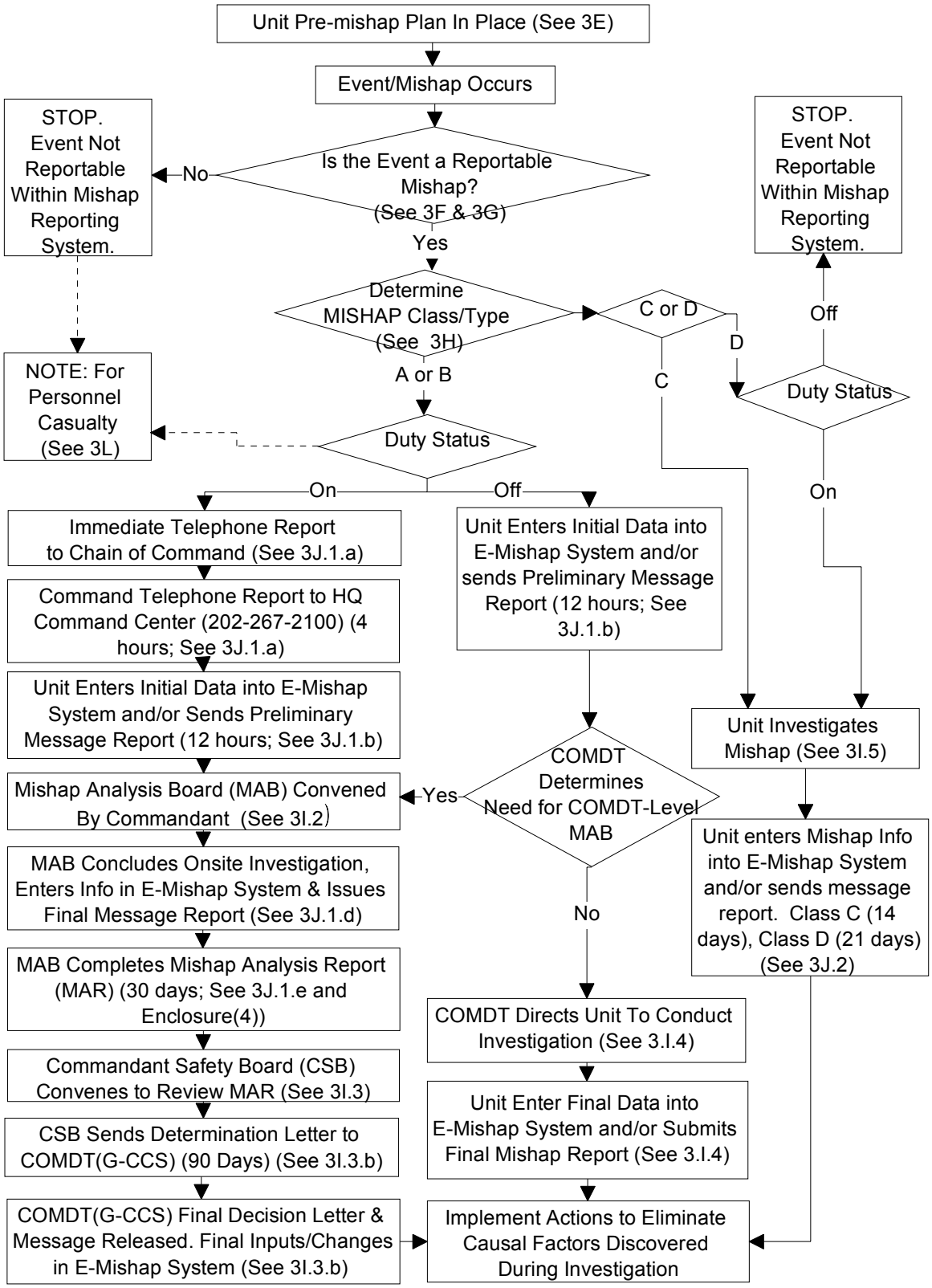

Figure 3 - 1

d. Notification of next-of-kin (NOK), death-imminent process, media, etc.

e. Security of mishap site.

f. Preservation of wreckage to facilitate analysis of the mishap causes and eventual restoration of damaged property (e.g., photograph, fluid samples oil, fuel, etc., physical examinations as appropriate, etc.).

g. Prior arrangements and coordination with other military, government and civilian agencies to obtain the necessary fire-fighting, rescue and salvage equipment, security guards, divers, flight surgeons, medical facilities, logistics, photographers, etc.

h. Preliminary mishap investigation and analysis which includes activating the unit mishap board, interviewing witnesses and initiating critical physical examinations and fluid specimens. See Section 3-I of this Manual.

i. Unit Critical Incident Stress Management actions.

j. Safeguarding of electronic memory units. Commandant (G-SEA) and (G-WKS) will provide guidance on the correct routing, handling, downloading, and analysis of aircraft electronic memory units. This includes crash survivable memory units in flight data recorders (FDR), cockpit voice recorders (CVR), and nonvolatile memory (NVM) chips on circuit cards from electronic engine controls, programmable navigation equipment, and other avionics. As shipboard automated systems evolve, similar steps may be required of shipboard system memory units.

5. Not every circumstance at every unit can be anticipated. The guidance presented provides a framework which must be tailored and customized by each unit according to their own requirements, equipment, mission responsibilities, etc. Pre-mishap plans should incorporate the eventuality that the unit mishap board may be required at a site away from the home unit.

6. Audits of unit mishap plans have found five areas of pre-mishap planning that are generally weak and are highlighted below. These areas should be particularly reviewed and addressed in all pre-mishap plans.

a. Telephone/Recall Lists. These lists should include names, home numbers and work numbers of spouses or next of kin. Mishaps often occurred during work hours and next of kin could not be located for many hours because work telephone numbers were not known. Verify and update at least annually. The pre-mishap plan should not actually include these lists—for privacy reasons—but should indicate where they may be located at the unit.

b. Incoming Telephone Calls. Commands have often experienced such a deluge of calls from other units, friends, media, senior commands, etc., that their ability to make outgoing calls was severely impacted.

Controlling this influx will be difficult and needs to be addressed in unit planning. A mechanism needs to be established to screen calls, eliminating press/interested parties posing as official Coast Guard callers.

c. Next of Kin (NOK) Notifications. Commands should anticipate the need to make several notifications simultaneously and in a timely manner. Additionally, there are administrative requirements for death-imminent retirements or death notifications that have strict time limits. These need to be reviewed with administrative staff, parent commands and district/area support staff and should be noted in the plan. (See the Personnel Manual, COMDTINST M1000.6 (series), Chapter 11)

d. Critical Incident Stress Debriefing (CISD). Units suffering serious loss may benefit from CISD. Additionally, members of a unit suffering serious loss may require extended counseling. These capabilities are available through the servicing ISC worklife staff. The telephone number of the ISC worklife employee assistance coordinator should be part of the pre-mishap plan. The Critical Incident Stress Management Commandant Instruction (COMDTINST 1754.3 (series)) highly encourages defusing or debriefing for those involved in serious mishaps or the loss of life, however, participation is not mandated.

e. Establishment of Support Plans. Pre-establishing support plans with other emergency preparedness agencies--local police departments, fire departments, rescue and SWAT teams, other federal agencies, hospitals--and including these agencies in the annual exercise of the pre-mishap plan will make it much more effective.

F. Mishap Events. The following events constitute a reportable mishap:

1. Injury or Illnesses which result in any of the following: death, days away from work, restricted duty, transfer to another job, medical treatment beyond first aid, or loss of consciousness.

a. Coast Guard active duty military personnel injured, missing, or missing in action while on duty; active duty military personnel injured or missing while in an off-duty status if it results in days away from work, more than 30 days of restricted duty or transfer to another job.

b. Coast Guard civilian personnel injured, missing, or missing in action while performing Coast Guard work, on or off Coast Guard property. Any occupational injury or illness reported on a Form CA-1 or CA-2 to the Office of Workers' Compensation, Department of Labor, is a mishap that occurred while performing Coast Guard work and must be also reported via the Coast Guard mishap system.

c. Coast Guard Reserve personnel injured, missing, or missing in action,while in an active duty status. (Active Duty for Training--ADT-AD, IADT, ADT-OTD; Active Duty other than Training--ADSW-AC, ADSW-RC, Involuntary AD, Emergency Voluntary AD;

Drilling on Inactive Duty for Training (IDT); or on an Extended Active Duty (EAD) contract). Injuries to Coast Guard Reserve personnel in one of the above active duty statuses while off-duty would also be reported if they resulted in days away from Coast Guard work, restricted duty or transfer to another Coast Guard position.

d. Coast Guard Auxiliary personnel injured, missing, or missing in action while under orders. See the Auxiliary Operations Policy Manual, COMDTINST M16798.3 (series).

e. Coast Guard contractors injured while working on Coast Guard property, on Coast Guard equipment, or while conducting Coast Guard missions.

f. Non-Coast Guard personnel and visitors injured or missing on Coast Guard property, including Coast Guard housing.

g. Coast Guard military or civilian personnel who develop an illness that may reasonably be ascribed to an immediate (acute) or long term (chronic) exposure to chemical or physical agents in the workplace. For illnesses linked to chronic exposures, a mishap report shall be initiated upon first diagnosis. An example of such a "sentinel event" for an occupational illness is a permanent threshold shift seen on an audiogram. Work-related musculoskeletal disorders (MSD's), occupational exposures to active tuberculosis (TB) that result in subsequent tuberculosis infections, and work-related needlestick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material should also be reported.

h. Coast Guard Exchange System (CGES) personnel injured while performing Coast Guard work.

2. Property Damage.

a. Damage to Coast Guard afloat or ashore facilities or aircraft.

b. Damage to non-Coast Guard facilities as a result of Coast Guard operations.

c. Personal property owned by Auxiliary units or Auxiliarists under orders that is damaged in the course of duty.

3. Other. To be reported regardless of whether injury, illness, or damage result.

a. Accidental firearms discharge.

b. Electrical Shocks

c. Fires

4. Aviation-specific Reportable Events. Report as Class D Flight-Related incidents that may not meet the criteria of a reportable event (as listed above), but can be used as indicators of possible trends and can teach valuable lessons.

These events usually do not have costs associated with them and do not involve injury or illness. These lessons learned incidents make for "hangar flying" or "there I was..." topics and should be shared. They shall be reported to prevent similar events from becoming actual mishaps.

a. Near Midair Collisions. Near midair collisions are extremely hazardous situations requiring special reporting procedures. Chapter 2 of this Manual and the Coast Guard Air Operations Manual, COMDTINST M3710.1 (series) provide specific reporting requirements for these events.

b. Human Factor Event. A psychological, physiological, or pathological condition occurring to a crewmember when intent for flight exists and results in interference of a crewmember's duties. This includes flight delays, diverts or aborts due to conditions affecting a crewmember or passenger (airsick, vertigo, suspected or proven hypoxia, other toxic exposure, decompression events, preexisting illness, spatial disorientation, other in-flight incapacitation or injury).

c. Special Operations. From time to time, headquarters will request that certain events be reported (e.g., use of the Traffic Collision Avoidance System (TCAS)).

d. Precautionary or Forced Landing (Aborted Flights). Any landing required because conditions or circumstances make further flight inappropriate or impossible is a reportable event. This includes emergency or precautionary landings when imminent engine and/or rotor system failure is confirmed after landing. Precautionary landings without confirmed failure, malfunction, or damage (e.g. suspected blade strike, warning lights, bird-strike, etc.) and no additional damage occurs during landing are not reportable (no components are replaced). However, if additional circumstances surrounding the event can be of value to the fleet, the event should be reported. If the event does not result in replacement of the component, it is not reportable.

e. The following events are reportable aviation mishaps and should be reported under the appropriate mishap class based on damage costs or injury:

(1) Power Loss. Any engine flameout, failure, substantial loss of power or required engine shutdown, regardless of successful restart. Unintentional engine shutdowns are reportable, regardless of restart.

NOTE: Intentional engine shutdowns (training, test flight, etc.) are not reportable, unless the engine fails to restart or other circumstances surrounding the event can be of value to the fleet.

(2) Propeller, Rotor or Engine Wash. Damage or injury resulting from propeller backwash, rotor down wash, or engine exhaust is reportable.

f. Weather Related Mishaps. Events caused by natural phenomena such as turbulence, lighting, sea state, floods or surges, restricted visibility, or static discharge, etc.

g. Jettison of a sling load or other external stores (intentional or unintentional) resulting in damage or injury.

h. Unplanned or inadvertent equipment drops resulting in injury or property damage.

i. Impact Damage. Damage or injury resulting from striking or being stuck by foreign objects.

j. Emergency breakaway during replenishment, helicopter-in-flight-refueling (HIFR), refueling at sea.

k. TFOA (Things Falling Off Aircraft). Damage or injury caused by any object unintentionally dropped or falling from an aircraft shall be reported regardless of amount of damage or severity of injury.

l. Aborted Takeoffs: An event that occurs before takeoff and interrupts a planned flight (e.g., vibrations, warning lights, noises or fumes, etc.).

m. Other Occurrences. Any event not specifically listed above where a definite mishap potential or trend exists and the Coast Guard Aviation Safety Program could benefit from the report. These may not have resulted in property damage or injury, but there is benefit from the lessons learned. Examples include: use of emergency procedures, use of nonstandard procedures, excellent displays of CRM, a significant failure of crew coordination, mishandling of Coast Guard equipment, or problems with aviation life support equipment.

NOTE: Reporting events involving positive action by the crew, good CRM or where crew actions avoided a more catastrophic outcome is encouraged. Incidents compounded by a breakdown in CRM or no CRM should also be reported.

n. Contractor Mishaps. Investigate and report all contractor mishaps resulting in reportable Coast Guard aviation damage or that can be of value to the Aviation Safety Program.

5. Afloat-specific Events. Report events that may not always meet the criteria of a reportable event, as per 3.F.1-3, but can be used as indicators of possible equipment/training trends and or can teach valuable lessons. These events usually do not have costs associated with them and may not involve injury or illness. They shall be reported to prevent similar events from becoming actual mishaps.

a. Falls overboard from vessels or supporting equipment and facilities.

b. Vessel Rollovers and Knockdowns (in excess of 90 degrees from an even keel)

c. Any event which may identify possible deficiencies in current operational policy or procedures; allowances, outfits, or personal protective equipment; or platform configuration or performance.

6. Near Misses/High Potential (HIPO) Events. Near mishaps, lessons learned events or other events with a High Potential (HIPO) for injury, damage or Coast Guard-wide implications are reportable even though they result in MINIMAL or NO DAMAGE, do not result in PERSONNEL INJURY, or would otherwise not be reportable in the mishap reporting system, i.e. improper maintenance.

G. Non-Reportable Mishap Events. The following events are non-reportable as mishap events and do not fall under the requirements of this Manual:

1. Minor Off-duty Injuries. Injuries to military members which occur off duty and do not result in either 1) days away from work; 2) more than 30 days of restricted duty or 3) transfer to another job.

2. Non-Occupational Illnesses. Illnesses which cannot be associated with an occupational exposure.

3. Intentional Acts of Violence. Suicide, homicide or other malicious and intentional acts of violence that result in physical harm or property damage (e.g. bar fights, muggings, etc.).

4. Intentional Damage or Injury. Intentional damage or injury caused by hostile action, malicious acts of sabotage or arson, law enforcement action ordered by competent authority, intentional damage or destruction for R&D purposes.

5. Conditionally Predicated Damage. Damage which cannot be reasonably prevented (e.g. damage from storms, range or forest fires, floods, or seismic events).

6. Normal Wear and Tear of Equipment. Damage, malfunctions or failures of equipment or components due to normal wear and tear, if it has a fixed useful life less than the complete system. These items are subject to periodic inspections, maintenance and replacement, and are **NOT** reported as mishaps.

NOTE: This applies only if the malfunction or failure is the **ONLY** damage and the sole corrective action is to replace or repair the component. If the malfunction or failure of a component causes collateral damage to other components, the incident is reportable. Design defects, poor workmanship, incorrect use of materials and improper installation are not considered normal wear and tear.

7. Normal Testing and Calibration. Damage or failure of equipment of components due to their normal testing and calibration.

8. Coast Guard Flying Club. Mishaps involving CG flying club aircraft are not reportable as an aviation mishap, however, if there is injury or death the event should be reported as an off-duty mishap.

9. Bird Strikes With No Damage. Bird strikes without aircraft damage or personnel injury (even if a precautionary landing is made) are not reportable

unless additional circumstances surrounding the event would be of value to the fleet.

10. Planned Controlled Jettison. Intentional jettison or release during flight of cargo, fuel, life rafts, auxiliary fuel tanks, drag chutes or external equipment when there is NO reportable damage to the aircraft or other property or injury. This does not apply if the jettison was the result of a malfunction. A good test of this exception is to question the intent of the aircrew. If the load was not meant to depart the aircraft, it is a reportable mishap. However, if the jettison is intentional but other aspects of the event can be of value to the community, it should be reported.

11. False Indications. False Alarms (precautionary landings, engine, propeller or rotorhead shutdowns) determined to be the result of erroneous indicators (e.g., chip light, warning light, etc.) are not reportable UNLESS it results in repair or replacement of a component.

H. Mishap Classifications. Mishaps are classified according to severity level (class) and operational mode (type).

1. Mishap Class (severity). Mishaps are divided into four classifications according to severity of injury or cost of property damage/loss. Class A and B mishaps are the most serious or costly and usually warrant a formal Commandant appointed Mishap Analysis Board (MAB). To determine costs, see enclosure (13) to this Manual.

a. Class A--Mishaps in which:

(1) An injury or occupational illness results in a fatality or permanent total disability.

(2) The cost of reportable property damage is $1,000,000 or greater.

(3) A Coast Guard aircraft or cutter is missing or abandoned, for which recovery is impossible or impractical, or is beyond economical repair.

(4) A Coast Guard small boat has reportable property value of $50,000 or more and

(a) is missing or abandoned;

(b) for which recovery is impossible or impractical;

(c) or is beyond economical repair.

(5) A midair collision, regardless of the severity of injury or amount of damage.

(6) Any Coast Guard personnel are missing or missing in action.

b. Class B--Mishaps in which:

(1) Any injury and/or occupational illness results in permanent partial disability.

(2) The resulting cost of reportable property damage, or damage to cutters and aircraft, is $200,000 or more, but less than $1,000,000.

(3) Three or more personnel are inpatient hospitalized.

(4) Coast Guard small boats incur repairable damage of $50,000 or more.

c. Class C--Mishaps in which:

(1) An injury or occupational illness results in 1) any loss of time from work beyond the day or shift on which it occurred; 2) placement of any individuals on limited duty or restricted status for more than 30 consecutive days; or 3) transfer of any individuals to a different job.

(2) The resulting cost of reportable property damage, or damage to cutters and aircraft, is $20,000 or more, but less than $200,000.

(3) Coast Guard small boats incur repairable damage of $20,000 or more, but less than $50,000.

(3) A person falls overboard accidentally from a vessel or a pier or other structure or equipment associated with Coast Guard operations.

(4) A grounding, capsizing, or rollover/knockdown occurs which is greater than 90 degrees from an even keel.

d. Class D--Mishaps in which:

(1) An occupational injury or occupational illness occurs requiring more than simple first aid treatment but that does not meet the criteria of a Class C mishap.. This includes events where individuals are placed on limited duty status or restricted duty for less than 30 consecutive days.

(2) The cost of property damage for non-aviation mishaps is $1,000 or more but less than $20,000.

(3) The cost of property damage for aviation mishaps is less than $20,000.

(4) An accidental firearm discharge, electrical shock, or fire occurs that does not meet the criteria of a higher classification.

(5) A near midair collision (NMAC) occurs. Report as a Flight-Related Class D mishap. See section 3.F.4.a and Chapter 2 of this Manual for additional NMAC reporting requirements.

(6) There is a Near Miss/High Potential (HIPO) Event. Near mishaps, lessons learned events or other events with a High Potential (HIPO) for injury, damage or Coast Guard wide implications are reportable as Class D mishaps, even though

they result in MINIMAL or NO DAMAGE OR PERSONNEL INJURY.

(7) An Aviation Reportable Mishap occurs as described in section 3.F.4. Report these as a Flight Related Class D mishap.

e. Aviation Class E--Aviation mishaps which involve engine damage only, regardless of the damage cost. If the damage is not contained or not limited to the engine (e.g., airframe, props, rotors, non-airframe damage or injury), the mishap will be reported and investigated according to the appropriate mishap Class. (Class E mishaps can be Flight, Flight-Related or Ground.) Class E incidents also include Foreign Object Debris (FOD) Damage Incidents.

NOTE: Foreign Object Debris (FOD) Damage. Foreign Object Debris (FOD) damage confined to the engine or limited to internal components (does not include cowling) are reported as a Class E mishap. If engine parts are not contained, exit the engine and cause other damage, then report as the appropriate mishap Class based on severity of the mishap.

NOTE: FOD mishaps where the engine is the only damage do not normally require a formal mishap investigation and are reported as a Class E mishap. Commandant (G-WKS) may deem it necessary to convene a Mishap Analysis Board if other circumstances dictate.

2. Injury Severity Definitions. For the purposes of mishap reporting (unrelated to Physical Disability Evaluation Processing (PDES)), the following definitions apply:

a. Permanent Total Disability. Any non-fatal injury or occupational illness that in the opinion of competent medical authority, permanently and totally incapacitates persons to the extent that they cannot follow any gainful occupation.

NOTE: The loss of use of both hands, both feet, both eyes, or a combination of any of these body parts as a result of a single mishap, shall be considered as a permanent total disability. Occupationally linked chronic irreversible diseases shall also be considered as a permanent total disability.

b. Permanent Partial Disability. An injury or occupational illness that does not result in death or permanent total disability, but that in the opinion of competent medical authority, results in permanent impairment.

NOTE: The loss or loss of use of any body part other than teeth, nails, and tips of digits shall normally be considered a permanent partial disability unless specifically determined to be otherwise by competent medical authority. Occupationally linked cancers--other than non-malignant skin cancers--shall also be considered as a permanent partial disability.

c. Simple First Aid Treatment. First aid which a person, who may or may not be a health care professional, can provide. It is defined as

using a non-prescription medication at nonprescription strength; administering tetanus immunizations (other immunizations, such as Hepatitis B vaccine or rabies vaccine, are considered medical treatment beyond first aid); cleaning, flushing or soaking wounds on the surface of the skin; using wound coverings such as bandages, Band-Aids™, gauze pads, etc.; or using butterfly bandages or Steri-Strips™; using hot or cold therapy; using any non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc.; using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.); drilling of a fingernail or toenail to relieve pressure; draining fluid from a blister; using eye patches; removing foreign bodies from the eye using only irrigation or a cotton swab; removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means; using massages (physical therapy or chiropractic treatment are considered medical treatment beyond first aid); or drinking fluids for relief of heat stress.

3. Aviation Mishap Types. Aviation-specific mishaps are divided into four types; intent for flight is used to differentiate among the mishap types. Intent for flight exists when an engine is started for the purpose of flight and continues until the aircraft comes to rest with the engine(s), propeller(s), or rotor(s) stopped and brakes set or wheel chocks in place. An aircraft's engines are considered started or running the instant any one of them is set into motion intentionally, either by internal or external power. In the case of an amphibian aircraft (Auxiliary only) landing on water, intent for flight ceases when the aircraft has made a water landing, the engine(s), propeller(s) or rotor(s) have stopped, and the aircraft has been anchored, moored, taken in tow, or otherwise comes to rest (adrift).

   a. Flight Mishap. Mishaps involving Coast Guard aircraft damage/loss with or without other property damage, personnel injury/death, or occupational illness, where intent for flight existed at the time of the mishap.

   b. Flight-Related Mishap. Mishaps in which there is NO Coast Guard aircraft damage. Intent for flight must have existed at the time of the mishap, and other property damage, death, injury or occupational illness has occurred. (Includes near midair collisions, non-aircraft damage caused by rotor wash, and other reportable events with NO reportable Coast Guard aircraft damage.)

   c. Aviation Ground Mishap. Mishaps involving damage to Coast Guard aircraft/aviation equipment or where death, injury, or occupational illness occurred where NO intent for flight existed (e.g., towing, maintenance, run-ups, servicing, etc.). Ground mishaps imply no intent for flight and include maintenance or handling mishaps of aviation assets while deployed aboard vessels.

d. CG Auxiliary Aviation Mishaps. Damage to auxiliary aircraft or the death, injury, or occupational illness to personnel while operating auxiliary aircraft, while under official orders shall be reported as per the Auxiliary Operations Policy Manual, COMDTINST M16798.3 (series).

NOTE: Flight, Flight-related, and CG Auxiliary Aviation mishaps which do not have any personnel injuries or occupational illnesses associated with them will NOT be reported via the E-Mishap system. However, all aviation related mishaps that involve personnel injuries, occupational illness or death, regardless of operational mode, must be reported via the E-Mishap System.

I. Mishap Investigation Boards.

1. Permanent Unit Mishap Board. Each unit shall assign a Permanent Unit Mishap Board. Members of the board, as appointed in the Pre-Mishap Plan (see enclosure (15) to this Manual), must be familiar with safety procedures and requirements of this Manual, relevant directives, and preliminary mishap analysis procedures before a mishap occurs. The Unit Mishap Board should also be familiar with the Coast Guard Administrative Investigation Manual (AIM), as well as manuals that apply to decedent affairs and other U. S. Coast Guard investigations that may be required as a result of the incident. The Unit Permanent Mishap Board should be familiar with what type of mishap information can be shared with other investigations (see enclosure (10) of this Manual). While the Unit Mishap Board would conduct or coordinate the investigation for minor mishaps (C & D), actions after a major mishap (A & B) should be limited to:

a. Securing and protecting the mishap site and wreckage until the arrival of the Commandant's Mishap Analysis Board (MAB).

b. Documenting the mishap site and wreckage by written, taped, videotaped and photographed documentation of the wreckage, location of survivors and fatalities and the mishap site. This is especially important if wreckage and bodies must be disturbed before the MAB can arrive.

c. Photographing and videotaping to preserve otherwise perishable evidence and aid the investigation.

d. Collecting Human Factors Evidence. Take blood and fluid samples of survivors, documenting evidence of mental and physical capability and medical opinion about individuals' ability to return to their duties. See Enclosure (4) for more guidance.

e. Safeguarding Electronically Stored Data. Immediately safeguard "continuously recorded" memory units. This can be accomplished by assuring power is not applied to the aircraft or memory unit or by removal of the unit. Failure to do so can result in the overwriting and loss of valuable mishap data. This includes crash survivable memory units in flight data recorders (FDR), electronic cockpit voice recorders

(CVRs), and nonvolatile memory (NVM) chips on circuit cards from electronic engine controls, programmable navigation equipment, and other avionics. Contact Commandant (G-WKS) and (G-SEA) for guidance.

f. Witness Statements. Physical and documentary information is usually the most credible form of information, but witness accounts often provide important leads. Witnesses include those involved in the mishap, those who saw it, and those who's training and experience qualify them as experts. See enclosure (2) and (4) to this Manual for guidance on the collection of witness statements.

g. Collecting and securing aircraft, boat crew training and administrative records and files.

2. Class A or B Commandant Mishap Analysis Board (MAB). MAB's will be appointed and convened at the discretion of Commandant (G-WKS) to investigate and report on Class A & B Mishaps. Enclosure (4) to this manual describes the Class A and Class B MAB composition and process. In cases where a Commandant level review of command policies, training procedures or equipment deficiencies are not anticipated, Commandant (G-WKS) may delegate this responsibility. In these cases, Commandant (G-WKS) will specify the scope and requirements of any unit investigations. These boards vary in composition according to the circumstances of the mishap. (G-CCS) may designate additional attendees as deemed necessary.

3. Commandant's Safety Board (CSB). Once the Mishap Analysis Report (MAR) from a Commandant-convened MAB (see 3.J.1.e) reaches Headquarters, a CSB shall be convened.

a. The CSB shall review the MAB report and endorsing comments and develop a report for Commandant (G-CCS). This report shall include:

(1) A synopsis of the mishap

(2) Classification and cost of the mishap

(3) Determination of the causal factors

(4) Determination of additional findings

(5) Determination of recommended corrective actions

(6) Other remarks as appropriate

(7) Information for the final update of the Coast Guard Mishap Reporting and Data System

(8) Development of a draft Commandant (G-CCS) Decision Letter and Final Action Message

b. Within 90 days of receipt of the MAB report and comments, the CSB shall forward the CSB report and draft Final Decision Letter to Commandant (G-CCS) for consideration. After review, Commandant (G-CCS) will issue a Final Decision Letter directing the corrective

actions to be taken. The CSB will also be responsible for any updates to the E-mishap system.

c. Upon approval of the Final Decision Letter, Commandant (G-CCS) will notify the Commandant prior to releasing the investigative results. As warranted, the Commandant will be briefed in the following types of mishaps:

- On-Duty Fatality or Permanent Partial Disability
- Loss of Coast Guard Asset
- Extensive Non-Coast Guard Property Damage or Personal Injury

Attendance at this brief, which will be determined by (G-CCS), will vary by mishap type and may include (G-CV), (G-I), (G-L), (G-WK), the applicable Assistant Commandant(s) responsible for unit/program involved, and the Area/District Commander.

(1) The purpose of this brief, which normally will be given by the President of the appropriate CSB within two weeks following approval of the Final Decision Letter, is to ensure appropriate staff elements are aware of the pending release of the findings and that required staff actions have been initiated. Likely staff actions could include preparation of a press release and draft media guidance (G-IPA), scheduling the notification of members or next of kin (Area or District Commander), development of Congressional outreach strategy (G-ICA), and preparation of a draft Secretary Alert (CGHQ 3517E) (G-WKS).

(2) Attendees shall bring drafts of any correspondence, notifications, or press releases that are anticipated to the brief. Commandant (G-WKS) will provide each attendee a copy of the approved Final Decision Letter and draft Final Action Message. After all required staff actions have been completed, Commandant (G-CCS) will release the Final Action Message.

4. Class A or B Off-Duty Mishap Boards. MAB's will be appointed and convened at the discretion of Commandant (G-WKS) to investigate and report on Class A and B off-duty mishaps. In most cases, mishaps involving off-duty Coast Guard military personnel will be investigated by the member's permanent command and the results will be reported via the E-Mishap submission (see 3.J.2), although Commandant (G-WKS) may also require a formal MAR. This includes off-duty motor vehicle mishaps, sports, hobbies or permissible outside employment activities. The mishap report shall include the results of any outside (non U. S. Coast Guard) investigations. Local law enforcement investigation report and related documents should be a major source of information. If the mishap occurs far from a member's permanent command, the permanent command may request via G-WKS that a command local to the incident conduct the investigation.

5. Class C and Class D Unit Mishap Boards. Unit Mishap Boards shall generally conduct local investigations for Class C and D mishaps and the results of the investigation shall be entered into the E-Mishap System (see 3.J.2 b and c). For high interest Class C, D or HIPO mishaps, a Commandant (G-WKS) MAB may be assigned to investigate the mishap or the unit may be tasked to complete and submit a formal MAR. Enclosure (4) to this Manual provides information on the makeup of Class C and D Unit Mishap Boards.

6. Joint Mishap Boards. In the event of a mishap involving the Coast Guard and other United States military aircraft or property, a joint board may be convened, if considered appropriate by both Commandant (G-WKS) and the Safety Chiefs of the service safety centers. Each service shall be represented on the Joint Mishap Board. The appointment of the MAB President, selection of board members and the report format, shall be by mutual agreement between Commandant (G-WKS) and the chief of the safety center involved.

7. Auxiliary Aviation/NTSB Boards. The NTSB will investigate auxiliary Class A and B aviation mishaps. A Coast Guard representative (active duty and/or auxiliary) will be assigned to such investigations. Commandant (G-WKS-1) will determine if a separate Commandant's MAB is to be convened. Immediate initial reports to Commandant (G-OFP) and (G-WKS) are required to ensure timely NTSB notification.

J. Mishap Reporting.

1. Class A and Class B Mishaps.

a. Immediate telephone report. (Not required for off-duty Class A or B mishaps.) Unit commanding officers or officers-in-charge shall immediately report all Class A and Class B to their Chain of Command. Within four hours of a Class A or B mishap, a telephone report, by the Command, shall be made to the Coast Guard Headquarters Command Center (G-OPF), 202-267-2100. This initial report shall include as much information as is available and should include location, time, and injury to personnel and or damage to Coast Guard property. See Section 3.J.2.a below for additional immediate telephone reporting requirements.

b. Preliminary Message Report. Within 12 hours of a Class A or Class B Mishap, a priority message report shall be sent to Commandant (G-WKS), MLCLANT (kse), MLCPAC (kse), the Area and the operational commanders, by the unit experiencing the mishap. The 12-hour delay is designed to allow for immediate rescue/recovery actions and for the collection of more detailed information. When the information has been entered into the E-Mishap online system, it can be used to generate the text for the message report. This text can be copied over to CGMS for transmittal. In the event that a unit is not able to connect to the intranet, i.e. a cutter underway, or does not

desire to use the E-Mishap System, the appropriate standard mishap format of Enclosure (6) should be used to send a message.

NOTE. For aviation Flight and Flight-related mishaps which involve equipment damage only, do NOT use the E-Mishap System but instead submit a message following the format specified in Enclosure (5) to this Manual with AIG 8907 as an info addressee.

(1) The initial input into the E-Mishap System and preliminary message shall amplify and expand on the data provided during the immediate telephone report regarding location, time, and injury to personnel and/or damage to property.

(2) The initial input and preliminary message shall contain factual information only. It shall not contain information based on witness statements or other testimonies. If some of the required information is unavailable or incomplete, subsequent updates to the E-Mishap System and/or supplemental messages shall be sent when such information is available.

(3) Although the E-Mishap System will collect names to meet OSHA reporting requirements and for analysis, the message generated for CGMS will not list the names or any other personal information such as social security numbers of members involved in the mishap. Message submissions made without use of the E-Mishap Systems shall not include names or SSN's.

(4) If there are serious injuries, personnel missing or deaths involved, personnel data must be reported in a Personnel Casualty Report within four hours. (See Section 3.L of this chapter.)

c. Progress/Supplemental Message Report. An update to the E-Mishap System shall be made within 72 hours. In the event that a unit is not able to connect to the intranet, i.e. a cutter underway, or does not desire to use the E-Mishap System, the appropriate standard mishap format of Enclosure (6) should be used to send a message to Commandant (G-WKS) and appropriate headquarters offices within this time frame. If an MAB has convened, then the MAB President shall send this message. Supplemental E-Mishap inputs and messages shall be sent thereafter at the MAB President's discretion or as directed by Commandant (G-WKS).

NOTE: For aviation Flight and Flight-related mishaps not involving personnel injury, death, or occupational illness, either the format in enclosure (5) to this Manual or the optional MAB progress message format in enclosure (14) to this Manual should be used.

(1) The MAB President shall send an arrival message notifying headquarters that all MAB members have arrived and that the

MAB has assumed the investigation. This information may be included as part of any Progress/Supplemental messages.

(2) The MAB President shall update the E-Mishap System and send appropriate messages at a minimum when critical information is discovered, when the MAB adjourns, and if it reconvenes.

NOTE: If the MAB discovers information that seriously impacts Coast Guard operations, the MAB President shall immediately notify Commandant (G-WKS) by telephone. E-Mishap System update(s) and supplemental message(s) shall be sent, regardless of whether the information is associated with the mishap under investigation. Commandant (G-WKS) will notify the appropriate Coast Guard Headquarters offices and other agencies and ensure that proper action is taken.

d. Final MAB Message. A final MAB message shall be sent when the MAB concludes the on site investigation and analysis. The E-Mishaps system should be updated, used to format the final message, and the text generated should be used as the draft within CGMS. Because the final MAB process is not complete at this point, Commandant (G-WKS) shall be the releasing authority for the message. The President of the MAB shall confer with and receive Commandant (G-WKS) permission prior to release. The final E-Mishap input and message report shall contain:

(1) A short factual synopsis of the event.

(2) Date the MAB adjourned.

(3) Description of damage.

(4) Disposition of wreckage and/or status of salvage operations.

(5) Specific recommendations the MAB feels should be brought to the immediate attention of field commands.

(6) The message shall not contain opinions or speculation regarding the mishap.

(7) Upon receipt of the final MAB Message, Commandant (G-WKS) shall notify the reviewing chain of endorsement of the deadlines contained in this Manual and offer MAB briefings to expedite the reviewing process.

e. Commandant Mishap Analysis Report (MAR). In addition to E-Mishap entries and messages, every Commandant appointed MAB should produce a MAR. Enclosure (2) to this Manual provides a description and format for the MAR. Enclosure (3) to this Manual provides a description and format for the Medical Officer's Report, which should be made part of the MAR when applicable.

(1) Within 21 days after the MAB completes their on-site investigation and analysis, the MAB President shall forward

the original MAR. The original MAR shall be forwarded to Commandant (G-WKS) via the commanding officer and appropriate chain of command for review and endorsement.

(2) Commandant (G-WKS) shall inform the endorsement chain of endorsing deadlines and the importance of timely review.

(3) When desired, Commandant (G-WKS) shall provide funding for member(s) of the MAB to brief endorsers, to assist in understanding the incident and to streamline the review process.

(4) Because mishap reports contain sensitive and privileged material, it is imperative that copies of the MAR be controlled. Therefore, only a limited number of copies and copyholders are authorized. See enclosure (2) to this Manual for specifics. The MAB President is the only MAB member authorized to keep a copy of the MAR. Reviewers in the chain are not authorized to hold a copy, and shall not be provided or reproduce a copy, unless requested of and authorized by Commandant (G-WKS). The MAB president will return his MAR copy to Commandant (G-WKS) after the Final Action Message is released.

2. All Mishaps.

a. Immediate telephone reporting. In addition to Class A and B mishaps the following incidents require an immediate telephone report to Coast Guard Headquarters:

(1) All Coast Guard mishaps likely to cause intense or unusual reaction from the public or news media.

(2) All Coast Guard mishaps requiring notification of the NTSB.

(3) A Coast Guard auxiliary aircraft involved in a Class A or Class B mishap while operating under written or verbal orders.

(4) A Coast Guard aircraft is involved in a mishap with a foreign aircraft, or a mishap occurring in a foreign country.

(5) Serious Near Midair Collision as discussed in chapter 2.

(6) Whenever deemed appropriate by the Commanding Officer or operational commander.

(7) Personal Casualty as discussed in Section 3.L of this chapter.

b. Aviation-specific Mishaps. Flight and Flight Related mishaps in which there are no deaths, injuries, or occupational illnesses, and which do not require a formal MAR shall be reported by message following the format in Enclosure (5) to this Manual. NO E-Mishap System entries should be made. Class C Aviation messages shall be submitted within 14 days; Class D and Class E Aviation messages shall be submitted within 21 days.

c. All other mishaps will be initially entered into the E-Mishap System or reported by message (including Aviation Ground mishaps). Class C mishaps must be entered within 14 days and Class D mishaps within 21 days.

d. Operational mishaps shall be shared within the appropriate operational community; the message format generated by the E-Mishap System shall be used to generate a message that will also be transmitted within the applicable time frames. If a unit is not able to connect to the intranet within the submission period or specifically desires to use message traffic, then a message report using the appropriate format of Enclosure (6) shall be submitted within the applicable time frames.

e. Although the E-Mishap System will collect names to meet OSHA reporting requirements and for analysis, the message generated for CGMS will not list the names or any other personal information such as social security numbers of members involved in the mishap. Message submissions made without use of the E-Mishap Systems shall not include names or SSN's.

NOTE: Class D mishaps for military members off-duty—no loss time from work; less than 30 days restricted or fit for light duty status; no transfers to a new job--are NOT reportable

3. Annual Reports. Commandant (G-WKS) will produce and publish annual safety awareness reports. These will be distributed to appropriate field commands and will include summaries and analysis of applicable mishap data. Real-time mishap data and reports will be available via the online E-Mishap System.

K. Limitations on the Use and Disclosure of Mishap Investigations and Reports. A thorough understanding of the concept of privilege and confidentiality as used in the Safety Program is essential for the proper investigation of mishaps. Enclosure (10) to this Manual discusses the use and restrictions of safety privilege. If the causal factors and the sequence of events that culminated in a mishap are to be determined and similar mishaps prevented, it is imperative that all parties involved either in the mishap or the administrative/legal investigation and mishap review process understand and honor the privileged nature of the information. These concepts are critical to the success of the Coast Guard Safety Program. The statements, material, and information obtained during a mishap investigation are for the sole purpose of mishap prevention and must be handled according to the provisions of this instruction.

L. Personnel Casualty Reporting. Personnel Casualty Reporting is required in addition to Mishap Reporting when the casualty is the result of a mishap or may be a stand-alone requirement in a non-mishap personnel event. It is not within the scope of this chapter to address Personnel Casualty Reporting in detail.

1. Immediate telephone notifications to the chain of command are required for Class A and B on-duty mishaps. A Preliminary Mishap Message Report,

regardless of whether it is generated by the E-Mishap System or not, is required within 12 hours for both on and off-duty Class A and B mishaps. See sections 3.J.1.a and 3.J.1.b of this chapter.

2. Immediate telephone notification to HQ Command Center (202) 267-2100 is required for death or death imminent situations. In addition, a Personnel Casualty Report Message is required within four hours of receiving personnel casualty information whether the result of a mishap or other causes, on or off duty. Procedures, message instructions, and format reside in the Personnel and Pay Procedures Manual, HRSICINST M1000.2, Section 5.A and enclosure (7) and in the Personnel Manual, COMDTINST M1000.6 (series), Chapter 11, Section A.

3. Though some message information may overlap, sufficient information will be provided on the mishap and on the member's personal data, ensuring a wide distribution of mishap information, yet protecting the member's privacy.

4. An Administrative Investigation may also be required in a personnel casualty case whether or not the result of a mishap. Contact Commandant (G-OPF) for additional information and see the Administrative Investigations Manual, COMDTINST M5830.1 (series), Section G.4.

CHAPTER 4. OCCUPATIONAL HEALTH

A. Scope. This chapter provides requirements and guidance to promulgate policy, standards, and guidelines for implementing the Coast Guard Occupational Health Program. The occupational health program pertains to all Coast Guard active duty and civilians on any Coast Guard facility, aircraft, or vessel or during any Coast Guard-related activities on a non-Coast Guard facility, aircraft, or vessel. Sections 3 and 4 also apply to contractors and visitors.

B. Background. Occupational health is a science devoted to the anticipation, evaluation and control of various environmental factors that arise in living or working environments that may lead to impaired health. The primary goal of occupational health is to ensure unit members are provided with working conditions free of known hazards. To be effective, occupational health programs must be proactive, e.g., conducting training and inspections, verses reactive, e.g., determining what caused an occupational illness or injury. One of the best proactive methods is to educate all hands on occupational health hazards and methods of prevention. The following program areas of occupational health will be covered by this chapter:

1. Occupational Medical Surveillance and Evaluation Program (OMSEP).

2. Industrial Hygiene

3. Hearing Conservation

4. Thermal Stress

C. Responsibilities.

1. Maintenance and Logistics Command (kse).

a. Provide assistance, funding, equipment, training and references to Safety and Environmental Health Officers to ensure they are able to provide services needed by units in their AOR.

b. Evaluate units regarding compliance with this instruction during routine unit visits.

2. Safety and Environmental Health Officer (SEHO).

a. Maintain equipment and references to provide services needed by units in their AOR.

b. Provide assistance to units regarding the contents of this instruction.

3. Group Commanders or Commanding Officers shall.

a. Ensure that the contents of this instruction are enforced at their unit(s).

b. Contact the local SEHO for assistance with any requirements that are beyond the abilities and training of personnel assigned to the unit.

D. Occupational Health Standards.

1. Occupational Medical Surveillance and Evaluation Program.

a. Reference.

(1) Medical Manual, COMDTINST M6000.1 (series), Chapter 12.

b. Background. The OMSEP is a physical examination program designed to identify work-related diseases at a stage when modifying the exposure or providing medical intervention may potentially arrest disease progression or prevent recurrences. This program provides exposure-specific physical examinations. It does not prevent adverse health effects. The primary role of the OMSEP is to provide initial, periodic, acute exposure and exit/separation physical examinations. Detailed information on the OMSEP program can be found in reference (1).

c. Responsibilities.

(1) Commandant (G-WKS).

(a) Provide program oversight and make policy decisions.

(b) Responsible for Safety and Environmental Health (SEH) policy as well as exposure assessment oversight.

(c) Provide policy oversight on Chapter 12 of the Medical Manual; maintains database on diagnosed occupational health disorders; determines need for long-term population based epidemiological studies; and provides training and support.

(2) Maintenance and Logistics Commands (MLC's).

(a) Maintain and manage the OMSEP centralized database.

(b) Provide OMSEP physical examination oversight.

(3) Safety and Environmental Health Officers (SEHO's).

(a) Perform workplace evaluations.

(b) Provide support and training on OMSEP related matters.

(c) Interact with OMSEP coordinator on final enrollment recommendations.

(d) Approve enrollment entries into the centralized database.

(4) Group Commanders or Commanding Officers.

(a) Must appoint a unit OMSEP coordinator.

(b) Ensure members comply with all established preventive safety practices.

(c) Request assistance from MLC (kse) for program support.

(5) OMSEP Coordinator.

(a) Maintain unit tracking report.

(b) Update database concerning enrollment and exam status for unit members.

(c) Interact with SEHO regarding enrollment recommendations/approvals/disapprovals.

(d) Ensure physical examinations occur as required.

(6) Medical Officers / Clinic Administrators.

(a) Ensure all physical examinations are appropriately conducted and recorded. Eligibility of enrollment in the OMSEP program must be verified utilizing the online OMSEP database.

(b) Provide oversight to contract providers and Independent Duty Technicians (IDTs) within their area of responsibility.

(c) Make diagnosis in accordance with the ICD-9 coding process.

(d) Provide patient notification on physical examination results and laboratory/radiological findings, including examinations conducted upon termination of employment/end of exposure and Exit/Separation Letter.

d. Required Program Elements.

(1) Each unit must name an OMSEP coordinator, typically the Unit Safety Coordinator or the Safety and Health Coordinator (SOHC) to coordinate the unit OMSEP program with the SEHO and medical clinic;

(2) Requirements for entry into OMSEP can be found in reference (1). Members must be recommended by their OMSEP coordinator and approved by the SEHO to be placed in the OMSEP database. Entry into the database is required prior to receiving an OMSEP examination.

(3) OMSEP data must be entered and maintained in the member's medical record; OMSEP records, data and related material, including the medical record jacket, must be clearly marked "OMSEP";

(4) MLCA (kse) will maintain the OMSEP centralized database in accordance with privacy act regulations. The database must be updated and readily accessible to the various levels of the OMSEP organization;

(5) OMSEP examinations, laboratory results, radiological findings and consultations must be discussed with the member, and all discrepancies explained before filing into the medical record;

(6) Members must receive a summary result of their OMSEP examination findings at the completion of their initial or periodic evaluations;

(7) Members separating from the OMSEP at end of exposure or at termination of employment must be provided with an Exit/ Separation Letter, accounting for all their known exposures and surveillance protocols;

(8) Members recommended for enrollment must meet the enrollment criteria;

2. Industrial Hygiene Program.

a. References.

(1) 29 CFR 1910, Occupational Safety and Health Standards

(2) American Conference of Governmental Industrial Hygienists' Threshold Limit Values.

b. Background. Industrial hygiene as a specialty is concerned with solving industrial health problems by anticipating, recognizing, evaluating and controlling potential health hazards in the occupational environment. As such, it is devoted to the recognition, evaluation and control of those environmental hazards - chemical, physical, biologic and ergonomic - that may cause sickness, impaired health or significant discomfort. Occupational health hazards are conditions that may potentially cause legally compensable occupational illness or any condition in the work place that impairs the health of employees sufficiently to make them lose time from work or work at less than full efficiency.

c. Responsibilities.

(1) Maintenance and Logistics Commands (MLCs) and detached Safety and Environmental Health Officers (SEHOs).

(a) Maintain industrial hygiene equipment to be prepared to conduct exposure monitoring as requested by Coast Guard units.

(b) During Risk Assessment Surveys, identify, measure, and evaluate personnel exposures to hazardous chemical or physical agents.

(c) Assist units in selecting engineering and administrative controls and personal protective equipment and clothing.

(2) Group Commanders or Commanding Officers.

(a) Ensure unit personnel are not overexposed to chemical and physical hazards.

(b) Request assistance from the cognizant SEHO or MLC to evaluate exposures.

d. Occupational Exposure Limits.

(1) The more stringent of reference (a) and (b) will be used when evaluating exposures to chemical hazard, including 8-hour time

weighted averages (TWAs), short term exposure limits (STELs) and ceiling limits.

(2) Engineering and/or administrative controls will be put into place when exposure levels exceed the occupational exposure limit.

(3) Personal protective equipment will be used as a last resort or during implementation of engineering controls.

e. Industrial Hygiene Equipment. All industrial hygiene equipment will be maintained according to manufacturer's specifications.

f. Record Keeping. All industrial hygiene evaluations and sampling results shall be maintained for no less than 40 years.

3. Hearing Conservation.

a. Reference.

(1) Medical Manual, COMDTINST M6000.1 (series)

b. Background. The Coast Guard working and living environments contain many high intensity noise sources. Exposure of Coast Guard personnel to high intensity noise damages their hearing, causing a major health and economic impact.

c. Responsibilities.

(1) Maintenance and Logistics Commands (MLCs) and detached Safety and Environmental Health Officers (SEHOs).

(a) Maintain noise monitoring equipment to be prepared to conduct exposure monitoring as requested by Coast Guard units.

(b) During Risk Assessment Surveys, identify, measure, and evaluate personnel exposures to noise sources.

(c) Assist units in selecting engineering and administrative controls and hearing protective devices.

(2) Group Commanders or Commanding Officers.

(a) Ensure unit personnel are not overexposed to noise hazards.

(b) Ensure that personnel exposed to hazardous noise receive initial and refresher training in hearing conservation.

(c) Ensure that all noise areas and sources are properly labeled and posted.

(d) Request assistance from the cognizant SEHO or MLC to evaluate noise sources and exposures.

d. Program Requirements. To reduce the impact of noise on personnel, the Coast Guard has implemented a hearing conservation program requiring the accomplishment of the following six action elements:

(1) Identify, assess, and post hazardous noise sources.

(2) Determine extent and disposition of personnel exposed.

(3) Engineer methods to abate noise.

(4) Provide and require the use of hearing protectors for all personnel exposed to hazardous noise (fit personnel with hearing protection devices as necessary).

(5) Educate and advise personnel concerning hearing conservation.

(6) Monitor employee hearing acuity using trained audiometric technicians in certified audiometric booths.

e. Noise Standard. Environments or equipment that produce continuous noise levels at or above 85 dB(A) time weighted average (TWA) and impact noises exceeding 140dB(A) are considered hazardous and protective measures must be taken to reduce exposure to personnel. Noise exposures shall be calculated using a 3 dB(A) exchange rate. See section 1.P.24 of this Manual for the definition of TWA.

f. Hearing Protection Devices.

(1) Hearing protective devices shall be worn by all personnel when they enter or work in an area where the operations generate noise levels of:

(a) Equal to or greater than 85 dB(A) continuous sound pressure level;

(b) 140 dB peak sound pressure level or greater.

(2) A combination of insert type and circumaural type hearing protective devices (double hearing protection) shall be worn in all areas where noise levels exceed 104 dB(A).

(3) In cases where hearing protective devices do not provide sufficient attenuation to reduce the individual's effective exposure level below 85 dB(A) and engineering controls are impractical, administrative control of exposure time will be necessary.

g. Training. All personnel exposed to hazardous noise shall receive a minimum of one hour of initial Hearing Conservation Training and appropriate refresher training annually thereafter. Documentation of such training (i.e., attendance logs) shall be made part of the command's training records. The following are the minimum requirements of hearing conservation program training:

(1) description of the symptoms, mechanism, and consequences of temporary and permanent hearing loss;

(2) elements of the hearing conservation program;

(3) proper selection, wearing, and maintenance of hearing protective devices;

(4) identification of hazardous noise sources at the command and safe work practices to be used to minimize exposure to hazardous noise;

(5) description of audiometric testing which will include explanation of audiometric test results and the procedures involved in testing.

h. Audiometric Testing. Shall be done in accordance with procedures in reference (1).

4. Thermal Stress

a. References.

(1) Preventing Heat Casualties, COMDTPUB P6200.12 (series)

(2) Cutter Heat Stress Program, COMDTINST M6260.17 (series),

(3) Sustaining Health an Performance in the Cold: Environmental Medicine Guidance for Cold Weather Operations, US Army Research Institute for Environmental Medicine http://www.vnh.org/refer/ColdWeatherOperations/depcold/toc.html

b. Background. Extreme heat and cold conditions may occur on Coast Guard cutters, at shore facilities, and during outdoor activities. It is important to evaluate environmental conditions and take preventive action to avoid adverse health effects to personnel.

c. Responsibilities.

(1) Maintenance and Logistics Commands (MLCs) and detached Safety and Environmental Health Officers (SEHOs).

(a) Provide assistance to units to evaluate thermal stress conditions and recommend preventive measures to avoid adverse health effects to personnel.

(b) Maintain equipment to evaluate extreme thermal stress conditions.

(2) Group Commanders or Commanding Officers.

(a) If onboard a cutter or in a location where heat or cold conditions are prevalent, initiate a thermal stress program to include training and an SOP to deal with extreme environmental conditions.

(b) Ensure that preventive measures are taken to prevent heat and cold stress disorders in unit personnel.

(b) Request assistance from the cognizant SEHO or MLC to evaluate environmental conditions and preventive measures.

d. Heat Stress. Heat stress conditions, medical disorders, and preventive measures are described in references (1) and (2). Particular attention must be paid to the following:

(1) Ensure personnel are aware of the symptoms of heat stress disorders and use the buddy system to watch out for these symptoms when working in hot environments.

(2) Measure hot environments to determine appropriate work-rest schedules to use to prevent heat stress disorders.

(3) Ensure personnel consume adequate amounts of fluids and eat three meals a day.

(4) Ensure new personnel are acclimatized to the environment prior to working in hot environments.

(5) Take efforts to reduce the heat load on personnel. This may include wearing lighter clothing and/or scheduling work during the cooler times of the day.

e. Cold stress. Cold stress conditions, medical disorders, and preventive measures are described in reference (3). Particular attention must be paid to the following:

(1) Ensure personnel are aware of the symptoms of cold stress, especially hypothermia, and use the buddy system to watch out for these symptoms when working in cold environments.

(2) Ensure personnel consume adequate amounts of fluids, eat three meals a day, and get plenty of rest.

(3) Have personnel dress in layers to help trap air for insulation. Do not overdress so as to cause excessive sweating. The clothing layer next to the skin should wick away moisture, and the outer layer should be wind resistant.

(4) Heat loss is higher in the extremities and particular attention should be paid to preventing heat loss through the feet, hands, and head.

CHAPTER 5. ENVIRONMENTAL HEALTH

A. Scope. This chapter provides requirements and guidance to prevent human illness through the elimination or control of biological disease agents and the various modes of their transmission to man.

B. Background. Environmental health is a science devoted to the identification, evaluation and control of various environmental factors that arise in living or working environments that may lead to impaired health. The primary goal of environmental health is to ensure unit members are provided with healthful working and living conditions. History has repeatedly demonstrated the relationship between a healthful environment and mission accomplishment. To be effective, environmental health programs must be proactive, e.g., conducting training and sanitary inspections, verses reactive, e.g., determining what caused a disease outbreak. One of the best proactive methods is to educate all hands on environmental health hazards and methods of prevention. The following program areas will be discussed within this chapter:

1. Habitability.

2. Swimming Pools and Spas.

3. Pest Management.

4. Food Safety.

5. Potable Water and Waste Water Systems.

6. Bloodborne Pathogens

C. Responsibilities.

1. Maintenance and Logistics Command (kse).

   a. Provide assistance, funding, equipment, training and references to Safety and Environmental Health Officers to ensure they are able to provide services needed by units in their areas of responsibility (AOR).

   b. Evaluate units regarding compliance with this instruction during routine unit visits.

2. Safety and Environmental Health Officer (SEHO).

   a. Maintain equipment and references to provide services needed by units in their AOR.

   b. Provide assistance to units regarding the contents of this instruction.

3. Group Commanders and Unit Commanding Officers.

a. Ensure that the contents of this instruction are enforced at their unit(s).

b. Contact the local SEHO for assistance with any requirements that are beyond the abilities and training of personnel assigned to the unit.

D. Environmental Health Standards.

1. Habitability.

a. References.

(1) Naval Ships Technical Manual, Chapter 510, Heating, Ventilation, and Air Conditioning Systems for Surface Ships. http://cgweb.mlcpac.uscg.mil/mlcpv/

(2) Naval Ships Technical Manual, Chapter 330, Lighting. http://cgweb.mlcpac.uscg.mil/mlcpv/

(3) ASHRAE Standard 62-1999, Ventilation for Acceptable Indoor Air Quality, Section 6.1 (NOTAL)

(4) Unaccompanied Personnel Housing (UPH) Design Guide, COMDTINST M11012.6 (series), Chapters 3 and 4

(5) Illuminating Engineering Society (IES) Lighting Handbook (NOTAL)

(6) Manual of Naval Preventive Medicine, NAVMED P-5010, Chapter 2 http://www.vnh.org/PreventiveMedicine/PreventiveMedicine.html

b. Background. Habitability is an aspect of environmental health that focuses on improving living conditions in berthing and other living spaces. Basic components include sanitation, illumination and ventilation. When these components are optimized, health, morale and duty performance is heightened. Poor living conditions generally have an adverse effect and must be avoided whenever possible. Some operations environments may not allow for optimal habitability. In these situations, the command must continually monitor the status of the operation and determine if improvements in living conditions are possible without compromising the mission. Besides crew living environments, habitability is concerned with protecting the health and well being of personnel utilizing laundry, barber and beauty shops, playgrounds, campgrounds and picnic areas, gymnasiums, theaters, child care centers, administrative spaces, and other similar facilities.

c. Responsibilities:

(1) Maintenance and Logistics Command (kse). Evaluate habitability of all appropriate areas as part of routine support visits.

(2) Safety and Environmental Health Officer (SEHO). Provide units with assistance in evaluating conditions in berthing. This includes, but is not limited to ventilation and lighting surveys.

(3) Unit Commanding Officers and Officers in Charge. Ensure that habitability conditions at their unit meet the minimum standards of this instruction.

d. Habitability Standards. Minimum standards that shall be maintained are as follows:

(1) Berthing Afloat.

(a) The master-at-arms is responsible for implementing a cleaning schedule in accordance with the Shipboard Regulations Manual. Berthing spaces, heads and showers shall be clean at all times, operable, well ventilated, and well illuminated.

(b) Routine inspections of toilets, lavatories and berthing spaces shall be conducted to check for problems related to sanitation and health conditions. These inspections are normally conducted by the unit's health services technician (HS) and reported to the CO via XO on the health services log and during material/safety inspections. If no HS is assigned, document inspections during XO or material/safety inspections.

(c) Indoor air quality shall meet the standards described in D.1.a(1), above.

(d) Minimum lighting standards are found in D.1.a(2), above.

(e) Use of polyurethane pillows and sleeping bags aboard ships are prohibited. Clean and comfortable mattresses and bedding are to be maintained.

(f) Food items are not permitted in berthing spaces to preclude pest problems.

(g) Pets or other animals are not permitted at any time in these areas.

(h) Mops, brooms, and other cleaning gear will be thoroughly cleaned and properly stored away from berthing areas after each use in a manner to facilitate drying.

(i) Problems related to sewage backflow through deck drains shall be identified and corrected as soon as possible using appropriate safe work practices to avoid exposure to potentially infectious human wastes.

(2) Unaccompanied Personnel Housing.

(a) The master-at-arms will implement a daily cleaning schedule for their respective areas. All spaces shall be kept clean, well illuminated and free of unnecessary clutter.

(b) The unit Commanding Officer or his/her designee will conduct routine inspections of these spaces to check for sanitation and health conditions. This inspection may be part of a routine material/safety inspection. Discrepancies will be reported back through the chain of command and promptly corrected.

(c) Indoor air quality shall meet the standards described in D.1.a(3), above. Berthing areas that are not air-conditioned must have screened windows and self-closing doors.

(d) Minimum lighting standards and other facility requirements are found in D.1.a(4), above.

(e) Mattresses and bedding will be clean and free from defects.

(f) Sewage overflow problems constitute an immediate health hazard and will be corrected immediately.

(g) Dogs, cats, birds or similar pets shall not be permitted in berthing areas. Other pets are allowed at the discretion of the Commanding Officer.

(h) Mops, brooms, and other cleaning gear will be thoroughly cleaned and properly stored away from living areas after each use in a manner to facilitate drying.

(i) For officer berthing, the Commanding Officer shall ensure routine inspections are conducted of all spaces, including common rooms and head facilities for compliance of minimum standards of sanitation. Complaints of unsanitary conditions will be investigated and resolved promptly. All head facilities and common rooms will be cleaned on a daily basis. Facility requirements are found in D.1.a(4), above.

(3) Child Development Centers (CDC). Environmental health concerns are discussed in Child Development Services Manual, COMDTINST M1754.15 (series), Chapter 3.

(4) Administrative Spaces.

(a) Indoor air quality and illumination must be maintained in accordance with D.1.a(3) and (5), above, respectively.

(b) Drinking fountains will be of the angle-jet type and should be cleaned at least once daily. Head facilities should be cleaned and re-supplied daily. The minimum ratio of plumbing fixtures to the number of persons to be accompanied are as follows:

	Water Closets	Lavatories	Urinals	Drinking Fountains
Females				
Up to 120	1/15	1/10	None	1/75
Males				
Up to 30	1/15	1/15	1/30	1/75
Up to 120	1/20	1/20	1/40	1/75

(c) Floors should be cleaned regularly. The type of floor determines the method of cleaning. Carpets and rugs should be maintained and cleaned as recommended by the manufacturer. Lavatory floors, commodes, sinks, and shower stalls must be cleaned and disinfected on a daily basis.

(d) Mops, brooms, and other cleaning gear will be thoroughly cleaned and properly stored away from working areas after each use in a manner to facilitate drying.

(e) Cooking is not permitted in administrative spaces. Designated lounges or coffee messes can be utilized if inspected and approved by the unit HS or XO.

(f) Trash receptacles shall be emptied daily and cleaned periodically.

(5) Laundry Facilities.

(a) Members working in laundry areas shall be briefed on safety in the work place, as well as, the hazards of chemical cleaning agents. Personnel must practice proper personal hygiene such as frequent hand washing after cleaning or sanitizing the lavatory

(b) Laundry facilities shall be maintained in a clean and sanitary condition, free from infestation by rodents and insects. Floors will be cleaned at least once daily by dustless methods. Grease drip pans will be installed where necessary and cleaned daily. Paper and trash will be placed in covered containers. Lint will be removed as necessary from bulkheads, overheads, and supporting members.

(c) Plumbing fixtures and appliances will be properly installed, maintained in good repair, and kept in a sanitary condition. These fixtures and appliances will be connected to prevent backflow or cross-connection with the potable water supply. For afloat units, seawater must not be used for laundry facilities when the ship is in polluted waters.

(d) Adequate drinking water will be furnished by means of a drinking fountain of the sanitary angle-jet type. Adequate toilet facilities with a shower and ample locker space will be provided and maintained in a sanitary condition. A sign stating "Wash Hands Before Leaving" will be prominently displayed in all toilet areas.

(e) Eating, drinking (other than water fountain), cooking, smoking, and storage of food, drinks, or smoking materials will be prohibited in rooms where clothing is handled, sorted, marked, washed, and/or dry cleaned.

(f) Unwashed clothes will not be received, sorted, marked, or handled in close proximity to washed clothes. Rooms or spaces should be designed and machines and equipment arranged so that a separate flow of clean and soiled garments will be maintained through the laundry or cleaning process. This flow requires separate contact surfaces, such as tables, carts, shelves, etc. Ventilation should move air from clean to soiled areas to prevent cross-

contamination. Vehicles and containers used for the transportation and storage of laundry and dry cleaning will be kept clean and in a sanitary condition.

(g) Contaminated work clothing/coverall must be laundered separate from domestic laundry. This includes clothing or other laundry that is contaminated during industrial operations, chemical spill cleanups, alien migrant interdiction operations, etc. Personnel may use the laundry facility in their industrial area or the unit's laundry service. If contaminated clothing is laundered in unit laundry, care must be taken to avoid personnel exposure and it shall be laundered separately from normal laundry.

(1) Care must be taken when cleaning chemically contaminated clothing. If clothing is heavily contaminated, consider disposing as hazardous waste.

(2) Laundry that is biologically contaminated (e.g., AMIO, body parasites) shall be washed at a minimum temperature of 120° F and hot air dried. Laundry that may be infested with body parasites (head/body lice) shall be laundered under the direction of the unit HS or XO to maintain confidentiality.

(h) Additional standards for laundry and dry cleaning facilities are found in section 4 of D.1.a(6), above.

(6) Barber and Beauty Shops.

(a) Employees of barbershops and beauty shops will adhere to the following personal hygiene and physical requirements:

(1) All barber and beauty shop employees, including personnel employed by a civilian contract, must be medically screened and determined to be free of communicable disease prior to their initial assignment. Unless required by local laws for subsequent health screening, annual evaluation is not routinely required. The medical screening must be sufficiently comprehensive to detect acute or chronic diseases that may be transmitted by direct or indirect contact during the performance of their services. Depending upon the prevalence of

communicable diseases in the geographical location, local units may order specific testing they consider necessary. Barber and beauty shop employees may be screened by local military medical departments or they may present documentary evidence, acceptable to the command, that a complete and thorough medical screening was completed.

(2) Barber and beauty operators shall maintain good personnel hygiene and wear clean clothing when attending patrons. Hands will be thoroughly washed with soap and hot water between patrons.

(b) The serving of persons with inflamed or infectious conditions of the scalp, face, or neck without the written consent of the medical department representative is prohibited.

(c) Barbershops and beauty shops will not be located in food service or berthing areas. If barbershops and beauty shops are located within a BOQ, BEQ, officer club or enlisted club, a separate room is required.

(d) Indoor air quality and illumination must be maintained in accordance with D.1.a(3) and (5), above, respectively.

(e) These shops will be maintained and operated in a clean and sanitary manner as follows:

(1) Only FDA-approved tonics, lotions, bleaches, dyes, etc., will be used. Only EPA/FDA disinfectants or sanitizing agents will be used. Questionable or unlabeled products shall be referred to the unit HS, local SEHO, or MLC (kse) for determination of suitability.

(2) Therapeutic practices, such as treating skin problems (dermatitis), pimples, ingrown hair, etc., are prohibited.

(3) The treatment of eye conditions is prohibited.

(4) Common brushes, dusters, etc. are prohibited.

(5) Shaving is prohibited.

(6) Individual sanitary neck strips must be used for each patron.

(7) The headrest of barber chairs will be covered with a clean sheet of paper or clean towel for each patron.

(8) Only types of material approved by the medical clinic or unit HS will be used to stop the flow of blood in case of "nicks." These materials will be applied only with freshly laundered towels or sterile cotton.

(9) Covering clothes will be changed preferable daily or as often as necessary to ensure cleanliness.

(10) Street clothing of operators will not be stored with that of patrons.

(11) Barber or beauty operators will not eat, drink, or smoke while attending patrons.

(12) Clean, covered sanitary receptacles will be provided for waste materials and used linen. Receptacles should be lined with disposable bags.

(13) The removal of cut hair from the decks shall be done frequently by dustless methods. Floors must be washed with detergent and water on a frequent basis to prevent the accumulation of dirt.

(14) When compressed air is used to remove hair from patrons, the pressure shall be 15 psi or less.

(f) Instruments shall be cleaned and disinfected as follows:

(1) All instruments in direct contact with patrons shall be cleaned and disinfected. Instruments will be thoroughly washed with soap and hot water to remove all film, oil, and debris immediately after use on each patron. Following cleaning, the instruments will then be paced in an EPA-registered disinfecting solution. Solution must be replaced as per manufacturer's instructions, but at least weekly. Due to the patron load at some facilities, the solutions may require changing on a more frequent basis. All instruments disinfected in a chemical

solution will be rinsed in running potable water to remove the chemical residue prior to use.

(2) Non-removable clipper heads, must be wiped, dusted and sprayed with an EPA registered disinfecting spray between each patron. Removable clipper heads may be disinfected with the spray or removed, wiped and dusted, and placed in a disinfecting solution as described in the previous paragraph.

(3) Adequate numbers of instruments and supplies must be available to accomplish disinfection.

(4) Formaldehyde cabinets and similar practices involving highly toxic chemicals for disinfecting are prohibited. Ultraviolet light is not an acceptable method of disinfection

(5) The label and Material Safety Data Sheet (MSDS) for any chemical used, including disinfecting solutions and sprays, must be maintained and consulted for information concerning proper use and any storage or handling precautions.

(g) Operators shall be expected to read, understand, and comply with these requirements. If necessary, bilingual/multilingual translation will be accomplished and posted.

(h) Unit HS shall conduct inspections of barber and beauty shops at least monthly.

(i) Further guidance can be found in D.1.a(6), above.

(7) Other Facilities. Standards for campgrounds, picnic areas, play grounds, gymnasiums and theaters are found in D.1.a(6), above.

2. Swimming Pools, Spas, Wading Pools, and Training Tanks.

a. References.

(1) Manual of Naval Preventive Medicine, NAVMED P-5010, Chapter 4. http://www.vnh.org/PreventiveMedicine/PreventiveMedicine.html

(2) Public Swimming Pools, ANSI/NSPI-1 1991.

(3) Public Spas, ANSI/NSPI-2 1999.

b. Background. Since water can transmit disease, swimming pools, spas, wading pools, and training tanks have the potential for causing many health problems if they are not properly operated. The risk of contracting a disease from a swimming pool, spa, wading pool, or training tank is extremely low if the facility is operated properly. Safety hazards play an equal and possibly greater role in causing harm to Coast Guard members and their families.

c. Responsibilities.

(1) Maintenance and Logistics Commands (kse). Evaluate swimming pool, spa, wading pool, and training tank sanitation as part of routine support visits.

(2) Safety and Environmental Health Officer (SEHO). Provide units with assistance in evaluating proper sanitation of swimming pools, spas, wading pools, and training tanks.

(3) Group Commanders or Commanding Officers. Ensure the proper operation and safety of swimming pools, wading pools spas, and training tanks at their unit in accordance with D.2.a(1) through (3), above.

d. Swimming pools, spas, wading pools, and training tanks shall be maintained in a manner that affords maximum protection from disease and injuries. D.2.a(1), above, provides requirements for the safe and healthful operation of swimming pools and other bathing areas. Design, construction, operation and maintenance of facilities shall conform to D.2.a(2) and (3), above.

e. Standards for saunas and steamrooms are found in chapter 2 of D.2.a(1), above.

3. Pest Management.

a. References.

(1) Armed Forces Pest Management Board. Standard Pesticides Available to DoD Components and All Federal Agencies. http://www.afpmb.org/afpmbdirectorate/standardlist.htm

(2) U.S. Navy Shipboard Pest Management Manual. http://www.vnh.org/PestControl/

(3) Manual of Naval Preventive Medicine, NAVMED P-5010, Chapter 8. http://www.vnh.org/PreventiveMedicine/PreventiveMedicine.html

(4) Armed Forces Pest Management Board Technical Information Memorandum Number 39, Guidelines for Preparing Pest Control Contracts. http://www.afpmb.org/pubs/tims/tim39.htm

(5) Armed Forces Pest Management Board Technical Guide Number 18, Installation Pest Management Program Guide. http://www.afpmb.org/pubs/tims/TG18/tg18.htm

b. Background. Pest management is important to the health and well-being of Coast Guard personnel and is needed to protect property and resources. Pest management is defined as the control or mitigation of insects and other arthropods, snails, slugs, fungi, weeds, birds, mammals, plant disease agents, and other pest organisms where their presence results in unacceptable consequences. This program seeks to minimize reliance on chemical pest control procedures and the adverse health effects of pesticides. Policy and procedures shall be consistent with the Federal Insecticide, Fungicide and Rodenticide Act, EPA and OSHA standards.

c. Responsibilities.

(1) Maintenance and Logistics Commands (kse).

(a) Evaluate pest management programs as part of routine support visits.

(b) Ensure that vessels that travel overseas are inspected and receive deratization certificate every six months.

(2) Safety and Environmental Health Officer (SEHO). Provide units with assistance in evaluating pest control issues and pesticide storage and application.

(3) Group Commanders or Commanding Officers.

(a) Establish pest management programs as specified in this instruction to ensure the health of personnel and dependents, and to protect real and other property.

(b) Ensure that all pesticide applicators have received appropriate training and certification in accordance with

this instruction. This includes contractors that apply pesticides at the unit.

(c) Use integrated pest management as the first line of defense for pest control. Chemicals shall be used only as a last resort.

d. Pesticide Applicator Training and Certification. All Coast Guard military and civilian pesticide applicators shall be trained and certified under one of the programs listed below:

(1) State Certified or Licensed Pesticide Applicators. State Certified or Licensed Applicators have met the training and certification requirements of the State in which they work. A copy of the certification or license must be maintained onboard the unit.

(2) Shipboard Pest Management Specialist. Shipboard Pest Management Specialists have completed the Navy's Shipboard Pest Control Course or Medical Entomology and Pest Management Technology for Preventive Medicine Technicians Course and have received authorization from their respective MLC (kse) to apply non-restricted use pesticides afloat. This program is not available to civilians. Four hours of annual refresher training is required.

(3) Coast Guard Limited Duty Pesticide Applicators. Coast Guard Limited Duty Pesticide Applicators are military members authorized by the respective MLC (kse) to apply non-restricted use pesticides on Coast Guard property. This authorization is limited to isolated duty stations or where commercial pest control services are not readily available or are cost prohibitive. Approvals will be limited to specific targeted pests, products and facilities. Personnel must meet any state training requirements for applying non-restricted use pesticides. Units requesting approval for limited duty applicators shall contact their MLC (kse).

(4) Afloat unit FS's should be encouraged to attend shipboard pest control training to increase their understanding of sanitation practices related to shipboard pest control, pest recognition, and proper preparation of spaces before and after pesticides are applied. Although these personnel will not receive certification, they may assist the HS in applying pesticides, when directly supervised by authorized personnel.

e. Integrated Pest Management (IPM) Strategy. It is the policy of the Coast Guard to establish and maintain safe, efficient, and environmentally sound integrated pest management programs to control pests that may adversely

affect health or damage structures or property. IPM is a comprehensive approach to pest control or prevention that considers all available strategies including mechanical, cultural, biological, and chemical techniques.

(1) Non-chemical pest controls such as good sanitation practices and the elimination of pest harborage and access will be instituted prior to implementing chemical control measures. Occupants of buildings, including family housing, play a critical role in an effective pest management program.

(2) The uses of preventive or scheduled periodic pesticide treatments are prohibited unless they are based on surveillance information or documented past uncontrolled pest problems (e.g., seasonal pest problems).

(3) Control of nuisance pests by chemical means is prohibited unless approved by the respective MLC (kse). Nuisance pests are those that do not present a public health threat or do not cause damage to property (e.g., spiders).

(4) Only pesticides listed in D.3.a(1), above, may be used by CG applicators at shore facilities. Pesticides approved for shipboard use are found in appendix A of D.3.a(2), above. Use of any pesticide not on one of these lists must receive approval from Commandant (G-WKS) prior to purchase.

(5) Proposed pest management projects that involve the aerial application of pesticides shall be approved by Commandant (G-WKS).

f. Record Keeping. Each unit will maintain a log of all pesticide applications, including general use pesticides. The log must contain, name of applicator, chemical used, quantity used, date of application, location, targeted pest and description of pest problem. The log shall be maintained indefinitely. Non-chemical pest control activities involved in pest management should also be documented. Pest control logs will be made available for review by Headquarters or MLC (k) safety and environmental health professionals.

g. Mixing, Storage, and Transport. Pesticides will be stored, mixed and loaded in suitable facilities and in such a manner that the material is not degraded, and that workers, the public and the environment are not threatened by exposure under routine conditions or in the event of an accidental spill. D.3.a(3), above, provides general guidance on use of pesticides. D.3.a(2), above, gives specific guidance for shipboard use and

storage. Pesticides shall be secured when unattended to prevent tampering and accidental exposure or release into the environment. Units must include pesticides in their spill prevention control and contingency plans.

h. Before handling any pesticide, read all label directions for use and precautions. Review the MSDS and any other product information sheets that may be available. It is required that pesticides be used according to manufacturers directions.

i. Commercial and Contract Pest Control Services. Contractors performing pest control work on CG facilities shall comply with all certification, licensing, and registration and use requirements applicable in the legal jurisdiction in which the work is performed. Follow the guidelines in D.3.a(4), above, for all contracts for pest control services. Contracted pest control services shall have an IPM approach. Records must be maintained in accordance with D.3.f. of this chapter. A copy of the certification or license of all commercial applicators must be maintained at the unit.

j. Rodent Control for Afloat Commands. Commanders of afloat units who travel overseas will maintain a vessel deratization certificate and keep it current every six months. One month extensions may be granted if a request is made to the original issuer before the certificate expires. When moored, approved rat guards shall be properly installed on all ship-shore lines at a minimum distance of 6 feet from ship's hull and 6 feet from the shore (D.3.a(2), above)).

k. Additional information can be found in D.3.a(2), above, for afloat units and D.3.a(3) and (5), above, for shore units.

4. Food Service Sanitation.

a. References.

(1) Food Service Sanitation Manual, COMDTINST M6240.4 (series).

(2) U. S. Food and Drug Administration Food Code. http://www.cfsan.fda.gov/~dms/foodcode.html

(3) Manual of Naval Preventive Medicine, NAVMED P-5010, Chapter 1. http://www.vnh.org/PreventiveMedicine/PreventiveMedicine.html

b. Background.

(1) Food protection and environmental sanitation play an important role in preventing food borne illness, as well as ensuring

operational readiness. An oversight in sanitation can lead to proliferation of disease-causing microorganisms sufficient enough to cause an outbreak. For this reason, food service operations require careful management to protect the health and well being of patrons. Steps must be taken to prevent the contamination of food items as they flow through the galley by identifying and addressing critical control points.

(2) D.4.a(1), above, details the requirements for the Coast Guard's food service sanitation program. D.4.a(2), above, is the industry standard for food service sanitation and D.4.a(3), above, details the U. S. Navy's program.

c. Responsibilities.

(1) Maintenance and Logistics Command (kse). Evaluate the operation of galleys and the food service sanitation program as part of routine support visits.

(2) Safety and Environmental Health Officer (SEHO). Provide units with assistance in maintaining a quality food service sanitation program.

(3) Group Commanders or Commanding Officers. Establish an effective food service sanitation programs as specified in this instruction and reference (1) to ensure the health of all personnel who use the galley or other food services at the unit.

d. Required Program Elements.

(1) A Food Service Officer (FSO) shall be appointed by the Commanding Officer.

(2) The unit HS or XO shall perform weekly food service facilities inspections. Results of the inspection shall be submitted to the unit CO/OIC with copies provided to the FSO.

(3) Foods shall be acquired from approved sources and properly handled from receiving to serving.

(4) Food service equipment shall be approved by the National Sanitation Foundation (NSF) and properly maintained.

(5) Strictly follow cleaning and disinfection procedures.

(6) Report food borne diseases using the disease alert format found in the Medical Manual, COMDTINST M6000.1 (series), Chapter 7. Immediately consult with the servicing MLC (kse) for assistance in a food borne illness investigation.

(7) Ensure assigned food service personnel are trained annually on sanitation requirements.

5. Potable Water and Wastewater.

a. References.

(1) Water Supply and Wastewater Disposal Manual, COMDTINST M6240.5 (series).

(2) Manual of Naval Preventive Medicine, NAVMED P-5010, Chapters 5, 6 and 7. http://www.vnh.org/PreventiveMedicine/PreventiveMedicine.html

b. Background.

(1) One of the most significant environmental health threats to a unit's operational readiness is having inadequate or contaminated supplies of potable water. Potable water systems shall be managed to provide adequate supplies of potable water for human consumption and culinary purposes.

(2) For additional information, see D.5.a(1), above, for details of the requirements for the Coast Guard's potable water and wastewater program. D.5.a(2), above, details the U.S. Navy's shore and afloat programs.

c. Responsibilities.

(1) Maintenance and Logistics Command (kse). Evaluate the water and wastewater program as part of routine support visits.

(2) Safety and Environmental Health Officer (SEHO). Provide units with assistance in maintaining a proper operation and sanitation of their water and wastewater program.

(3) Group Commanders or Commanding Officers. Establish a water and wastewater program as required at the unit in accordance with this instruction and D.5.a(1), above.

d. Required Program Elements.

(1) Water Supply Afloat.

(a) Develop a Water Sanitation Bill to meet the individual needs of the ship and address any unique conditions.

(b) Ensure that personnel responsible for the maintenance and treatment of the potable water systems receive adequate training.

(c) Obtain water from approved sources. If the ship must use suspect water, it must be properly disinfected before use.

(d) Properly handle and store potable water hoses.

(e) Indoctrinate crew in water conservation methods.

(f) Take appropriate actions to protect potable water tanks and piping systems.

(g) Prevent cross-connections between the potable water systems and any other piping system on the ship.

(h) Install a back-flow prevention device on all potable water hose connections to ensure nonpotable water or other materials are not pulled into the potable water system.

(i) Conduct required halon residual, pH and bacteriological testing of the water system.

(j) Investigate all complaints of taste or smell of the water using the guidelines in D.5.a(1), above.

(2) Water Supply Ashore.

(a) Conduct required halon residual, pH and bacteriological testing of water throughout the unit, if required.

(b) Properly label all non-potable water sources.

(c) If unit has its own water system and does not receive water from an approved city water source, they must strictly follow the storage, disinfection, testing and record keeping requirements of D.5.a(1), above, and contact local authorities to determine additional requirements.

(d) Units with wells must ensure they are properly protected and maintained in accordance with D.5.a(1), above.

(e) Investigate all complaints of taste or smell in the water according to the guidelines in D.5.a(1), above.

(f) Install a back-flow prevention device on all potable water hose connections to ensure nonpotable water or other materials are not pulled into the potable water system.

(g) Follow storage and treatment requirements in D.5.a(1), above, if storing bulk potable water.

(3) Wastewater Treatment Afloat.

(a) Follow local and federal regulations regarding the discharge of sewage and gray water, including reporting of releases.

(b) Properly maintain the collection, holding and transfer (CHT) system to prevent accidental discharge of sewage.

(c) Have a kit available for safe clean up and disinfection of sewage spills onboard.

(d) Provide training to personnel who conduct maintenance on the CHT systems. Training should include personal hygiene, sanitation, personal protective equipment, and safety.

(4) Wastewater Treatment Ashore.

(a) Units with septic systems must ensure proper operation and maintenance of the system. Inspect the tanks periodically based on the guidance provided in D.5.a(1), above. Contact the local health department to determine any additional requirements.

(b) Units with community wastewater treatment systems must follow the guidelines provided in D.5.a(1), above, and contact local and state authorities to determine any additional requirements.

(c) Provide training to personnel who conduct maintenance on the CHT systems. Training should include personal

hygiene, sanitation, personal protective equipment (PPE), and safety.

(d) Units with a wastewater treatment plant shall comply with local laws and regulations.

6. Bloodborne Pathogens and Infectious Waste.

a. References.

(1) Prevention of Bloodborne Pathogen Transmission, COMDTINST M6220.8 (series).

(2) The Medical Manual, COMDTINST M6000.1 (series), Chapter 13, Section J.

b. Background.

(1) It is essential to prevent the transmission of infectious disease. Some Coast Guard personnel have assignments that will put them at a higher risk of infectious diseases, particularly bloodborne diseases.

(2) D.6.a(1), above, details the requirements for the Coast Guard's bloodborne pathogen program. D.6.a(2), above, contains guidelines for an infection control program.

c. Responsibilities.

(1) Maintenance and Logistics Command (kse). Evaluate the bloodborne pathogen program as part of routine support visits.

(2) Safety and Environmental Health Officer (SEHO). Provide units with assistance in the proper handling and disposal of bloodborne pathogen-related items.

(3) Group Commanders or Commanding Officers. Establish an effective bloodborne pathogen program as specified in this instruction and D.6.a(1) and (2), above, as appropriate at the unit.

d. Required Program Elements.

(1) Establish engineering controls as the first line of defense for bloodborne pathogens (e.g., sharps containers).

(2) Personnel who are at risk for exposure to bloodborne pathogens must be offered the hepatitis B vaccine series.

(3) Provide training to employees prior to them entering into a job that puts them at risk for exposure to bloodborne pathogens and then annually thereafter.

(4) Use universal precautions at all times when there is blood or other potentially infectious material present or the possibility of the presence exists.

(5) Post exposure evaluations must be conducted to determine vaccination status and possible need for post exposure prophylaxis.

(6) Ensure proper disinfection of spills and the surrounding area.

(7) Ensure proper segregation, storage, and disposal of infectious waste is in accordance with reference (2) and federal, state, and local regulations. Contact the county health department for more information.

(8) Ensure proper handling of contaminated laundry.

CHAPTER 7. COAST GUARD RADIOLOGICAL HEALTH PROGRAM

A. Purpose.

1. Minimize X-Ray Health Risks. According to the National Research Council, "medical diagnostic radiology accounts for at least 90 percent of the total radiation dose to which the U.S. population is exposed." The purpose of this section is to minimize x-ray health risk at Coast Guard medical diagnostic radiology facilities and at all other facilities that have the potential of generating x-rays.

2. Responsibilities. This chapter states the responsibilities of Coast Guard health care facilities and other facilities where x-ray exposure may occur, and procedures these facilities are to use in minimizing personnel exposure to x-rays.

B. Policy. The policy of the program is to keep x-ray exposures as low as reasonably achievable (ALARA) and to ensure that the authorized limits are not exceeded.

C. Authority.

1. The principal laws affecting Coast Guard facilities having the capability of generating x-rays are:

   a. Public Law 90-602, Radiation Control for Health and Safety Act.

   b. The Consumer-Patient Radiation Health and Safety Act of 1981 (42 USC 10001, et seq.).

   c. Public Law 91-596, Occupational Safety and Health Act of 1970, as amended (29 U.S.C. 651).

2. Regulations and Other Directives.

   a. Executive Order (FR Doc. 78-2776), Radiation Protection Guidance to Federal Agencies for Diagnostic x-rays.

   b. 10 CFR 20, Standards for Protection Against Radiation.

   c. 21 CFR Subchapter J, Part 1000 to 1050.

   d. 29 CFR 1910.96, OSHA Safety and Health Standards.

   e. HHS Publication FDA 82-8193 - United States Public Health Service Personnel Monitoring Program.

7-C-2. f. HEW Publication FDA 76-8043 - Photographic Quality Assurance in Diagnostic Radiology, Nuclear Medicine, and Radiation Therapy. Vol. I, The Basic Principals of Daily Photographic Quality Assurance, 1979.D

D. **Definitions**. The following definitions apply to terms used in this chapter:

1. **Absorbed Dose**. The amount of energy imparted to matter by ionizing radiation per unit mass of irradiated material. The special units of absorbed dose are the rad and grey. The rem (roentgen equivalent man) is the older unit. It represents an energy deposition of 0.01 joules/kilogram of material. The gray (Gy) is the newer unit that ultimately will replace the rad. 1 Gy = 100 rad.

2. **Activity**. The number of nuclear disintegrations per second from a radioactive source. The older unit of activity is the curie. It is defined as 3.7×10^{10} nuclear disintegrations per second. The newer unit is the becqueral (Bq). The Bq ultimately will replace the curie. It is defined as 1 nuclear disintegration per second.

3. **Background Radiation**. Ionizing radiation arising from sources other than the one directly under consideration. Radiations are always present due to cosmic rays and natural radioactivity of substances in the earth and building materials.

4. **Becqueral (Bq)**. See activity.

5. **Calendar Quarter**. A three month period of time. The first quarter starts on 1 January; second quarter 1 April; third quarter 1 July; and fourth quarter 1 October.

6. **Controlled Area**. A defined area in which control is exercised over the occupational exposure of personnel to ionizing radiation.

7. **Curie**. See activity.

8. **Dose Equivalent**. The quantity used to express on a common scale the amount of biological damage in humans caused by absorption of different types of ionizing radiation. The units of dose equivalent are the rem (roentgen equivalent man) and the sievert (Sv). The rem is the older unit. It is defined as absorbed dose (rad) X Q. Q is a quality factor which reflects the ability of different types of radiation to cause damage to human tissue. Sv is the newer unit that ultimately will replace the rem. 1 Sv = 100 rem.

7-D-9. **Dosimeter**. An instrument used for measuring or evaluating the absorbed dose, exposure, or similar radiation quantity.

10. **Exposure**. A measure of the ionization produced in air by x or gamma radiation. The special unit of exposure is the roentgen.

11. **Gray**. See absorbed dose.

12. **High Radiation Area**. Any area, accessible to personnel, in which there exists radiation at such levels that a major portion of the body could receive in any one hour a dose equivalent in excess of 100 millirem.

13. **Ionizing Radiation**. Any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter. Alpha and beta particles, gamma rays, x-rays, and neutrons are examples of ionizing radiation.

14. **Millirem**. A submultiple of the rem equal to one one-thousandth (1/1000th) of a rem see dose equivalent.

15. **Occupationally Exposed Individual**. An individual whose work is normally performed in a controlled area, or whose duties involve exposure to radiation and who is subject to appropriate radiation controls. Occupational exposure does not include the exposure of an individual to sources of ionizing radiation for the purpose of medical or dental diagnosis or therapy.

16. **Protective Apron**. An apron made of radiation absorbing material, used to reduce radiation exposure.

17. **Protective Barriers**. Barriers of radiation absorbing material, such as lead, concrete, plaster, and plastic, that are used to reduce radiation exposure.

    a. **Protective Barriers, Primary**. Barriers sufficient to attenuate the useful beam to the required degree.

    b. **Protective Barriers, Secondary**. Barriers sufficient to attenuate stray or scattered radiation to the required degree.

18. **RAD (Radiation Absorbed Dose)**. See absorbed dose.

19. **Radiation Area**. Any area, accessible to personnel, in which there exists radiation at such levels that a major portion of the body could receive in any one hour a dose equivalent in excess of five millirem or in any five consecutive days a dose equivalent in excess of 100 millirem.

7-D- 20. **Radiation Safety Officer**. An individual who has the knowledge and responsibility to apply radiation protection regulations.

21. **Radiation Sources**. Materials, equipment, or devices that generate or are capable of generating ionizing radiation, including naturally occurring and accelerator produced radioactive materials; fission products; materials containing induced or deposited radioactivity; nuclear reactors; radiographic and fluoroscopic equipment; particle generators and accelerators, klystron, magnetron, rectifier, cold-cathode tubes, and other electron tubes operating above 10 kV; x-ray diffraction and spectrographic equipment; electron microscopes; and electron-beam welding and melting devices.

22. **Radiation Worker**. See occupationally exposed individual.

23. **REM (Roentgen Equivalent Man)**. See dose equivalent.

24. **Sievert**. See dose equivalent.

25. **Thermoluminescent Dosimeter**. A dosimeter made of certain crystalline material that is capable of both storing a fraction of absorbed ionizing radiation and releasing this energy in the form of visible photons when heated. The amount of light released can be used as a measure of radiation exposure to these crystals.

E. **Responsibilities**.

1. **Contractor**. The Public Health Service provides personnel dosimeter badges to each of its participating facilities through a contract with a commercial supplier of personnel monitoring services.

a. **Requirements**. The contractor is required to:

(1) Provide personnel badges to participating facilities only where authorized do so by the PHS Project Manager.

(2) Send new badges to each facility in time to arrive at least seven days before the beginning of the next monitoring period.

(3) Make additions, deletions, or changes to the program promptly, only when instructed to do so by the PHS Project Manager.

(4) Provide radiation dosimetry reports to each participating facility and the PHS Project Manager.

7-E-1. a. (5) Promptly notify the facility and the PHS Project Manager of abnormally high exposures or overexposures.

2. **Center for Devices and Radiological Health**. The Center has a contractual agreement with the Coast Guard to provide:

   a. Personnel monitoring support through the USPHS Film Badge Program Project Manager, Center for Devices and Radiological Health, Rockville, MD.

   b. Technical radiological health support through the radiological health officers located at the USPHS regional offices and at the Center for Devices and Radiological Health, Rockville, MD.

3. **Commandant (G-KSE) Responsibilities**.

   a. Establishing and promulgating policies, procedures and standards for Coast Guard medical diagnostic x-ray facilities.

   b. Serving as the Coast Guard liaison with the USPHS, FDA, and Center for Devices and Radiological Health in their support of the program.

4. **MLC Commander (k) Responsibilities**.

   a. Ensuring compliance with this section of each facility having medical diagnostic x-ray capability.

   b. Providing health assessment support to Coast Guard facilities with medical diagnostic x-ray capability.

   c. Providing health assessment support to Coast Guard facilities with potential x-ray exposures from nonmedical sources.

5. **Senior Medical Officer/Supervising Medical Officer Responsibilities**. The senior medical officer or designated supervising medical officer of each health care facility with medical diagnostic x-ray capability is responsible for:

   a. Compliance with all provisions of this section.

   b. Designating in writing a Radiation Safety Officer, who must be a technically qualified person responsible for the daily operation of the program. This person should have a basic knowledge of radiation safety practices and procedures.

7-E-5. c. Informing Commandant (G-KSE-3) in writing, via the MLC commander, whenever new x-ray equipment is installed, existing x-ray equipment is moved to a different location, new x-ray facilities are constructed, or existing x-ray facilities are renovated.

d. Using the personnel monitoring program provided to the Coast Guard by the USPHS Center for Devices and Radiological Health.

6. **Radiation Safety Officer Responsibilities**.

a. Ensuring compliance with this chapter of the personnel dosimeter quality assurance and personnel monitoring programs.

b. Ensuring adherence to the quality assurances contained in HEW Publication FDA. 76-8043.

c. Receiving dosimeters from the contractor and making proper distribution to individuals in the program.

d. Collecting dosimeters promptly at the end of the monitoring period and shipping them to the contractor for analysis.

e. Promptly sending requests for additions, deletions, or changes to the personnel monitoring program via MLC commander (k) to:

Project Manager
USPHS Personnel Monitoring Program
HFX-3
Center for Devices and Radiological Health
5600 Fishers Lane (HFX-320)
Rockville, MD 20857

f. Ensuring instruction of each dosimeter wearer in its purpose and proper use.

g. Ensuring understanding by individuals assigned a dosimeter that they are responsible for the proper use, loss of, or damage to the personnel dosimeter which is issued. Deliberate exposure or other improper use of a dosimeter constitutes falsification of an official record resulting in the need for an investigation and possible disciplinary action.

h. Annual advisement of the accumulated radiation dose for the previous calendar year to each individual assigned a dosimeter. All women of child bearing age will be advised of the potential hazards of x-ray

7-E-6. h. (cont'd) exposure to unborn children as described in enclosure (12). She is required to sign a statement that she has been so briefed. A copy of that statement will be attached to her fourth quarter dosimeter report and retained in her health record.

i. Maintaining all quality assurance and personnel monitoring records and dosimetry reports.

j. Reviewing radiation reports for unusual exposures, investigating to determine the cause, and reporting conclusions to Commandant (G-KSE-3) via MLC commander (k).

k. Ensuring evaluation of medical diagnostic x-ray equipment by the Regional Radiological Health Representatives (RRHR) at least once every two years.

l. Ensuring further evaluation whenever:

(1) New x-ray equipment is installed.

(2) Existing x-ray equipment is moved to a different location.

(3) New x-ray facilities are constructed.

(4) Existing x-ray facilities are renovated.

7. <u>Personnel Using Diagnostic X-Ray Equipment</u>.

a. <u>General</u>.

(1) A personnel dosimeter shall be issued to and worn by each person who routinely works in a radiation area, or who must enter a radiation area regularly in the course of his or her duties.

(2) Personnel dosimeters shall be worn at all times when the individual is in an area where sources of ionizing radiation (x-ray machines or radioactive materials) are used.

(3) Each personnel dosimeter contains an identification label. The facility account number contains five digits. The "30" identifies badges assigned to the PHS Personnel Monitoring Program. The remaining three digits (e.g., 399) are the facility's number.

F. <u>Personnel Dosimeter Program</u>. Enclosure (11) contains requirements for implementing a personnel dosimeter program.

7-G. **Privacy Act**. The Public Health Service is required by the Privacy Act of 1974 to provide the following information to individuals participating in the PHS Personnel Monitoring Program:

1. Radiation Protection Program Personnel Monitoring System (Federal Register, Volume 42, No. 189, September 29, 1977) is the designated system of records in which information provided by individuals is maintained. Authority for maintenance of this system of records is the Atomic Energy Act of 1954 (68 Stat. 919 et seq.) as amended (42 U.S.C. 2073, 2093) and the Occupational Health and Safety Act of 1974. The authority for soliciting the social security number is Title 10, Code of Federal Regulations, Part 20.

2. The Department of Health and Human Services uses the information to record and evaluate the radiation exposure of employees who are occupationally exposed to ionizing radiation. Individuals monitored under this program will be provided with their radiation history upon request. See enclosure (11). The information may be used to provide data to the individual's employer and to other Federal and State agencies involved in monitoring and evaluating radiation exposures to employees. Information may also be provided in the course of an administrative or judicial proceeding.

3. It is voluntary on the part of the employee to furnish the requested information including the social security number. However, if the necessary information is not provided, an individual may be denied employment in an occupation involving exposure to ionizing radiation. The social security number is essential in order to positively identify those persons on whom radiation exposure information is maintained.

4. The Project Manager, PHS Personnel Monitoring Program, is the system manager.

CHAPTER 8. VESSEL SAFETY PROGRAM

A. Policy. Safety is an integral part of all Coast Guard vessel operations. All members must commit to a personal responsibility to safeguard themselves, fellow crew members, and the property entrusted to their care. The leadership and responsibility for all safety programs must originate from senior leadership at each unit and follow the chain of command to each individual in the command. Each level of the command is responsible for safety enforcement through strict compliance with existing rules, professional practices, and standards.

B. Goal. The goal of the Vessel Safety Program is to improve safety, enhance mission effectiveness, and increase the operational readiness of all Coast Guard floating units by:

1. Identifying the loss exposures that endanger our people, platforms, equipment and mission readiness;

2. Evaluating the associated risks; and

3. Controlling our accidental losses.

C. Scope. This chapter applies to all Area, District, MLC, Group, and Unit commanders operating cutters and/or small boats to fulfill mission responsibilities. Vessels include cutters, small boats, Coast Guard Auxiliary boats operating under Coast Guard orders, and morale boats used as part of Coast Guard operations. All Program and Support Managers are subject to this chapter. This chapter also applies to the use of firearms by Coast Guard personnel. Group Commanders and Station CO's/OIC's shall also refer to the appropriate chapter of this manual for safety of their shore facilities.

D. Authority. The laws requiring federal occupational safety and health programs are listed in section 1-D of this manual.

E. Standards. (See Section 1-K of this manual) Because safety is an integral part of every operating and support program, many Coast Guard safety standards are contained within the policies and directives of those programs.

F. Organization. The Vessel Safety Program is organized to function through the chain of command. The Commandant promulgates policy and sets program requirements. Area and District commanders carry out the policies and tailor program requirements to their operations. CO's and OIC's implement the program at the unit level, supplementing guidance with unit plans, instructions, and supervision. MLC commanders provide primary support to unit CO'S. Section 1-F of this manual lists the general responsibilities for the Safety and Environmental Health

8-F (cont'd) Program. The organizational components described in the following paragraphs are assigned specific responsibilities.

1. **Commandant**.

a. Commandant (G-KSE-4), the Vessel Safety Branch, operates under the cognizance of Commandant (G-KSE).

(1) Commandant (G-KSE-4) will initiate, develop, review, and modify policies, procedures, and standards for the Vessel Safety Program. The Branch shall also monitor and evaluate the implementation of the program.

(2) Specific duties of Commandant (G-KSE-4) are:

(a) Develop, recommend, promulgate and monitor policies and procedures for vessel safety in consultation with appropriate program managers.

(b) Recommend policies and procedures to protect the public from possible hazards of Coast Guard vessel activities.

(c) Advise and assist the chain of command in correcting hazardous conditions adverse to vessel safety.

(d) Maintain liaison with the U.S. Naval Safety Center.

(e) Coordinate and convene formal Mishap Analysis Boards (MABs) on behalf of the Commandant.

(f) Coordinate the activities of the Commandant's Vessel Safety Board and participate as a member.

(g) Maintain a master file of Class A and B mishap reports, safety recommendations and corrective actions.

(h) Monitor all safety recommendations and corrective action until completed.

b. **Program and Support Managers**. Program and Support Managers have the responsibility to manage the Coast Guard's resources: people, time, money, and equipment. In carrying out this responsibility, they must incorporate safety and environmental health into all aspects of their respective missions. These Managers shall adhere

8-F-1. b. (cont'd) to, and enforce, the Commandant's vessel safety and environmental health standards.

c. Commandant's Vessel Safety Board (CVSB). The CVSB is comprised of officers on the Commandant's staff having special knowledge of vessel operations, engineering, safety and environmental health matters. The CVSB is responsible for reviewing Class A and Class B vessel mishaps, as well as reviewing selected vessel mishaps and vessel safety matters. See enclosure (13) for the CVSB precept.

2. Area, District, and MLC Commanders. Area, District, and MLC Commanders shall ensure that the provisions of this program are implemented for all cutters and small boats. MLC Commander (k) provides the primary Safety and Environmental Health support to Area and District units. However, Area and District Commanders are responsible for controlling accidental losses to USCG personnel, property, and mission readiness for resources under their operational control. These responsibilities include but are not limited to the following:

a. Identifying and evaluating specific hazards associated with vessel types and vessel operations within their area of responsibility.

b. Developing abatement plans to eliminate, reduce, or control the risks associated with cutter and small boat operations. Putting to sea is inherently hazardous and decisions to eliminate, reduce, and control operational risks must always be weighed against the severity of the hazard, the probability of its occurrence, and the ultimate benefit to be gained by tasking a unit to perform a mission.

c. Carrying out and monitoring abatement plans.

3. Group Commanders. Group Commanders shall perform the functions listed in 2. above for all cutters, small boat stations and small boats under their operational control.

4. Units.

a. Commanding Officer/Officer-in-Charge (CO). CO'S of cutters and commands which operate small boats are responsible for implementing a vigorous Vessel Safety Program.

(1) The CO is responsible for the safety and health of the crew, and is also responsible for the safe operation of the unit. Therefore, the program's effectiveness will

8-F-4. a. (1) (cont'd) be determined entirely by CO's interest and efforts. The CO's safety policy shall be conveyed through the following:

(a) An active, visible role in safety stand downs and pre-briefs for major evolutions.

(b) Allocation of unit time and money to support administration of the safety program.

(2) The unit CO must identify and weigh the risk of each operation and evolution. Every effort must be made to eliminate, reduce or control the risks to the crew and equipment. When the very nature of an evolution involves inherent, unavoidable risk, the CO must evaluate:

(a) the training and experience of the crew,

(b) the adequacy of manning levels,

(c) the condition and operating limitations of the people and equipment to be used,

(d) the need for personal protective equipment/rescue and survival equipment,

(e) weather and sea conditions, and ultimately,

(f) whether or not to even undertake the mission/evolution.

(3) Once the decision to get a small boat underway is made, the boat coxswain assumes these same responsibilities per USCG Regulations, CIM5000.3 (series).

(4) The CO and coxswain <u>shall</u> always emphasize crew and mission safety.

b. <u>Vessel Safety Officer</u>. The unit Executive Officer/Executive Petty Officer (XO) shall serve as the safety officer per USCG Regulations, CIM5000.3 (series).

(1) <u>Duties of the Safety Officer</u>.

(a) Act as the CO's representative and advisor on all unit safety matters.

8-F-4. b. (1) (b) Chair the unit's safety and health committee.

(c) Conduct liaison with all support facility personnel to consolidate loss prevention programs.

(d) Ensure thorough and timely completion of vessel mishap investigations.

(e) Ensure proper mishap analysis is accomplished <u>at the unit level</u>.

(f) Ensure completion of mishap reports in accordance with this manual.

(g) Establish, maintain, and annually exercise the unit's Pre-Mishap Plan.

(h) Recommend the composition of the unit Safety Board for consideration by the CO. Commands may elect to designate a Permanent Mishap Board to investigate Class C and D mishaps, as well as carry out initial investigative actions outlined in the Pre-Mishap Plan. (See enclosure (15) for a sample Pre-Mishap Plan).

c. <u>Unit Safety Supervisor</u>. The unit safety supervisor shall assist the Safety Officer in managing the unit's safety program, and shall:

(1) Disseminate safety information within the unit to ensure that all hands have access to it.

(2) Coordinate and organize unit safety training.

(3) Maintain written safety and mishap records.

(4) Conduct annual training for the unit Safety and Health Committee members on the unit Pre-Mishap Plan, Accident Investigation, and Accident Analysis.

(5) Maintain files of unit mishap reports and other mishap reports/lessons learned from other Coast Guard units.

(6) Serve as recorder for the unit Safety and Health Committee.

G. <u>Safety and Environmental Health Audits</u>. The general requirement for an annual MLC audit of each unit is modified for cutters and shore facilities with boats assigned.

8-G-1. Cutters.

a. **Area, District, and MLC Commanders shall ensure that safety audits are scheduled and coordinated with all other requirements for cutters.** All Coast Guard Cutters are considered to be "High Risk" units and as such shall have an annual safety audit. These audits will normally be scheduled prior to the first operational deployment after a lengthy shipyard or major dockside availability. MLC Safety Audits or Naval Safety Center Surveys will satisfy annual safety audit requirements. However, the time between MLC safety audits shall not exceed twenty-four months. All Imminently Dangerous and Serious hazards identified during these three activities shall be reported via the chain of command to MLC Commander (k) and abated per enclosure (1) to this manual. See enclosure (1) for definitions of imminent danger, serious, and non-serious conditions. Alternate evaluations, audits, and surveys do not preclude audits of a unit by the MLC when deemed appropriate by higher authority.

b. The U.S. Naval Safety Center, Norfolk, VA (NAVSAFECEN) conducts Ship Safety Surveys upon request. A NAVSAFECEN survey meets the requirements of subparagraph 1.a. All Imminently Dangerous and Serious hazards identified during a NAVSAFCEN survey shall be reported via the chain of command to MLC Commander (k) and abated per the enclosure (1). The next subsequent safety audit shall be conducted by MLC Commander (k).

   (1) The Navy survey team normally has ten safety specialists, but for smaller cutters a smaller survey team can be requested. Requests for NAVSAFECEN Surveys shall be submitted to MLC Commander (k) via message or rapidraft letter. However, CO's are authorized direct liaison with the Naval Safety Center for short lead time requests if the survey is to be conducted in the immediate Norfolk area.

c. CO's are responsible for performing a comprehensive annual self-audit using the MLC Safety and Environmental Health checklist. Self-audits shall be performed midway between the formal audits required by paragraph G-1.a. and filed at the unit with a copy forwarded via the chain of command to the appropriate MLC Commander (k). All Imminently Dangerous and Serious hazards identified during the self-audit shall be

8-G-1. c. (cont'd) reported via the chain of command and abated per the enclosure (1). See enclosure (1) for the definitions of imminent danger, serious, and non-serious conditions.

2. Shore Facilities with Boats Assigned.

a. **District, MLC, and Group Commanders shall ensure that MLC safety audits are coordinated with Standardization Assessment Visits and other scheduling requirements for small boat stations.** The recommended period between Standardization Assessment Visits and MLC safety audits is two years. Imminently Dangerous and Serious hazards identified shall be reported via the chain of command and abated per enclosure (1). See enclosure (1) for definitions of imminent danger, serious, and non-serious conditions.

b. Nonstandard boat outfits and operating limitations are set by the district commanders. However, if the limitations are not specific enough for a unit's area of responsibility, the unit shall establish specific operating and area limitations. Boat crew qualifications for all boats are established in the Boat Crew Qualification Guide, COMDTINST M16114.9 (series). Written standards shall also cover preventive maintenance and inspections which are not established by higher authority. Standardization Assessment Visits are thorough and comprehensive assessments of a station's standard small boats. However, the Coast Guard now operates at least as many nonstandard as standard small boats. The need for written standards cannot be over emphasized.

c. Shore facilities with boats assigned shall conduct annual unit self-audits using the MLC Safety and Environmental Health checklists. The self-audits shall be filed at the unit with a copy forwarded to MLC Commander (k). All Imminently Dangerous and Serious hazards identified during the self-audit shall be reported via the chain of command and abated per enclosure (1). See enclosure (1) for definitions of imminent danger, serious, and non-serious conditions.

H. **Training**. Safety training includes safety program indoctrination, safety management training at all levels of the chain of command, and technical safety training.

1. Training for Unit Safety Supervisors is sponsored by Commandant (G-KSE). The objective of the training is to help Unit Safety Supervisors develop a safety program and unit safety action plan.

8-H-2. Training for Unit Safety Officers (XO/XPO) is sponsored by Commandant (G-KSE). This training focuses on how to identify and manage an effective unit safety and loss control program.

3. Training for Unit CO's, Program, and Support Managers is sponsored by Commandant (G-KSE). This training focuses on risk assessment in decision making, the causes and effects of loss, and safety management.

4. Human Error Accident Reduction Training and Vessel Resource Management are sponsored by Commandant (G-KSE). This training helps in developing greater crew coordination to enhance operational safety.

5. Technical Safety Training that goes beyond the scope of the unit safety supervisors course such as: Fit Testing of Respiratory Protection, Shipyard Safety, Hazard Communication, etc. shall be requested from the MLC.

I. <u>Pre-Mishap Plan</u>. Each unit shall develop a pre-mishap plan to organize an effective unit response to Class A and Class B mishaps. The plan need not be a separate unit instruction, but may be reflected in Standing Orders, Standard Operating Procedures, and/or Operational Bills. A separate pre-mishap plan will however, serve to fill in the gaps that are not covered by existing instructions in outlining actions to be taken for mishaps that occur inport, away from home port, and underway. A sample pre-mishap plan is provided in enclosure (15).

1. Groups and Group Units. Because of the limited resources and response capabilities of our smaller units, Group Commanders shall establish pre-mishap plans which cover mishaps involving subordinate units within their Group. Subordinate units shall submit unit specific Plans to be incorporated into their overall Group Pre-mishap Plan.

2. The Safety Officer shall ensure that the following response priorities are reflected in the unit plan:

a. Rescue, recovery, and emergency medical care for unit personnel.

b. Minimization of injury, property damage, and secondary or follow-on mishaps arising from the initial incident.

c. Preservation of evidence to facilitate analysis of mishap causes and, if possible, restoration of damaged property.

d. Preliminary mishap investigation and analysis.

8-I-3. A notification checklist shall be included in the plan along with a list of personnel responsible for making the notifications.

4. **Additional Support**. As part of the pre-mishap plan, prior arrangements shall be made with other CG units and agencies to obtain necessary firefighting services, rescue and salvage equipment, security, divers, medical support, logistics, photographers, etc. For cutters, many of these arrangements can be made through the host command at the moorings, local authorities, or the operational commander. For small boat stations, many of these arrangements can be made by the Group Commander, and should be reflected in the Group pre-mishap plan. For further guidance on pre-mishap planning and investigation, see Chapter 3 of this manual.

CHAPTER 9. SHORE FACILITY FIRE SAFETY

A. Policy. It is the Commandant's policy that the Coast Guard shall actively strive for an environment safe from fire. As a general rule, Coast Guard personnel shall not actively engage in structural fire fighting. Exceptions to this policy include the following: trained individuals whose primary duty is fire fighting; isolated units located where there are no municipal fire departments AND the commanding officer determines a fire brigade is necessary to carry out the mission of that unit; in order to save a life; or in instances where a fire is in the early stages and can be extinguished using a portable fire extinguisher.

B. Purpose. The purpose of this chapter is to establish and implement a Coast Guard-wide fire safety program. The program shall enhance military readiness, mission capability, and the public interest. It protects Coast Guard personnel and facilities from mishaps due to uncontrolled fire.

C. Scope. This chapter applies to all shoreside Coast Guard personnel and property. It does not apply to; (1) Internal fire protection requirements aboard Coast Guard ships, (2) COMDTINST M3710.2A related shipboard helo operations, (3) Activities performed under the Captain of the Port purview, or (4) to the Coast Guard leased quarters/housing program.

D. Authority.

1. Principal Laws. The principal laws affecting fire safety programs are:

   a. Occupational Safety and Health Act of 1970 Public Law 91-596, as amended (41 CFR 101-20)

   b. The Fire Prevention and Control Act as amended (15 USC 2200)

   c. "Fire Fighter Standards, GS-081 series (5 USC 8401) current revision

2. Regulations and Other Directives. Regulations, references, and other directives reflecting current nationally recognized standards of good practice that affect the Coast Guard Fire Safety program include:

   a. Code of Federal Regulations, 29 CFR 1910, Subpart L

   b. Emergency Medical Care Training and Qualifications Requirements, COMDTINST 6440.1

9-D-2. c. Staffing Standards Manual, COMDTINST M5312.11

d. Civil Engineering Manual, COMDTINST M11000.11A

e. Aeronautical Engineering Maintenance Management Manual, COMDTINST M13020.1C

f. Shipboard Helicopter Operations Manual, COMDTINST M3710.2A (series)

g. Fire Protection Manual, Department of Transportation

h. Fire Risk Management Program, Department of Transportation DOT Order 3902.8

i. Department of Defense Fire Protection Program, DoD Instruction, 6055.6 (current edition)

j. Aircraft Firefighting & Rescue Manual, Naval Air Training and Operating Procedures Standardization (NATOPS) NAVAIR 00-80-R-14 (current edition)

k. Air Force Manning Standard, United States Air Force (USAF) AFMS 4426 (C1)(current edition)

l. National Fire Codes, (current edition), National Fire Protection Association

m. Fire Department Occupational Safety and Health Program, NFPA 1500 (current edition), National Fire Protection Association

n. Developing Fire Protection Services for the Public, NFPA 1201 (current edition), National Fire Protection Association

o. ICMA, Managing Fire Services, (current edition) International City Management Association

p. Uniform Fire Code, (current edition), Western Fire Chief's Association and International Conference of Building Officials (WFCA & ICBO)

q. National Fire Prevention Code, (current edition), Building Officials and Code Administrators International, (BOCA)

r. OMB Circular No. A-76 Revised March 29, 1979, section 5b & 6e

9-D-1. s. Security Manual, COMDTINST M5500.11 (series)

2. Published Coast Guard Safety and Environmental Health standards shall have precedence over all fire standards except those NFPA standards specifically cited herein. Where there is no published Coast Guard standard or designated NFPA standard, the most stringent applicable standard/code shall be considered to be a guide to good practice.

E. Definitions.

1. Advanced Life Support. All basic life support measures, plus invasive medical procedures, including; intravenous therapy; cardiac defibrillation; administration of antiarrhythmic medications and other specified drugs, medications, and solutions; use of adjunctive ventilation devices; and other procedures which may be authorized and performed under medical control.

2. Aircraft Crash Fire Rescue vehicle. A fire apparatus for use at air stations and airports that meets NFPA 414.

3. Ambulance. A vehicular conveyance designed and operated for transportation of ill and injured people in a prone or supine position, equipped and staffed to provide basic or advanced life support during transportation.

4. Automatic Aid. An established procedure which permits dispatchers to send the nearest available fire unit automatically, regardless of jurisdictional boundaries.

5. Basic Life Support. Generally limited to airway maintenance, breathing support, CPR, hemorrhage control, splinting of fractures, management of spinal injury, protection and transportation of the patient in accord with accepted procedures.

6. Coast Guard Fire Department. An organization of full time military and/or civilian personnel providing rescue, fire suppression, and related activities.

7. Crew (fire crew/crash crew). Generic term referring to the personnel assigned to a fire apparatus.

8. Emergency Medical Service. The response to requests for assistance in any instance involving a medical emergency. Service is provided at the basic or advanced life support level.

9. Emergency Medical Technician (EMT). A generic term referring to at least three (3) emergency care

9-E-9. (cont'd) positions; EMT (or EMT-A), attended a course at least 80 hours in length and is certified proficient in basic life support. EMT-Paramedic (EMT-P) has been trained in a program that includes as a minimum all fifteen (15) modules of the DOT national training course and is certified as proficient in advanced life support. EMT-Defibrillation (EMT-D), trained to use portable cardiac monitors and defibrillators, analyze certain cardiac rhythms, and apply defibrillation where appropriate.

10. Evolution. One aircraft evolution consists of one takeoff, one landing, or one touch and go flight.

11. Facility. A separately defined (by OPFAC number) Coast Guard organizational entity, under a duly assigned commanding officer or officer-in-charge, provided with personnel and material for the performance of a prescribed mission.

12. Fire Alarm System. A system for initiating an alarm as the result of detection of smoke, flame or heat; the operation of an automatic protection system including water flowing in a sprinkler system; or the discharge of a flooding agent (CO2/halon), or manual activation.

13. Fire Apparatus. A vehicle assigned to the fire department used for fire suppression that complies with NFPA 1901-1903 or 414.

14. Fire Brigade. An organized group of employees who are skilled, trained, knowledgeable of basic firefighting operations as outlined in 29 CFR 1910.156. They engage in fire suppression and related activities on an "as-needed or on-call" basis.

15. Fire Chief. The highest ranking officer in charge of a fire department or fire brigade.

16. Fire Engine. A fire apparatus equipped with a permanently mounted fire pump with a rated capacity of at least 1000 GPM or greater and complying with NFPA 1901-1903.

17. Fire Fighting. Activities involved in controlling and extinguishing fires. For purposes of this chapter, fire fighting shall include all activities performed at the scene of a fire mishap, emergency, or training exercise that expose members to the dangers of heat, flame, smoke, or other products of combustion, explosion, or structural collapse.

9-E-18. Fire Origin & Cause. The point or area where the fire originated and where the cause of ignition may be found.

19. Hazardous Material. A substance that presents an unusual danger to individuals due to properties of toxicity, chemical reactivity, or decomposition, corrosiveness, explosion or detonation, etiological hazards, or similar properties.

20. Helicopter Landing Site. Any location not specifically designed or designated for helicopter operations where the frequency of helicopter operation does not exceed 24 helicopter operations per year. Helicopter landing sites may be parking lots, playing fields or vacant lots.

21. Heliport. A designated area of land, water or structure used or intended to be used for helicopter operations.

22. Heliport (Class A). Multipurpose stations and group offices with regular helicopter operations.

23. Heliport (Class B). Non-Aviation units with more than 24 helicopter operation per year.

24. Incident Command System. (ICS) An organized system of roles, responsibilities, and standard operating procedures used to manage and direct emergency operations.

25. Live Fire. Any unconfined or uncontrolled open flame that can propagate fire to other combustible material.

26. May. This term is used to state a permissive use or an alternative method to a specified requirement.

27. Mishap. Any unplanned, unexpected, or undesirable event causing injury, occupational illness, death, material loss, or damage. The term "mishap" shall be used in lieu of "accident" and/or "occupational illness."

28. Mutual Aid. A verbal or written agreement between two or more fire departments or government jurisdictions to respond to requests for fire apparatus assistance.

29. Operation. One complete aircraft or helicopter operation consists of one take off and landing.

30. Occupational Medical Monitoring Program. A program for monitoring the health of Coast Guard personnel working

9-E-30. (cont'd) in jobs designated as having high health risk potential to chemical and/or physical elements.

31. Shall. Indicates a mandatory requirement.

32. Turnout Clothes. Generic term that refers to all protective clothing and appliances used in the protection of fire department personnel.

F. Responsibilities.

1. General Responsibilities. All members of the Coast Guard have a personal responsibility to safeguard themselves, their families, fellow members, and government property entrusted to their care from mishaps.

2. Headquarters Responsibilities.

a. Commandant (G-K) as the support program director for safety and environmental health is responsible for developing, promulgating, managing, and overseeing a Coast Guard-wide fire safety program.

b. Commandant (G-KSE) under the general guidance of Commandant (G-K), is the support program manager for fire safety.

c. Commandant G-KSE-2 is responsible for establishing and promulgating instructions and standards for all shore facilities including shoreside Crash Fire Rescue (CFR) guidance for Air Stations and Heliports. G-KSE-2 also ensures that sufficient resources are provided to enable commands to carry out shore facility fire safety program responsibilities.

d. Commandant (G-KSE-1) shall maintain membership on the NATOPS Advisory Group. G-KSE-1 accepts requests for NATOPS and NFPA waivers. Commandant's Aviation Safety Board (CASB) grants waivers from NATOPS or NFPA requirements where such compliance is considered impractical or inappropriate for Coast Guard aircraft operations and aircraft type. Waivers shall only be granted upon application by the Air Station Commanding Officer via the chain of command. Approved waivers shall always indicate the specific purpose for which granted and the time limitations for the waiver. The NATOPS Advisory Group is to be advised of all Coast Guard waivers.

9-F-2. e. Commandant (G-E), (G-O), (G-M), and (G-N) are responsible for ensuring that all cognizant plans, programs, operations, facilities, and equipment meet appropriate fire safety standards and nationally recognized standards of good practice as referenced in this chapter.

f. Commandant (G-A) shall ensure that procurement requests for commodities, systems, and equipment have been reviewed by the originator for compliance with the standards referenced in this chapter.

g. Commandant (G-P) and (G-R) shall ensure that all applicable training plans, course outlines, training manuals, and like documents contain acceptable fire safety procedures and practices. Further, in conjunction with the Office of Engineering, ensure that physical plants and equipment used in training meet or exceed all applicable fire safety standards.

3. Field Responsibilities:

a. MLC commander (k) is responsible for providing the necessary support and technical assistance to assist in implementing an effective fire safety program at all districts, area units, and headquarters units located within their organizational area of responsibility. These responsibilities include, but are not limited to:

(1) Ensuring fire hazards are entered into the safety and health hazard abatement system and tracked until abated.

(2) Ensuring that fire departments conduct fire incident investigations and report incidents in accordance with the National Fire Incident Reporting System (NFIRS) and this chapter.

(3) Reviewing employee notices of fire hazards and investigating these notices as necessary.

(4) Providing a preliminary hazard analysis, or, safety and health analysis to accompany planning proposals for Coast Guard units within their jurisdiction.

9-F-3. a. (5) Initiating action, as appropriate, to correct deficiencies or assisting in the implementation of corrective actions or recommendations.

b. Unit commanding officers/officers-in-charge (CO's/OIC's) are responsible for ensuring that personnel under their cognizance are provided an environment free from fire hazards. Specific responsibilities include:

(1) Developing a pre-fire plan including the provisions of paragraph L.

(2) Developing and issuing fire safety instructions.

(3) Ensuring that workplace inspections outlined in chapter 1-F-3(d)(2) include fire safety.

(4) Ensuring that applicable fire related sections of the standards in paragraph D of this chapter are implemented.

(5) Conducting fire prevention awareness campaigns and providing fire prevention training.

c. At units with fire departments, the CO/OIC shall ensure:

(1) Adequate funding is provided for fire departments based on DODI 6055.6, AFMS 4426 (C1), M5312.11A or this chapter.

(2) Fire Chief has direct communication and coordination with unit executive officer.

(3) The fire department is administered and managed in accordance with commonly accepted standards of good practice, including but not limited to current editions of NFPA 1000 series, 1200 series, 1500 series, National Fire Code guidelines and International City Management Association (ICMA) "Managing Fire Services."

(4) Fire Chief or his designated representative serves as the incident commander on emergency operations and may use an incident command system (ICS).

c. (5) Fire fighters are provided Hazardous Material First Responder/Operations training in accordance with 29 CFR 1910.120.

(6) Fire Departments shall review construction projects, facility modernization or rehabilitation projects, and self-help projects to assist in ensuring that they meet the requirements of the national model building and fire code in effect for the facility location and applicable National Fire Codes. The National Fire Protection Association (NFPA) Code 101 (Life Safety Code) shall take precedence over any conflicting requirements of the national model fire code in effect for the facility location.

d. At units without fire departments, the CO/OIC shall ensure:

(1) Fire protection is available for the protection of their facilities and tenant commands. A Memorandum of Understanding (MOU) may be established with the civilian fire fighting organization serving the jurisdiction in which the unit is located to ensure that fire protection will be provided and to ensure that all parties are aware of their responsibilities. Enclosure (17) is a sample MOU.

(2) Limited assistance is provided in the event of a fire, such as directing emergency vehicles, crowd control, or assisting with personnel casualties.

(3) The local agency or voluntary organization having responsibility for fire protection in the jurisdiction where the unit's buildings and housing units are located is invited to prepare, and biennially review, a pre-fire plan for the unit's buildings and housing units. If such agency or organization declines an invitation to prepare and review pre-fire plans, such actions shall be documented in a memorandum for the record and retained at the unit.

(4) If a fire brigade of shore-based personnel is established, it meets or exceeds the minimum training requirements of NFPA 600.

Fire brigade members assigned to an advanced exterior or interior structural fire brigade shall be provided live fire training annually.

e. In addition to the provisions of paragraph b. through d. above, commanding officers of air stations shall establish a CFR plan that meets or exceeds the requirements of section Q of this chapter.

G. **Fire Bill.** A fire bill is important for the protection of Coast Guard facilities. It shall outline the steps to be taken against a possible fire, should be permanently and prominently posted, and include:

1. Procedure for reporting fires;

2. Instructions for evacuating personnel;

3. Assignment of personnel responsibilities; and

4. Instructions for removal of equipment/materials, e.g., removing aircraft from hangars or vessels from piers. (Specific guidance for classified material is addressed in the Security Manual, COMDTINST M5500.11 (series)).

9-H **Notification of Fire.**

1. Individuals discovering a fire shall initiate the alarm, warn the building occupants, evacuate the facility, notify the fire department or appropriate agency, and guide suppression equipment to the scene of the fire.

2. All fires shall be reported, regardless of the size or nature, including those that have been extinguished.

3. Once the facility has been evacuated, no person shall reenter the facility until approval has been given by the fire official in charge.

I. **Inspections.**

1. Annual fire safety inspections shall be performed as part of the Safety and Environmental Health Inspection.

2. The following inspections are recommended to be conducted and documented by the unit safety supervisor, facility supervisor, shop supervisor or other designated unit personnel:

   a. Weekly Visual Inspections. Hazardous occupancies or areas where the fire loading and ongoing activity presents a high risk to life, safety and severe fire potential. This includes industrial areas, refueling areas, aircraft maintenance facilities, ship overhaul facilities, and major construction and renovation projects.

   b. Monthly. Barracks; dormitories; maintenance, transportation and recreation facilities; ordnance storage; flammable gas and liquids storage; health care facilities; dependent schools; day-care facilities; automated data processing and communication equipment facilities; and commissaries.

   c. Quarterly. Common areas of multifamily housing, administration, adult schools, and all other structures, including mobile facilities, not inspected weekly or monthly, except family housing.

   d. Annually. Low hazard buildings and family housing (including privately owned mobile homes on Coast Guard property).

9-J. **Fire Detection and Alarm Systems.**

1. Fire Alarm Systems. (automatic, manual, sprinkler) Fire alarm systems installed on Coast Guard facilities as a result of new construction or major building renovations shall be in compliance with NFPA 71 and 72 and transmit to a central alarm location at a Coast Guard fire station or a local fire department. Units without Coast Guard or local fire department shall transmit to a 24 hour manned watch station.

2. Smoke Detectors. Battery powered or electrically powered smoke detectors shall be installed in all base housing occupancies. "Hard wired" or electrically powered smoke detection systems are mandantory for new base housing, and new buildings with sleeping areas for personnel. This requirement includes new Coast Guard owned property and property to be leased by the Coast Guard.

K. **Reporting.**

1. A mishap report shall be submitted in accordance with enclosure (6) of this manual on of all fires that result in personal injury or damage to Coast Guard property. Chapter 6 of the Coast Guard Administrative Investigations Manual (COMDTINST M5830.1) requires an administrative investigation of all fires that result in personal injury or damage to Coast Guard property. These two investigations shall be conducted separately and independently.

2. At units with fire departments, the fire chief shall report fire incidents as outlined in the National Fire Incident Reporting System (NFIRS) in addition to the mishap requirements in K.1 above.

3. Fire Chiefs shall issue a quarterly report of the activities of the department such as inspections, abatement, responses, training, injuries etc; to the unit commanding officer and command safety officer.

L. **Alternative Fire Protection Options.** The majority of Coast Guard facilities receive fire protection from other agencies. These agencies may include other federal/military, city, county, municipality or state fire departments. The following options are available:

1. Local or State Government Contract. Contracting with the local fire protection agency is authorized to increase or enhance fire protection. Contracting with local government entities (city, county,

9-L. 1. (cont'd) municipalities, fire district or state) may be considered, but protection provided shall meet or exceed all requirements of this chapter.

2. Fire Brigades. Fire brigades may be organized at remotely located Coast Guard installations where external assistance is not readily available and the commanding officer has made a determination that a fire brigade is necessary to carry out the mission of the unit. Fire brigades shall meet or exceed the requirements of 29 CFR 1910.156 and be physically capable of performing the required tasks. Fire fighting equipment shall be provided in accordance with this chapter.

3. Mutual Aid Agreements. A written understanding covering the obligations and the extent of authorized action of each of the parties may be negotiated with local fire fighting authorities. Each agreement shall include a waiver by each party of all claims against the other party for compensation for any loss, damage, personnel injury, or death occurring as a result of the performance of such agreement. The agreement shall describe what Coast Guard equipment is maintained primarily for the purpose of supporting Coast Guard operation; what equipment and personnel are available; and that the Coast Guard shall, when properly notified of an actual or potential emergency, respond and render assistance. The Coast Guard shall receive like services from the other participants in the agreement.

4. On-Call Fire Fighters. The creation of an organized group of trained individuals to respond to fires is encouraged. The group shall be under the administration and management of the Unit Fire Chief and shall be trained to the NFPA minimum standards listed in NFPA 1001 (Fire Fighter I). Members of on-call fire fighting units shall be physically capable of performing the duties, trained to Fire Fighter I standards and reside within a reasonable response distance from the fire station.

M. **Emergency Medical Service Response.** Fire departments may be prepared to respond to mishaps and medical emergencies. Training to meet or exceed the requirements of COMDTINST M6440.1 shall be required of personnel who respond to EMS calls. Procedures shall be developed and implemented with medical officers and dispensaries to allow for the initial response of fire personnel to EMS calls and/or the

9-M. (cont'd) operation of rescue ambulances where appropriate to preclude loss of life, further injury, or property damage. The minimum manning on any EMS ambulance operated by a Coast Guard Fire Department is two fully trained EMT personnel.

N. **Fire Department Personnel Training and Physical Fitness.**

1. General Training. Structural fire safety training programs shall conform to the NFPA 1000 series. Air station/facility fire training programs shall conform to NFPA 1000, 1003, and 1021.

2. Fire Exposure and Training. Fire exposure and training shall be given at least annually. The use of locally available training is strongly encouraged to provide realistic proficiency training at reasonable cost. Consideration shall be given to cooperative arrangements with state, county and local fire departments for realistic fire exposure and training.

3. Emergency Medical Technician (EMT) Training. EMT training programs for fire safety personnel shall meet or exceed the standards of COMDTINST 6440. Training of fire safety personnel to EMT standards shall be encouraged. The use of local schools, colleges and training centers is likewise appropriate and encouraged.

4. On-The-Job-Training. Training shall be provided and documented for all personnel assigned fire fighting duties through an on-the-job-training program. The training provided shall be both realistic and meet the standards outlined in the NFPA 1000 series. OJT shall not be substituted for formal basic training required for full time personnel to meet the minimum NFPA 1001 Fire Fighter I training requirements.

5. Physical Fitness. Military firefighters shall participate in a physical fitness exercise program designed to maximize job performance. Likewise civilian firefighters shall participate in physical fitness at those locations where a union contrac has been negotiated that addresses the issue. Coast Guard firefighters shall meet the entrance and retention requirements of NFPA 1001 and NFPA 1500.

6. Bloodborne Pathogens. Training shall be provided in recognizing, evaluating and controlling the hazards associated with fire fighters who are potentially exposed to contaminated blood and infected victims during emergency rescue operations. Training is widely available through local commercial vendors.

9-O. **Personal Protective Equipment.** Fire departments and fire brigade personnel shall dress appropriately to be protected from radiant heat, flames, toxic products of combustion and oxygen deficiency. Personal protective equipment shall be procured, maintained and worn in accordance with current OSHA standards or NFPA codes and consist of at least the following components:

1. Turnout Clothes. NPFA 1971, Standard on Protective Clothing for Structural Fire Fighting, covers the minimum requirements for protective clothing. Protective garments consist of a coat and trousers, or a coverall designed to provide protection to the fire fighters body. Proximity clothing shall be required for all shoreside aircraft fire rescue. Protective garments meeting all applicable requirements of this standard shall be labeled as meeting the requirements of NFPA 1971 or NATOPS.

2. Helmets. NFPA 1972, Standard on Helmets for Structural Fire Fighting, provides the minimum requirements for helmets. Helmets shall essentially consist of a shell, an energy absorbing system, a retention system, reflective markings, ear covers, and faceshields. Labels shall be affixed to helmets that satisfy all the requirements specified in this standard.

3. Gloves. NFPA 1973, Standard on Gloves for Structural Fire Fighters, specifies minimum performance criteria and test methods for gloves. Gloves shall be made of durable outer material designed to withstand the effects of heat, vapor, liquids, sharp objects, and other hazards that are encountered during structural fire fighting. A label is permanently attached to each glove certifying it meets the requirements of NFPA 1973.

4. Footwear. NFPA 1974, Standard for Protective Footwear for Structural Fire Fighting, establishes minimum design and performance criteria for protective footwear. Protective footwear shall consist of a sole with heel, upper lining, and insole, with a puncture-resistant device and an impact and compression-resistant toe cap permanently attached. Protective footwear should be labeled certifying compliance with NFPA 1974.

9-O-5. Hoods. Members who engage in structural and crash fire rescue firefighting shall be provided with approved protective hoods that provide protection to the face, ears and neck and are compatible with SCBA facepieces, protective coats, and helmets.

6. Safety Goggles. Safety goggles with sideshields may be necessary when full face respirators are not in use and eye contact with debris is of concern.

7. Respiratory Protection. Approved self-contained positive pressure breathing apparatus (SCBA) shall be provided to and worn by structural and all aircraft fire fighters. The SCBA's shall have a minimum service life of 30 minutes and be equipped with an indicator which automatically sounds an audible alarm when the remaining service life of the SCBA is reduced to within a range of 20 to 25 percent of its rated service time. Coast Guard fire fighting personnel shall meet grooming standards to ensure that hair and beard styles do not interfere with the proper fit of SCBAs. Oxygen breathing apparatus (OBAs) are not approved for shoreside fire fighting.

P. Standardization of Fire Apparatus.

1. Structural Apparatus. Fire Apparatus (engines & trucks) shall meet or exceed the standards as set forth in NFPA 1901-1903 and engine shall have at least 1000 GPM pumping capacity.

2. Crash Fire Rescue(CFR). Apparatus shall meet or exceed the standards as set forth in NFPA 414.

3. Marking and Identification. All Coast Guard fire safety vehicles shall be clearly marked on both front doors. The marking shall be of appropriate size for the vehicle. Radio or vehicle identifying numbers used in coordination with automatic and mutual aid fire departments may be attached as needed for coordination and identification.

4. Vehicle Safety Equipment. The types of lights and sirens and their placement on the equipment shall be in compliance with DOT standards, NFPA 1901-1903, as well as local and state laws. DOT regulations shall take precedence over state and local regulations.

5. Communications Equipment. All vehicles assigned to Coast Guard fire departments shall be equipped with two way radio communications, both vehicle mounted and portable.

Q. Aircraft Crash Fire and Rescue

This section prescribes the minimum aircraft firefighting and rescue requirements for Coast Guard air stations. The primary duty of Crash Fire Rescue (CFR) personnel is saving lives. The secondary responsibility is to extinguish the fire and limit damage to the aircraft and property. This section applies to Coast Guard air stations and heliport operations.

1. Coast Guard air stations shall have CFR services available to meet operational needs. CFR services shall meet the applicable requirements of either the Department of Transportation Fire Protection Manual chapter 14.6, or the NATOPS U. S. NAVY AIRCRAFT FIRE FIGHTING AND RESCUE MANUAL (NAVAIR 00-80R-14) as specified by Commandant (G-KSE).

2. NAVAIR 00-80R-14 is not applicable in its entirety. This section addresses the deviations to NATOPS REQUIREMENTS.

3. NATOPS requirements can only be implemented at air stations where CFR resources are under the operational and administrative control of the Coast Guard or the air station is a tenant unit of another military service. At locations where Coast Guard resources are not provided, the commanding officers shall establish a memorandum of understanding with the local fire authority having jurisdiction to provide fire protection services, to meet or exceed the NATOPS requirements.

4. Where the Coast Guard is a tenant of an airport which does not meet NATOPS criteria, an agreement shall be negotiated whereby adequate CFR services shall be provided to meet the criteria of NFPA standards 402M, 403, and 414.

5. The apparatus and equipment specified to comply with these requirements are not designated for application to structural fire fighting and should not be used for that purpose. Equipment for CFR operations shall be in addition to that required for structural fire protection.

6. Combined Fire Departments.

   a. The two principal fire protection functions at Coast Guard air stations are aircraft fire rescue and structural firefighting. These services shall be organized and consolidated in accordance with the administrative direction of the commanding officer.

9-Q-6. b. The station fire chief shall be responsible for the operational readiness, performance, technical training and management of the fire protection organization. The fire chief or his designated representative shall have direct supervision and control of all fire fighting rescue operations at the immediate scene of an aircraft emergency. The air operations officer or his designated assistant exercises overall control of the air field other than the immediate scene of an accident.

c. The combined fire functions require that civilian and military personnel assigned to the fire protection organization be appropriately trained in both structural and aircraft fire and rescue procedures. Position descriptions shall embrace all duties and responsibilities associated with aircraft and structural fire fighting.

d. Where the combined fire protection organization is located in common quarters, one aircraft fire fighting rescue vehicle should be crossmanned by personnel normally assigned to structural fire fighting duties. One structural fire pumper shall be maintained in a fully manned condition at all times to permit ready response to structural fire emergencies.

7. Minimum Response Requirements for Fixed Wing and Multi-Use Air Stations.

a. Table 5-1 of NAVAIR 00-80R-14 (Table 9.1) contains the minimum response requirements necessary to adequately perform the aircraft crash fire and rescue functions. Commandant (G-KSE-1) shall establish the airfield category for Coast Guard air stations predicated on the aircraft gross weight of the heaviest aircraft assigned at the activity. The airfield category shall be reviewed every three years by Commandant (G-KSE-1) to ensure adequate CFR protection. Requests for aircraft category changes shall be initiated and fully justified at the air station level and submitted to Commandant (G-KSE-1) for review and approval.

Gross Weight Category	Aircraft Maximum Gross Takeoff Weight in Pounds	Truck Capacity/Flow Water	GPM*
1	Up to 10,000	**	N/A
2	10,000 to 200,000	2,000	1,000
3	200,000 to 500,000	4,000	1,500
4	500,000 and above	7,000	2,500

Note

A minimum requirement for gross weight categories 2 and 3 above shall consist of a minimum of two major CFR vehicles and category 4 shall consist of a minimum of three major CFR vehicles.

* GPM delivery rate based on fire fighting and rescue truck onboard water/AFFF supply delivered by the roof turrets.

** Or as directed

Figure 9-1. Minimum Response Requirements

9-Q-7. b. **Activities without aircraft assigned.** An airfield category shall be determined by the type/gross weight of the aircraft normally supported. The airfield category shall be reviewed every three years by Commandant (G-KSE) to ensure adequate CFR protection. Requests for category changes shall be initiated and fully justified at the Air Station level and submitted to Commandant (G-KSE) for review and approval.

c. **The minimum response times** are:

(1) One minute for any incident on the runways or overruns after prepositioning for an announced emergency, or

(2) Three minutes to any incident on the runway or overruns for an unannounced emergency.

9-Q-8. **Minimum Requirements for Heliports.** Heliports shall meet the following requirements for CFR.

a. Helipads at fixed off shore marine stations are otherwise protected and are not included in these standards. These standards do not apply to remote station runways.

b. Heliports located at multi-use air stations shall use the criteria in 9.Q.7.

c. Heliports with more than ten operations per day shall be supplied with a "Twinned Agent" vehicle.

d. All other heliports shall he protected with potassium bicarbonate (PKP), multipurpose (ABC) dry powder, and where a water supply is adequate and funds are sufficient, with hose streams in accordance with the following:

AIRCRAFT	CLASS A HELIPORT	CLASS B HELIPORT
HH-65A	1 ea. 20 lb. ABC or PKP 1 ea. 150 lb. PKP 1 ea. 100 GPM hose stream *	4 ea. 30 lb. PKP
HH-3F HH-60J	1 ea. 20 lb. ABC or PKP 2 ea. 150 lb. PKP 2 ea. 100 GPM hose streams *	2 ea. 30 lb. PKP 1 ea. 150 lb. PKP

NOTE: Halon-1211 extinguishers of equal size may be substituted for ABC or PKP extinguishers until they are phased out of use.

* Hose streams shall be capable of reaching all areas of the helipad. The hose streams should be equipped with foam producing capabilities.

Table 9-2

e. Fire fighting tools including extinguishers, pumps, hoses, hose nozzles, and foam making equipment, should be kept in clearly marked weatherproof cabinets. These cabinets should be located within 50 feet of the helipad area, but not protruding into the normal approach or departure paths.

9-Q-9. Aircraft Fire Fighting and Rescue Vehicles.

a. Major aircraft crash fire fighting and rescue (CFR) vehicles are listed in Paragraph 5.2 of NAVAIR 00-80R-14. The type and quantity of CFR vehicle assigned will vary with the operational status of the air activity. Additional apparatus, over and above the minimum response, should be provided to allow for repair and maintenance or for exceptionally hazardous or intense flight operation.

b. Supporting Aircraft Fire Fighting and Rescue vehicles.

(1) Auxiliary CFR vehicles are small light weight, multidrive type vehicles, equipped with twinned agent capabilities, forcible entry tools and field lighting equipment. The P-10 and P-13 CFR trucks are in this category.

(2) Tank vehicles (Tenders) are mobile water supply trucks with capacities of 1000 to 5000 gallons. They are used to resupply primary fire fighting and rescue vehicles with liquid agents over extended periods of operation. Tank vehicles should meet the requirements of NFPA standard 1903.

(3) Structural fire pumpers and brush trucks may be used to backup CFR vehiches. They should be equipped with foam capabilities.

(4) Command and control vehicles are small, light weight, multidrive vehicles equipped with communications equipment and command associated equipment. They are used by the on scene incident commander to control the incident.

(5) An ambulance is a vehicle designed and built for emergency patient care and transport. Federal specifications KKK-A-1822C give the requirements for emergency care vehicles.

9-Q-10. Personnel Requirements.

a. Minimum on duty requirements to operate the major CFR vehicles necessary to meet the minimum response requirements is four (4) personnel; Driver/Operator, Lead Fire Fighter (Crew Chief), Fire fighter, and Rescueman.

b. Crew requirements to operate supporting CFR vehicles are:

(1)	Rescue Truck	2 Persons
(2)	Twinned Agent Vehicle	2 Persons
(3)	Tanker (Tender)	2 Persons
(4)	Structural Fire Pumpers	4 Persons
(5)	Brush Fire Trucks	3 Persons
(6)	Ambulance	2 Persons

c. Air Station commanding officers may increase the minimum manning as appropriate for each CFR vehicle if the primary mission of the Air Station involves extra hazardous flight operations.

d. Staffing at Coast Guard Fire Protection Activities is determined in COMDTINST M5313.11, Chapter 28.

e. If additional duties are required, additional personnel shall be assigned.

f. Extra hazardous flight operations are those by reason of training, intensity, or number of aircraft involved increase the potential for an aircraft mishap. Determination of whether an activity is conducting extra hazardous flight operations is the responsibility of the commanding officer or officer in charge.

g. Alert Requirements.

(1) Immediate Response Alert. The commanding officer shall determine the need for an immediate response alert. When posted, the immediate response alert shall consist of a major CFR vehicle manned and strategically located to provide immediate and initial rescue and firefighting to takeoff and landing emergencies. No crew member shall be required to stand more than eight (8) hours of immediate response alert duty in a 24 hour period.

9-Q-10. g. (2) Standby alert. A standby alert shall be maintained at all times during flight operations. Such an alert shall consist of the required minimum response CFR vehicles and crews. The alert shall be maintained to permit response as required in 9.Q.7.c. Upon notification of an anticipated or impending emergency, the standby alert shall assume the readiness condition from the immediate response alert at a pre-designated location on the field.

(3) Backup Standby Alert. During flight operations, a backup standby alert consisting of medical/ambulance personnel, security, structural fire companies and hazardous materials teams shall be maintained in a condition of readiness that will permit prompt **RESPONSE FROM NORMAL WORK AREAS to a standby alert position. Upon notification** of an emergency, these forces shall **assume the condition of readiness of the standby alert** and await instruction from the senior fire officer at the scene of the emergency.

11. **Training Requirements.** Standard and continuous training shall be provided and documented for all personnel through an on the job training program. Section 5.8 of NAVAIR 00-80R-14 provides a listing of training requirements, subjects, fire prevention and extinguisher training, training aids, as well as a list of aircraft familiarization films. CFR personnel shall be qualified and certified in accordance with NFPA standard 1003 Airport Firefighter. International Fire Service Training Association (IFSTA) training manuals, Air Force TO 00-105E-9 and NAVAIR 00-80R-14-1 are excellent reference material for training purposes.

12. **Emergency Communications Requirements.** Emergency communications systems as outlined in section 5.9 of NAVAIR 00-80R-14 shall be established as a minimum requirement.

13. **Administrative Reporting and Records Requirements.**

a. Safety and Health mishap reporting requirements are contained in this manual. Administrative investigation requirements are contained in the Coast Guard Administrative Investigations Manual (M5830.1).

13. b. Aircraft mishaps involving any Department of Defense aircraft require submitting DOD Form 2324 within 14 days following the incident to the Commander, Naval Safety Center (ATTN: Code 44), Naval Station, Nofolk, VA 23611-5796. A copy of the DOD Form 2324 should also be sent to the aircraft custodian. This report is independent of Coast Guard mishap reporting requirements.

c. Non-fire reporting requirements are contained in Chapter 3 of this instruction.

d. CFR Daily Journal. A daily journal shall be maintained by each CFR organization. This journal should be a chronological listing of all pertinent events and retained on file for a minimum of 3 years after the journal is completed.

e. Response Report. A locally produced report of the details of each response run made by the CFR unit shall be made. These response reports shall be retained on file for 3 years.

f. Crash Fire and Rescue Bill. Each air activity shall maintain a crash, fire and rescue bill which includes the operational and functional details for both on station and off station crash, fire, and rescue incidents. IFSTA manual 206 and NFPA standard 424 may be used for guidance when developing station crash, fire and rescue bill. An activities pre-mishap plan which provides all the necessary elements of the crash, fire and rescue bill shall satisfy this requirement.

g. Crash Locator Maps. In order to provide uniform response by all agencies to crash areas, a standard uniform map system shall be developed and maintained at each air activity. The map system should cover an area 20 miles in all directions from the center of the airfield. The map system shall be available to all vehicles that respond to aircraft mishaps, and all stations on the primary and secondary communication system.

CHAPTER 10. TRAFFIC SAFETY

A. **PURPOSE.** The purpose of this Chapter is to provide policy and guidance for implementing a Coast Guard-wide traffic safety program.

B. **SCOPE.** This Chapter applies to motor vehicle operators, passengers, bicyclists and pedestrians as follows:

1. All Coast Guard military personnel at all times (on and off Coast Guard installations).

2. All Coast Guard civilian personnel in a duty status (on and off Coast Guard installations).

3. All persons in any vehicle owned, controlled or authorized for official use by the U. S. Coast Guard.

4. All persons at any time on a Coast Guard installation.

C. **DEFINITIONS.**

1. All terrain vehicle (ATV). Motorized vehicle with three or more wheels, low pressure tires, a wheel base of 50 inches or less, an overall weight of 600 pounds or less, and a seat to be straddled by the operator. This definition does not apply to special purpose vehicles such as golf carts. ATVs are designed for off-road use and are not constructed to carry passengers.

2. Motor vehicles. Wheeled vehicles designed for travel on public roads under motor power or assisted by motor power.

3. Motorcycle. A two-wheeled vehicle, similar but heavier than a bicycle, driven by a gasoline engine. For purposes of this Chapter, motor scooters and motorized bicycles with or without pedals (on and off road) are included in this definition.

D. **AUTHORITY.** The principal laws requiring national traffic safety programs are:

a. Public Law 89-563, National Traffic and Motor Vehicle Safety Act of 1966, as amended (15 U.S.C. 1381 et seq.).

b. Public Law 89-564, Highway Safety Act of 1966, as amended (23 U.S.C. 401 et seq.).

10-E. **REGULATIONS AND OTHER DIRECTIVES.** Regulations and other directives affecting this Chapter include:

a. 49 CFR 571, Federal Motor Vehicle Standards.

b. DOT Order 3902.9(Series), Safety Belt Use.

c. COMDTINST M11240.9(Series), Motor Vehicle Manual.

d. COMDTINST 5100.46, Driving Under The Influence of Intoxicants.

e. COMDTINST M5530.1(Series), Physical Security Manual.

F. **BACKGROUND.** Congress enacted two public laws, "The National Highway and Motor Vehicle Safety Act" and "The Highway Safety Act" in 1966. The purpose of these Acts was to reduce traffic accidents and deaths, injuries and property damage by establishing motor vehicle safety standards and implementing approved highway safety programs. Since the inception of these Acts, numerous state laws have been enacted that include (but are not limited to) safety belts, motorcycle helmets, and child safety restraints.

G. **MOTOR VEHICLE REQUIREMENTS.**

1. <u>Occupant Restraints</u>.

a. U. S. manufactured vehicles of model years 1965 and newer must have installed occupant restraints. Vehicles manufactured prior to 1965 must have occupant restraints installed if required by host state laws.

b. Occupant restraint assemblies must be maintained in serviceable condition and be readily available for operator and passenger use. All commercial vehicles either purchased, leased, or rented by the Coast Guard, must be equipped with serviceable occupant restraint devices and rollover protective devices as required by 49 CFR 571.208-210.

c. All personnel operating or riding in a government or private motor vehicle on any Coast Guard installation shall properly use installed occupant restraints at all times. Individuals shall not ride in seating positions where safety belts have not been installed, have been removed or rendered inoperative. Additionally, passengers shall not ride in the cargo areas of motor vehicles, except when the vehicle has been modified for such purposes. Prior to use as a passenger vehicle, modifications shall include installation of safety belts which meet 49 CFR 571.208-210.

10-G-1. d. All Coast Guard personnel (military and civilian) operating or riding in government or private motor vehicles shall have their safety belt properly fastened about their body while on official Government business.

e. All Coast Guard military personnel are required to wear safety belts properly fastened about their body at all times while travelling in any motor vehicle that is required to be so equipped.

f. The operator of the motor vehicle is responsible for informing all passengers of applicable safety belt, child car safety seat, and protective equipment requirements and for ensuring compliance by all passengers with those requirements.

2. **Alcoholic Beverages**. While driving on any Coast Guard installation, the operator and/or passenger(s) of motor vehicles are prohibited from having open containers of alcoholic beverages in their possession. Policy governing intoxicated driving is established in COMDTINST 5100.46.

3. **Traffic Requirements**. Road networks on Coast Guard facilities shall be maintained in a safe condition. Capital improvements to modernize existing roads or to provide new traffic facilities shall meet the safety standards issued or endorsed by the Federal Highway Administration. Traffic codes shall comply with the traffic codes of the state in which the facility is located.

4. **Motorcycle Operators**.

a. Operators of privately owned motorcycles must possess a current license and motorcycle endorsement (where required) from civil authorities to operate on public highways.

b. All Coast Guard military personnel who operate a motorcycle shall successfully complete the appropriate Motorcycle Safety Foundation course (see paragraph J.2.). Individuals operating a motorcycle on any Coast Guard facility must also successfully complete an appropriate Motorcycle Safety Foundation (MSF) course. Individuals who are required to register their motorcycles at a Coast Guard unit must provide proof of successfully completing the appropriate course prior to registration. Registration requirements are outlined in COMDTINST M5530.1A.

10-G-4. c. Motorcycles shall have headlights on when they are operated and shall be equipped with rear view mirrors.

d. Passengers are prohibited on MOPEDS.

e. All motorcycle operators and passengers shall wear the following protective equipment:

(1) A DOT approved motorcycle helmet properly fastened under the chin.

(2) Properly worn eye protective devices which are defined as impact or shatter resistant glasses, goggles or full-face shield attached to helmet. A windshield or fairing is not considered to be proper eye protection.

(3) Over the ankle, sturdy leather footwear,

(4) Full-fingered leather gloves

(5) Long-legged trousers and

(6) Long-sleeved shirt or jacket.

e. Motorcycle operators and passengers are strongly encouraged to wear high visibility garments (reflective vests or retro-reflective strips on clothing).

5. **<u>ATV operators</u>**.

a. All Coast Guard personnel who operate an ATV on official business or on any Coast Guard installation (regardless of purpose or duty status) shall successfully complete an approved ATV safety course (see paragraph J.4.).

b. ATV operators are required to wear the same protective equipment as motorcycle operators. (see paragraph G.4.e.)

c. Passengers are prohibited on ATVs.

H. **PEDESTRIAN SAFETY.**

1. Commands will stress pedestrian safety as part of the overall traffic safety program, to include separating pedestrian and motor vehicle traffic. Provisions shall be made for adequate sidewalks, jogging routes, pedestrian crossings and bicycle paths to ensure maximum safe traffic flow without jeopardizing pedestrian safety.

10-H-2. Personnel shall not jog on main roads and streets of Coast Guard facilities during peak traffic periods and high density traffic. Jogging on roads and streets of Coast Guard installations should be avoided; personnel should be encouraged to use jogging facilities where available. When jogging on roads and streets, personnel should wear light colored clothing. During periods of reduced visibility (i.e., nighttime, fog, rain, etc.) personnel should wear retro-reflective clothing.

3. Strong emphasis shall be placed on the protection of children walking to and from school, entering and leaving school buses, and playing in Coast Guard housing areas.

4. The wearing of portable headphones, earphones or other listening devices while operating a motor vehicle, jogging, walking, skating or bicycling on roads or streets on any Coast Guard facility is prohibited. Use of these devices masks or prevents recognition of emergency signals, alarms, announcements, the approach of vehicles, human speech, and the ability to determine the direction from which the sound is coming.

I. **BICYCLE SAFETY.**

1. All persons who operate a bicycle on a Coast Guard facility shall wear an approved bicycle helmet properly fastened under the chin. There are two nationally recognized safety standards for bicycle helmets sold in the United States- the Snell Memorial Foundation and the American National Standards Institute.

2. Coast Guard military personnel who operate a bicycle off base shall comply with the host state and local traffic laws and are strongly encouraged to wear bicycle helmets.

3. Bicycle riders should wear light colored clothing. During periods of reduced visibility (i.e., nighttime, fog, rain, etc.) personnel should wear retro-reflective clothing. Vests, jackets, tape, wrist bands and other items are available that make a rider visible to motorists.

4. The following applies to carrying a child as a passenger on an adult's bike on Coast Guard facilities and is strongly recommended off base:

10-I-4. a. Only competent adult cyclists shall carry young passengers.

b. Bicycle riding is restricted to parks, bicycle paths or quiet streets.

c. Infants too young to sit in a rear bike seat shall not be carried on a bicycle. Back or front packs are prohibited.

d. Only children who are old enough to sit well unsupported and whose necks are strong enough to support a light-weight helmet may be carried in a rear-mounted seat.

e. A rear-mounted seat shall be securely attached over the rear wheel; have spoke guards to prevent feet and hands from being caught in the wheels; and have a high back and a sturdy shoulder harness and lap belt that will support a sleeping child.

J. **TRAINING.**

1. <u>Driver Improvement Course</u>. A driver improvement course shall be used to reinforce positive attitudes and motivate individuals who have been convicted of serious moving traffic violations or determined to have been at fault in a serious traffic mishap while operating a government motor vehicle. Offenders, military and civilian, shall be required to attend such a course as a condition of continued authorized use of a motor vehicle on a Coast Guard facility or while on authorized travel. The course duration will not exceed 8 hours. The American Automobile Association Driver Improvement Program (DIP) or the National Safety Council Defensive Driving Course (DDC) may be used. It is strongly encouraged that commands require high risk drivers (ages 17-26) at their units to attend a driver improvement course. The Maintenance and Logistic Commands (MLCs) provide this training upon request.

2. <u>MSF Rider Courses</u>. Coast Guard personnel shall satisfactorily complete one of the two MSF motorcycle safety courses listed below in order to operate a motorcycle. Refresher training (Experienced Rider Course) is required to be successfully completed every three years. Proof of course completion is possession of an MSF course completion card. Commands that do not have a certified MSF instructor can contact the appropriate MLC Safety Branch for assistance in identifying training sources.

10-J-2. a. Motorcycle Rider Course: Riding and Street Skills (MRC:RSS) is designed for the novice rider (less than 6 months riding experience). This course has 7 hours of classroom instruction and 8 hours of hands-on training and evaluation that includes instruction in defensive riding techniques, use of personal protective equipment, and related subjects essential for safely operating a motorcycle. Only MSF-certified instructors are permitted to teach this course.

b. Experienced Rider Course (ERC) is designed for riders with more than 6 months of riding experience. Course provides 4 hours of classroom instruction and 4 hours of hands-on training and evaluation. Only MSF-certified instructors are permitted to teach this course.

3. <u>MSF Instructor Course</u>. Commands with a large motorcycle rider population who need an instructor should select an individual who is interested in becoming an MSF instructor. The individual selected shall submit a letter request to Commandant (G-KSE-2) via the chain of command addressing the qualifications listed below. A copy of the individual's motor vehicle driving record from his/her license state shall be forwarded with the letter request. The MSF Certified Instructor Course is a 16 day course designed for individuals who meet the following basic requirements:

a. Own and operate a motorcycle in good operating condition.

b. Possess a valid motorcycle license or endorsement.

c. Have a clean driving record.

d. Experienced motorcyclist (minimum 2 years riding experience).

e. Have the endorsement of his/her command so that upon satisfactorily completion of the course the individual will be available to instruct the motorcycle course once a month at that command.

f. During this training, the instructor candidate must successfully complete each of the following phases to continue training:

(a) Pass a qualifying skill test.

10-J-3. f. (b) Pass a written knowledge test.

(c) Pass the student teaching phase of the course.

Instructors shall attend and satisfactorily complete a three-day update every three years or when major changes occur in the Rider Course.

4. **ATV Course**. All personnel who operate any ATV on official business or on any Coast Guard installation (regardless of purpose or duty status) shall successfully complete the Specialty Vehicle Institute of America (SVIA), ATV Safety Institute (ASI) Rider Course. This course is 5½ to 7 hours in length and includes safe riding techniques and strategies, local laws, required personal protective equipment, and vehicle orientation. Proof of successful completion is a SVIA course completion card. It is the responsibility of the ATV user command to ensure this training is completed. Contact the SVIA at (800) 447-4700 for information on training courses nationwide.

K. **AWARENESS AND PROMOTIONAL CAMPAIGNS.** Commands shall conduct awareness and promotional campaigns as part of an overall traffic safety program. The Department of Transportation and the National Highway Traffic Safety Administration sponsor several national campaigns throughout the year in conjunction with state traffic safety programs aimed at reducing fatalities and injuries on our nation's highways. Each state has a Highway Safety Representative appointed by the Governor who manages the State/Federal Highway Safety Grant Safety Program and who can provide promotional materials and information about particular state projects and programs designed to accomplish this goal. Enclosure (1) provides the addresses and phone numbers of the Governor's Representatives. The MLCs have films available for command use on the various campaign topics. The following is a list of the national awareness and promotional campaigns:

1. **Child Passenger Safety Awareness Week**. This campaign is observed during the week that includes Valentine's Day and is designed to encourage parents and others to correctly secure children in child safety seats and safety belts every time the child rides in a motor vehicle.

10-K-2. **Summertime Seatbelt Campaign**. The "Buckle Up America! Week" in May (starts one week prior to Memorial Day) is the beginning of the Summertime Seatbelt campaign. This campaign focuses on the importance of seatbelt usage and continues through Labor Day.

3. **National Drunk and Drugged Driving Awareness Campaign**. The second week in December is designated the National Drunk and Drugged Driving Awareness Week. However, the Coast Guard begins this campaign prior to Thanksgiving and continues through New Years Day to cover the entire holiday season when people are at a higher risk of drinking and driving.

4. **Motorcycle Safety Campaigns**. These campaigns are conducted on a state-by-state basis. May and June are traditionally the months when states promote motorcycle safety focusing on motorist awareness. Special activities and promotions are scheduled for either one designated week or an entire month depending upon the state program. Information and materials for these campaigns can be obtained from the State Motorcycle Safety Coordinator. Enclosure (2) provides a list of addresses and phone numbers of these coordinators. Contact the appropriate MLC Safety Branch for assistance where there is no state Motorcycle Safety Coordinator.

L. **RESPONSIBILITIES.**

1. MLC Commander (k) shall:

   a. Provide driver improvement training to units.

   b. Provide assistance to units, upon request, pertaining to such things as motorcycle training sources, traffic awareness sources and promotions and campaigns, including promotional materials.

   c. Review unit plans and activities during audits to ensure a comprehensive traffic safety plan is implemented.

2. Unit commanding officers/officers-in-charge shall:

   a. Ensure a comprehensive traffic safety plan is implemented and enforced that includes the following:

      (1) Written policy and guidance in compliance with this Chapter.

10-L-2. a. (2) Orientation of newly assigned personnel on unit traffic safety requirements.

(3) Training requirements.

(4) Awareness and promotional campaigns.

3. Individuals shall acquaint themselves with state, local and Coast Guard traffic safety requirements and comply with same. All Coast Guard personnel have a personal responsibility to safeguard themselves, their families and their fellow workers from harm.

10-M. GOVERNOR'S HIGHWAY SAFETY REPRESENTATIVES

ALABAMA

Governor's Highway Safety Rep.
Department of Economic &
Community Affairs
P. O. Box 2939
3465 Norman Bridge Road
Montgomery, AL 36105-0939
(205) 261-3572

ALASKA

Governor's Highway Safety Rep.
Department of Public Safety
State of Alaska
P. O. Box N
Juneau, AK 99801
(907) 465-4322

AMERICAN SAMOA

Governor's Highway Safety Rep.
American Samoa Government
P. O. Box 1086
Pago Pago
American Samoa 96799
(684)633-1111

ARIZONA

Governor's Highway Safety Rep.
Department of Public Safety
P. O. Box 6638
Phoenix, AZ 85005
(602) 223-2464

ARKANSAS

Governor's Highway Safety Rep.
Arkansas State Highway and
Transportation Department
P. O. Box 2261
Little Rock, AR 72203
(501) 569-2211

CALIFORNIA

Governor's Highway Safety Rep.
Office of Traffic Safety
Business, Housing and
Transportation Agency
7000 Franklin Blvd., Suite 330
Sacramento, CA 95823
(916) 445-0527

COLORADO

Governor's Highway Safety Rep.
Department of Highways
4201 East Arkansas Avenue
Denver, CO 80222
(303) 757-9011

CONNECTICUT

Governor's Highway Safety Rep.
Department of Transportation
Bureau of Highways
24 Wolcott Hill Road
Wethersfield, CT 06109
(203) 566-4248

DELAWARE

Governor's Highway Safety Rep.
Office of Highway Safety
Robbins Building
802 Silver Lake Boulevard
Dover, DE 19901
(302) 736-5613

DISTRICT OF COLUMBIA

Governor's Highway Safety Rep.
Department of Public Works
Frank D. Reeves Center
2000 14th St., NW, 6th Floor
Washington, DC 20009
(202) 939-8000

FLORIDA

Governor's Highway Safety Rep.
Department of Community Affairs
2740 Center View Drive
Tallahassee, FL 32399
(904) 488-6001

GEORGIA

Governor's Highway Safety Rep.
Office of Highway Safety
100 Peachtree St., Suite 2000
Atlanta, GA 30303
(404) 656-6996

GUAM

Governor's Highway Safety Rep.
Department of Public Works
P. O. Box 2950
Agana, GU 96910
(671) 646-8643

HAWAII

Governor's Highway Safety Rep.
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813
(808) 548-4655

IDAHO

Governor's Highway Safety Rep.
Office of the Governor
State House
Boise, ID 83720
(208) 334-2100

ILLINOIS

Governor's Highway Safety Rep.
Division of Traffic Safety
3215 Executive Park Drive
Springfield, IL 62703
(217) 782-4972

INDIANA

Governor's Highway Safety Rep.
Division of Traffic Safety
801 State Office Building
Indianapolis, IN 46204
(317) 232-1299

IOWA

Governor's Highway Safety Rep.
Department of Transportation
Wallace State Office Building
Des Moines, IA 50319
(515) 281-5261

KANSAS

Governor's Highway Safety Rep.
Department of Transportation
Docking State Office Building
Topeka, KS 66612
(913) 296-3461

KENTUCKY

Governor's Highway Safety Rep.
Department of Justice
Kentucky State Police HQ
919 Versailles Road
Frankfort, KY 40601-9980
(502) 695-6300

LOUISIANA

Governor's Highway Safety Rep.
Highway Safety Commission
P. O. Box 66336
Baton Rouge, LA 70896
(504) 925-6991

MAINE

Governor's Highway Safety Rep.
Department of Public Safety
Northern Avenue
Gardner, ME 04345
(207) 582-8776

MARYLAND

Governor's Highway Safety Rep.
Department of Transportation
P. O. Box 8755
BWI Airport
Baltimore, MD 21240-0755
(301) 859-7397

MASSACHUSETTS

Governor's Highway Safety Rep.
Highway Safety Bureau
100 Cambridge St., Room 2104
Boston, MA 02202
(617) 727-5074

MICHIGAN

Governor's Highway Safety Rep.
Office of Highway Safety
Planning
300 Washington Sq., Suite 300
Lansing, MI 48913
(517) 334-5210

MINNESOTA

Governor's Highway Safety Rep.
Department of Public Safety
Transportation Bldg., Room 207
St. Paul, MN 55155
(612) 296-6642

MISSISSIPPI

Governor's Highway Safety Rep.
301 West Pearl Street
Jackson, MS 39203-3085
(601) 949-2225

MISSOURI

Governor's Highway Safety Rep.
P. O. Box 1406
Jefferson City, MO 65102-1406
(314) 751-4161

MONTANA

Governor's Highway Safety Rep.
Highway Traffic Safety Div.
Department of Justice
303 North Roberts
Helena, MT 59620
(406) 444-3412

NEBRASKA

Governor's Highway Safety Rep.
Department of Motor Vehicles
State Office Building
Statehouse Station 94789
Lincoln, NE 68509
(402) 471-2281

NEVADA

Governor's Highway Safety Rep.
Department of Motor Vehicles &
Public Safety
555 Wright Way
Carson City, NV 89711-0999
(702) 885-5375

NEW HAMPSHIRE

Governor's Highway Safety Rep.
Highway Safety Agency
Pine Inn Plaza
117 Manchester Street
Concord, NH 03301
(603) 271-2131

NEW JERSEY

Governor's Highway Safety Rep.
Div. of Highway Traffic Safety
Quakerbridge Plaza
Bldg. #5, CN-048
Trenton, NJ 08625
(609) 588-3750

NEW MEXICO

Governor's Highway Safety Rep.
Highways/Transportation Dept.
P. O. Box 1149
Santa Fe, NM 87504-1149
(505) 827-5110

NEW YORK

Governor's Highway Safety Rep.
Department of Motor Vehicles
Empire State Plaza
Swan Street Building
Albany, NY 12228
(518) 474-0841

NORTH CAROLINA

Governor's Highway Safety Rep.
215 East Lane Street
Raleigh, NC 27601
(919) 733-3083

NORTH DAKOTA

Governor's Highway Safety Rep.
Department of Transportation
600 East Boulevard Avenue
Bismarck, ND 58505-0700
(701) 224-2581

OHIO

Governor's Highway Safety Rep.
Department of Highway Safety
P. O. Box 7167
Columbus, OH 43205
(614) 466-3383

OKLAHOMA

Governor's Highway Safety Rep.
Highway Safety Office
200 NE 21st Street
Oklahoma City, OK 73105
(405) 521-2631

OREGON

Governor's Highway Safety Rep.
Traffic Safety Commission
State Library Bldg., 4th Floor
Salem, OR 97310
(503) 378-3670 or 3669

PENNSYLVANIA

Governor's Highway Safety Rep.
Dept. of Safety Administration
1200 Transportation &
Safety Building
Harrisburg, PA 17120
(717) 787-3928

PUERTO RICO

Governor's Highway Safety Rep.
Dept. of Transportation &
Public Works
Box 41269, Minillas Station
Santurce, PR 00940
(809) 725-7112

RHODE ISLAND

Governor's Highway Safety Rep.
Department of Transportation
State Office Bldg., Smith St.
Providence, RI 02903
(401) 277-2481

SOUTH CAROLINA

Governor's Highway Safety Rep.
Office of Highway Safety Prog.
Edgar A. Brown State Building
1205 Pendleton St., Room 453
Columbia, SC 29201
(803) 734-0421

SOUTH DAKOTA

Governor's Highway Safety Rep.
Dept. of Commerce & Regulation
910 East Sioux Avenue
Pierre, SD 57501
(605) 733-3178

TENNESSEE

Governor's Highway Safety Rep.
Department of Transportation
505 Deaderick St., Suite 700
Nashville, TN 37219
(615) 741-2848

TEXAS

Governor's Highway Safety Rep.
Department of Highways &
Public Transportation
11th and Brazos
Austin, TX 78701
(512) 463-8616

UTAH

Governor's Highway Safety Rep.
Office of Highway Safety
Department of Public Safety
4501 South 2700 West
Salt Lake City, UT 84119
(801) 965-4461

VERMONT

Governor's Highway Safety Rep.
133 State Street
Montpelier, VT 05602
(802) 828-2657

VIRGINIA

Governor's Highway Safety Rep.
Department of Motor Vehicles
P. O. Box 27412
Richmond, VA 23269
(804) 367-6602

VIRGIN ISLANDS

Governor's Highway Safety Rep.
Office of Highway Safety
Lagoon St. Complex, Bldg. #2
Fredricksted
St. Croix, VI 00840
(809) 772-3025 or 2946

WASHINGTON

Governor's Highway Safety Rep.
Traffic Safety Commission
1000 S. Cherry St., MS/PD-11
Olympia, WA 98504
(206) 753-4018

WEST VIRGINIA

Governor's Highway Safety Rep.
Criminal Justice & Highway
Safety Office
1204 Kanawha Blvd., East
Charleston, WV 25301
(304) 348-8814

WISCONSIN

Governor's Highway Safety Rep.
Department of Transportation
P. O. Box 7910
4802 Sheboygan Avenue
Madison, WI 53707
(608) 266-1113

WYOMING

Governor's Highway Safety Rep.
Highway Safety Branch
P. O. Box 1708
Cheyenne, WY 82002-9019
(307) 777-4195

10-N. STATE MOTORCYCLE SAFETY ADMINISTRATORS

ALABAMA

Coordinator, MC Safety Programs
Traffic Safety Center
University of Montevallo
Montevallo, AL 35115
(205) 665-6740

ARIZONA

Manager, MC Safety Program
Department of Transportation
1801 W. Jefferson, Room 531M
Phoenix, AZ 85007
(602) 255-7557

CALIFORNIA

California Highway Patrol
P. O. Box 942898
Sacramento, CA 94298-0001
(916) 657-7222

COLORADO

Highway Safety Programs
Department of Highways
4201 E. Arkansas Avenue
Denver, CO 80222
(303) 757-9466

CONNECTICUT

State Coordinator
Office of Highway Safety
24 Wolcott Hill Road
Wethersfield, CT 06109
(203) 666-4343

DELAWARE

Coordinator, Motorcycle Prog.
Motor Vehicle Division
P. O. Box 698
Dover, DE 19903
(302) 739-4422

FLORIDA

Bureau of Driver Improvement
Department of Highway Safety
Niel Kirkman Building
Tallahassee, FL 32399-0579
(904) 488-3286

GEORGIA

Coordinator, MC Safety Prog.
Department of Public Safety
P. O. Box 1456
Atlanta, GA 30371-23039
(404) 624-7720

HAWAII

Coordinator, MC Safety Prog.
University of Hawaii
600 Pensacola St., Bldg. 856
Honolulu, HI 96814
(808) 587-2621

IOWA

Department of Education
Grimes Office Building
Des Moines, IA 50319-0146
(515) 242-6025

ILLINOIS

Cycle Rider Safety Coordinator
Commerical Vehicle Safety
P. O. Box 19212
Springfield, IL 62794-9212
(217) 782-2920

INDIANA

Department of Education
Div. of School/Traffic Safety
Room 229, State House
Indianapolis, IN 46204-2798
(317) 232-0890

KANSAS

Department of Education
120 E. 10 Street
Topeka, KS 66612
(913) 296-3141

LOUISIANA

Supervisor, MC Safety Program
Department of Education
P. O. Box 94064
Baton Rouge, LA 70804-9064
(504) 342-3404

MAINE

Training & Ed. Coordinator
Motor Vehicle Division
Station 29, State House
Augusta, ME 04333
(207) 289-2785

MARYLAND

Motor Vehicle Administration
Motorcycle Safety Division
6601 Ritchie Hwy., NE
Glen Burnie, MD 21062
(301) 768-7328

MASSACHUSETTS

Governor's Hwy. Safety Bureau
Highway Safety Programs
100 Cambridge St., Room 2104
Boston, MA 02202
(617) 727-5074

MICHIGAN

MC Safety Education Consultant
Department of Education
P. O. Box 30008
Lansing, MI 48909
(517) 373-0763

MINNESOTA

Motorcycle Safety Coordinator
Institute of Public Health
2829 Verndale Avenue
Anoka, MN 55303
(612) 427-5310

MONTANA

MC Safety Education Specialist
Office of Public Instruction
State Capitol
Helena, MT 59620
(406) 444-4569

NEBRASKA

Department of Motor Vehicles
P. O. Box 94612
Lincoln, NE 68509
(402) 471-2515

NEW HAMPSHIRE

Motorcycle Safety Coordinator
Department of Public Safety
James H. Hayes Safety Building
Hazen Drive
Concord, NH 03301
(603) 271-6088

NEW MEXICO

Motorcycle Safety Program
Joseph Montoya Building
P. O. Box 1149
Santa Fe, NM 87504-1149
(505) 827-0427

NORTH CAROLINA

Motorcycle Safety Program
Minges A-19
East Carolina University
Greenville, NC 27858-4353
(919) 757-4650

NORTH DAKOTAA

Coordinator of Rider Ed.
Driver License & Traffic Safety
608 E. Boulevard Avenue
Bismarck, ND 58505-0700
(701) 224-4354

OHIO

Motorcycle Safety Coordinator
Department of Highway Safety
P. O. Box 7199
Columbus, OH 43266-0563
(614) 466-6855

OREGON

Traffic Safety Commission
4th Floor, State Library Bldg.
Salem, OR 97310
(503) 378-3669

PENNSYLVANIA

Manager, MC Safety Program
Bureau of Driver Licensing
Rm. 415, Transportation &
Safety Bldg.
Harrisburg, PA 17123
(717) 787-9723

RHODE ISLAND

Community Services
Louis Quissett Pike/CCRI
Lincoln, RI 02865
(401) 333-7070

SOUTH CAROLINA

Dir. of Interagency Affairs
Technical Education
111 Executive Center Drive
Columbia, SC 29210
(803) 737-9343

SOUTH DAKOTA

Motorcycle Safety Coordinator
South Dakota Safety Council
3021 E. 10 Street
Sioux Falls, SD 57103
(605) 338-0472

TENNESSEE

Motorcycle Safety Coordinator
Dept. of Safety, Training Div.
1140 Foster Avenue
Nashville, TN 37249-1000
(615) 741-5664

TEXAS

Department of Public Safety
Motorcycle Safety Bureau
P. O. Box 4087
Austin, TX 78773-0001
(512) 465-2021

UTAH

Commercial Driver Lic. Div.
3495 South, 300 West
Salt Lake City, UT 84115
(801) 262-2570

VERMONT

Department of Motor Vehicles
120 State Street
Montpelier, VT 05602
(802) 828-2066

VIRGINIA

Manager, Motorcycle Safety
Department of Motor Vehicles
P. O. Box 27412
Richmond, VA 23269
(804) 367-1813

WASHINGTON

Motorcycle Safety Program
Department of Licensing
211 12th AVenue, SE
Olympia, WA 98504
(206) 586-1424

WEST VIRGINIA

State Coordinator
Motorcycle Safety Program
725 Jefferson Road
South Charleston, WV 25309
(304) 746-2272

WISCONSIN

Manager, MC Safety Program
Department of Transportation
P. O. Box 7910
Madison, WI 53707-7910
(608) 266-7855

HAZARD IDENTIFICATION AND ABATEMENT

1. Purpose. The early detection of unsafe and unhealthful working conditions and prompt correction of related hazards at the lowest possible working level are essential elements of accident and illness prevention. The procedures to be used in the Coast Guard to identify and track the correction of hazards are detailed in this enclosure.

2. Hazard Identification.

   a. Employee Hazard Report Types.

      (1) Oral Reports. Coast Guard personnel are encouraged to make oral reports to supervisors as the most prompt and effective method of hazard identification. Commanding officers shall hold supervisors accountable for investigating any alleged hazard reported to them and, if valid, for having the hazard followed up until corrected. Supervisors shall commit all valid oral reports to writing by completing the USCG Employee Hazard Report form (Figure 1-1).

      (2) Written Notices. Coast Guard military personnel or employees may submit written notices of suspected unsafe or unhealthful conditions in the workplace by completing form CG-5082, Hazardous Condition Notification (Figure 1-3) and submitting via normal chain of command. Forms do not need to be signed.

      (3) Report Directly to Commandant (G-KSE). If desired, Coast Guard civilian employees or employee representatives may submit a completed CG-4903 directly to Commandant (G-KSE), giving essential details as to why a condition is considered hazardous, suggested solutions to the problem, and the exact location of the condition. Reports need not be signed. In suspected imminent danger situations, telephone reports are acceptable.

      (4) Agency or Negotiated Grievance Procedure. Civilian Coast Guard employees or their representatives may also use the agency or negotiated grievance procedure or they may write directly to the Occupational Safety and Health Administration (OSHA) to seek further resolution of a hazardous condition. Details are provided on the Coast Guard Occupational Safety and Health poster, a copy of which is required to be prominently displayed in each workplace.

2. b. **Employee Hazard Report Procedures.**

(1) Copy to Unit's Safety Staff. Any employee submitting a USCG Employee Hazard Report shall provide a copy to the appropriate command safety staff. Suspected imminent danger situations shall be reported by telephone and followed up in writing.

(2) Hazard Investigation. Upon receipt of a CG-4903, or other Coast Guard personnel notice, the Unit Safety Supervisor or nearest Safety Supervisor shall investigate the safety hazard and refer environmental health issues to the nearest industrial hygienist or environmental health specialist as appropriate. The appropriate safety and health staff shall initiate an investigation of the reported condition and respond in writing (if the identity is known) to the employee who reported the hazard within 24 hours for reports of imminent danger conditions, within 3 working days for potentially serious conditions, and within 20 working days for other than serious conditions. However, an inspection may not be necessary, if through normal management action and prompt notification of personnel, the hazardous condition(s) identified can be abated immediately. For anonymous reports, make a note to file.

(3) OSHA 29 CFR 1960.28 (d) requires all establishments (including Coast Guard units) to maintain a log of employee hazard reports. CG-4905, USCG Hazardous Conditions Log (Figure 1-2) shall be used to fulfill this requirement and for the timely tracking of the Hazard Abatement process at the unit level. The Safety Supervisor/Officer shall maintain this log for 1 year after all hazards have been abated.

(4) The unit or servicing Collateral Duty Safety Officer, Safety Supervisor or Industrial Hygienist that receives the USCG Employee Hazard Report shall enter unabated hazards in the Coast Guard Safety and Health Hazard Abatement Data System (SHHADS) or call servicing MLC who will take information over the phone and enter into data system.

2. c. **Hazards Discovered During Audits or Inspections**.

(1). All serious, unsafe or unhealthful conditions discovered during audits or inspections shall be reported in the SHHADS data system and shall be tracked until corrected.

(2). In cases of imminent danger situations, one copy of Hazardous Condition Notification (CG-5082) must be posted at the site of the hazard. The form shall remain posted for a minimum of three days, or until the hazard has abated. All other reports of hazardous conditions must be kept in a place readily available for Coast Guard employee review. Hazardous Condition Notification form may also be posted at hazardous sites where the degree of danger is less than imminent.

3. **Hazard Abatement**.

a. **Correct the Hazard**. After a hazard has been identified, upon receiving notice, the command shall promptly initiate action to abate or correct the hazard.

b. **Written Hazard Abatement Plan**. All serious hazards which cannot be abated within 30 days require a written hazard abatement plan. Abatement plans shall give the reason for abatement delay, a proposed timetable for abatement and the interim measures being taken to protect personnel.

c. **Forward Abatement Plans**. Abatement plans shall be forwarded to the appropriate MLC Safety and Health Staff within the commands geographic zone for inclusion in the SHHADS data system. Form CG-5082 may be used to forward hazard abatement plans. Plans shall be kept current, shall be updated when substantial changes occur and shall be tracked by the appropriate Safety and Occupational Health Staff until completed.

4. **SHHADS Computerized Data System File Structure**. The SHHADS file data dictionary defines and sets limits on the data elements contained in the file. A copy of the data dictionary (SHHADS.DIC) can be found in the computer system.

5. **Instructions for Completing Form CG-5082**. See Figure 1-3 for a sample copy of CG-5082.

   a. Enter the name and address of the unit from which the report is being submitted or unit being inspected.

   b. Enter seven digit Operating Facility (OPFAC) number. See the Operating Facilities of the U.S. Coast (COMDTINST M5440.2 series). Example of an OPFAC: 05-36236.

   c. Date form prepared or submitted.

   d. Check appropriate box for type of notice.

   e. Describe equipment, process, procedures, etc., creating hazard. Also, for other than personnel reports, use this space to state interim abatement action (abatement plan). Recommended solutions may be included here.

   f. Describe hazardous condition. Give number of personnel exposed to hazard.

   g. Enter the standard violated. Use the most appropriate Coast Guard standard.

   h. Enter location, building number, shop name, room number, etc. For vessels, enter compartment number or other identifying data.

   i. Enter estimated cost, including both manpower and material costs. Rounded off estimate to nearest whole dollar. DO NOT leave spaces blank. Enter estimated time to complete, using days as the unit of time.

5. j. **Criticality**. Select one from the following:

(1) Imminent Danger. A condition or practice that could reasonably be expected to cause death, disease, illness, or serious physical harm immediately or before the danger can be eliminated through normal abatement procedures.

(2) Serious. A hazard that could adversely affect a person's health or safety or mission accomplishment, if such a condition or practice is allowed to persist.

(3) Non-Serious. A hazard that is less serious, but nevertheless has the potential to cause mishaps or is in violation of Coast Guard Safety and Occupational Health standards.

k. Safety specialist code is the first two digits of the seven digit OPFAC number of the safety and health professional signing the form.

l. When the corrective action has been completed, this block is to be completed and signed by the unit Commanding Officer and forwarded to the appropriate safety and health staff.

note: The CG-4903, USCG Employee Hazard Report, and the CG-4905, USCG Hazardous Conditions Log are authorized for local reproduction from the attached examples. Form CG-5082, Hazardous Condition Notification may be procured from Supply Center Brooklyn, using SN 7530-01-GF2-5480, U/I (SE).

Department of Transportation U.S. Coast Guard CG-4903 (1-91)	USCG EMPLOYEE HAZARD REPORT (See Instructions on Reverse)	Hazard Report No._____ (Assigned by Safety Office)

HAZARD (Completed by individual reporting hazard)

Reports may be submitted anonymously. Reprisals for reporting actual or suspected hazardous conditions are forbidden (COMDTINST M5100.47 Chapter 1)

To: Unit Safety Supervisor/Safety Officer	From: (Optional) Name, Organization

Description of Hazard (Date, Time, Summarize-Who, What, When, Where, How, Why)

Facility, Procedure, Equipment (Type, Model, Serial Number) or Material Involved

Recommendations (What you think will solve the problem)

INVESTIGATION OF HAZARD

Criticality: Imminent Danger ☐ Serious ☐ Non-Serious ☐

Summary of Investigation (Cite Standard Violated)

Recommendations by Safety Investigator

Action Taken by Office of Primary Responsibliity

Date Received	Reviewer	Signature of Reviewer
Date Forwarded	Investigator/Action Officer	Signature of Investigator
Date Closed		

LOCAL REPRO

Figure 1-1

INSTRUCTIONS FOR COMPLETING USCG EMPLOYEE HAZARD REPORT

HAZARD REPORT NO. is completed by Collateral Duty Safety Officer/Safety Supervisor

SECTION 1 HAZARD is completed by individual reporting hazard.

1. Enter the name of your UNIT SAFETY SUPERVISOR /OFFICER.

2. Enter name, Organization. **(No adverse actions maybe taken against an employee for reporting actual or suspected hazards.)**

3. Give a DESCRIPTION of the HAZARD summarizing who did what, when (time and date), where, how and why.

4. Enter TYPE, MODEL, SERIAL NUMBER of equipment or MATERIAL used, FACILITY involved, or a description of the HAZARD involved.

5. State what RECOMMENDATIONS you think will solve the problem.

SECTION 2 INVESTIGATION OF HAZARD is to be completed by the investigating safety supervisor/officer at the unit, district or MLC level as appropriate.

1. A SUMMARY of INVESTIGATION by the investigator will be entered along with the STANDARD that was VIOLATED. The CRITICALITY shall be entered based on the following:

   a. Imminent Danger. A condition or practice that could reasonably be expected to cause death, disease, illness, or serious physical harm immediately or before the danger can be eliminated through normal abatement procedures.

   b. Serious. A hazard that could adversely affect a person's health or safety or mission accomplishment, if such a condition or practice is allowed to persist.

   c. Non-serious. A hazard that is less than serious, but has the potential to cause mishaps or is in violation of Coast Guard Safety and Occupational Health Standards.

2. The RECOMMENDATIONS of the Safety Investigator will be entered here.

3. ACTIONS TAKEN BY THE OFFICE OF RESPONSIBILITY will be entered to indicate what interim abatement measures the responsible party is taking. Follow up shall be included.

REVIEW AND COORDINATION SECTION.

1. THE REVIEWING OFFICIAL shall enter dates received, forwarded, and closed. This person is responsible for monitoring the hazard reports of the affected unit, district, or MLC area as appropriate. May be the Safety Supervisor, Collateral Duty Safety Officer, or Industrial Hygienist. The name of the reviewer will be legibly entered and signed in the appropriate blocks.

2. The INVESTIGATOR or ACTION OFFICER (person investigating hazard) will legibly enter name and signature in the appropriate blocks.

USCG HAZARDOUS CONDITIONS LOG

DATE RECEIVED	LOCATION	NUMBER	HAZARDOUS CONDITION	CORRECTIVE ACTION	FOLLOW-UP	CORRECTED

Date Reviewed	Reviewing Person	Signature of Reviewer
Date Followed-up		
Next Follow-up Due		

DEPT. OF TRANSP., USCG, CG-4905 (1-91)

LOCAL REPRO

Figure 1-2

Reverse Blank

MISHAP ANALYSIS REPORT (MAR) FORMAT AND ROUTING.

1. Preparation of the Mishap Analysis Report. The sole purpose of a Mishap Analysis Report (MAR) is to assist the Commandant in preventing future mishaps. The MAR is not a legal document, and it is not necessary to enclose documents unless they reveal unusual circumstances that are essential to clearly understanding the report or mishap. In the past, Mishap Analysis Board (MAB) reports have contained enclosures that were unnecessary to the report, i.e., copies of yellow sheets, blue sheets, flight plans, weather briefing, crew members training records, maintenance records and/or diagrams, etc. Do not include copies of all related paperwork (flight plans, log entries, personnel qualification records, etc.) unless they show significant problems or irregularities. Simply stating that the MAB examined these specific documents/records and found them in order is sufficient. The board only needs to comment in the report that the AC failed to sign the yellow sheet; the crew member(s) was current/non-current regarding training requirements, the crew filed a proper flight plan and received a weather brief, etc. Nice to have, but not essential, documents should be left out. Further guidance can be obtained from Commandant (G-WKS) during the investigation.

NOTE: Observations made about the unit by the MAB unrelated to the mishap are best handled via the MAB President during the out brief with the Commanding Officer.

2. Mishap Analysis Report (MAR) Preparation. The report shall be formatted in accordance with section 3 of this enclosure and prepared using standard Coast Guard word processing software. A disc containing the report shall be forwarded directly to Commandant (G-WKS) by the MAB President after the MAB adjourns. The MAR shall:

   a. Be prepared on letter-size paper contained within a folding pressboard folder fastened at the top with two-hole fasteners. DO NOT use loose-leaf binders or notebooks.

   b. Contain all privileged information on the RIGHT side of the folder. This includes the analysis, conclusions, recommendations, privileged witness statements, and all other information that is only known to the MAB due to its privilege status. Number the pages beginning with the cover sheet. (See enclosure (10), section 15.a.)

NOTE: Verbatim transcripts of statements or interviews shall not be made. Interviewers' notes or summaries are sufficient. After the final review and release of Chief of Staff's Final Decision Letter, the MAB President shall destroy all tapes and notes of privileged information.

   c. Contain all non-privileged information on the LEFT side of the folder. This includes synopsis, diagrams, photographs, lab analysis reports, all other enclosures, non privileged appendices, etc. List the enclosures on a cover sheet (See enclosure (10), section 15.b.)

   d. Securely attach all captions to the photographs. If possible, the captions should be placed so that the caption and the photographs can be examined simultaneously.

NOTE: Attaching captions that include speculations, conclusions, or opinions directly to the photograph renders the photograph a privileged document. If the captions can be redacted, the photocopy may be released under FOIA.

e. Ensure that all copies are legible. Signatures are required on the original report, statements, appendices, and enclosures. If individuals are not available to sign the original documents, authentication of the document by the MAB is authorized. Copies of the formal MAR, statements, appendices, and enclosures do not require signatures or authentication, except when a copy is submitted in lieu of the original report.

3. Detailed Description of the Report.

a. Cover Sheet. This page shall be labeled as follows:

Name of Unit/Custodian and mishap Class

Aircraft Model/Serial # / Class of Cutter/Small Boat (if applicable)

Pilot-in-Command/ Coxswain (if applicable)

Unit Commanding Officer/OIC

Date of Mishap

b. Table of Contents. On this page, list titles and page numbers of all major paragraphs and enclosures.

c. Synopsis. The synopsis page will present a brief factual summary of the mishap, property damage, injuries, occupational illnesses, deaths, and sequence of events. The synopsis should lead the reader through the sequence of events involved in the mishap. It should be a chronological summary of the facts, conditions, and circumstances as they occurred without reference to attachments. State why the mishap occurred, not how. Do not discuss the importance of facts or how they relate to the conclusions

NOTE: Do not identify personnel involved in the mishap by name or call sign in the synopsis. Instead, use such terms as "the flight lead," "the crane operator" or "involved personnel."

NOTE: The synopsis is releasable under the Freedom of Information Act (FOIA). Therefore, it should be a factual, complete recount of the mishap. No analysis should be included. Many FOIA requests are for a summary of the mishap not the actual report. In these cases, only the synopsis is released.

d. Mishap Information. In this section, only information and data that relate to the mishap and the personnel involved are presented. All of the listed paragraph titles may not apply to all mishaps. Therefore, whenever a paragraph is deleted, the paragraph numbering will be changed from that indicated. The Mishap Analysis Report format should be adjusted by adding/deleting paragraphs. Should there be any questions concerning the report format, contact Commandant (G-WKS).

(1) History. Under this subheading, describe in chronological order the

significant sequence of events that preceded the mishap. In some cases this can be achieved by using the radio log(s)/transcripts as a basis of time. Any evidence that is relevant, regardless of the source, may be added as long as it relates to established fact. A convenient introduction is to give a description of the mission, the departure point, the departure time and the destination. A description of the events could commence with the crew briefing and planning and proceed to departure, weather, navigational details, significant communications, and the sequence of events culminating in the mishap. It is important to give a word picture of the pertinent events and scenarios as they occur and what personnel involved in the mishap knew. The mishap site (Latitude/Longitude), local time, the elevation (if applicable), weather, visibility, etc. should be included in this section.

(2) Injuries to Personnel. Complete the following table (in numbers):

	CREW	PASSENGERS	OPERATOR	OTHER	TOTAL
INJURIES	---------	----------	----------	---------	----------
FATALITIES	---------	----------	----------	---------	----------
NO INJURIES	---------	----------	----------	---------	----------

(3) Damage to Unit. Give a brief statement of the damage sustained by the unit in the mishap. A complete, technical description of the damage will be made in Appendix D of the mishap analysis report.

(4) Other Damage. Give a brief description of the damage sustained by non-Coast Guard property. A complete, technical description of the damage will be made in Appendix D of the mishap analysis report.

(5) Personnel Information. Under this subheading, describe crew and operator qualifications, experience, and previous assignments. This description should provide at least the following:

(a) Names, SSN, ranks, and ages.

(b) Billet/Assignment. Give the position held or occupied when the mishap occurred, such as: pilot-in-command, engineer, copilot, navigator, coxswain, OOD, boarding officer, etc. For aviation mishaps include seat position and aircraft designation.

(c) Aviation, vessel or job experience. Give details of job experience, involving job or equipment operated during the mishap. Provide type of aircraft flown, vessel sail, hours/time in type, total hours.

(d) Details of recent training and mandatory periodic checks, and currency of training.

(e) Time at unit; experience with route/familiarity with waters/AOR where mishap occurred.

(f) Duty and rest periods.

(g) Any other information considered significant.

(6) Aircraft/Vessel Information. Describe the aircraft/vessel history and maintenance. The description should include:

(a) Type/serial number of aircraft or class of vessel and date of construction/manufacture.

(b) Damage that has resulted from previous mishaps.

(c) Major modifications/renovations to the structure or key components associated with the mishap.

(d) Defects, if any.

(e) Aircraft take off/landing data cards and weight and balance sheets.

(7) Meteorological Information. Describe the forecasted weather conditions and any relevant observations of the actual weather conditions, with an after-case or appreciation of the weather in retrospect. This description should provide at least the following:

(a) Forecast weather, including route and destination forecasts available to the unit/personnel and details of weather briefings received prior to departure or in route.

(b) Weather observations at the time of the mishap.

(c) Actual weather conditions along the route and at the mishap site. On scene weather, sea conditions, seawater temperature and details of these conditions encountered along the track-line prior to the mishap.

(d) Natural light conditions at the time of the mishap day, night, twilight, moonlight, etc.

(8) Aids to Navigation. Describe the availability of navigation facilities. This information should include the steps taken to establish the serviceability of the facilities at the time of the mishap. List navigation equipment carried and indicate whether an integrated navigation system was installed. Serviceability of this equipment should be stated. Details of maps, charts, approach plates, etc., available to crew and appropriate to the route should be included.

(9) Communications. Describe the communications facilities available to the aircraft/vessel and their effectiveness. All communications with other agencies or vessels (Air Traffic Control, Vessel Traffic Service, Navy, Oceanic, etc.) relevant to the circumstances of the mishap should be included by reference to communication logs or transcripts of recordings. Include pertinent extracts only.

(10) Airdrome and Ground Facilities (For Aviation Mishaps Only). Describe relevant information concerning airdrome installations, such as runway lengths, slope, obstructions, and runway conditions. Include airdrome lighting, approach lighting, VASI, and runway

lighting information.

(11) Flight Recorders/Voice Recorders (For Aviation Mishaps Only). Provide any necessary critiques of the system; the condition, location, serviceability, functioning, capacity, parameter coverage, accuracy, and sampling rate that is relevant. If the recorder(s) operated properly, a short statement to this effect is all that is necessary. If not, the shortcomings should be described. The pertinent flight recorder/cockpit voice recorder readouts are not normally included in this section but are generally attached to the report as an appendix.

(12) Wreckage Description. In relatively uncomplicated mishaps the entire wreckage examination may be described under this subheading. In major mishap investigations, however, it may be necessary to discuss the examination of the wreckage and the technical investigations under appropriate sections: e.g., structures, power plants, systems and human factors. The description in each section should embrace the significant facts determined by the group or specialist responsible for the detailed investigation. These special reports shall be contained in the mishap report as an appendix.

(13) Fire. If fire occurred, describe the nature of the occurrence and of the fire fighting equipment used and its effectiveness. Appropriate comments on the training and coordination of personnel should be included.

(14) Survival Aspects. Describe search, evacuation and rescue aspects. Note the locations of crew and passengers in relation to injuries sustained. Report on the effectiveness of personal protective equipment and whether it was used/worn.

(15) Tests and Results. Describe the nature of any tests or research undertaken in connection with the mishap and state the results.

(16) Unit Response to the Mishap. Describe the adequacy of the unit's pre-mishap and/or pre-fire plan. State when and how the response was initiated; and the status of the investigation when the Formal Mishap Analysis Board assumed responsibility for the investigation.

(17) Witnesses. List all witnesses interviewed and whether they were offered and accepted privilege. For witnesses offered privilege a Witness Statement-Promise of Confidentiality Advisory Form (See Figure 2-1) must be included with their statement as proof that the individual was offered privilege and whether the witness accepted or declined the offer.

Figure 2-1 NOTE: This statement is for all mishaps in which confidentiality is offered. Every witness offered confidentiality shall read and sign this form. Copies of the form should be made on 8-1/2 by 11-inch paper for inclusion in safety reports.

Witness Statement Offer of Confidentiality Advisory Form

You are hereby advised that, as a witness to this safety investigation, your statement will be used solely for mishap prevention purposes. Your statement will not be made available to anyone other than United States Coast Guard officials responsible for the assembly and review of this safety investigation report.

I, (Name)_____,
(Rank/Rate/Grade)_____, (Organization)_____, have been advised by
(Name)_____ of the following:

- This investigation is being conducted under the provisions of COMDTINST M5100.47 solely for mishap prevention within the United States Coast Guard to determine all factors relating to the mishap and to prevent recurrence.
- I have been offered confidentiality concerning this statement. If I elect to have my statement treated as confidential, this means it will <u>not</u> be distributed outside the Coast Guard nor used within the Coast Guard as evidence to support any disciplinary action or adverse administrative action including, but not limited to line-of-duty status or pecuniary liability, or separation from the Coast Guard.
- Non-confidential witness statements <u>may</u> be released to the public pursuant to a Freedom of Information Act request or used in disciplinary or administrative proceedings. Only statements given under an offer of confidentiality are protected from release and use beyond safety purposes.
- Whether or not a statement is considered confidential, the chain of command will review the final mishap report, but the chain of command may only use confidential statements for safety and mishap prevention purposes.

I understand I am being interviewed as a witness in a mishap investigation and I acknowledge that an offer of confidentiality has been extended to me. I further understand the effect of this promise. I (do) (do not) desire my statement to be treated as confidential.

_____(Signature)_____(Date)

Verified and Witnessed by: _____ (Signature of person offering confidentiality) _____ (Date)

(To be completed after the witness has given a statement)

I (still desire) (do not desire) to have my statement to remain confidential.

_____ (Signature) _____ (Date)

Verified and Witnessed by: _____ (Signature of person having offered confidentiality) _____ (Date)

(19) Classified Material. Describe possible impact or compromise of classified material resulting from the mishap. Include here, any recommendations for improvements.

(20) News Media and Public Reaction. Describe any effect or reaction on the news media or the public created by the mishap. Include here, any recommendations for improvements.

(21) Additional Data. Each causal factor should be a conclusion reached from the collected data. Add any essential paragraphs needed to support/illustrate the determination of each mishap causal factor.

e. Analysis. In the analysis, it is not necessary to repeat any description of the evidence. However, the Board should review and evaluate the evidence and develop the various patterns, conditions and events that may have existed. This will lead to the formulation of hypothesis that may be tested against the evidence. Theories not supported by evidence should be eliminated. The justification for sustaining the validity of the remaining hypothesis or hypotheses should be stated. There should follow a description of the pattern or series of conditions and events that have been determined to be causal factors in the mishap, and reference should be made to the relevant evidence in support of the argument as it is developed.

f. Conclusion. Conclusions should indicate which aspects of the evolution contributed to the mishap and which did not. It is usual to report on certain features in every case, for example:

(1) The training and experience of the crew.

(2) The condition, stability or airworthiness/seaworthiness of the aircraft/vessel.

(3) Pre-mishap human error/equipment failure that contributed to or resulted in the loss.

g. Causal Factors. List all causal factors contributing to the mishap. Designate which cause factors need to be corrected to keep similar mishaps from occurring. Some factors, because of their importance, or because they can be easily corrected, tend to take priority positions. These factors should be described in a concise statement rather than just an abbreviated description of the circumstances of the mishap. If the investigation uncovers cause factors or findings requiring immediate corrective action beyond the unit level, Commandant (G-WKS) shall be notified immediately. The MAB President shall follow up on this initial report with an operational immediate message as soon as practical. Each causal factor should address who did what and why.

h. Recommendations. Recommendations are feasible solutions related to the causes of the damage, fatalities, or injuries in the mishap sequence of events. While recommendations are normally in response to causal findings, not every cause needs to have a recommendation. Well thought out recommendations are necessary for proper corrective action. Recommendations should be short, concise statements requiring no explanation and follow in a natural sequence

after the analysis, conclusion, findings, etc. Include recommendations not related to the causal factors of the mishap as "other findings or recommendations."

i. Signature Page. The names and rank/rate of all MAB members will be typed on a separate signature page. All MAB members will sign and date the MAR immediately above their typed name.

j. Investigation and Report Preparation Work-Hours. On the signature page, list the estimated work-hours required for the mishap investigation and analysis and the estimated hours required to prepare the MAR.

k. Distribution List. On signature page or the page immediately following, list number of copies made and the distribution. (See Figure 2-2).

l. Appendices. Where appropriate, the following appendices need to be included in the MAR.

(1) Appendix A. A copy of the initial mishap message and all supplemental, progress and final messages in chronological order.

(2) Appendix B. MAB appointing order/messages.

(3) Appendix C. Personnel Information. In addition to the mishap crew, include pertinent information regarding other personnel, such as air traffic controllers, and maintenance personnel, etc., when relevant to the mishap.

(4) Appendix D. Damage Summary. A detailed description of Coast Guard and non-Coast Guard property damage. Include photographs and detailed sketches as necessary.

(5) Appendix E. Transcripts of pertinent recorded radio communications (air-to-ground and aircraft-to-aircraft). Begin the transcript as early in the mishap sequence as needed and end the transcript when all damage and injury has occurred. It is not necessary to include long term rescue/SAR transmissions. Because radio communication transcripts are factual data, they often provide a basis for information in the factual summary of circumstances.

(6) Appendix F. Transcripts of relevant portions of the cockpit voice recordings (CVR). The transcribed material is considered non-privilege. The actual CVR tapes are protected from release to the public based on the privacy interests of the aircrew and or the surviving family members.

(7) Appendix G. Films or videotapes documenting the actual mishap sequence or mishap scene (i.e., flight deck videos, films from bystanders) are not privileged material, should be located with this tab. List the tape or film on the index page. Animations made from flight recorder data are not privileged as long as they do not contain privileged safety information (i.e., MAB opinions, speculation, conclusions or other information known to the MAB. If the actual

audio of the mishap crew is voices incorporated into the animation, simulation or recreation, the tape with such audio is not releasable due to the privacy interests of the aircrew and or their surviving family members.

(8) Appendix H. Photographs should be well-defined 8 by 10 inch. Photographs should show damage, impact areas, metal fractures, flight path, vehicle travel, etc. Use of scanned color images for reproduction in the formal report is preferred over use of actual photographs. Number the pages containing photographs (G-1, G-1, etc.). Do not mark the photographs themselves. To aid the reviewers, place an index of photographs at the beginning of the Tab. Do not refer to privileged information on the page captions or in the index. Staged photographs are considered privileged. Place staged photographs near the related text. Pointing with a finger or other device at a portion of wreckage does not make the photograph staged. Assembling or reconstructing damaged parts or aligning parts to show fire patterns or impact marks are examples of staged photographs. Depictions of cockpit indications for a given set of assumptions made by the MAB or described in witness statements are staged photographs.

NOTE: Do not include photographs of deceased personnel in the safety report.

NOTE: Include only photographs that aid in understanding the mishap.

(9) Video of simulation, computer animation's or reenactments of a mishap prepared using input from MAB members or with knowledge of privileged safety mishap information are privilege. Commandant (G-WKS) may authorize use of MAB video simulations for mishap prevention purposes after the mishap review is finished. Reference these video simulations or reenactments in the MAR, and include the video simulation with the MAR original sent to Commandant (G-WKS) via the reviewing chain. Destroy all other copies of the video simulation when no longer needed by the MAB for analysis or briefing.

(10) Appendix I and Subsequent. Add as many appendices as needed to support the investigation and the analysis. List appendices in the order referred to in the MAR. These could include, but are not limited to:

(a) Crew/witness Statements. Include only those statements essential to fully explain the mishap. Long statements from interviews should be summarized or paraphrased to include necessary portions only; legal, word-for-word transcripts shall not be made from interviews. Instead of including lengthy witness answers about background information, it will suffice for the MAB to simply comment on the reliability and experience of specific witnesses. Include the Witness Statement-Promise of Confidentiality Advisory Form (Figure 2-1) for each witness that was granted privilege.

(b) Include messages, lab reports, diagrams, drawings, photographs, etc., as necessary to clarify the report for reviewers

NOTE: It is sufficient to show a listing of documents or records reviewed by the MAB and their effective dates. Do not mark, highlight, or extract a particular page to show the MAB's exact area of interest. The MAB's conclusion that a particular paragraph of a document was or was not a mishap factor is privileged. This also applies to comments or conclusion made by the MAB of documents such as training and personnel records.

(c) Statement by maintenance officers.

(d) Weight and balance form, flight plans, weather briefing and other critical data or forms. Include only those forms supporting a cause factor.

(e) Applicable portions of Op-Orders, Comm-Plans, etc. Include only required or appropriate sections.

(f) Medical Officer's Report (if applicable). See enclosure (3) of this manual.

(g) Results of engineering investigations, analysis, etc.

4. Number of Copies. Because mishap reports contain sensitive and privileged material, it is imperative that the reports be controlled. Therefore, only a limited number of copies and copyholders are authorized. The MAB President is the only MAB member authorized to keep a MAR copy. Reviewers in the chain are not authorized to hold a copy, and shall not reproduce or be provided a copy, unless requested of and authorized by Commandant (G-WKS). See Figure 2-2 of this enclosure for specifics. Commandant (G-WKS) maintains the original copy of the MARs. The original MAR and all copies (including the MAB President's) are to be returned to Commandant (G-WKS) for destruction after the Final Action Message is released.

NOTE: MISHAP REPORTS CONTAIN SENSITIVE, PRIVILEGED MATERIAL. UNDER NO CIRCUMSTANCES SHALL ADDITIONAL COPIES OF MISHAP REPORTS BE MADE WITHOUT THE EXPRESS PERMISSION OF COMMANDANT (G-WKS).

5. MAR Labeling.

a. The original MAR and copies shall be labeled in the center of the cover:

COAST GUARD (TYPE) MISHAP
UNIT
CLASS: (A or B)
DATE:
RESOURCE TYPE/SERIAL NUMBER:
COPY(*)

* Mark according to TABLE 2-2 (i.e., ORIGINAL, COPY 1/UNIT FILE, etc., as appropriate).

b. The following notice shall appear on the MAR immediately after the initial heading identifying the mishap

MISHAP ANALYSIS REPORT
FOR OFFICIAL USE ONLY
SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH
COMDTINST M5100.47 (series)

c. The following notice shall appear immediately after the initial heading identifying the mishap and on each page containing privileged information

//

FOR OFFICIAL USE ONLY

WHAT FOLLOWS MAY CONTAIN PRIVILEGED SAFETY INFORMATION. UNAUTHORIZED DISCLOSURE OF THE INFORMATION IN THIS REPORT IS PUNISHABLE UNDER ARTICLE 92, UNIFORM CODE OF MILITARY JUSTICE AND MAY ALSO BE GROUNDS FOR DISCIPLINARY ACTION UNDER CIVILIAN PERSONNEL REGULATIONS

//

d. The following notice shall appear immediately before the subject line of the mishap message and subsequent endorsements:

UNCLAS FOUO //N05100// or //N03750//
WHAT FOLLOWS MAY CONTAIN PRIVILEGED SAFETY INFORMATION. USE FOR MISHAP PREVENTION PURPOSES ONLY.

e. Mailing Envelopes/Outside Covers. Mailings and Mishap Analysis Report Covers should be stamped:

FOR OFFICIAL USE ONLY SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH COMDTINST M5100.47 (series)

6. Distribution. Distribute copies as appropriate. (See Figure 2-2).

Figure 2-2

Mishap Analysis Report Distribution

Aviation Mishaps

MARK	FORWARD TO
Original	G-WKS-1, via reviewing CO, District & Area. (Vessel Commanding Officer and ATC Mobile, as appropriate)
Copy 1/Unit	Unit: retain until Final Action Message is released
Copy 2/MAB President	MAB President retain until Final Action Message is released

Copy 3/G-OCA	Forward to G-WKS; retain until Final Action Message is released
Copy 4/G-SEA	Forward to G-WKS, retain until Final Action Message is released
Copy 5/G-WKH	Forward to G-WKS, retain until Final Action Message is released

All copies of the MAR will be returned to G-WKS after the Final Action Message is released

Vessel Mishaps

MARK	FORWARD TO
Original	G-WKS-4, via reviewing CO, District & Area.
Copy 1/unit file	Unit file
Copy 2/MAB President	MAB President
Copy 3/G-OCU (cutters) G-OCS (small boats)	Forward to G-WKS; retain until Final Action Message is released

All copies of the MAR will be returned to G-WKS after the Final Action Message is released

Shore Mishaps

MARK	FORWARD TO
Original	G-WKS-2, via reviewing CO, District & Area
Copy 1/unit file	Unit file
Copy 2/MAB President	MAB President
Copy 3/G-SEC	Forward to G-WKS; retain until Final Action Message is released

All copies of the MAR will be returned to G-WKS after the Final Action Message is released

7. Delivery of Mishap Analysis Reports. When the MAB has completed its analysis and prepared the report, the MAB President shall deliver the original and all copies, less the MAB President's copy, to the Commanding Officer for his review and endorsement. At this time, the MAB President shall also debrief the Commanding Officer regarding the results of the analysis. The MAB President will notify G-WKS to coordinate and release the MAB's final message and make arrangements for the

release of the aircraft and/or wreckage, as appropriate.

8. Mailing of Mishap Analysis Materials.

a. Mishap Analysis Reports. A double envelope system shall be used in mailing MAR's. Mark the inner envelope with the address of the person/office who is to receive the report, along with the following information:

FOR OFFICIAL USE ONLY
SPECIAL HANDLING IN ACCORDANCE WITH
COMDTINST M5100.47 (series)

b. Mailing of Recorded Tapes. Audio tape/cassette recordings and videotapes may be included in the MAR. Forward these items as follows:

(1) Protectively package the materials to avoid breakage by rough handling.

(2) Mark outside of package, "**MAGNETIC TAPE, DO NOT X-RAY.**"

c. Handling and mailing Mishap Animation Tapes. If mishap animations are created from the CVR/FDR data or other mishap data, the original shall be forwarded to G-WKS-1 with the original MAB via the reviewing chain.

9. MAR Review and Endorsement. The major purpose of a mishap report is to initiate corrective action to prevent similar mishaps in the future. This is important to keep in mind during the review process. Only through objective, thorough, and critical investigation and review will the Coast Guard be able to institute the necessary corrective action to prevent future mishaps. Endorsement shall not contain any reference to disciplinary action, personnel or medical boards.

a. The Commanding Officer.

(1) Shall review and endorse the report. Comment upon each causal factor, additional findings, and recommendations of the mishap board. If he does not concur with the causal factor(s), additional finding(s), or recommendation(s) submitted by the mishap board, he will present an analysis of his reason for non-concurrence.

(2) If a need for local action is indicated, state the specific action that has been or will be taken to correct the situation and to prevent such future mishaps.

(3) If the mishap involved human error cause factor(s), provide a personal evaluation of the individual(s) involved, their attitudes and past performances, including deficiencies.

b. All Other Reviewing Officials.

(1) Review the mishap report to evaluate the circumstances surrounding the mishap and initiate action, as appropriate, to correct deficiencies disclosed. If a reviewing officer does not concur with the causal factors, additional finding(s), or recommendation(s) submitted by the mishap board, or disagrees with comments/actions taken by the

Commanding Officer, the reviewing officer will present an analysis of the reason for non-concurrence in the endorsement.

(2) Make appropriate recommendations to prevent similar future mishaps. State specific actions that have been or will be taken on recommendations that can be resolved at that reviewing level.

NOTE: To facilitate review by the endorsing chain, all reviewers should ensure comments coincide with the paragraphs of the MAB (remarks should follow the same format as the reports).

NOTE: To facilitate review by the endorsing chain, all reviewers should limit comments to those linked to specific facts, findings and recommendations contained in the MAR.

10. Reviewer Deadlines. Timely review of the formal Mishap Analysis Report is a critical process of preventing future mishaps. Delays at this stage can result in further loss and/or injury.

a. Within 21 days after the MAB completes their on-site investigation and analysis, the MAB President shall forward the original MAR. The original MAR shall be forwarded to Commandant (G-WKS) via the Commanding Officer and appropriate chain of command for review and endorsement.

b. MAR reviewers shall **review, endorse and forward the MAR via the chain of command within 15 workdays of receipt.** Unit Commanding Officer shall notify Commandant (G-WKS) when finished.

c. Commandant (G-WKS) shall advise the endorsing chain of associated deadlines and requirements for timely review via message. Commandant (G-WKS) will provide briefings to the endorsers by the MAB to expedite review. Requests for review extensions will not normally be granted and must be specifically requested through Commandant (G-WKS).

11. Headquarters Review and Disposition of MAR's.

a. The Commandant's Safety Board shall review all Class A and B MAR's and submit a report to Commandant (G-CCS) within 90 working days. Their report shall include but is not limited to:

(1) Synopsis of the mishap.

(2) Classification and cost of the mishap.

(3) Determination of the causal factors.

(4) Determination of the additional findings.

(5) Determination of the recommendations.

(6) Other remarks as appropriate.

(7) Information for the final update of the Coast Guard Mishap Report and Data Systems (non aviation mishaps).

(8) Development of a draft Commandant (G-CCS) Decision Letter.

b. Review of all other (Commandant-appointed) formal MAB reports will be

reviewed by the Commandant's Safety Board. Resulting reports to Commandant (G-CCS) shall be determined on a case-by-case basis.

12. Commandant (G-CCS) Review. Commandant (G-CCS) will review all Commandant Safety Board reports and issue a Final Decision Letter to the appropriate command(s)/authorities, via the chain of command. The Final Decision Letter shall direct the implementation of corrective action, if appropriate. The Final Decision Letter is not privileged.

13. Dissemination of Mishap Information to the Field.

    a. Final Action Message. The Final Action message is a brief summary of the Final Decision letter. Commandant (G-WKS) will draft and transmit this message to advise field units of the results of the investigation and review process.

    b. Optional Sources. For particularly noteworthy or critical mishaps, Commandant (G-WKS) may further disseminate mishap safety information through various alternate methods, including:

        (1) Articles in Coast Guard publications, such as the *Coast Guard* magazine and *Flight Lines.*

        (2) Incorporate into Crew Resource, Team Coordination and Maintenance Resource Management training.

        (3) Special interest newsletter articles.

        (4) Federal or commercial safety publications.

        (5) Electronic mailings to Commanding Officer and/or Safety Officer distribution lists.

MEDICAL OFFICER'S MISHAP REPORT (MOR)

1. GENERAL.

a. An accident is an unplanned event or series of events, which result in an injury and/or property damage. If the total severity of the damage and/or injury meets the minimum established criteria, then the event is categorized as a mishap. Most mishaps result from a combination of two or more causal factors. All cause factors are considered to have an equal role in the cause of a particular mishap since without one of them the mishap would likely not occur. All cause factors are also considered to be "under human control" meaning they can be eliminated and mishaps prevented. Defining the cause factors of a mishap and determining why they occurred is one of the biggest challenges of a mishap investigation. These investigations are difficult and time consuming but they need to be thorough and precise if we are to determine what went wrong and figure out how to prevent a recurrence. In all cases involving death or injury, Class A and Class B mishaps, a medical officer representative will be assigned, by the appointing authority, as the Human Factors member to the Mishap Investigation Board.

b. The Medical Officer's Mishap Report (MOR) is an essential part of a mishap investigation. The Medical Officer, when assigned to the investigation, should collect the initial medical evidence and compile ALL available medical materials that could be used by the Board as future evidence. This should include laboratory results, medical records, hospital admission forms, psychological profiles, autopsy reports, medical photographs, diagrams and any medical written opinions. However, information received, based only on opinions, should not be included in the MOR unless it is supported by physical facts, witness statements, and/or statements made during medical interviews. The analysis of the medical data shall be effectively coordinated with all other aspects of the investigation and must comprise the five essential underlying elements- *medical, physiological, psychological, social and behavioral* - which may relate to the cause factors of the mishap. In addition, the MOR should contain a detailed analysis of the two general groups of causal factors: **human and material**. This analysis should include a careful investigation of crash survival characteristics, escape systems, egress mechanisms and procedures, survival factors and any additional supporting information.

c. The ultimate goal of a mishap investigation is to determine the cause(s) of the mishap and prevent future recurrences. To such endeavor, the medical officer should pay close attention to all possible and potential contributing factors. It is important to remember that causality may have started as a result of events seemingly isolated and distant from the actual mishap. Causality should be sought along all possible operational settings, from crew, maintenance and supervisory factors, to the unit's facilities and support. The evaluation of these causality factors should, at a minimum,

include a careful review of operational components, such as communication, coordination, and performance, as well as engineering and environmental conditions before making a probability determination. In summary, the MOR should include all the factors included in the following table format.

Medical Officers Report- Causality Table

Human and Material Causal Factors Evaluation			
Medical Data	Mishap Factors	Causal Factors	Operational Components
Medical information Physiological conditions Psychological status Social events Behavioral reports	Crash survival characteristics Escape systems Egress mechanisms and procedures Survival factors Supporting information (photos; witness reports)	Crew factors Maintenance factors Support and facilities Supervisory factors	Communication Coordination Performance Engineering Environmental
Causality Determination			
Determined	Most Probable	Possible	Undetermined

d. Prior to completing the report, the Medical Officer should carefully review the following policies contained in the current version of the Safety and Environmental Health Manual, COMDTINST M5100.47 (series):

(1) Chapter 2, Aviation Safety Program.

(2) Chapter 3, Mishap Response, Investigation and Reporting.

(3) Enclosure (2), Mishap Analysis Report (MAR) Format.

(4) Enclosure (4), Mishap Analysis Board (MAB) Appointment, Composition and Procedures.

(5) Enclosure (10), Limitations on the Use and Disclosure of Mishap Investigations and Reports.

2. PREPARATION.

a. The medical officer should utilize all available tools in preparing the MOR. A well-organized pre-mishap plan and on-site mishap investigation as well as a thorough understanding of post-mishap factors will facilitate this process. Planning, and preparation as well as understanding the value of the information collected and knowing how to utilize it will yield the best results. The accuracy and value of the MOR is dependent on the medical officer‘s attentiveness to detail and fulfillment of pre-mishap-on site-and post-mishap duties. The medical officer’s responsibilities include:

(1) Having a well-organized, compact, portable mishap investigation kit.

(2) Providing adequate care to survivors and ensuring all crews are afforded the necessary medical and psychological services.

(3) Documenting the relationships at the mishap site before items are removed and impounding critical equipment and records.

(4) Ascertaining and documenting injuries and maintaining close follow-up of the injured for changes in the medical condition.

(5) Ensuring that pathological services are available, knowing the autopsy jurisdiction, getting acquainted with the local coroner and coordinating support with the Air Force’s Institute of Pathology (AFIP) for transport of victims to the morgue or transporting the team to the mishap site.

(6) Performing adequate physical exams, distributing and collecting the post-mishap questionnaires and 72-hour medical history as well as drawing the appropriate labs and performing the necessary radiological studies.

(7) Performing timely witness interviews and correlating that information with photographs, and diagrams of the mishap site.

(8) Understanding crash survivability, impact forces, restraint systems, survival equipment, and egress and rescue procedures.

(9) Knowing the effect that environmental conditions, such as water temperature, wind conditions and surface terrain had on the mishap and/or the injuries or survivability of the crew.

(10) Having the appropriate tools, equipment and administrative support to conduct, prepare and finalize the investigation.

3. MISHAP INVESTIGATION QUESTIONNAIRES. A number of questionnaires have been developed to assist the medical officer in gathering the necessary information to complete the MOR. These questionnaires are to be used as

facilitation tools and need only be completed if the conditions or situations indicate. Mishap investigation questionnaires include:

a. GENERAL INFORMATION QUESTIONNAIRE. Collects vital demographics, work habits, social history and training on each member involved in the mishap.

b. MEDICAL OFFICER'S INJURY QUESTIONNAIRE. Collects valuable medical information, including autopsy findings, injury patterns and laboratory and radiological results on each member involved in the mishap.

c. HUMAN FACTORS CHECKLIST. This checklist provides medical and psychological profiles for member's involved in the mishap. It may also be provided to other unit personnel at the discretion of the medical officer.

d. 72-HOUR PRE-HISTORY. Is to be provided to each member involved in the mishap and is intended to collect a detailed history of the member's life during the three days preceding the mishap. This is a mandatory form and is not to be used in place of or replaced by the Human Factors Checklist or the Medical Officer's Questionnaire.

e. ESCAPE, EGRESS QUESTIONNAIRE. Provides data on egress procedures for each member that exited the mishap vessel or was extracted as a result of the mishap.

f. RESCUE AND SURVIVAL QUESTIONNAIRE. Provides vital information on rescue procedures, as well as the rescue equipment used by the crew before, during and after the mishap.

g. SURVIVAL AND PERSONAL PROTECTIVE EQUIPMENT QUESTIONNAIRE. Provides information on survival procedures and personal survival equipment.

h. MEDICAL OFFICER'S REPORT (TEMPLATE). A printable template is provided for the medical officer to complete the final report. The medical officer MUST complete all mandatory information in the pre-printed blocks.

4. <u>INSTRUCTIONS FOR COMPLETING QUESTIONNAIRES</u>.

a. Each questionnaire should be completed for every member involved in the mishap.

b. Specify conditions particular to the member, such as actions taken before, during and after the mishap.

c. Indicate effect that actions taken by the member had upon the mishap.

d. Indicate what effect actions taken, or failed to be taken, by member had on survivability (i.e., egress procedures, escape systems, survival gear), injury patterns (i.e., cause, severity, prevention).

e. Expand, whenever possible, on the effect that actions or failed actions by each individual member had on mishap causality.

f. Describe how each event could have been prevented, modified or altered to prevent the mishap.

g. Describe how findings can be used to prevent future mishaps.

h. Make a determination on whether human factors identified in the mishap definitely contributed to the causality of injuries, rescue, egress, escape or survival efforts; were suspected as contributing factors to any phase of the mishap; or were present but had no contribution to any phase of the mishap.

i. The member's medical record should be thoroughly reviewed for any significant changes on health status; the training record should also be reviewed noting any significant lapses in egress training procedures (i.e., HEEDS/Dunker).
Note: Records must be properly secured during and after the investigations.

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GENERAL INFORMATION QUESTIONNAIRE	
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

1. Mishap Information: include all pertinent information regarding mission and craft (aircraft/vessel).

a. Type of mission involved:

(1) Routine Patrol (scheduled): _____

(2) Familiarization: _____

(3) Search and Rescue: _____

(4) Training: _____

(5) Demonstration/Parades (static display/airshow/boat shows): _____

(6) Deployment/TAD support: _____

(a) TAD Unit: _____

(b) TAD Command: _____

(c) Deployment mishap status: _____

1. Mishap occurred during predeployment: ☐ Yes ☐ No
2. Mishap occurred _____ days into deployment.
3. Deployment scheduled to last _____ days.

b. Type of craft(s) (aircraft/vessel) involved in mishap:

(1) Type: _____

(2) Size: _____

(3) Designation: _____

(4) Model: _____

(5) Class: _____

(6) Reporting Unit: _____

(7) Command: _____

(8) Craft Status at time of Mishap:

☐ Stationary ☐ Taxi Way ☐ Hanger ☐ Runway
☐ In-flight ☐ Docked ☐ En-route ☐ Harbor
☐ Open water ☐ Embarked ☐ Disembarked ☐ Solo craft ☐ Formation

2. <u>Crew Information</u>: include all personnel involved in primary craft (aircraft/vessel) as well as any crews from secondary craft or bystanders involved in the mishap.

- Number of primary crew (aircraft/vessel) personnel involved: _____
- Number of primary crew (aircraft/vessel) personnel injured: _____
- Number of ALL personnel (bystanders/crewmembers) involved: _____
- Number of ALL personnel (bystanders/crewmembers) injured: _____

FIGURE - A

GENERAL INFORMATION QUESTIONNAIRE (con't)

Name:	Date of Mishap:
Mishap Category:	Mishap Number:

Fill table in for all personnel involved in the mishap (use additional pages as necessary):

Name: (*Last, First, MI)*	Sex *(M/F)*	Duties:	Grade/Rank	Branch	Unit

INSTRUCTIONS FOR COMPLETING TABLE

- Indicate by * individual at controls (aircraft/vessel) at time of mishap.
- Sex: self-explanatory.
- Indicate duties, responsibilities of each crewmember including crew position at time of mishap.
- Grade/Rate: self-explanatory
- Indicate Branch of Service: I.e., CG, USN, AF, USA, RES, PHS
- Indicate both permanent and/or temporary unit.

3. <u>COMMENTS</u>: (make note of important events and significant findings):

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MEDICAL OFFICER'S INJURY QUESTIONNAIRE

Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

1. General Information:

A. Duty Status: ☐ Active Duty ☐ Reservist ☐ Civilian

B. Injury Classn: _____

C: Days Hospitalized: _____

D. Days in Qtrs: _____

E. Days Grounded (aircrew only): _____

F. Unconscious: ☐ Yes ☐ No

DURATION: _____ Hours/Days/Mins/Secs)

G. Smoking History: ☐ Yes ☐ No

_____ packs per day

2. Injuries Incurred during Mishap:

(Use additional sheets if necessary)

		ICD Code
Body Part		
Diagnosis		
Specific Cause		
Body Part		
Diagnosis		
Specific Cause		
Body Part		
Diagnosis		
Specific Cause		

3. Laboratory Test:

mm/dd/yr	Date Drawn	Time Drawn	Elapsed Time	Lab Used	Tissue Used	Normal Range	Method Used	Results
Carbon Monoxide								
Alcohol								
Drug Screen								
HgB/Hct								
Lactic Acid								
Glucose								
Other								

4. Urinalysis:

_____ Specific Gravity _____ Dipstick _____ Miroscopic

_____ WNL _____ Other

Elapsed time after Mishap (hours): _____

5. Radiological Results:

Performed: ☐ Yes ☐ No WNL: ☐ Yes ☐ No Comments: (enclose results of pertinent)

FIGURE - B

MEDICAL OFFICER'S INJURY QUESTIONNAIRE (Con't)

Name:	Date of Mishap:
Mishap Category:	Mishap Number:

6. Pre-existing Diseases/Effects Present at Time of Mishap:

	Discovery Method (X)				Waivers as applicable	
DIAGNOSIS	Annual Physical	Sick Call	Autopsy	Other	Authority	Date

7. Autopsy Data: Conducted by/in Presence of (Check each applicable):

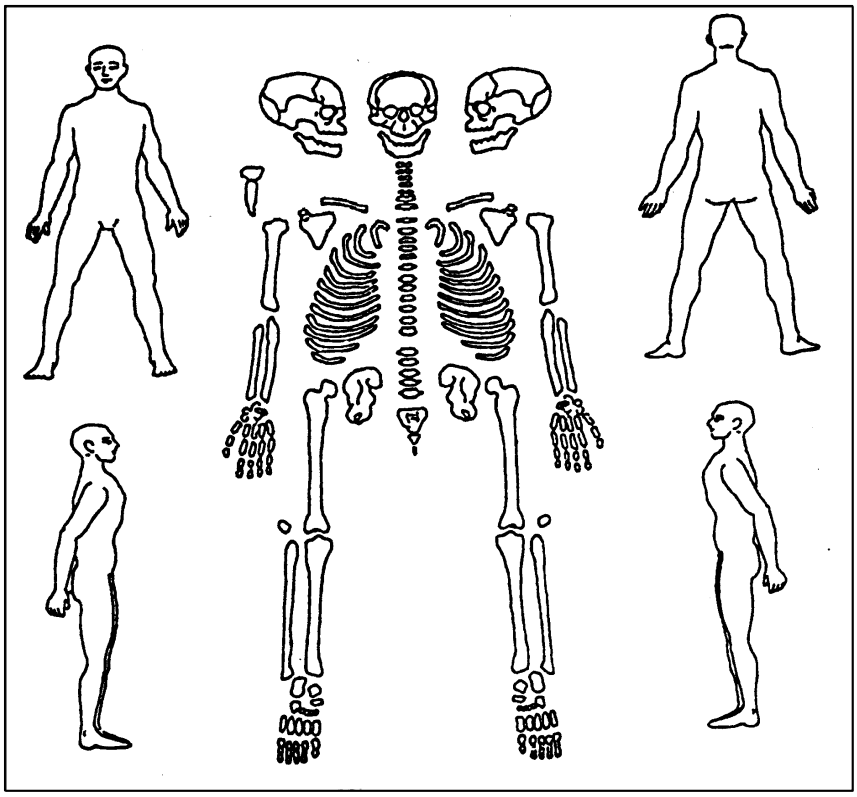
☐ AFIP PATHOLOGIST ☐ CIVILIAN ☐ PATHOLOGIST

☐ FLIGHT SURGEON ☐ OTHER Military Pathologist ☐ Other:_____

8. Injury profile: Mark or draw injury profile on diagram.

INJURY PROFILE

Mark or draw injuries where applicable



MEDICAL OFFICER'S INJURY QUESTIONNAIRE (con't)	
Name:	Date of Mishap:
Mishap Category:	Mishap Number:

9. Comments/Remarks:

10. Instruction on Completing Questionnaire:

a. This questionnaire should be completed for every member injured in the mishap or who incurred relevant medical findings.

b. Injuries - Part 2: All injuries should be listed in decreasing order of severity, using standard medical terminology to describe body parts and conditions. In fatalities the primary cause of death should be listed. Any external factor that can be reasonably concluded to have affected the mechanism of injury should be accurately described. These factors can be listed under "specific causes". (See example below)

c. ICD Codes - Part 2: ICD codes should be used to most accurately account for injuries incurred during the mishap.

Example:

Body Part		Right tibia		
Diagnosis		Spiral hairline fracture		
Specific Cause		Flexion-rotation motion/impact during egress		

d. **Laboratory Tests -** Part 3: Frozen samples of serum and urine should be retained for at least 90 days in case future use/verification is requires. The medical officer should note the importance or significance of the findings with relation to the mishap.

e. **Urinalysis -** Part 4: Self-explanatory. Add additional comments as clinically indicated to describe the presence of blood, protein, and/or status of renal function.

f. **Radiological Results** - Part 5: Radiological procedures may be required, as clinically indicated, according to the nature of the mishap, and egress/rescue procedures. In aviation mishaps involving crashes, forced egress or bailouts, spinal X-rays are required. A copy of the X-ray reports should be attached to this form.

g. **Preexisting Diseases/Defects** - Part 6: All known preexisting diseases, defects and diseases present at time of mishap should be listed. This should include all auditory and visual defects. Note the process by which these defects/diseases were identified and verify the date and conditions of any waivers issued to that effect.

h. **Autopsy** - Part 7: The medical officer should be careful to highlight all the individuals responsible for conducting or being part of the autopsy process. If the medical officer was present at the time of the autopsy or participated in the procedure this should also be noted. Any preliminary or final results should be attached to this form.

i. **Injury Profile** - Part 8: The Injury Profile diagram should provide the exact location of the injuries, abrasions, contusions, fractures, amputations and dislocations, as well as the degree and nature of burnt injuries incurred during the mishap, egress and/or rescue process. This report should be supplemented with any photographs, video or any other supporting evidence, whenever possible. Supporting information including the aforementioned photos, videos and reports should be attached to this form upon submission.

j. **Comments/Remarks** - Part 9: Use this section to add any additional material, describe injuries, explain laboratory findings, or any other information which may be related to the mishap.

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FIGURE - C

HUMAN FACTORS CHECKLIST	
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

Following is a list of questions on conditions and situations prone to human-error. The medical officer may choose to ask these questions to obtain a better understanding of factors associated with or leading to the mishap.

MEDICAL -PHYSIOLOGICAL FACTORS:

- ☐ Use of alcohol or drugs
- ☐ Use of medications (prescribed/OTC); use of nutritional supplements
- ☐ Operating under stress/anxiety (hyperventilation)
- ☐ Fatigued/lack of rest/nutrition/hydration status
- ☐ Performing while ill/recent illness
- ☐ Physical fitness level/state of health
- ☐ Other

COMMUNICATION / COORDINATION FACTORS:

- ☐ Inadequate mission planning
- ☐ Failed mission brief/plan
- ☐ Failing to use /follow standard procedures
- ☐ Inadequate training
- ☐ Failing to use available resources
- ☐ Interpersonal crew conflicts
- ☐ Failed communication/coordination among crew members
- ☐ Language barrier
- ☐ Unacknowledged/misunderstood intentions

PERFORMANCE /BEHAVIORAL FACTORS:

- ☐ Failed to adequately perform (preoccupation)
- ☐ Complacency (inattention, distraction)
- ☐ Failed to follow standard operating procedures (misread, habit)
- ☐ Exceeded operational limits (over confident)
- ☐ Performed under command /peer pressure (expectations)
- ☐ Ignored safety warning parameters (misinterpretation, timing)
- ☐ Failed to adequately prioritize tasks (task saturation, judgment error)
- ☐ Inadequate knowledge of regulations/system/procedures
- ☐ Operating in non-current status/below proficiency level
- ☐ Operating under stress (anger/frustration/personal problems)
- ☐ Performance attitude (overassertive/nonassertive/failed confidence/too confident)
- ☐ Other

HUMAN FACTORS (con't)

Name:	Date of Mishap:
Mishap Category:	Mishap Number:

SUPERVISORY FACTORS:

- ☐ Failed to establish work schedule/monitor assignments
- ☐ Failed to follow/monitor compliance with regulations
- ☐ Failed to follow craft limitations per mission requirements
- ☐ Failed to monitor crew training/performance levels
- ☐ Failed to remove poor performer
- ☐ Inadequate crew skill level per mission tasking/requirements
- ☐ Failed to recognize weak procedures/increased operational risks
- ☐ Failed to communicate problems to chain of command
- ☐ Excessive operational commitments
- ☐ Lax safety supervision
- ☐ Inadequate operating standards/procedures
- ☐ Failed to establish adequate mission standards/procedures
- ☐ Poor/inadequate command attitude
- ☐ Inadequate resources/facilities
- ☐ Inadequate Human Factors training
- ☐ Failed to establish/enforce crew training
- ☐ Failed to monitor crew rest/secondary assignments

ENGINEERING FACTORS:

- ☐ Inadequate/poor arrangement of controls
- ☐ Inadequate data display
- ☐ Difficulty interpreting/reading instruments
- ☐ Workplace (anthropometric) incompatibility - hard to reach controls
- ☐ Inadequate instructions
- ☐ Inappropriate automation/excessive complexity
- ☐ Failed to use appropriate control
- ☐ Failed response to warning signal
- ☐ Failed to manual override-over reliance on automated system

ENVIRONMENTAL FACTORS:

- ☐ Over exposure to elements (hypothermia/hyperthermia)
- ☐ Experienced vertigo/loss of consciousness
- ☐ Experienced hypoxia/hyperventilation
- ☐ Weather condition exceeded minimum operational safety standards
- ☐ Inadequate preparation per weather conditions (deicing)
- ☐ Inadequate established mission parameters (night/low altitude/NVG's)
- ☐ Experienced acceleration/deceleration forces (excess)
- ☐ Experienced sudden decompression/
- ☐ Experienced air turbulence/vibration
- ☐ Cockpit/cabin compromised (smoke/fumes/fire)

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FIGURE - D

72 - HOUR PRE-MISHAP HISTORY

Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

This chronological account of activities, of the 72 hours preceding the mishap, should be completed by the medical officer and included as part of the analysis for each member and for other persons who may have contributed to the mishap.

1. Genera Information:

a. Age: _____

b. Date of Birth (mm/dd/yr): _____

c. Sex: ☐ Male ☐ Female

d. Marital Status: ☐ Single ☐ Married ☐ Divorced ☐ Separated

e. Leave/TAD Inforamtion:

(1) Date Last Leave Began (mm/dd/yy): _____

(2) Duration of Last Leave (days): _____

(3) Type: ☐ Regular ☐ Emergency ☐ Sick/Convalescent

(4) Date of Last TAD (mm/dd/yy): _____

(5) Duration of Last TAD (days): _____

f. Work/Rest Information:

(1) Hours Worked in Last: ☐ 24 hours ☐ 48 hours ☐ 72 hours

(2) Continuous Duty Prior to Mishap (hours): _____

(3) Hours Continuously Awake Prior to Mishap: _____

(4) Hours Slept in Last: ☐ 24 hours ☐ 48 hours ☐ 72 hours

(5) Duration of Last Sleep Period (hours): _____

(6) Last Sleep Period Was: ☐ Continuous ☐ Broken

(7) Hours between Last Meal and Mishap: _____

(8) Time in Aircraft/Vessel Prior to Mission: _____

(9) Duration of Mission before Mishap occurred: _____

2. Instructions:

a. The history should begin 72 hours prior to the time of the mishap and proceed in a chronological order. The medical officer should pay close attention to any alcohol consumption, physical activities, nutritional status (eating habits), emotional stress, personal problems, sleep habits, the use of medications/drugs and/or supplemental products (vitamins/minerals) and any other significant event affecting the member.

b. An example on completing this form is provided:

Friday: 13 Dec 2002

1800 Ate dinner at home: meatloaf, peas, rice, 2 glasses of wine, coffee and flan (custard).
1900 Relaxed and watched TV, ate popcorn and pretzels, drank 1 beer.
2300 Went to bed.

72 - HOUR PRE-MISHAP HISTORY (con't)

Saturday: 14 Dec 2002

0600 Woke up went to Gym.
0800 Showered ate breakfast: 1 egg, 2 slices of toast, orange juice and coffee.
0830 Worked at computer, read, relaxed.
0900 Worked around yard: cut grass, trim bushes pulled weeds.
1130 Ate lunch: ham and cheese sandwich, tea.
1200 Read a book, took nap, relaxed.
1700 Ate dinner: salad pizza: cheese/pepperoni -three slices, drank 2 glasses of beer.
1800 Watched television with family.
2200 Went to bed.

Sunday: 15 Dec 2002

0800 Woke up, read newspaper.
0900 Ate breakfast: glass orange juice, coffee, 2-egg ham and cheese omelet.
1100 Went to church.
1230 Lunch at friends home: 1 large steak, mashed potatoes, egg salad, and large Pepsi.
Played volleyball and Frisbee with kids.
1700 Returned home, watched TV.
1900 Ate dinner at home: spaghetti and meatballs, 2 glasses of wine, salad and garlic bread.
2100 Went to bed.

Monday: 16 dec 2002

0600 Woke up, showered, left for work.
0630 Ate breakfast in Officer's Mess.
0700 Office: Reviewed papers, sent e-mails.
0730 Brief for mission.
0930 Mission: Familiarization flight with student pilot.
1100 Landed at ATC Mobile.
1130 Debrief
1200 Office: paperwork
1230 Lunch: hamburger, fries, Pepsi.
1300 Officer's meeting.
1500 Brief for SAR.
1600 Take off.
1800 Noted ECS air at high temperature, fire-warning light, deteriorating engine indicators, smoke, emergency landing, flames extinguished--no injury.
1830 Recovered by HH-60 helo.
1900 Returned to ATC Mobile, visit health services clinic.

(Continue on additional sheets as necessary)

c. **NOTE:** Include page 1 of this form and the completed chronological questionnaire as part of the final Medical Officer's Report

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FIGURE - D

72 HOUR PRE-MISHAP HISTORY
CHRONOLOGICAL QUESTIONNAIRE

Name:	Rate/Rank:
Duty/Position	Mishap Category:
Date of Mishap:	Time of Mishap:

This report **MUST** accompany the 72-hour General Information Page

DAY: _____ : _____

0500 hrs: _____
0600 hrs: _____
0700 hrs: _____
0800 hrs: _____
0900 hrs: _____
1000 hrs: _____
1100 hrs: _____
1200 hrs: _____
1300 hrs: _____
1400 hrs: _____
1500 hrs: _____
1600 hrs: _____
1700 hrs: _____
1800 hrs: _____
1900 hrs: _____
2000 hrs: _____
2100 hrs: _____
2200 hrs: _____
2300 hrs: _____
2400 hrs: _____
0100 hrs: _____
0200 hrs: _____
0300 hrs: _____
0400 hrs: _____

COMPLETED FOR ALL THREE DAYS PRECEEDING MISHAP
CONTINUE ON ADDITIONAL SHEETS

"THE INFORMATION CONTAINED IN THIS QUESTIONNAIRE MAY ONLY BE RELEASED IN ACORDANCE WITH THE FREEDOM OF INFORMATION AND PRIVACY ACT"

ESCAPE - EGRESS QUESTIONNAIRE

Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

1. Location of Individual in craft/vessel: *(Check appropriate box)*

a. General:

☐ Cockpit ☐ Nav/Eng Compartment ☐ Cabin/Pax Compartment ☐ Outside on Ground
☐ On Deck ☐ On Bridge ☐ Outside in Flight (Hoisting) ☐ Below Decks ☐ Other

b. Longitudinal Location: ☐ Forward ☐ Center ☐ Aft ☐ Unknown

c. Lateral Location: ☐ Center ☐ Left/Port ☐ Right/Starboard ☐ Unknown

d. Direction Facing: ☐ Forward ☐ Aft ☐ Sideward ☐ Unknown

e. Use of Seat: ☐ In seat ☐ Not in seat ☐ In Bunk/Litter ☐ Unkown

2. Escape Data: *(Check appropriate box)*

a. Egress Attempted: ☐ Yes ☐ No ☐ Unknown

b. Aircraft/Vessel Abandoned: ☐ NA - No Actual/Successful Egress ☐ After Impact/Landing ☐ Unkown

c. Escape Method: *(Check only one method and specify from chosen selection)*

☐ Accomplished (free of aircraft/vessel)
☐ Definitely Not Attempted
☐ Other Escape
☐ Underwater Egress
☐ Escape Unassisted (not emergency egress)
☐ Blown/Thrown Out
☐ Standard Emergency Abandon Ship
☐ Vessel to Vessel Raft Transfer
☐ Suspected Escape
☐ Unknown if Attempt was Made/Accomplished
☐ Standard Emergency Ground Egress
☐ Other Unsuccessful Escape Attempt
☐ Carried/Assisted Out
☐ Jumped/Fell from A/C (airborne)/Vessel (underway)
☐ Escape Method Unknown

d. Sequence of Actions: *(Describe)*

_____
_____
_____
_____
_____
_____

e. Intent for Escape: *(Check appropriate box)*

☐ Intentional ☐ Unintentional/Self-induced ☐ Intent Unknown
☐ Unintentional/Mechanically Induced ☐ Unintentional/Other Induced

f. Order of Escape: _____ of _____ members.

g. Number of Previouse: _____ escapes _____ other.

h. Exits Used: ☐ Normal Exit ☐ Emergency Exit ☐ Other ☐ Unknown

FIGURE - E

ESCAPE - EGRESS QUESTIONNAIRE (con't)

Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

3. Cockpit/Bridge/Cabin Condition Relative to Individual's Location: *(check appropriate)*

☐ No Damage ☐ Damaged-Definitely Habitable ☐ Damage Unknown ☐ Damaged-Probably Habitable
☐ Damaged-Probably Not Habitable ☐ Destroyed-Definitely Not Habitable

4. Emergency Egress Lighting Systems: *(check appropriate)*

☐ Installed ☐ Not Installed ☐ Unknown ☐ Aided in Location of Exit ☐ Not Seen
☐ Did Not Aid in Location of Exit ☐ Not Applicable ☐ Unknown Effect in Locating Exit

5. Aircraft/Vessel Parameters at Time of Escape: *(if unknown, so indicate)*

Aircraft: Altitude(FT): _____ (MSL)/ _____ (AGL) _____

Velocity: Airspeed (KTS): _____ **Groundspeed(KTS):** _____

Sink Rate (FT/MIN): _____ Climb Tate (FT/MIN): _____

Pitch (DEG): _____ ☐ Up ☐ Down *(Check one)*

Pitch Rate (DEG/SEC): _____ ☐ Up ☐ Down *(Check one, unless Rate=0)*

Bank Angle (DEG): _____ Direction: ☐ Right ☐ Left *(Check one, unless Rate=0)*

Roll Rate (DEG/SEC): _____ ☐ Right ☐ Left *(Check one, unless Rate=0)*

Yaw (DEG) _____ Direction: ☐ Right ☐ Left *(Check one)*

Yaw Rate (DEG/SEC): _____ ☐ Right ☐ Left *(Check one, unless Rate=0)*

Forces: Normal (G's)_____ ☐ Up ☐ Down *(Check one)*

Lateral (G's) _____ ☐ Right ☐ Left *(Check one)*

Other: *(Check all that apply)* ☐ Nose Down Spin ☐ Flat Spin ☐ Oscillating Spin
☐ Upright on Ground ☐ Inverted ☐ Tumbling ☐ Mushing
☐ Upright on Water ☐ Disintegrating ☐ Rolling ☐ Under Water/Sinking
☐ Other: *(Describe)*

_____
_____
_____
_____

Vessel: Velocity (KTS) _____

Water Conditions: _____ ft seas. ☐ Rough ☐ Calm ☐ Unknown

Attitude: ☐ Normal ☐ Underwater/Sinking ☐ Listing ☐ Rolling ☐ Capsized

Direction/Position: ☐ to Port ☐ to Sea ☐ In Harbor ☐ at Pier
☐ Anchored

ESCAPE - EGRESS QUESTIONNAIRE (con't)

Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

6. Egress Problems: *(See Instructions)*

PHASE: B = before D = during A = after (egress)

TYPE: W = water G = ground

PROBLEM	PHASE	TYPE
Locating hatch/window exit release mechanism		
Mechan. releasing hatch/window exit		
Reaching hatch/window exit		
Confusion/Panic/Disorientation		
Darkness/Loss Visual Reference		
Fire/Smoke/Fuel		
Anthropometric Problem		
Obstruction		
Obstruction clothing/equipment/injuries		
Injuries: specify body area affected		
Hypothermia		
Inrush of Water		
Loss of Consciousness		
Environment wind/water/light(darkness)		
Entanglement		
Other		

7. Explanation: _____

8. Reasons for escape: *(indicate all that apply)*

☐ Fire/Explosion/Smoke ☐ Out of Fuel ☐ Loss Control ☐ Water Impact ☐ Engine Failure
☐ Ground/Structure Impact ☐ Structural failure ☐ SHIPOPS Failure ☐ Collision
☐ Other ☐ Capsizing/sinking ☐ Unknown

9. Communications: *(Before egress)*

☐ Distress signal Transmitted ☐ Position Fix Transmitted ☐ Emergency IFF ☐ Unknown ☐ None

FIGURE - E

ESCAPE - EGRESS QUESTIONNAIRE (con't)	
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

10. Remarks:

a. Complete this questionnaire for each person who successfully egressed as part of the mishap event and also for each person who unsuccessfully tried to egress.

b. Location, part 1: indicate where this person was located at the time of the mishap by checking one selection from part A. Amplify with one selection each from parts B through E, as indicated.

c. Escape Method, part 2 (A-C): indicate the type of escape and amplify from the adjacent selections. Use only the selections associated with the particular method.

d. Sequence of Actions, part 2 D: list sequence of preparatory actions accomplished by this individual before actual egress. Examples: visor down, lap belt/shoulder harness straps adjusted, seat moved/adjusted, tightened mask, crew alert, etc.

e. Cabin/Cockpit/Bridge Conditions after Impact, part 3: check the one selection that best describes the condition of the cockpit/cabin/bridge.

f. Emergency Egress Lighting, part 4: indicate the presence or absence of emergency lighting and effect, contribution to the egress/escape procedure.

g. Vessel Parameters at time of Escape, part 5: indicate all pertinent parameters/conditions and specify/expand on any possible impact, both positive and negative contributions these conditions would have had on egress procedures.

h. Egress Problems, part 6: indicate the problem encountered and explain in the remarks section the nature, effect and result each problem had on the egress procedures. Specify the phase of the egress action the problem was encountered and the type of egress with the problem. Indicate difficulties in finding, reaching or releasing the emergency release mechanisms and whether this was caused by injuries obstructions caused by equipment, clothing, attitude of craft, external or internal forces, entanglement, etc. Be specific and detailed, part 7. Use additional sheets if necessary.

i. Reasons for Escape, part 8: indicate all the reasons, which apply.

j. Communications, part 9: indicate whether emergency procedures were followed in relating position, transmitting distress signal before initiating egress.

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RESCUE AND SURVIVAL QUESTIONNAIRE

Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

1. Conditions Prevailing at Survival/Rescue Site:

a. Temperature/Winds/Waves (if widely variable, give range):

Water Temp: _____ deg F Air Temp: _____ deg F

Surface Wind: _____ kts _____ deg

Wave Height: _____ ft _____ deg (mag) Wave Freq: _____ per min

b. Terrain: *(Check appropriate box)*

☐ Open Ground ☐ Woods/Jungle ☐ Mountains
☐ Desert ☐ Water ☐ Ice/Snow
☐ Swamp ☐ Other ☐ Unknown

c. Weather: *(Check appropriate box)*

☐ Clear ☐ Overcast ☐ Fog
☐ Rain ☐ Snow ☐ Sleet
☐ Hail ☐ Other ☐ Unknown

2. **Time Lapse Sequence for Actual Rescue Vehicles/Personnel:**

	Actual Time (24)hour) Local Clock	Elapsed Time from Mishap	Light Conditions (X)			
			Dawn	Day	Dusk	Night
Rescue personnel notified						
Rescue vehicle departed						
This individual located by rescue personnel						
This individual physically reached by rescue vehicle personnel						
This individual actually in rescue vehicle or rescue attempt abandoned						
Rescue completed (Person returned to station, hospital, etc.)						

3. Time this Individual Spent:

a. In water: _____ hrs _____ min

b. In raft: _____ hrs _____ min

c. On land: _____ hrs _____ min (unsheltered and/orexposed)

FIGURE - F

RESCUE AND SURVIVAL QUESTIONNAIRE (con't)	
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

4. Personnel/Vehicles Performing Rescue:

a. Vehicle Performing Actual Pickup of This Person:

Organization: _____ Type/Model: _____

Location When Alerted: _____

Duty When Alerted: _____

Distance to Victim(s) (miles): _____ straight line _____ actual miles traveled.

b. SAR Report Information: SAR Report Attached ☐ Yes ☐ No

Report # _____ Available from: _____

c. Did Rescue Personnel Leave Vehicle to Assist in Rescue: ☐ Yes ☐ No

If yes, how: ☐ Jumped ☐ Lowered by Hoist ☐ Descended Line/Ladder/Net

☐ Into Water/Onto Ground (no jump) ☐ Other _____

5. Personnel/Vehicles Assisting/Attempting Rescue:

Organization: _____ Type/Model: _____

Problems: ☐ Yes ☐ No (If yes, explain in remarks)

List additional vehicles participating/standing by in remarks or attach additional sheet.

6. Rescue Alerting Means (use numbers to show sequence):

☐ Witnessed ☐ Crash Phone ☐ Other Telephone ☐ Radio MAYDAY Call

☐ Survival Radio ☐ Other Radio Report ☐ Radar Surveillance ☐ Overdue Report to SAR

☐ Airborne Rapid Relay ☐ Visual Signaling Equipment ☐ Survivor Report ☐ Loss of Radio Contact

☐ Smoke/Fire/Crash Scene ☐ Audio Signaling Equipment ☐ Other (describe) _____

7. Alerting Communications Problems :

☐ Poor Radio Reception ☐ Telephone Line Busy ☐ Poor Radio Discipline ☐ Acft Radio/Iff Eqpt Inop

☐ Poor Radio Procedures ☐ Language Problems ☐ Incompatible Radio Frequency ☐ None

☐ Other ☐ IFF

8. **Delays in Departure of Rescue vehicle(s):**

☐ Vehicle Operator Not Available ☐ Vehicle Not Ready ☐ Vehicle Crew Not Available

☐ Communication Breakdown ☐ Completing Previously Assigned Duties

☐ Lack of Information on Crash Site ☐ Nature of Terrain ☐ Nature of Terrain

☐ None ☐ Other _____

RESCUE AND SURVIVAL QUESTIONNAIRE (con't)

Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

9. Rescue Vehicle Problems En Route:

☐ Headwind ☐ Poor Visibility ☐ High Sea State ☐ Mechanical Problems ☐ Nature of Terrain
☐ Rescuers Lost ☐ Weather ☐ Other Obstructions (fences, etc.) ☐ None
☐ Other (specify) _____

10. Problems in Locating Individual or Keeping Individual in Sight:

☐ Heavy Seas ☐ Trees ☐ Fog/Clouds ☐ Precipitation ☐ Darkness ☐ Radio Interference
☐ Loss of Radio/Radar Contact ☐ Inadequate/Improper Search ☐ Confusion Due to Other Lights
☐ Malfunction of Directional Equipment ☐ Lack of Correct Information on Location of Survivor
☐ Inability to Visually Distinguish Survivor from Terrain ☐ Survivor's Failure to Use Signaling Equipment
☐ None ☐ Other (specify) _____

11. Rescue Equipment Used: *(use numbers to show sequence)*

☐ Rescue Strap ☐ Seat ☐ Cargo Net ☐ Rope ☐ Life Ring ☐ Basket ☐ Boom Net
☐ Davit ☐ Raft ☐ Webbing Cutters ☐ Grapnel ☐ Boarding Ladder ☐ Makeshift Carrier/Support
☐ First Aid Equipment ☐ Forest Penetrator ☐ Helicopter Platform ☐ Stretcher
☐ Cable Cutter ☐ Helicopter Rescue Boom ☐ Knife/Axe/Saw ☐ Billy Pugh Net
☐ Other (describe)

12. Survival Problems Encountered by This Person: *(number in the sequence experienced)*

☐ Inadequate Flotation Gear
☐ Lack of Signaling Equipment
☐ Entanglement
☐ Entrapment in Aircraft
☐ Unfamiliar with Equipment
☐ Incapacitated by Injury
☐ Exposure (Heat, Cold, Sunburn)
☐ Weather
☐ Darkness
☐ Hampered by Helo Downwash
☐ Thirst
☐ Insects, Snakes, Animals, etc.
☐ Proximity to Ship (_____Yards)
☐ None
☐ Inadequate Cold Weather Gear
☐ Lack of Other Equipment
☐ Dragging
☐ Unfamiliar with Procedure
☐ Confused, Dazed, Disoriented
☐ Poor Physical Condition
☐ Fatigue
☐ Topography(Swamps, Mountains, Deserts, etc.)
☐ Thrown Out of Raft
☐ Problem Boarding Rescue Vehicles
☐ Hunger
☐ Sharks
☐ Hampered by Injuries
☐ Other(Describe) _____

FIGURE - F

RESCUE AND SURVIVAL QUESTIONNAIRE (con't)	
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

13. Problems that Complicated Rescue Operations:

- ☐ Failure of Rescue Vehicle (Mechanical Problems)
- ☐ Failure of Rescue Equipment (Hoist, etc.)
- ☐ Inadequacy of Rescue Personnel (Know/Training)
- ☐ Inadequate Medical Facilities
- ☐ Rescue Crewman Assist Hesitancy
- ☐ Entrapment in Aircraft
- ☐ Physical Limitations of Person Being Rescued
- ☐ Rescue Vehicle Accident
- ☐ Communications Problems, etc.
- ☐ Interference from Other Vehicles
- ☐ Weather
- ☐ Weight/Drag Problem
- ☐ Floating Debris
- ☐ Awaiting Further Attempts by Other Rescuers
- ☐ Inadequate Rescue Procedures/Pre-Mishap Plans
- ☐ Poor Suitability of Rescue Equipment
- ☐ Poor Coordination of Rescue Efforts
- ☐ Panic/Inappropriate Actions of Person Being Rescued
- ☐ Inadequate Knowledge of Personal Equipment Releases/Actuators
- ☐ Inadequacy/Lack of Rescue Vehicle
- ☐ Inadequacy/Lack of Rescue Equipment
- ☐ Inadequate Medical Equipment
- ☐ Vehicle Operator Factor (Poor Procedures)
- ☐ Fire/Explosion
- ☐ Physical Limitations of Rescue Personnel
- ☐ Carelessness of Rescue Personnel
- ☐ Topography (Rough Seas, Mountains)
- ☐ Victim Pulled Away by External Forces
- ☐ Darkness
- ☐ Hampered by Personal/Survival Equipment
- ☐ Primary Rescuer Delayed
- ☐ Hampered by Helicopter Downwash
- ☐ Poor Availability of Rescue Equipment
- ☐ Poor Survivor's Techniques
- ☐ Inadequate Training of Rescue
- ☐ None
- ☐ Other (describe) _____

_____

_____

14. Individual's Physical Condition:

	During Rescue *(Check one)*	After Rescue *(check one)*
1. Fully Able to Assist		
2. Partially Able to Assist		
3. Immobile or Unconscious		
4. Fatal on Recovery-Due to Injuries		
5. Fatal on Recovery-Drowned		
6. Recovered Alive-Died From Injuries		
7. Lost During Rescue Attempt-Apparently Injured or Drowned		

RESCUE AND SURVIVAL QUESTIONNAIRE (con't)	
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

15. Remarks: *(Indicate item referred to. Continue on separate sheet , if necessary)*

Submit this questionnaire on each survivor who was rescued as a result of a search and rescue (SAR) operation.

1. More than one condition may prevail under sections A, B, and C.
2. Report all times as local. Elapsed time begins from the moment rescue personnel are first notified. The length of time that a survivor is exposed to environmental hazards before aid arrives is critical in determining survivability.
3. A total of A plus B plus C should represent total time from egress until rescue. Time in a raft is not part of time in the water. Anytime the individual enters the water (abandons his raft) should be included in section A.
4. This section pertains only to the vehicle that performed the actual rescue. NOTE: title of organization effecting the rescue is, e.g., police department, etc., as well as the name and address of participating civilians, should be listed. The rest is self-explanatory.
5. Refers to vehicles other than that listed in number 4 that participated or could have participated in a rescue attempt. This is important in determining availability of resources.
6. Indicate how rescuers/units were alerted to the need for a rescue effort.

7-10. Refers to problems affecting rescue operations. Fill out accordingly.

11. List all rescue equipment utilized.
12. List all conditions that presented a hazard to the survivor.
13. The problems and conditions listed here should be checked as indicated. Any condition, which presents a potential problem during a rescue operation today, may represent the loss of life in a future rescue effort.
14. Check all conditions concerning survivor's/victim's condition.
15. Remarks: Self-explanatory.

"THE INFORMATION CONTAINED IN THIS QUESTIONNAIRE MAY ONLY BE RELEASED IN ACCORDANCE WITH THE FREEDOM OF INFORMATION AND PRIVACY ACT"

FIGURE - G

PERSONAL PROTECTIVE EQUIPMENT QUESTIONNAIRE (con't)	
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

Mark with an X in the appropriate box. Note any irregularities in the remarks section.

Designation	Required	Optional	Available	Utilized	Type/Model
Helmet/Neoprene					
PFD (personal flotation device)					
Survival vest					
Strobe light					
Signal Mirror					
Whistle					
Rain Gear					
Boat shoes					
Gloves/inserts/cold weather					
Goggles/sunglasses					
Knife					
Boots (insulated, safety, waterproof)					
Coveralls (anti-exposure)					
Balaclava					
Watch cap					
Personal EPIRB					
Underwear (reg, thermal, polar)					
Socks (reg, thermal)					
Dry suit/MSD900					
Signaling Devices:					
Mark 79					
Mark 124					
Other Equipment:					
Oxygen mask, regulator					
Life raft					
Survival Kit					
Restraint System (lap belts, shoulder harness)					

PERSONAL PROTECTIVE EQUIPMENT QUESTIONNAIRE (con't)	
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

Remarks:

INSTRUCTIONS

Submit this questionnaire on each survivor who was rescued as a result of a search-and-rescue (SAR) operation.

1. Indicate the availability of equipment, knowledge of use, operational training, working condition.
2. Indicate equipment, which may have assisted in rescue/survival, had it been available.
3. Make note of special equipment, seasonal clothing and gear (i.e., 3-layer cold weather gloves; layer1 or layer 2 thermal underwear; polar fleece, etc.).
4. Obtain list of standard operating equipment for particular aircraft/vessel and cross check against equipment available/used at time of mishap.
5. Be specific as to type, model, number of equipment.
6. Note any modifications to standard equipment.
7. Note use of any personal, unauthorized gear, equipment and impact on rescue, survival, and/or mishap.

" THE INFORMATION CONTAINED IN THIS QUESTIONNAIRE MAY ONLY BE RELEASED IN ACCORDANCE WITH THE FREEDOM OF INFORMATION AND PRIVACY ACT"

FIGURE - H

MEDICAL OFFICERS'S MISHAP REPORT (MOR)	Part - 1
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

USE ADDITIONAL SHEETS OF (PART -1) IF NECESSARY	Page _____of_____

MEDCIAL OFFICER'S MISHAP REPORT (MOR)	**Part - 2**
Name:	Date of Mishap:
Rate/Rank:	Mishap Category:
Duty/Position:	Mishap Number:

Medical Officer's Name:	Date Report Submitted:
Rank/Grade:	E-mail Address:
Phone Number:	Hours Spent on Investigation:

"THE INFORMATION CONTAINED IN THIS REPORT MAY ONLY BE RELEASED IN ACCORDANCE WITH THE FREEDOM OF INFORMATION AND PRIVACY ACT"	(Final) Page _____of_____

FIGURE - H

MEDICAL OFFICERS'S MISHAP REPORT (MOR)

INSTRUCTIONS

The Medical Officer should submit this report as part of the mishap investigation whenever any of the following factors apply:

1. Human factor error is suspected as part of the investigation.
2. Personal injuries or other significant medical findings result from the mishap.
3. Egress from an operational aircraft/vessel has occurred, attempted whether successful or not.

The MOR should include all pertinent information and supporting documentation. However, information gathered in the following questionnaires should constitute the basis for the summation, conclusions and recommendations formulated in the MOR.

1. General Information Questionnaire
2. Medical Officer’s Injury Questionnaire
3. Human Factors Checklist
4. 72-Hour Pre-Mishap History
5. Escape-Egress Questionnaire
6. Rescue and Survival Questionnaire
7. Utilize Part -1 as initial page of report and for additional pages if needed, provide current page number and total pages of report at the bottom of the form. (example: Page 1 of 5)
8. Part - 2 is to be used for the final page of the MOR, provide total pages in report. (example: Page 5 of 5)

Note: Aforementioned questionnaires are inclusive to Enclosure (3) of the Safety and Environmental Health Manual, COMDTINST M5100.47 (series)

MISHAP BOARD APPOINTMENT, COMPOSITION AND PROCEDURES.

1. Mishap Board Appointment and Composition. A mishap board shall be appointed as soon as practicable to analyze each Coast Guard mishap.

   a. Class A and Class B Commandant Mishap Boards (MAB). Commandant (G-WKS) is the appointing and convening authority for all Class A and Class B Mishap Analysis Boards. Commandant (G-WKS) may delegate this responsibility to the reporting custodian or an officer in the chain-of-command senior to the custodian if it is deemed that a Commandant Board is not warranted. In these cases, Commandant (G-WKS) will specify the scope and requirements of the investigation. These MABs may vary in composition according to the seriousness/complexity of the mishap and the type of report required. Commandant (G-WKS) will determine the composition of the MAB. Generally, Class A and Class B mishap boards are comprised of the following membership (as appropriate):

      (1) A MAB President, senior to the personnel involved in the mishap and not in the mishap unit's chain-of-command. If the MAB President desires, and circumstances warrant, he/she may request replacement by a new MAB President senior to the commanding officer or operational commander. For aviation mishaps, the MAB President must be a designated aviator. For vessel mishaps, MAB President will have served as commanding officer of the same type of unit as that involved in the mishap. The MAB President will generally be selected by Commandant (G-OCA), (G-OCU), (G-OCS), or (G-SEC).

      (2) An Engineering Officer qualified in the mishap aircraft type or familiar with the class of vessel or shore facility involved. Consideration should be given to assigning a Warrant Officer for Engineering Support. Commandant (G-SEA), (G-SEN) or (G-SEC) generally chooses the engineering member.

      (3) A Medical Member or Flight Surgeon if personnel injuries are involved. See section 4 of this enclosure for medical officer responsibilities. The medical officer is generally chosen by Commandant (G-WKH).

      (4) A Flight Safety Officer qualified in the mishap aircraft type for Aviation Mishaps. This member is selected by Commandant (G-WKS-1).

      (5) For Aviation Mishaps: A Coast Guard Surface Operations representative shall be assigned when a surface vessel or boat is involved in a mishap with a Coast Guard aircraft.

      (6) For Vessel and Shore Mishaps: An MLC (kse) safety specialist familiar with mishap investigation procedures.

      (7) Aviation Standardization Instructor pilot and an enlisted Standardization member, qualified in the mishap aircraft type shall

normally be assigned for aviation mishaps.

(8) A senior AST should be assigned to all aviation mishaps involving aircrew injuries, fatalities, or incidents where aviation life support equipment was used or should have been used.

(9) Other knowledgeable personnel or technicians may be assigned as conditions warrant.

NOTE: For Class B mishaps, where Commandant (G-WKS) does not convene an MAB, the composition of the unit level investigation board shall be directed by the commanding officer. Ad hoc members from outside the mishap unit maybe requested and will be provided by Commandant (G-WKS).

b. Class C and Class D Unit Mishap Boards. The cognizant commanding officer shall normally be the appointing and convening authority for Class C and Class D mishaps. However, for Class C or Class D mishaps deserving senior management scrutiny, Commandant (G-WKS) may convene a full or partial MAB. A written convening order is not required. A local unit investigation and submission of the results in the required mishap report is satisfactory. Depending on the circumstances these boards usually include one to three members. Board members need not be senior to the involved person-in-command. A Flight Surgeon or Medical Officer shall be assigned to mishap boards that involve injuries or human factors events.

2. Appointment of Non-Coast Guard Personnel to Mishap Boards.

a. Members from other Services/Armed Forces, the United States Public Health Service, and Flight Surgeons or medical officers are routinely assigned as board members as appropriate.

b. Designated personnel of other Armed Forces may serve as members of Coast Guard mishap boards when mishaps involve military members from other services in an exchange program, resources in which the other services have considerable expertise, or when qualified Coast Guard personnel are unavailable.

c. Technical Observers. Commandant (G-WKS) may assign additional Coast Guard, other military or civilian personnel as observers/technical experts to assist the investigation. An invited observer will not be a member of the board, but may participate in the board's investigation and analysis to the extent considered warranted by Commandant (G-WKS).

d. National Transportation Safety Board (NTSB)/Federal Aviation Administration (FAA) may request or elect to investigate or participate in, any Coast Guard mishap investigation.

3. Mishap Board Membership Prohibitions. The following personnel are prohibited from serving as members of Commandant MAB's or participating in their proceedings:

a. Members of fact-finding Bodies. Personnel who are members of the fact-finding body that is conducting the legal or administrative investigation of the

mishap.

b. Personnel or Crewmembers Involved in the mishap cannot serve as members.

c. Personnel in Unit's Chain of Command. No member of the Board will be in the direct chain of command of the unit involved in the mishap.

d. Personnel Who Have A Personal Interest. If it becomes apparent that a member of the mishap board has a personal interest in the mishap, that member shall be replaced. Normally, it will not be necessary to duplicate proceedings completed prior to the change in membership. The new member shall be thoroughly indoctrinated concerning all aspects of prior proceedings before the analysis is continued.

4. Overview of the Mishap Investigation and Analysis Process. The following is a broad outline of the mishap investigation and analysis process.

a. The Basic Examination. The initial investigative work where information is collected from the field and from witnesses, records, autopsy, etc. This investigation also covers the examination of management and supervisory processes involved.

b. Analysis of the Evidence. A list is made of possible scenarios (theories) that are supported by facts. The theories are tested. If further information is necessary to either prove or disprove a theory, then this information is obtained.

c. In-depth Investigation. As the investigation narrows the probable scenarios, there may be the need for information that can only be obtained by detailed disassembly of components and/or laboratory analysis.

d. Final Analysis. Once all the possible information that has been gathered, the MAB must determine the cause factors or the most probable cause factors. In almost every mishap there are going to be anomalies that cannot be explained. The preponderance of information takes precedence. Not everything must be proven beyond a shadow of a doubt. Often, the most likely causes are all that can be cited. If the information shows that a hazard may have caused the injury to personnel or property damage, then it should be corrected.

e. Recommendations. Recommendations are feasible solutions related to the causes of the damage, fatalities, or injuries in the mishap sequence of events. Recommendations should be short, concise statements requiring no explanation and follow in a natural sequence after the analysis, conclusion, findings, etc.

5. Witness Statements. Investigators may take statements from all individuals concerned with the mishap or who were eyewitnesses. A promise of confidentiality may be given to any witness who the mishap investigator, in his/her discretion, determines should be extended such a promise. These promises should be given only as needed to ensure forthright cooperation of a witness and not given on a blanket basis to all witnesses. Individuals interviewed by the MAB will not testify under oath. If a witness is granted a promise of confidentiality by the MAB, they should be

advised their statement (oral or written) will be used for safety only and will be protected by the safety investigation privilege from disclosure or use in the event of administrative, punitive or legal actions. Refer to enclosure (10) of this manual for further discussion of confidentiality.

a. This assurance is given to obtain complete and candid information about the circumstances surrounding the mishap. Without this assurance, a witness might withhold certain important information by invoking constitutional rights of a self-incriminating nature. As a result, the actual mishap causal factors would remain hidden, curtailing effective mishap preventive measures. Witnesses are not limited to testimony acceptable to a court, but may be invited to express personal opinion or to speculate as to the probable mishap causal factors.

b. These promises must be explicit and not implied from the investigator's status or function. Whenever a witness gives a statement pursuant to a promise of confidentiality, it shall be documented as described in Enclosure (2) and (10). These promises should be given only as needed to ensure forthright cooperation of a witness and not given on a blanket basis to all witnesses. In each instance, the promise of confidentiality shall be strictly limited to only the information provided directly by the witness to the safety investigation. The witness will be told that the promise does not extend to testimonial information provided to other investigations, even if it is the same information.

c. All those with access to privileged reports and resulting products must ensure the restrictions on handling mishap information are enforced. It is the responsibility of the safety staff to ensure individuals working with, or having access to such materials are knowledgeable of the limited use and the required protection of such materials. All levels throughout the mishap investigation and review process must respect the overlying principle of safety privilege and confidentiality.

d. Do not advise witnesses of their Article 31, UCMJ or 5th Amendment Rights.

e. Do not have witnesses testify under oath or give sworn testimony. Ensure witnesses understand they are obliged to give honest, good faith statements.

f. Verbatim transcripts of interviews will not be made. The report should rely on interviewer's notes or summaries of interviews.

6. Promise of Confidentiality. Where a promise of confidentiality has been extended a Witness Promise of Confidentiality Advisory form (See Figure 2-1 in Enclosure (2)) must be signed and included with the statement and must be read onto all tape recordings of interviews:

a. Where a promise of confidentiality has been extended summaries of witness interviews must have the Witness Statement--Promise of Confidentiality Advisory form attached.

b. A list of witnesses interviewed shall be included in the MAR and it should indicate whether each witness was granted confidentiality.

c. Only members of the mishap investigation (MAB, the unit permanent mishap board or a safety officer) may offer promises of confidentiality to witnesses. Accordingly, all such statements are PRIVILEGED and are protected from disclosure to unauthorized personnel.

NOTE: Select only meaningful statements and information to include in MAR. *It is not necessary to publish every statement taken from every individual interviewed.* Place the selected statements of each individual together in chronological order with the earliest on top to make it easier to compare the individual's impressions.

NOTE: Failure to observe the prohibitions and mandatory provisions of this enclosure by military personnel may be a violation of Article 92, *Uniform Code of Military Justice* (UCMJ). Violations by civilian employees may result in administrative disciplinary action without regard to applicable criminal or civil sanctions for violations of related laws.

Privileged safety information shall not be used to support disciplinary or administrative action, in determining the misconduct or line-of-duty status of any personnel before any evaluation board. Nor shall this information be used to determine liability in claims for or against the Government.

7. Access to Witnesses. Safety investigators may need frequent access to or multiple interviews with participants in a mishap. The MAB shall have priority access to the wittiness over all other investigation boards. This priority access will ensure the MAB hears the initial recollections and impressions from the witnesses. The Commanding Officers will make all participants available to investigators upon request of the MAB president. The MAB president will advise the Commanding Officer when participants are no longer needed. Safety investigators make no determinations regarding the fitness of participants to be returned to normal duties.

8. If the MAB suspects that a member may have committed an offense under the UCMJ, the MAB shall contact Commandant (G-WKS) for guidance before conducting or continuing the interview of that member. Commandant (G-WKS) shall contact Commandant (G-LGL) to discuss whether the safety information or the military justice concerns take precedence. Commandant (G-WKS) shall instruct the MAB president to either cease or continue interviewing the individual.

9. Medical Officer Responsibilities. Examinations will be recorded and reported by the medical officer using The Medical Officer’s Report in Enclosure (3). Examinations should be as complete as the examinee's condition and other circumstances permit.

a. Survivors shall be treated/examined at the first opportunity. Blood and urine tests are required for all class A and B mishaps, and for class C and D mishaps if human physiological factors are suspected. Samples shall be taken from military members as soon as possible after the mishap. Laboratory tests are listed on Form A, Section II of the Medical Officer's Report. See enclosure (3), Figure 3-1 of this manual. Label the specimens with name, SSN, date and time taken. Specimens should be prepared and stored as required by the receiving medical laboratory. Samples needed from each person are as follows:

(1) Blood, two "red top" tubes, 10 ml each.

(2) Urine, minimum of 50 ml.

b. Additionally, testing after a mishap may also be required for civilian employees. Contact your servicing civilian personnel office for guidance on civilian testing procedures.

c. All personnel involved in class A and class B mishaps shall receive a complete physical examination by a military medical officer prior to returning to full duty. Not only should the examination cover obvious injuries, but also consider future developments, e.g., x-rays of back and neck, in the case of hard aviation landings, etc. This examination shall be recorded on Standard Forms 88 and 93, and these forms shall be included in the Medical Officers Report. See enclosure (3) of this manual.

d. Deceased Members. Remains should be taken into custody, covered, protected and transported to a safe holding, if necessary, until released to the custody of the medical officer/Flight Surgeon. Do not allow remains to be photographed by non-investigators.

10. Autopsies.

a. Purpose of Autopsies. It might be impossible to determine the causal factors in a fatal mishap unless autopsies are performed. Fatal mishaps have been caused by hypoxia, toxic gas, disabling occurrences such as heart attacks and other physical disabilities that can only be determined by autopsy. Discovery of these physical factors not only can determine the true causal factors, but can also provide medical authorities with information for the establishment of future personnel physical requirements. Autopsies also provide program managers and design engineers with information for improving the crash survivability of cockpits, cabins and compartments.

b. Authorization to Perform Autopsies. The authorization to perform and autopsy in the event of a fatal mishap may involve one or more of three parties; the next of kin, local civil authorities and the Commanding Officer. If death occurs on board a Coast Guard unit, and if the state has not retained concurrent legal jurisdiction at that unit, then the commanding officer may authorize an autopsy. Under these circumstances, the permission of the next of kin is not required; nevertheless, it is desirable that every effort be made to obtain concurrence from the next of kin. If death occurs within the jurisdiction of civil authorities, authorization is the responsibility of the civil authority and may or may not require permission of the next of kin, depending on local law. Commanding Officers must be familiar with the reasons that require an autopsy and, where responsibility for authorizing an autopsy rests with local authorities, should advise those authorities of the need for an autopsy.

c. Personnel to Perform the Autopsy. Whenever possible, an autopsy should be performed by personnel from the Armed Forces Institute of Pathology (AFIP). These personnel are available on short notice to assist Coast Guard MABs. To arrange AFIP assistance in performing an autopsy, contact Commandant

(G-WKH). If AFIP is unavailable, a qualified Pathologist should perform the autopsy.

d. Autopsy Reports. The report of an autopsy shall be prepared in the original with three copies plus any additional copies needed for the medical officer's files. The original and two copies shall be forwarded as a part of the Medical Officer's Report. The third copy will be forwarded to the Armed Forces Institute of Pathology, Washington, D.C. 20305.

11. MAR Preparation and Routing. A formal Mishap Analysis Report (MAR) shall be submitted for every Commandant appointed MAB. Other reports are considered informal reports. See Enclosure (2) to this manual for information and guidance on preparing and routing MAR's.

12. Time Limits. Timely review of formal MAR's is a critical process of preventing future mishaps. Delays at this stage can result in further loss and/or injury.

a. The MAB President shall submit the MAR to Commandant (G-WKS), via the commanding officer and the appropriate chain of command, **within 21 days** after the MAB completes their on-site investigation and analysis. Extension of Deadlines must be approved by Commandant (G-WKS).

b. Unit Commanding Officer shall notify Commandant (G-WKS) when finished. G-WKS shall advise endorsing chain of the associated deadlines and requirements for timely review via message.

NOTE: No additional copies of the MAR shall be made without the express permission of Commandant (G-WKS).

c. MAR reviewers shall review, endorse and forward the MAR via the chain of command **within 14 days of receipt**.

13. Delays. Timely dissemination of mishap information is critical to the Coast Guard Safety Program and very important to personnel in the field. In the event that the investigation cannot be completed and/or the report cannot be forwarded within the prescribed period, the responsible member shall notify Commandant (G-WKS) to request an extension. Reviewers should expect notification by message, through the chain of command, of missed deadlines.

FORMAT AND DIRECTIONS FOR COAST GUARD AVIATION MISHAP MESSAGE

FM (UNIT NAME)
TO COMDT COGARD WASHINGTON DC//G-WKS/G-OCA/G-SEA//
AIG EIGHT NINE ZERO SEVEN (Aviation mishaps of interest to all aviation units)
AIG EIGHT NINE NINE NINE (Aviation mishaps involving ship/helo operations)
AIG FOUR NINE THREE FOUR (Aviation mishaps involving small boats or hoisting operations)
(CO's should readdress msgs to deployed crews, as appropriate)
(Add MLCA (kse) and MLCP (kse) if personnel injury or casualty involved)
(Other Addressees as appropriate)
BT
UNCLAS FOUO //N03750//
**////////////

TOTAL FLIGHT TIME/____// FLIGHT TIME IN TYPE/____// FLIGHT TIME LAST 30 DAYS/_____// MONTHS AT UNIT/_____//

C. AIRCREW POSITION/DESIGNATION/__(See list number 13)**_// RATING/_**(See list number 14)**_// TOTAL FLIGHT TIME/___// FLIGHT TIME IN TYPE/___// FLIGHT TIME LAST 30 DAYS/___// MONTHS AT UNIT/_____//**

D. AIRCREW POSITION/DESIGNATION/__(See list number 13)**_// RATING/_**(See list number 14)**_// TOTAL FLIGHT TIME/___// FLIGHT TIME IN TYPE/___// FLIGHT TIME LAST 30 DAYS/___// MONTHS AT UNIT/_____//**

(Pilot at the controls is the pilot at the controls at the time of the mishap or during the incident being reported. If flight was single pilot, enter N/A for PILOT NOT AT CONTROLS. For GROUND mishaps, do not list pilot data unless the pilots were in the aircraft at the time of the mishap.)

(Add as many subparagraphs as needed. List aircrew information ONLY if there was an aircrew function involved in the mishap. For GROUND mishaps, list experience information for the aircrew involved in the incident.)

NO NAMES, RANKS OR SSN.

10. NARRATIVE/___(Brevity is desired, but provide a clear and complete picture of what happened. Include description of mishap causes, injuries and damages. Describe the sequence of events and circumstances leading to the mishap, what happened immediately after the mishap and any other details or information pertinent to the mishap and not described elsewhere in the message.)**_____//**

11. MISHAP DAMAGE AND COST.

A. COAST GUARD AIRCRAFT DAMAGE OR COMPONENTS INVOLVED IN MISHAP PARTS/____// COST/ ____// LABOR COST/ _____// TOTAL COST/ _____//

(List individual parts, components or aircraft damage after PARTS. List total parts cost after COST and labor cost (figured on $18 per hour) after LABOR. TOTAL cost is the total of PARTS and LABOR. If a more detailed description is necessary or desired, use the NARRATIVE or ADDITIONAL FINDINGS. Round cost to the nearest dollar. Specify new vs. overhaul cost as appropriate.)

B. OTHER COAST GUARD PROPERTY DAMAGE/__(Describe non aviation Coast Guard property damage)**___// COST/ _____//**

C. NON COAST GUARD PROPERTY DAMAGE/___(Includes other gov't as well as non gov't damage)**_____// COST/ _____//**

D. NUMBER OF INJURIES/___// FATALITIES/___// DAYS LOST/__//(days off work// restricted activity, SIQ, hospitalized, etc.)**___.** (List number of people injured or killed. Enter 0 if no injuries or fatalities.)

E. TOTAL COST/ $__(Sum of 10A, 10B and 10C)**__//**

(**NOTE:** List number of personnel injured. Details of injuries should be described in the narrative. Include rank, crew position, if applicable, and injuries of unit personnel, passengers or others involved. INJURY NUMBERS MUST AGREE WITH NARRATIVE).

<u>NO NAMES OR SSN**</u>**

(**NOTE**: Aviation mishaps involving personnel injuries must also be reported to the MISREP data base. The CG AVIATRS database does not capture injury data (SSN, name, age, days off, severity, etc.)) This is a function of the MISREP data base system.

12. A. ADDITIONAL INFORMATION/____(Text as appropriate. Include relevant information not included elsewhere in the message. Describe any item involved in the mishap that is not found elsewhere or in the narrative. Describe problems or complications caused by equipment (ALSE, Avionics, Rescue, NVG, etc) not operating as advertised. This includes positive as well as negative items.)**____//**

B. ENGINE MISHAP DATA/_____(For tracking purposes, list the phrase that best describes what happened to the engine as a result of the mishap). (See list number

15)_____//
13. RECOMMENDATIONS AND CORRECTIVE ACTIONS/___(List recommendations or corrective action taken to prevent future mishaps_____**//**
14. NAME, RANK, PHONE NUMBER OF PERSON TO CONTACT REGARDING MISHAP/_____//
15. COMMANDING OFFICER'S ENDORSEMENT/COMMENTS/_____//.
(The CO shall review the mishap report to evaluate the circumstances surrounding the mishap and indicate actions or recommends needed to correct the deficiencies and prevent similar mishaps. The CO should comment on cause factors and other aspects of the mishap. Comments should address human factor issues involved in the mishap.)
BT
NNNN

PICK LISTS FOR AVIATION MISHAP MESSAGES

List #1

AIRCRAFT	**OPMODE**
AUX	GROUND
HC130	FLIGHT
HH60	FLT-REL
HH65	
HU25	
VC4A	
VC20	

LIST #2 **MISHAP CLASS COST** (refer to COMDTINST M5100.47 (series) for more information)

CLASS A	Over $1,000,000 in Coast Guard aircraft damage, aircraft missing, abandoned or not economically repairable. Mishap results in fatalities or permanent total disability.
CLASS B	$200,000-1,000,000 in Coast Guard aircraft damage, permanent partial disability or more than five people hospitalized.
CLASS C	$20,000-200,000 in Coast Guard aircraft damage, nonfatal injury or occupational illness resulting in lost time from work beyond the day of the mishap.
CLASS D	Less than $20,000 damage, nonfatal injury or illness not meeting criteria for Class C mishaps. (includes Near Midair collision, Lessons Learned and other mishaps with significant mishap prevention information.)
CLASS E	Aviation incidents involving engine damage only, regardless of the damage cost. If the damage is not contained or not limited to the engine, the mishap will be reported according to the appropriate mishap Class. Class E mishaps can be Flight, Flight-Related or Ground Class E incidents also include Foreign Object Debris (FOD) Damage Incidents.

List #3 **PERIOD OF DAY**

DAY	DUSK	
DAWN	NIGHT	N/A

LIST #4 **METEOROLOGICAL CONDITIONS**

IMC	VMC	N/A

LIST #5 **OBSTRUCTIONS TO VISIBILITY**

BLOWING SAND	FOG/RAIN	RAIN/SNOW
BLOWING SNOW	HAZE	SEA SPRAY
BROWNOUT	MIST	SMOG
CLEAR	NO MOON	SMOKE
CLOUDS	NONE	SNOW
DUST	N/A	SUN
FOG	RAIN	VOLCANIC ASH
FOG/HAZE	RAIN/HAZE	WHITEOUT

LIST #6 **MISSION**

AI	COOP	ICE	MDP	OLP	SAR
ALPAT	DEMO	LE	MEP	OPS	TEST/FCF
AMIO	ELT	LOG	MER	PAO	TRNG
ATON	FERRY	M-OPS	MSO	PAX	
CARGO	FISH	MAINT	NVG	PHOTO	

LIST #7 **FLIGHT PLAN**

IFR	VFR
N/A	SVFR

LIST #8 PHASE

APPROACH	HOT REFUELING	PREFLT
AUTOROTATION	HOVERING	ROTOR ENGAGEMENT
CARGO	INFLIGHT	RS DEPLOYMENT
CLIMBING	INTERCEPTING	RUNUP
DEBARKING/EMBARKING	ITO	SEARCH/PATROL
DESCENDING	JACKING	SHUTDOWN
DROPS	LANDING	SIMULATED EMERGE
DUMPING FUEL	LEVEL FLIGHT	STARTUP
FINAL	LOADING/UNLOADING	STATIC DISPLAY
FORCED LANDING	LOW LEVEL	TAKEOFF
FORMATION FLIGHT	MAINTENANCE	TAXIING
FUELING	ORBITING	TEST/FCF
GO AROUND	OVERFLT/FLYBY	TIED DOWN/PARKED
GROUND HANDLING	OVER/WATER	TOUCH/GO
HFIR	PATTERN	TOWING
HOISTING	POSTFLT	WASH

Several choices may seem redundant, but some may better describe the actually situation at the time of the mishap.

LIST #9 ALTITUDE

AGL	FL	
AWL	MSL	N/A

LIST #10 PILOT IN COMMAND

PIC NPIC

LIST #11 SEAT POSITION

RIGHT LEFT

LIST #12 DESIGNATION

AC	FP
CP	IP

SP (student pilot)

LIST #13 CREW POSITION/DESIGNATION

AV	AI	BA
DM	FE	FM
FS (flight surgeon)	HQBA	HS (corpsman)
LM	N	R
RS	SSO	

Refer to Chapter 8 of the Air Operations Manual (COMDTINST M3710.1) for information on aircrew designations

LIST #14 RATING

AMT AVT

AST

LIST #15 ENGINE

FLAMEOUT	N/A
INFLT FAILURE	OVERHAUL
INFLT SHUTDOWN (w/restart)	REMOVE/REPLACE
INFLT SHUTDOWN (w/o restart)	SEL/3EL
INSPECTION	

Several choices may seem redundant, but some may better describe the actually situation at the time of the mishap.

MESSAGE REPORTING OF MISHAPS

The following worksheet and tables below should be used to help gather the information needed for the message.

Mishap Report Worksheet

Date of Mishap:_____ Local Time of Mishap: _____

Coxswain Data:

Grade: _____ Age: _____ Months Qualified in Vessel: _____ Months at Unit: _____

Narrative of Mishap (What, Where, How, Why, Environmental Conditions if applicable)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Cause(s) and Contributing Factor(s) of Mishap							
Sports		No Fault Vehicle					
if not Sports *or* No Fault Vehicle check as many that apply from below							
Personnel				**Equipment**		**Environment**	
Experience		Policies/Procedures		Eng/Design		Weather	
Qualifications		Planning/Risk Assessment		Failure		Noise	
Judgment		Management/Supervision		Inadequate Maint.		Visibility/Lighting	
Fatigue		Communication				Temperature	

Office of Safety and Environmental Health

Additional Cause Information:

_____

_____

_____

_____

Corrective Actions Taken/Lessons Learned:

_____

_____

_____

Medical Injuries:

Name: _____ Age: _____ Grade: _____ Rate: _____

Status:									
On Duty Coast Guard (Act Duty)		On Duty CG Reserve		On Duty DOD		Contractor		NAFA	
Off Duty Coast Guard (Act Duty)		On Duty Civilian		Off Duty DOD		Visitor		Auxiliary	

Part of Body Injured:											
Arm		Foot		Head		Lung		Neck		Trunk	
Eyes		Hand		Legs		Middle/Inner Ear		Other Internal			

Nature of Injury:				**Severity:**	
Abrasions/Cuts/Punctures		Fractures/Dislocation		Fatal	
Biological Exposure		Irritation		Full Disability	
Bruise/Sprain/Strain/Tear		Occupational Illness		Partial Disability	
Chemical Exposure		Radiation Exposure		None of the above	
Concussion/Loss of Consciousness		Thermal Exposure (Includes Hot & Cold)			
Electrical Exposure					

Type of Personal Protective Equipment used:											
	Req.	**Used**		**Req.**	**Used**		**Req.**	**Used**		**Req.**	**Used**
Ear			Foot			PFD			Other		
Eye			Hand			Respirator			Description of Other:		
Fall Protection			Head			Seat Belt					

Days Hospitalized		Lost Work Days (NFFD/SIQ)		Days Restricted (FFLD)	

Were any days of sea/boat/flight duty missed? Yes		No		(Civilians Only) Worker Comp Filed? Yes		No	

Property Damage:

Coast Guard Property Damage	
Government Property General	
Government Property Specific	
Operational Days Lost	
Cost of CG Owned Parts/Materials	
No. of CG man hours to repair damage	

Non-Coast Guard Property Damage Due to CG Operations	
Description	
Cost of Repairs	

Coast Guard Auxiliary Facilities / Equipment	
Description:	
Cost of Repairs:	

First Level Review

Comments:

_____

_____

_____

Name: _____ Phone: _____

Command Review (By Direction Authority)

Comments:

_____

_____

_____

Name: _____ Phone: _____

Table 1: Mission

ATON	Shore and Radio Navigation Aids
C&S	Command and/or Support
DO	Defense Operations
ELT	Enforcement of Laws and Treaties
IO	Ice Operations
M+R	Maintenance and Repair
MER	Marine Environmental Response
MI	Marine Inspection
OTHER	Other Not Listed
PERS	Off Duty/Off-The-Job
PSS	Port Safety and Security
SAR	Search and Rescue
TRG	Training

Table 2: Boat Types

ANB	ATON Boat (ANB - 55', 63' & 64')
ANB(X)	ATON Boat Misc. (34' and 38')
ASB	Arctic Survey Boat (38')
ATB	Aviation Training Boat (41' UTB)
BU	Buoy Boat (45')
BUSL	Buoy Boat, Stern Loader (49')
CB-S	Cutter Based: 14-15'
CB-M	Cutter Based: 17-18'
CB-L	Cutter Based: 19'-22'
CB-OTH	Cutter Based: Over the Horizon (24' Zodiac)
CT (All Types)	Cadet Training Boat
DPB	Deployable Pursuit Boat (38' or 42')
IMARV	Independent Maritime response Boat (50' 0r 55')
LCVP	Landing Craft
MCB	Motor Cargo Boat (25')
MSB	Motor Surf Boat (26')
MLB-44	Motor Life Boat (44')
MLB-47	Motor Life Boat (47')
PWB	MSO Port & Waterways Boat (21'' – 38', all brands)
RB-HS	Response Boat, Homeland Security
RB-S	Response Boat, Small
SKF	Skiff: Immediate vicinity maintenance & response
SPC	Special Purpose Craft (General)
SPC (Airboat)	Special Purpose Craft (Airboat)
SPC (Cable)	Special Purpose Craft (Cable Boat)
SPC (Ferry)	Special Purpose Craft (Ferry)
SPC (LE)	Special Purpose Craft (Law Enforcement)
SPC (HWX)	Special Purpose Craft: Heavy Weather (52' MLB)
SPC (SURF)	Special Purpose Craft: Surf (30' SRB)
TANB	Trailerable ATON Boat (21')
TPSB	Transportable Port Security Boat (PSU)
UTL	Utility Boat, Light (17' – 28'11")
UTB	Utility Boat, Big (41')
UTM	Utility Boat, Medium (25'-40'11" and is STA(sm) Primary Response vsl)

Use the following format for the message:

FM (UNIT NAME)
TO COMMANDANT (G-WKS)
COMCOGARD MLC LANT NORFOLK VA//KSE//
COMCOGARD MLC PAC ALAMEDA CA//KSE//

AIG FOUR NINE THREE FOUR (FOR SMALL BOAT OPERATIONAL MISHAPS)
AIG FOUR NINE TWO THREE (FOR CUTTER/CUTTER SMALL BOAT OPERATIONAL MISHAPS)
AIG EIGHT NINE SEVEN FOUR (FOR SHORE UNIT OPERATIONAL MISHAPS)
(AIG's to be used only for operational mishaps)

INFO OPERATIONAL CHAIN

BT
UNCLAS FOUO//N05100//
SUBJ: CLASS (A, B, C, D or D - HIPO) MISHAP (Unit or Boat Type) – NRN
**////////////

DAYS LOST/(Number of days of lost work time beyond the day of injury)//
DAYS REST//(Number of days in a restricted or fit for light duty status)//
(Repeat the above fields for each injury)

3. **PROPERTY DAMAGE**//
CG PROP DESC/(Description of Coast Guard property damaged)//
LOST OP DAYS/(Number of operational days lost for the CG property due to the mishap)//
CG PROP COST/CG MAT:$(Cost of Coast Guard property or cost to repair in $, 0.00 if none)/**LABOR:$(**Cost of labor need to make repairs in $, 0.00 if none)/**CONTRACT:$(**Cost of contractors needed for repairs in $, 0.00 if none)//
NON-CG PROP COST/(Cost to repair non-Coast Guard property in $, 0.00 if none)//
AUX COST/(Cost to repair Auxiliary property in $, 0.00 if none)//

4. **INVESTIGATOR/NAME**/Name of mishap investigator)/(Phone number of mishap investigator)/(E-mail address of mishap investigator)//

BT
NNNN

SOUND LEVEL REPORT INSTRUCTIONS

1. <u>Sound Level Survey Report Form (CG-5139) (RCN-5100-3)</u>. CG-5139 is designed for use with a Type I or II (ANSI) calibrated sound pressure level (SPL) meter. See Figure 7-1 for a sample CG-5139. Reproduce CG-5139 locally.

2. <u>Specific Instructions</u>.

   a. Enter the data required for the calibrator and SPL meter.

   b. Indicate whether this is an initial survey, resurvey or other type.

      (1) Initial survey is the first survey taken of an area or operation suspected to produce hazardous noise.

      (2) Resurvey is a follow-up of the initial survey conducted at least annually.

      (3) Other is a survey associated with engineering treatment or done on special request.

   c. Indicate whether measurements are made indoors or outdoors.

   d. Identify each noise source or noise hazardous area. If the entire room or area is noisy, list it (i.e., forward engine room). When noise sources present a hazard only in the immediate vicinity, list the source separately.

   e. Indicate whether the meter is in the fast or slow position. Most measurements will be made in the slow position because it is easier to read.

   f. Measure and record the A-weighted and C-weighted sound pressure levels at the normal operator position, ear height. Hold the instrument at arms length and at a 90 degree angle to the source. Where noise varies throughout an area, write the average and high-to-low range.

   g. Indicate whether noise is continuous (S) or intermittent (I); e.g., engines at a constant speed produce continuous noise; hammering, shearing or weapons firing produce intermittent noise.

2. h. For each hazardous noise source or area, record the full name of all personnel exposed. Submit the list to the local medical department for monitoring.

i. Indicate for each person listed whether they are civilian (C) or military (M).

j. For each person listed, indicate the type of hearing protection worn, if any, and date (month/year) of last known audiogram.

k. If a more detailed survey is needed, indicate the type recommended and submit a copy of the noise survey with a written request to the appropriate Commander (k), Coast Guard Maintenance and Logistics Command.

l. Indicate the name of the foreman, section chief or other supervisory person in charge of the area.

m. Include in the space provided any additional information pertinent to the work area, workers exposed or the noise sources.

n. State the name, location and operating facility (OPFAC) number of the unit survey; surveyor's full name and title and the district or Headquarters unit where the facility is located.

o. <u>READ THESE DIRECTIONS AND COMPLETE THE REVERSE SIDE OF THE FORM</u>.

Include a diagram of the operation or work area.

Indicate the primary noise source by a circled "A" and secondary noise sources by a circled "B," etc.

Workers shall be identified by circled numbers indicating relative position(s) to the noise source which should coordinate with names of exposed workers on the reverse side of the form.

One number may appear on the diagram several times if the employee moves to two or more positions having different sound levels.

Identify type of machinery, model number, manufacturer, dimensions, kind of deck, overhead and bulkhead, etc.

RCN-5100-3

DEPARTMENT OF TRANSPORTATION U.S. COAST GUARD CG-5139 (Rev. 3-90)	SOUND LEVEL SURVEY REPORT	REPORT NUMBER (RNO)

SOUND LEVEL METER		CALIBRATED		INITIAL SURVEY		RE-SURVEY		OTHER
MFG.		MFG.						
MODEL	TYPE	MODEL		INDOOR		OUTDOOR		
SN		SN		Wind Screens Will Be Used On All Measurements Indoors and Outdoors				
DATE CALIBRATED		DATE CALIBRATED						
ILLUSTRATE REVERSE SIDE WITH DESCRIPTION OF AREA WHERE NOISE SURVEY IS CONDUCTED								

IDENTIFY SPECIFIC WORK LOCATION AND NOISE SOURCE	DBA READING	DBC READING	TWA	FULL NAME, RATE OR JOB TITLE, AND SSN OF EXPOSED PERSONNEL	PLUGS ☐ MUFFS ☐ NONE ☐
1				1	☐ ☐ ☐
2				2	☐ ☐ ☐
3				3	☐ ☐ ☐
4				4	☐ ☐ ☐
5				5	☐ ☐ ☐
6				6	☐ ☐ ☐
7				7	☐ ☐ ☐
8				8	☐ ☐ ☐
9				9	☐ ☐ ☐
10				10	☐ ☐ ☐

COMMENTS:

UNIT NAME: LOCATION: OPFAC NO.:	TIME	DATE	NAME AND TITLE OF PERSON TAKING SURVEY

PREVIOUS EDITIONS ARE OBSOLETE

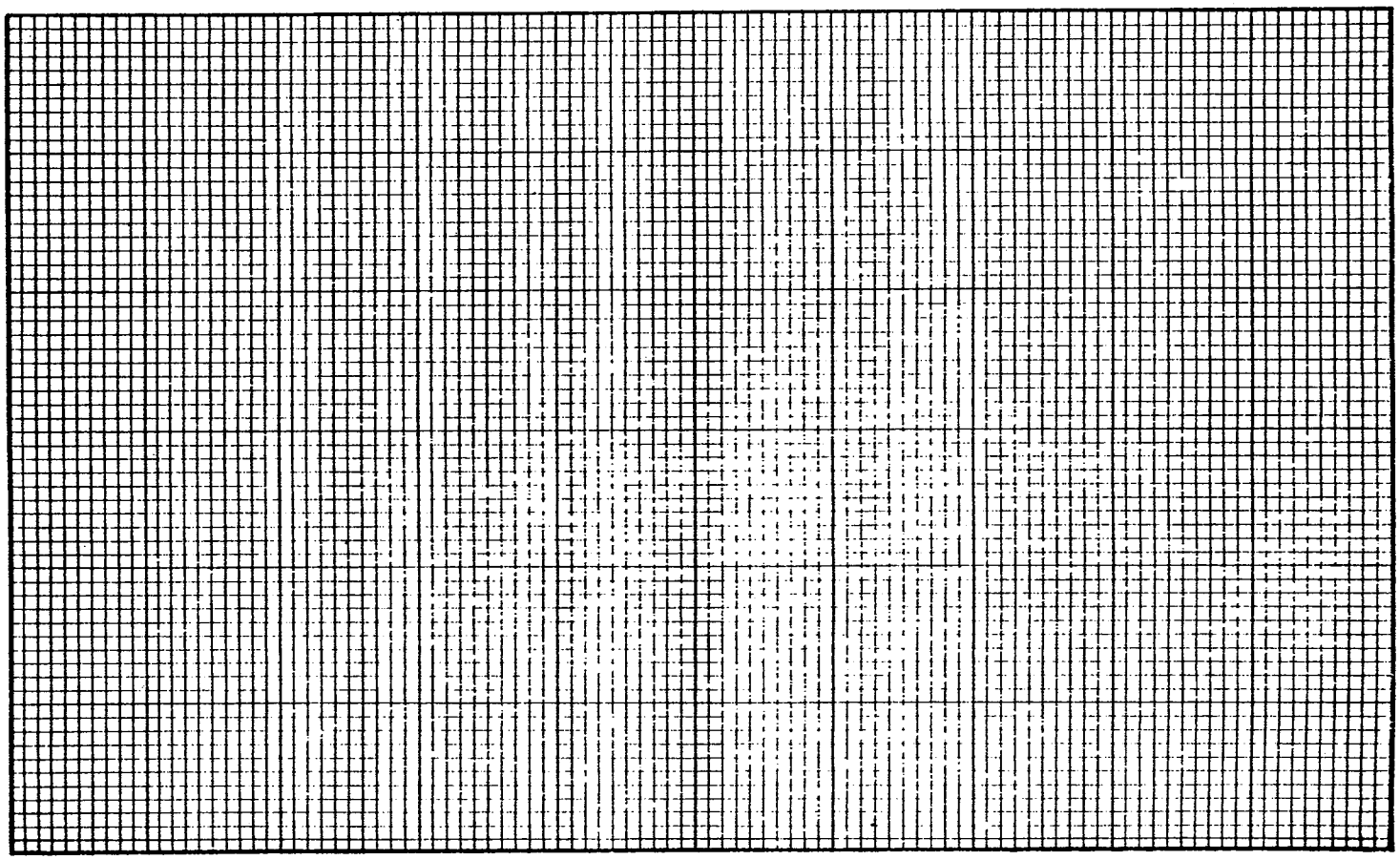
COPY TO G-KSE-3. COPY FOR FILES. LIST OF NAMES TO MEDICAL DEPARTMENT

Figure 7-1

CG-5139 (Rev. 3-90)

DIAGRAM OF AREA AND OPERATIONS

Instructions: Include a diagram of the operation or work area; indicate the primary noise source by a circled "A", and secondary noise sources by circled "B" etc.; workers shall be identified by circled numbers indicating relative position(s) to the noise source which should coordinate with names of exposed workers on the reverse side of the form. One number may appear on the diagram several times if the employee moves to two or more positions having differing sound levels. Identify: type of machinery, model number, manufacturer, dimensions, kind of deck, overhead and bulkhead surfaces.



Has area previously been designated and labeled noise hazardous? ☐ **YES** ☐ **NO**
Retain one file copy for 20 years, mail one copy to G-CSP-4.

Noise exposed personnel list must be transmitted to medical department for monitoring.

Figure 7-1
4

WORKPLACE MONITORING REPORT INSTRUCTIONS

1. **Coast Guard Industrial Hygiene Data Files**. The United States Coast Guard Industrial Hygiene Workplace Monitoring Report (CG-5386) (RCN-5100-2) is one of two forms used for recording, reporting and entering data into the Coast Guard Industrial Hygiene Data Files. See Figure 8-1 for a sample CG-5386.

2. **Description**. A double sided two page form, page one of CG-5386 contains space for worksite, hazardous materials in use, sampling and analysis data. This side of the form is designed to be photostated and mailed directly to laboratories for entry of analytical data. There is room for entry of up to two samples each with up to four analyses. Page 2 of the form contains space for Privacy Act restricted employee exposure data and hazardous materials proprietary data both of which require special handling. The left hand margin of both pages of the form contains computer file attribute abbreviations which serve as prompts for computer data input.

3. **Data Entry Procedures**. Listed below are data entry procedures for those elements of CG-5386 having computer input. Elements having no entry data should be left blank. Required data elements are so indicated. DO NOT ABBREVIATE.

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
RNO	Report Number	Report numbers are assigned to surveys, studies or projects for data tracking purposes. Report numbers will be assigned by Commandant (G-KSE).
	File(s)	Check appropriate file for data entry.
	(REQUIRED DATA ELEMENT)	IHSD - Sampling data other than sound level survey data.

3. (cont'd)

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
		Hazardous Materials Information System (HMIS) - Hazardous materials information not presently contained in the HMIS file.
		HMIN - Hazardous materials inventory data.

BLOCK 1 - WORKSITE DESCRIPTION

FAC	Facility Sampled	Name of facility actually sampled. See enclosure (3) of the Standard Distribution List (SDL) (COMDTNOTE 5605) and Chapter 1 of COMDTINST M5440.2 (series) for a listing of authorized unit abbreviations if sampled unit is Coast Guard. Do not use CG in front of abbreviations.
	For Spill Response	Latitude, longitude, river and rivermile as appropriate.
	For COMDT (G-M) Activities	Ship name, barge name (or owner).

NOTE: Computer field has 50 character limit.

WLOC	Work Location	Specific location of work operation being monitored such as Building, Shop, Space, etc.
OPS	Work Operation	Briefly describe work operation.
	For Spill Response	Enter Pollution Response and level of response, i.e., A, B, C or D; or Pollution Investigation.

3. (cont'd)

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
	For COMDT (G-M) Activities	Enter one of the following types of operations: Letter of Compliance; Midperiod Inspection; Certificate of Inspection; Topside Inspection; Foreign Vessel Inspection; Transfer Monitoring.

NOTE: Computer field has 100 character limit.

WOC	Workplace Conditions - For COMDT (G-M) Activities	Last two cargoes. Was tank certified? For what? When Day/Month/Year)?

NOTE: Computer field has 50 character limit.

PRO	Protective Equipment	Types and level of protective equipment available and in use. Use coding system contained in the Practices for Respiratory Protection (COMDTINST M6260.2 series) for respiratory protective equipment.

NOTE: Computer field has 80 character limit.

ENG	Engineering Controls	Briefly describe types of available engineering controls.

NOTE: Computer field has 40 character limit.

3. (cont'd)

BLOCK 2 - HAZARDOUS MATERIALS IN USE

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
PNO	Product Number	HMIS file product number (PNO) of hazardous materials in use.
	For Spill Response	CHRIS Code (3 letter alpha) of spilled material. Use special designation code for items not in CHRIS.
	For COMDT (G-M) Activities	CHRIS Code of material being handled or shipped. Use special designation code for items not in CHRIS.
NM	Product Name	Commercial name of product in use.
	For Spill Response	CHRIS name of product spilled.
	For COMDT (G-M) Activities	CHRIS name of product being handled or shipped.
CL	Product Class	HMIS product class of hazardous material in use. Do not complete for COMDT (G-M)/spill response activities.

BLOCK 3 - SAMPLING AND ANALYSIS DATA

SNO	Sample Number	Locally assigned sample number.

NOTE: Computer field has 5 character limit.

ST	Sample Type (REQUIRED DATA ELEMENT)	P (for personal) A (for area) B (for bulk)

3. (cont'd)

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
SLOC	Sample Location	Specific location where sample was taken, e.g., inside spray paint booth or behind boiler #2, etc.
MED	Sample Collection Medium	CT (for charcoal tube) T (for tube other than charcoal and specify type, e.g., silica gel) I (for impinger) DR (for direct reading instrument, including indicator tubes)

NOTE: Computer field has 2 character limit.

DT	Sample Date	Month/Day/Year
TIME	Sample Time	Sample time in minutes.
CAS1 CAS5 CAS2 CAS6 CAS3 CAS7 CAS4 CAS8	Chemical Abstract Service Registry Number REQUIRED DATA ELEMENT	Unique number assigned to chemicals by Chemical Abstract Service. Can be found in ACGIH TLV Booklet or NIOSH Toxic Effects Registry.
A1 A5 A2 A6 A3 A7 A4 A8	Analysis	Requested analyses. Use chemical names as given in current copy of ACGIH TLV Booklet.
R1 R5 R2 R6 R3 R7 R4 R8	Analytical Result	Real Number Result mg/M3, f/cc or % with qualifiers such as <or>.

Three primary concentration terms are contained in the IHSD file -- mg/M3, f/cc and %. All bulk samples will be reported in %; all area or personal samples will be reported in mg/M3 except asbestos samples which will be reported in f/cc. For data entry, the following concentration term rules apply:

3. (cont'd)

CONCENTRATION TERM	SAMPLE TYPE (ST) MUST EQUAL	OTHER CONDITIONS
mg/M3	P or A	
f/cc	P or A	Analysis (A) must contain either word "Asbestos" or word "Count."
%	B	
Positive	B	Result (R) = 100
None Detected	B or P or A	Result (R) = 0
u	P or A	Analysis (A) must contain either word "Diameter" or word "Length."
ppm	NOT ALLOWED	
COM	Comments	Additional comments.

NOTE: Computer field has 50 character limit.

PAGE 2 OF REPORT

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
RNO	Report Number	Report Number assigned to survey, study or project. This RNO will be consistent with the RNO assigned to page 1 of the report.

BLOCK 4 - EMPLOYEE DATA

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
EMP	Employee Name	Name of employees actually sampled or performing same job as sampled employee. Each computer record has the ability to store information on up to 6 employees.

3. (cont'd)

SSN	SSN	Employee's social security number.
RATE	Job Title	Employee's job title (civilian) or job rate (military).
ENSO	Employee Sample Number	Locally assigned sample number (SNO) for personnel actually sampled; for others performing same job, leave blank. Must be same as SNO from block 3.
FREQ	Est. Exp. Time	Estimate of employee exposure time in hours per week.

BLOCK 5 - HAZARDOUS MATERIALS INVENTORY

NOTE: Each record has ability to store information on up to 5 products.

PNO	Product No.	HMIS file product number of hazardous material, if known.
NM	Product Name	Manufacturers, Distributors or National Stock Number assigned product name.
CL	Product Class	HMIS file product class of hazardous material.

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
NSN	Nat. Stock No.	National Stock Number of hazardous material.
MFG	Manufacturer	Manufacturer or distributor of hazardous material.

3. (cont'd)

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
MATLO	Material Location	Specific location of hazardous material at Coast Guard unit, e.g., carpenter shop, paint shop, etc.

BLOCK 6 - HAZARDOUS MATERIALS INFORMATION

PNO	Product Number	HMIS file product number (PNO) of hazardous material if assigned.
SOURCE	Data Source	Check appropriate source of hazardous materials data.
NM	Product Name	Manufacturers or National Stock Number name assigned to product.
CL	Product Class	HMIS file product class of hazardous material.
NSN	Nat. Stock No.	National Stock Number of hazardous material. Each computer record has ability to store up to 4 NSN's.
FED	Fed. Spec.	Federal Specification of hazardous material.
ING	Major Chemical Ingredients	Major chemical ingredients. Use chemical names as given in current copy of ACGIH TLV Booklet. Each computer record has ability to store up to 6 major chemical ingredients.

3. (cont'd)

ATTRIBUTE ABBREVIATION	DATA ELEMENT	YOU ENTER
AMT	(%)	Real number % chemical composition of up to 6 chemical ingredients. Chemical ingredients should be listed as follows: 32% Acetone, 21% Methyl Ethyl Ketone, etc.
HAZ	Hazard	Explain hazards of material in lay person terms, e.g., will irritate the nose and throat rather than mucous membrane irritant, etc.

NOTE: Computer field has 800 character limit.

PRO	Protective Measures	Explain measures to be taken to protect worker from hazards of material. Use coding system in COMDTINST M6260.2 (series) for respiratory protective equipment.

NOTE: Computer field has 800 character limit.

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RNO Report # _____

UNITED STATES COAST GUARD
INDUSTRIAL HYGIENE WORKPLACE MONITORING REPORT

RCN-5100-2

File(s) (check one or more):
☐ IHSD (Fill out blocks 1, 2, 3, 4) ☐ HMIN (Fill out block 5) ☐ HMIS (Fill out block 6)

FAC 1. Worksite Description — Facility Sampled:

WLOC Worksite (Bldg., Shop, etc.) _____

OPS Description of Work Operation _____

WOC Workplace Conditions _____

PRO Protective Equipment: _____

ENG Eng. Controls: _____

2. Hazardous Materials In Use

PNO Product # _____ Product Class _____

NM Product Name _____

CL

3. Sampling and Analysis Data

a. Sampling Data

		Atmospheric Conditions		
		DB Temp (° F)	R. H. (%)	Wind
SNO	Sample #			
ST	Sample Type (P, A or B)			
SLOC	Sample Location			
MED	Collection Medium (T;F;I)			
DT	Sample Data (mo-da-yr)			
	Sample Instrument			
	Calibration Date			
	Sample Rate (ℓ/min)			
TIME	Sample Time (min)			
	Sample Volume (ℓ)			

	Analysis Requested	CAS #	NAME	CAS #	NAME
CAS, A		1	1	5	5
CAS, A		2	2	6	6
CAS, A		3	3	7	7
CAS, A		4	4	8	8

Sampled by _____ Title _____

b. Analysis Data:

	Analytical Method (CAM) SCP = if NIOSH Method):		
R1, R5	Analytical Results (mg/M3)	1.	5.
R2, R6	(f/cc) (%)	2.	6.
R3, R7		3.	7.
R4, R8		4.	8.

Date Sample Received	Date Results Reported	Lab Report #

Analyzed By _____ Laboratory _____

COM Comments: _____

Dept. of Transp., USCG CG-5386 (Rev. 3-90) SN 7530-01-GF3-1640

Figure 8-1

Reverse of CG-5386 (Rev. 3-90)

UNITED STATES COAST GUARD
INDUSTRIAL HYGIENE WORKPLACE MONITORING REPORT

RNO Report # _____

4. Employee Exposure Sampling Data

EMP SSN RATE ESNO FREQ

Name: Last, First, MI	SSN*		Job Title, Rate	Sample #	Est. Exp. Time (hr/wk)
		( )			
		( )			
		( )			
		( )			
		( )			
		( )			

*Note: Insert an "x" after the SSN to indicate a personal sample.

5. Hazardous Materials Inventory

PNO NM CL FSN MFG MATLO

Product No.	Product Name	Product Class	Nat. Stock No.	Manufacturer	Material Location

6. Hazardous Materials Information

Data Source (check one)
- ☐ CG-HMIS
- ☐ DOD-HMIS
- ☐ MFG.-MSDS (OSHA FORM 20)
- ☐ OTHER (Explain) _____

PNO SORCE — Product No.

NM — Product Name

CL — Product Class

NSN — Nat. Stock No.

FED — FED Spec

ING AMT — Major Chem. Ingredients (%)

HAZ — Hazard

PRO — Protective Measures

Figure 8-1

E-MISHAP SYSTEM WEB LINK and GUIDE TO ONLINE MISHAP REPORTING

1. The E-Mishap System may be accessed at:

http://cgweb.lant.uscg.mil/KDiv/kseMISREP/Default.asp

2. The guide for using the E-Mishap System to report mishaps online can be found at:

http://cgweb.lant.uscg.mil/Kdiv/kseMISREP/help/QuickGuide.doc

LIMITATIONS ON THE USE AND DISCLOSURE OF MISHAP INVESTIGATIONS AND REPORTS.

1. Introduction. A thorough understanding of the concept of privileged safety information is essential for the proper investigation of mishaps in the Coast Guard Safety Program. This enclosure discusses the use and restrictions of safety privilege. Personnel involved in either the mishap or legal investigation and the review processes **must** understand and honor the privileged nature of safety information.

2. Mishap Investigations vs. Legal Investigations. There are several reasons for investigating mishaps. Mishap investigations and administrative investigations share a common goal of fact finding. However they serve different purposes within the Coast Guard and must be treated differently. Safety investigations are conducted solely for mishap prevention. Legal investigations are conducted for all other purposes including claims, disciplinary, and administrative actions.

   a. Mishap investigations are conducted with the goal of prevention, not punishment. Persons involved in mishaps, either directly or indirectly, cannot be disciplined or punished based on the findings of the mishap investigation. A mishap investigation traces the events from a time when things were going normally through the mishap evolution. This sequence of events is then analyzed for all the contributory or causal factors that played a role in the mishap. This process seeks to find out why a mishap occurred so similar mishaps may be prevented.

   b. Legal investigations of mishaps are conducted to determine possible neglect or malfeasance by government personnel. This type of investigation may take the form of a court of inquiry or other fact-finding body, as specified by the Administrative Investigations Manual, COMDTINST M5830.1 (series). If the legal investigation seeks to place blame for the mishap, witnesses are accorded the right not to testify if such testimony would be self-incriminating.

3. The Safety Privilege Concept. The Commandant has determined that certain Mishap Analysis Reports contain privileged information and shall only be used for safety purposes and only reviewed by personnel who have a direct responsibility for mishap prevention. The concept of privilege is intended to prevent the unnecessary disclosure of privileged safety information outside the safety program. To promote conjecture, speculation and frank discussions by safety investigators, safety investigation boards, endorsers and reviewers of safety investigations, the USCG will not disclose privileged safety information, which is defined in this enclosure.

   a. Definition of Privileged Information. There are two types of privilege safety information found in mishap reports.

      (1) The first includes the findings, evaluations, analyses, opinions, conclusions, recommendations and other products of the deliberative processes of a safety investigator, safety investigation boards, endorsers and reviewers.

      (2) The second includes statements, reports or information given to a safety investigator or board pursuant to a promise of confidentiality,

and any direct references to any such statements or information in a mishap report.

b. In some mishaps, the actual causal factors may never be discovered unless witnesses are assured that their statements and information will be used for mishap prevention only. Individuals may be reluctant to reveal information pertinent to a mishap because they believe certain uses of the information could be embarrassing or detrimental to themselves, their fellow service members, their command/employer, or others. In addition, Mishap Analysis Board (MAB) members and endorsers might be reluctant to include their deliberations, opinions, and recommendations if they believe the information could be used for other than safety purposes.

4. Grants of Confidentiality. To advance the purpose of mishap prevention, investigation procedures should encourage widest disclosure of all relevant information. Safety investigators may give a promise of confidentiality to encourage frank and open communications to any individual who provides information to the MAB, if it is believed that without an offer of confidentiality, the individual will not provide a candid statement.

a. These promises must be explicit, in writing or spoken at the beginning of a recorded statement, and cannot be implied from the investigator's status or function.

b. The witness will be told that the promise only applies to information provided by the witness for the safety investigation (even if the witness provides the same information to another investigation board). In each instance, the promise of confidentiality will be strictly limited to only the information provided directly by the witness for the safety investigation, after the promise was extended.

c. Individuals interviewed by the MAB will not testify under oath. If a witness is granted a promise of confidentiality by the MAB, they should be advised their statement (oral or written) will not be used in any administrative, punitive or legal action without their consent.

d. The safety investigator must document all instances in which a witness gives a statement pursuant to a promise of confidentiality. These promises should only be given as needed to ensure forthright cooperation of the witness concerned. See Figure 2-1 in Enclosure (2).

e. Promises of confidentiality will be granted individually (on a witness by witness basis) and may not be given automatically or on a blanket basis to all witnesses interviewed.

f. A “Witness Statement Promise of Confidentiality Advisory Form” (See enclosure (2)) shall be attached to each witness statement.

g. A list of all witness interviewed shall be include in the Mishap Analysis Report annotating whether the individual was offered and accepted the promise of confidentiality.

h. If evidence of a crime is discovered, the safety investigation must stop and no further offers of confidentiality may be made. Commandant (G-WKS) in consultation with the Office of Chief Council will decide whether the safety investigation should be secondary to the criminal investigation.

i. Safety investigators may grant promises of confidentiality in investigations of all aviation mishaps. For mishaps involving military unique items (such as ships, shipboard systems, weapon systems, etc) military unique operations or exercises, Commandant (G-WKS) will determine for each mishap whether investigators may grant confidentiality. For all other mishaps, promises of confidentiality are not authorized.

5. Restrictions/UCMJ Violations. All members of the Coast Guard are prohibited from violating the privileged character of the mishap report in any way, whether by unauthorized access, duplication or retention of copies or original documents or through unauthorized disclosure of any part of the safety investigation report. Distribution of privileged safety information to any person or any command not specified in this instruction or specifically authorized by the Commandant (G-WK) is prohibited. Such violations are punishable under article 92, Uniform Code of Military Justice and may be grounds for disciplinary action under civilian personnel regulations. In accordance with the "privilege statement" concept, the following restrictions shall be observed:

a. Completed Report. Privileged safety information from a mishap analysis report shall not be appended to any other document, unless the sole purpose of such a document is the prevention of mishaps.

b. This prohibition includes reproducing any part of a mishap analysis report or disclosing the contents thereof by means of giving testimony relative to the mishap report.

c. Adverse Action. Privileged safety information will not be used to support disciplinary or adverse administrative action, to determine the misconduct or line-of-duty status of any personnel, or as evidence before any evaluation board. Nor shall they be used as evidence before administrative bodies, such as aviator disposition boards or promotion boards.

d. Litigation of Claims Involving U.S. Government. Privileged safety information will not be used to determine liability in administrative claims for or against the Government or in any litigation on behalf of the Government.

e. The decision to convene a legal investigation of a mishap remains within the discretion of the commander(s) concerned. Such a decision shall not be based on the contents of a mishap investigation analysis report or the Coast Guard Mishap Report. Remarks concerning legal proceedings being conducted shall not be included in a mishap analysis report. The report of the proceedings of a legal investigation shall not be appended to, or made a part of, the mishap investigation analysis report.

6. Administrative Safeguards.

a. Correspondence. The following notices shall appear before the subject line

for:

(1) Messages.

UNCLAS FOUO //N03452// or //NO3750//
WHAT FOLLOWS MAY CONTAIN PRIVILEGED SAFETY INFORMATION.
USE FOR MISHAP PREVENTION PURPOSES ONLY.

(2) Endorsements.

WHAT FOLLOWS MAY CONTAIN PRIVILEGED SAFETY INFORMATION.
USE FOR MISHAP PREVENTION PURPOSES ONLY.

(3) The following notice shall appear on the MAR immediately after initial heading identifying the mishap.

//

MISHAP ANALYSIS REPORT
FOR OFFICIAL USE ONLY
SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH COMDTINST M5100.47 (series)

WHAT FOLLOWS MAY CONTAIN PRIVILEGED SAFETY INFORMATION. UNAUTHORIZED DISCLOSURE OF THE INFORMATION IN THIS REPORT IS PUNISHABLE UNDER ARTICLE 92, UNIFORM CODE OF MILITARY JUSTICE AND MAY ALSO BE GROUNDS FOR DISCIPLINARY ACTION UNDER CIVILIAN PERSONNEL REGULATIONS

//

(4) The following notice shall appear on the bottom of each page of the MAR.

//

MISHAP ANALYSIS REPORT
FOR OFFICIAL USE ONLY
SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH COMDTINST M5100.47 (series)

//

b. Mailing Envelopes/MAR Covers. Envelopes and Mishap Analysis Report Covers should be stamped:

FOR OFFICIAL USE ONLY
SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH COMDTINST M5100.47 (series)

7. Security Classification. Mishap analysis reports shall not be classified unless they contain information requiring classification in the interests of national defense or security. Reports containing such information shall, if possible, be prepared with the classified material separate from the report, so that the remainder of the report may remain unclassified.

8. Essential Safety Information. Communication of this type information is necessary to share lessons learned that may prevent reoccurrence of the same or similar type mishap. This information may be mishap specific in nature, such as an equipment design problem, or it may be conceptual in nature, such as a management system problem.

9. Dissemination of Essential Safety Information. Commandant (G-WKS) shall disseminate any essential safety information received from any reports required by this instruction. Minimum distribution shall be to the appropriate resource/aircraft/vessel controlling custodians. In no case should the fact that information is privileged safety information inhibit the dissemination of essential safety information. Should essential safety information include privileged safety information, and that information has not been adequately disseminated to those who need it, Commandant (G-WKS) shall take one of the following actions (listed in the order of preference):

   a. Extract the essential safety information from the privileged safety information and disseminate only that information (i.e., via articles in safety periodicals, safety advisory messages, newsletters, correspondence recommending corrective action, etc.).

   b. Expunge ("scrub" or "sanitize") all identifying data from the privileged safety information which could connect it to a particular individual, organization, or mishap. Circulate the essential safety information via articles, periodicals, case studies, etc.

10. Release of Non-Privileged Mishap Information. All requests for non privilege mishap reports or excerpts outside the authorized distribution shall be referred to Commandant (G-WKS).

   a. The provisions of the Coast Guard Freedom of Information and Privacy Acts Manual, COMDTINST M5260.3 (series), the Public Affairs Manual, COMDTINST M5728.2 (series) and the Personnel Manual, COMDTINST M1000.6 (series) govern the release of information not contained in the mishap analysis report.

   b. Restrictions on the release of information contained in mishap analysis reports are contained in this instruction. The provisions of the Administrative Investigations Manual, COMDTINST M5830.1 (series) govern release of information contained in the report of a legal investigation.

11. Release of Privileged Mishap Information. All requests for privileged safety information shall be forwarded to Commandant (G-WKS). Unless specifically authorized by Commandant (G-WKS), these restrictions apply to the release of Coast Guard privileged safety information:

   a. Individual Knowledge. Any individual having knowledge of the content of MAB reports is prohibited from releasing that information, except per this instruction.

   b. Information Exchange with Other U. S. Military Services. Exchange of privileged safety information among the military services shall be limited to

the respective safety centers, and controlled to prevent the compromise of privileged information.

c. News Media. Mishap information based on the Mishap Final Action message may be released. In regard to news release in particular, it is essential to preserve the privileged status of MAB reports. The release of information to the news media is governed by the Coast Guard Freedom of Information and Privacy Acts Manual, COMDTINST M5260.3 (series), the Public Affairs Manual, COMDTINST M5728.2 (series) and the Personnel Manual, COMDTINST M1000.6 (series). Mishap information released to news media during the investigation will not include or show:

(1) Mishap responsibility on the part of any person.

(2) Failure of equipment or facilities.

(3) Statements tending to indicate mishap liability of the government or persons.

(4) Classified information.

(5) Causal factors.

(6) Other privileged safety information

d. The Congress or Foreign Nationals. Request for information from foreign nationals or the Congress, its committees, or members acting in their official capacity shall be forwarded to Commandant (G-WKS).

e. Relatives of Persons Involved in Mishaps. Notification to relatives of persons involved in mishaps is governed by the Personnel Manual, COMDTINST M1000.6 (series) or Decedent Affairs Manual, NAVMEDCOM 5360.1 (series). The release shall make no reference to any cause factors of a mishap. Classified information shall not be discussed with, nor given to next of kin or any representatives of the next of kin.

f. Subpoenas. Subpoenas for mishap information for use in civil/military criminal proceedings, anticipated litigation, or in administrative claims against the government, shall be referred to Commandant (G-L). This also applies to requests for release to the U. S. Department of Justice.

g. Technical Representative/Contractors. Requests for mishap information from technical representatives, manufacturers, and contractors or their agents shall be forwarded to Commandant (G-WKS) for action. Information requested shall be for safety purposes only regarding product design and/or improvement. Information shall be furnished only by Commandant (G-WKS) with the complete understanding that it will be used ONLY for safety and shall not be further released by the requester.

h. Training Purposes. Commandant (G-WKS) shall forward selected mishap information to the respective training programs (i.e., ATC Mobile, PCO/PXO School, etc.) for use as training examples.

i. Other U. S. Government Agencies. Requests shall be forwarded to

Commandant (G-WKS).

j. All other requests for mishap information, not covered above, shall be referred to Commandant (G-WKS).

12. The Privacy Act of 1974 requires that all information that can be retrieved by an individual's social security number, name, or some other identifying particular assigned to the individual, be furnished or made available to the individual unless the system manager has authorized denial of access to a record. Requests for information maintained in a system of records as defined by the Privacy Act shall be forwarded to Commandant (G-CIM). The Privacy Act specifically prohibits the release or dissemination of information from a mishap record that pertains to an individual, except as authorized in the act. See the Coast Guard Freedom of Information and Privacy Acts Manual, COMDTINST M5260.3 (series). In order to prevent the release of privileged safety information pursuant to a Privacy Act request, it shall not be maintained in a system of records from which it can be retrieved by the name, or any other identifier (such as social security number), of an individual. See the Coast Guard Freedom of Information and Privacy Acts Manual, COMDTINST M5260.3 (series).

13. The Freedom of Information Act (FOIA) requires that all Federal agencies provide the fullest possible disclosure of information to the public and places the burden on the federal agency to justify withholding any requested information. Requests made by clear implication or expressly per the Freedom of Information Act shall be forwarded to Commandant (G-CIM). Privileged safety information shall not be released pursuant to FOIA, as it is exempt from release under the authority of 5 USC 552(b)(5). The deliberative process privilege shall be cited to protect release of the deliberations of board members, experts, and endorsers. The special armed forces safety privilege shall be cited to protect witness statements and information collected under a grant of confidentiality. See the Coast Guard Freedom of Information and Privacy Acts Manual, COMDTINST M5260.3 (series).

14. Privileged Safety Information Restrictions. In accordance with the "privileged statement" concept, the following restrictions shall be observed:

a. Witness. A witness in other investigations who was also a witness before a mishap board for the same mishap cannot properly be questioned with respect to their statement to the mishap board. This does not preclude the legal investigation from questioning the same witness in the same area(s).

b. Investigation Board Member. A member of the mishap board shall not be assigned as a member of a board conducting a legal investigation for the same mishap and vice versa.

c. Member of a Mishap Board as a Witness. Although a member of a mishap board may be called as a witness in the legal investigation of the same mishap, such a procedure should be avoided, if possible. If called however, such a person cannot properly be asked or required to divulge the findings or recommendations of the mishap board. These restrictions apply to any person who may have knowledge of the substance of the report of the mishap board.

15. Privileged Nature of Material. It is essential that the mishap analysis report provide a basis for effective preventive action. Certain portions of the material used in the mishap analysis are obtained under the promise that information will have a privileged status and cannot be used for disciplinary, punitive, promotion, evaluation, attrition, or litigation purposes. Previously, the privileged status applied to each document in the mishap analysis report, causing duplication of effort. For example, the flight plan filed by the pilot prior to a mishap is a Government record and may be used by both the mishap analysis and the legal investigation. Former directives required that the mishap analysis board and fact-finding body make separate copies of the flight plan and similar documents. No good purpose is served by such duplication of effort. Therefore, the mishap board shall initially classify mishap information into two categories: Privileged and Non-privileged. The presidents of the mishap board and the fact-finding body can then determine what non-privilege information they both require and designate one person to obtain this material and make enough copies for both the mishap board and the fact-finding body. This procedure will provide a considerable saving in time and eliminate useless duplication of effort without compromising the effectiveness of the mishap analysis or the status of the privileged material. Any material not clearly within either category should be classified as privileged.

a. Privileged Material. Privileged material shall be given the special handling required by this paragraph. Privileged material shall include, but is not limited to, the following:

(1) All information obtained under the assurance that it will be used solely for mishap prevention.

(2) All statements made to the mishap board with a promise of confidentiality.

(3) All conclusions, opinions, and recommendations made by the mishap board.

(4) All endorsements to the mishap analysis report (except for the Chief of Staff's Final Decision Letter).

(5) Photographs captioned or staged by the mishap board where such captions include speculation, opinions or conclusions, if the caption cannot be removed or redacted from the photograph.

(6) Videotapes of simulated, computer generated or reenactments of the mishap are always privilege if they are made with input from MAB members or with knowledge of privilege mishap information.

(7) Expert opinions and conclusions obtained by the MAB.

(8) The actual cockpit voice recordings, but not the transcripts of pertinent information. The actual CVR tape is protected from release to the public based on the privacy interests of the aircrew and or their surviving family members.

b. Non-Privileged Material. The mishap board and fact-finding body may share

non-privileged material and the work involved in obtaining and duplicating this material. This information may also be released to the public in accordance with the law. In general, non-privileged material consists of real evidence, such as:

(1) Pieces of wreckage and other recovered items.

(2) Records: such as flight plans; weather reports and briefings; pilot aircraft and vessel log books; aircraft, vessel, shore facilities, vehicle maintenance records; hoist cam recordings; and weight and balance records.

(3) Transcripts of tape recordings from control towers, flight service stations, and air traffic control centers radio transmissions.

(4) Transcripts of relevant portions of cockpit voice recorders (CVR). (However, the actual cockpit voice recordings are privileged and may not be disclosed.)

(5) Photographs, but not the captions placed on the photograph by the mishap board.

(6) Videotapes documenting or depicting the mishap scene or wreckage, including flight deck videos and non-official videotapes and films made by individuals.

(7) Laboratory analyses (factual data, but not opinions, recommendations or conclusions).

(8) Witness statements made to the safety investigator without the promise of confidentiality.

(9) Medical records and laboratory tests, but not the Medical Officer’s Report or analysis.

(10) Other factual data.

(11) The Chief of Staff's Final Decision Letter and the Final Action Message.

PERSONNEL DOSIMETER PROGRAM REQUIREMENTS

1. Purpose. The purpose of monitoring dosimeters is to measure occupational exposure over and above background. Therefore, during the time the employee is off duty, it is important that each badge be stored in a low background radiation location away from any radiation source in the entrance/exit to the radiation area. This facilitates changing of the badges at the end of the monitoring period.

   a. Badges. A badge should never be taken from the premises unless it is to be used by the individual at some other location and storage of badges in clothing, vehicle glove compartments, private residences, and similar areas is inappropriate.

   b. Personal Identification. Each individual shall use only the dosimeter marked with his/her own personal identification.

   c. Medical or Dental X-Ray Examinations. When an individual is undergoing medical or dental x-ray examinations, the badge shall not be worn.

2. Dosimeter Badge Exchange Periods.

   a. Quarterly Monitoring Periods. Quarterly monitoring periods begin the first day of January, April, July and October. All account numbers, other than those between 400 and 499, identify facilities that are monitored quarterly.

   b. Time Period. Dosimeters should be shipped by the contractor to arrive at the facility at least seven days before the start of the next wearing period. The start date/issue date is shown on the top line of the badge's identification label and the badge labels are color coded to facilitate proper exchange of new for used badges each wearing period. Start wearing the new badge on the date shown.

   c. Deletions. It is possible you may receive badges for personnel that you requested be deleted. With approximately 4500 badges that must be labeled, packaged, and shipped, the contractor begins preparing our account for shipment three weeks before the end of the quarter. Therefore, if you request a deletion during the last month of a quarter, that person's badge still may be included in your shipment. Mark it deleted and return it to the

2. c. (cont'd) contractor. If you receive badges for personnel you have deleted from the program more than a month ago, contact the PHS Project Manager immediately by phone or letter. Do not return those badges to the contractor until you have received instructions to do so.

d. **Badge Returns**. At the end of the monitoring period, return all badges to the contractor for processing. DO NOT send badges to the PHS Project Manager. Badges must be received by the contractor before the 15th day of the month following the end of the monitoring period so that the exposure results can be included on the dosimetry report for that month. Results for badges received after the 15th will not be reported until the next month, diminishing their value in early recognition of exposure trends.

3. **Whole Body Dosimeter Badge**.

a. **Purpose**. The purpose of this badge is to record the radiation exposure to the whole body, head and trunk, active blood-forming organs, gonads, and the lenses of the eyes. The whole body dosimeter is the basic personnel monitoring device. This badge is issued to and worn by all personnel registered in the PHS Personnel Monitoring Program.

b. Badge Placement.

(1) Without Leaded Apron. The badge is worn on the outer clothing on the front of the body at chest or waist level except when wearing a protective leaded apron.

(2) With Leaded Apron. When a protective leaded apron is worn, the head and neck region i.e., the thyroid and lens of the eye, is expected to receive the highest exposure, so the whole body dosimeter should be worn on the collar outside the protective apron. (The Maximum Permissible Dose Equivalent (MPD) for the head and neck region is the same as that for the whole body and gonads, 1,250 mrem per calendar quarter, and we want to monitor that region of the body expected to receive the greatest fraction of the MPD.)

c. **Optional Procedure**. Optional procedure for when a protective leaded apron is worn is as follows.

3. c. (1) Two badges can be worn while performing diagnostic radiological examinations that require the wearing of protective aprons, e.g., during fluoroscopy and when operating portable x-ray equipment. The basic whole body badge is worn under the protective apron, at chest or waist level, and a second whole body badge then is worn on the front collar outside the apron.

(2) Badge Placement Identification. Since the second whole body badge and the basic whole body badge are identical, except for the badge number, it is extremely important that care always be taken to wear the same badge at the same position on the body during each use in order that the dose acquired by each badge is recorded and correctly identified as to the part of the body where the badge was worn. To avoid confusion, the characters "W2" should be written on the badge worn on the collar and the letters "WH" be similarly placed on the basic whole body badge.

4. <u>Control Dosimeter Badge</u>.

a. <u>Purpose</u>. The purpose of the control dosimeter badge is for quality assurance. It is identical to the basic whole body badge except that on the identification label the word "Control" is substituted for an individual's name.

b. <u>Elimination of Recording Natural Sources Radiation</u>. When measuring an individual's occupational exposure one would not want to record radiation exposure to the individual from natural sources of radiation such as cosmic radiation and radiation from naturally occurring radioactive materials. These include radium, thorium, and uranium, along with their daughter products, which are present in nearly all building materials. To eliminate the reading on the personnel badges from these sources, a control badge should be stored in the rack or cabinet where the badges assigned to individuals are stored. This should be an area away from any radiation sources used in the facility. The control badge is processed when the badges assigned to individuals are processed, and its reading is subtracted from those on the assigned badges.

4. c. **In the Control Room**. The control dosimeter is not intended to measure radiation levels in the x-ray control room or behind the operator's protective barrier. It must never be used as an area monitor or assigned to an individual.

5. **Extra Dosimeters Badges**.

   a. **Purpose**. To monitor visitors, students, or facility employees who only occasionally enter radiation areas. More importantly, they can be used to monitor new personnel until such time as their regularly assigned badges arrive from the contractor. Extra dosimeters may be ordered at any time. Since two to three weeks could elapse between the time a Request for Change in Radiation Monitoring Requirements (FDA Form 2546) is submitted and the badge arrives from the contractor, each facility should have a few extra badges on hand.

   b. **Identification**. These badges are identical to those regularly assigned except that on the label there is a blank space where an individual's name normally appears.

   c. **Satellite Clinic**. If a facility has a satellite clinic which is staffed by the "home" clinic, each individual should have an assigned badge at the home facility which is worn at both the home and satellite clinics. If considered necessary, in addition to the assigned badge, an extra badge, which is stored at the outlying clinic, may be worn alongside the assigned badge only while working there. Enter the outlying facility name and the employee's initials in the blank space provided. The total occupational exposure recorded in the individual's record is that on the assigned badge. The extra or satellite facility badge will make it possible to tell at which location significant dose was accrued.

6. **Area Dosimeters Monitors**.

   a. **Purpose**. These badges aid in the evaluation of radiation levels in areas accessible to unbadged personnel and the public as well as badged personnel. Monitors placed on the wall inside an x-ray room other than behind the operator's protective barrier serve no useful purpose. Personnel in the room are required to wear badges and we do not need to know how much radiation the wall received.

6. a. (1) Placement. Area monitors may be placed in occupied areas to measure ambient radiation levels. Typically, area monitors may be placed behind the operator's protective barrier in an x-ray room or on the wall of a room adjoining an x-ray facility.

(2) Identification. Area monitors are identical to the basic whole body badge except that the words "Area Monitor" will be printed on the badge's label in the space where an individual's name normally appears, unless a specific name of the area being monitored is provided. Some examples of names for specific area monitors are: operator's booth, dental clinic, hallway, wall-room 306, and secretary's desk.

7. **Personnel Monitoring Requirements**.

a. **Individual**. Personnel monitoring is required if it is likely that an individual:

(1) Over the age of 18 could receive a dose in any calendar quarter in excess of 25 percent of the applicable value shown in the table below. Thus, personnel monitoring is required if it is likely that an individual would receive a dose in any calendar quarter in excess of the following approximate values; or

	Rems Per Calendar Quarter
Whole body; head and trunk; active blood-forming organs; lens of eyes; or gonads	1.25
Hands and forearms; feet and ankles	18.75
Skin of the whole body	7.50

(2) Under the age of 18 could receive a dose in any calendar quarter in excess of five percent of the applicable value shown in the table below. Personnel monitoring for individuals under age 18 would be required if it is likely that a dose in any calendar quarter could exceed the following approximate values:

7. a. (2) (cont'd)

	Mrem Per Calendar Quarter
Whole body; head and trunk; active blood-forming organs; lens of eyes; or gonads	60
Hands and forearms; feet and ankles	900
Skin of the whole body	370

b. **High Radiation Area**. Personnel monitoring is required for each employee who enters a high radiation area.

8. **Guidelines**.

a. Low Level Exposures. Personnel monitoring is unnecessary where the nature of the work performed or the nature of the radiation sources is such that personnel exposures are below the limits recommended for uncontrolled areas two millirem in one hour, 100 millirem in seven consecutive days or 500 millirem in one year and where there is a very small potential for accidental exposure above these limits. Occasional visitors to restricted areas, including messengers, and service and delivery personnel, should be regarded as non-occupationally exposed. It is most improbable that these individuals will receive in one year a dose equivalent of more than a small fraction of the non-occupational limit of 500 millirem during their brief occupancy of restricted areas. It is, therefore, unnecessary to provide personnel monitors. Long-term visitors in a hospital should be regarded as occupationally exposed if they are likely to receive a dose equivalent exceeding 500 millirem per year, and should be monitored.

b. **Pregnant Women**. Because of special concerns regarding radiation doses to the fetus, consideration should be given to monitoring all women who operate x-ray equipment or use radioactive materials. See enclosure (12).

9. **Implementing the Program.**

a. **Request for Change in Radiation Monitoring Requirements (Form FDA 2546).** This form is used whenever a person is placed on or deleted from the PHS Personnel Monitoring Program. Upon completion, submit the forms to the PHS Project Manager. A copy should be retained for your file. If forms are not available, requests for changes may be submitted by letter provided all the information called for by the form is given. The forms can be obtained from the PHS Project Manager. The following instructions are to be used for filling out each section of the form:

(1) Return This Form To. This is the address where all completed FDA 2546 forms are to be sent. DO NOT send the forms to the contractor as the contractor has been instructed to take no action that does not originate from the PHS Project Manager. This ensures the individual is properly entered into the PHS Radiation Dosimetry Registry before a badge is issued.

(2) From. This section of the form has information which is very important to the program managers. Please give all the requested information.

(a) Enter Facility Name and Address. Write complete facility mailing address in this space.

(b) Facility Number #30 ---. Enter the number which is displayed in the lower left hand corner of your badges. It is the number by which your facility is identified in the computer.

(c) Enter Name of Person Preparing the Form, Phone Number, and Date. The name we want is the person who could answer any questions which may arise about your request. Enter that person's name, phone number, and the date the form is being submitted. The FTS number should be given if you have one.

(3) Block 1 - Required Information for Personnel to be added. This section is used to add individuals to the PHS Personnel Monitoring Program. If there is insufficient space, use additional forms or an attachment page with the complete information requested by the form and in the same format.

9. a. (3) (a) Name. Clearly print or type the individual's last name, first name, and middle initial. Be sure the printing is legible and the spelling accurate.

(b) Social Security Number. Enter the individual's social security number (SSN). This item is extremely important. All individual radiation dosimetry records are keyed to the person's SSN. Always copy the SSN from the individual's social security card, or other valid identification and double check to be sure it is correct. Access to this individual's records will be lost to him if his records are identified by the wrong social security number. If the individual does not have a SSN enter the word NONE. An identification number will be assigned.

(c) Birth Date. Enter the month, day, and year the individual was born (month written in 3 letters abbreviation, i.e., "DEC").

(d) Occupation. Refer to the list on the reverse side of the form FDA 2546. Enter the occupation that most closely represents the individual's function. If none apply, enter OTHER.

(e) Badge Type. Enter the type of badge that is being requested (in most cases this is WH).

(4) Block 2 - Required Information for Information Changes. This section is to be used if a person's name or occupation has changed or if any of the data originally submitted was incorrect.

(a) From. Enter the individual's former name and initials.

(b) To. Enter the individual's new name and initials.

(c) Social Security Number. Enter the individual's social security number. This item is extremely important.

9. a. (4) (d) Birth Date. Enter the month, day, and year the individual was born (month written in letters, i.e., "DEC").

(e) Occupation. Refer to the list on the reverse side of the form FDA 2546. Enter the occupation that most closely represents the individual's function. If none apply, enter OTHER.

(5) Block 3 - Required Information for Personnel to be Deleted. This section is to be used to delete individuals who no longer require monitoring or who no longer are employed at your facility. A deletion notice should be submitted as soon know that an individual no longer requires monitoring, to avoid receiving (and being charged for) unneeded badges in succeeding monitoring periods.

(a) Name. Clearly print or type the individual' last name, first name, and middle initial.

(b) Social Security Number. Enter the individual's social security number. This item is extremely important.

(c) Effective Date. Enter the date the individual is to be deleted from the program.

(6) Block 4 - Miscellaneous Badges Needed. This section is used for requesting extra badges or badges used as area monitors.

(a) Area Monitors. Enter the name of each area to be monitored. This is desirable but not required. If you do not wish to name the areas just enter the number of area monitors you are requesting.

(b) Extras. Enter how many extras are needed.

(7) Comments/Notes. This space is to communicate specific problems for which no space can be found on the form. Possible examples are:

(a) John Smith, badge #1234, lost his badge and needs a new one immediately.

9. a. (7) (b) This is the second time we have requested a badge for J. Jones (see above). First request was submitted month/day/year.

(c) We have a new address/phone number. Please note change above.

b. **Procedures for Using Extra Dosimeters (Badges)**. The following instructions assume that unused extra badges are available at the facility.

(1) Issuing to New Employees.

(a) Complete form FDA 2546 entering data on the new employee in Block 12, and send it to the PHS Project Manager immediately.

(b) Write the individual's name on the label of an extra badge and issue the badge to the individual.

(c) Maintain a record of the individual's name, social security number, date of birth, occupation and the badge number.

(d) When the individual's assigned badge arrives from the contractor, exchange it for the extra badge previously issued. Store the extra badge with the control badge until the end of the monitoring period (month or quarter).

(e) At the end of the monitoring period send both badges to the contractor attached to a memo stating that:

"Extra Badge No. _____for the period _____ through _____ was assigned to (give name, social security number, date of birth and occupation). This individual is being added to the PHS Personnel Monitoring Program."

(f) If the individual's regularly assigned badge has not arrived by the end of the monitoring period, reissue a new extra badge having the same identification number as before. Send the old extra badge to the contractor with the note:

9. b. (1) (f) (cont'd)

"Badge No.____ for the period _____ through _____ was assigned to (give name, social security number, date of birth, and occupation). This individual is being added to the PHS Personnel Monitoring Program."

(g) You do not need to send copies of either of these to the PHS Project Manager. These memos are for the purpose of helping the contractor assign the dose from both badges to the individual's newly assigned badge number when issued.

(2) Issuing to Visitors, Students, or Temporary Employees. These are individuals who require badging for a short time only. They should be assigned badges in the following manner:

(a) DO NOT complete a form FDA 2546;

(b) Write the individual's name on the label of an extra badge;

(c) Keep in your files a record of the badge number with the person's name, social security number, and birth date; and

(d) At the end of the monitoring period (quarterly or monthly) return the badge to the contractor. The contractor's Dosimetry Report will reflect the individual's radiation dose.

(3) Unused Extra Badges. At the end of the monitoring period, unused extra badges should be marked UNUSED and returned to the contractor. New extra badges will be issued before the start of the next monitoring period. These may be assigned to anyone as outlined above.

10. <u>Radiation Dosimetry Reports</u>.

a. <u>General</u>.

(1) The contractor will send to each facility a quarterly (or monthly) radiation dosimetry report for the badges forwarded to them for

10. a. (1) (cont'd) evaluation. The report will indicate the amount of radiation to which each badge was exposed in units of millirem (1000 mrem = 1 rem).

(2) The dosimetry report lists each employee's current and cumulative radiation exposure expressed as shallow and deep doses. For the purposes of this program "deep" is the whole body dose and "shallow" is the skin dose.

b. **Minimum Sensitivity of the Dosimeter**. The minimum sensitivity of the dosimeter is 10 mrem (0.01 rem). Any exposure less than 10 mrem will appear on the Radiation Dosimetry Report as 0 mrem. A reading near 0 mrem should be the goal of each employee. If proper practices and radiation safety precautions are observed, radiation exposures should be minimal.

c. **Cumulative Dose**. The dosimetry report gives the cumulative exposure data for each employee since the beginning of service with the current contractor. No exposures accumulated while being monitored by a previous contractor have been added to the cumulative totals. Possible changes in contractor each fiscal year would make it very difficult and expensive to transfer the exposures of the approximately 4500 individuals serviced by the program. The total life-time cumulative dose is, however, maintained on the PHS Personnel Monitoring Program System of Records. An individual's occupational radiation history reflecting the entire time enrolled in the Public Health Service Personnel Monitoring Program may be obtained at any time at the request of the individual or the facility involved. See paragraph 7-E-5 of this manual instruction.

d. **Interpretation of Dosimetry Readings**. In general, personnel dosimeters do not measure directly in dose equivalent units (rem). The measured quantity is exposure and is made with small dosimeters (badges) worn at the surface of the worker's body. For radiation protection purposes, however, the exposure (in roentgens) is taken to be equal to the dose equivalent (in rem). Unless the body is subjected to a uniform distribution of dose, the "whole-body dose" and doses to critical organs cannot be strictly determined from measurements at one point or a few points. When personnel doses are well below the Maximum Permissible Dose Equivalent (MPDE), it may be assumed for personnel monitoring purposes that the surface dose determined at one point on the trunk of

10. d. (cont'd) the body or on part of the body, such as the hand, represents the dose to the whole body or to that part. At levels approaching or exceeding the MPDE, the dose to the whole body and the critical organs should be more carefully evaluated and correction factors relating to the circumstances of the exposure should be applied.

e. **Report Review**.

(1) Evaluating and Comparing. Upon receipt of the dosimetry report from the contractor, the person responsible for the personnel monitoring program at the facility level should review it for any unusual radiation doses. By carefully evaluating and comparing radiation doses listed on the report, it may be possible to identify problems such as poor operator technique, insufficient shielding or improper storage of the dosimeters (badges). Typical examples are:

(a) If several employees have the same type of job and one receives a substantially greater radiation dose, it is possible that the employee needs to improve his/her radiation safety procedures, or there could be a radiation leakage problem with the x-ray machine, or inadequate shielding. Inadvertent exposure of the badge while not being worn by the employee should also be suspected.

(b) If all the badges, including the control, show radiation doses of about the same magnitude, they may have been improperly stored or perhaps exposed during shipment.

(c) If an individual's current dosimetry record represents a substantial fraction of his/her total annual or lifetime dose, the cause should be investigated. For example, the radiation dose for an individual's current monitoring period is 250 mrem but the individual's yearly and lifetime doses are 340 mrem. Obviously a substantial fraction of the individual's total accumulated dose occurred in the current monitoring period and the cause should be investigated.

10. e. (2) Special Notes. Give attention to any special notes the contractor has provided on the report; for example, damaged dosimeters (badges), late badges, or badges not received.

(3) Correct Utilization. By correctly using the information gained from the personnel monitoring service, you will be able to provide improved radiation safety for yourself and your employees.

11. **Investigation of an Abnormally High Exposure or Overexposure**.

a. **General**.

(1) Requirements. When a processed dosimeter (badge) indicates an abnormally high exposure or an overexposure to ionizing radiation, an investigation must be performed to determine whether the apparent radiation exposure represents an actual exposure of a person, or improper use, storage or shipment of the badge.

(2) Measurement of Exposure. For the purposes of this program, an exposure in excess of 300 mrem (monthly) or 600 mrem (quarterly) is considered to be an abnormally high exposure and requires an investigation.

(3) Definition of Overexposure. An overexposure is any monthly or quarterly accumulated dose that exceeds the applicable limits.

b. **Immediate Notification**.

(1) Abnormally High Exposure or Overexposure Indicated. When a dosimeter (badge) indicates an abnormally high exposure or an overexposure, the contractor will report the exposure immediately (by telephone or telegram) to the PHS Project Manager via the MLC commander (k) and the responsible individual at the facility concerned. Information transmitted will include the individual's name, social security number, badge number, date of birth, facility number, monitoring period and exposure (in mrem).

11. b. (2) Notify Senior Medical Officer. MLC commander (k) will notify the senior medical officer or designated supervising medical officer and request an investigation into the cause of exposure. All women of child bearing age will be notified in writing if such exposure resulted in a dosage of 0.5 rem or higher.

c. **Determining the Cause of an Abnormally High Exposure or Overexposure**.

(1) Investigation Guidance. Personnel at the facility in which the abnormally high exposure or overexposure occurred are required to conduct an investigation. The PHS Project Manager is available to give advice and guidance in conducting the investigation.

(2) Investigation Situations. The investigation should determine whether there exists any of the following:

(a) Deliberate exposure of the dosimeter (badge);

(b) Improper storage of the badge (for example, storage in an area that contains levels of ionizing radiation above natural background);

(c) Failure on the part of the individual to use protective radiation shielding when required;

(d) Improper working procedures on the part of the exposed person;

(e) Inadequate radiation shielding of personnel in the restricted working area or defects in otherwise adequate shielding;

(f) Unintentional wearing of the badge while receiving medical or dental x-rays or undergoing nuclear medicine procedures; or

(g) Equipment malfunction.

11. d. **Investigation Report**.

(1) Disposition. When the investigation is complete, the senior medical officer or designated supervising medical officer must submit a complete, written report concerning the circumstances of the exposure and the corrective action taken. The report shall be sent to the Project Manager, PHS Personnel Monitoring Program via the MLC Health and Safety Division so that it can be determined whether or not the exposure should be removed from the individual's record and whether or not corrective action is adequate.

(2) Individual Concurrence Statement Requirement. The report shall contain a signed statement from the person to whom the dosimeter was issued, stating the person's concurrence with, or exception to, the results of the investigation.

12. **Radiation Dosimetry Histories**.

a. **Individual Record**. The radiation dosimetry record of any individual who has participated in the Public Health Service Personnel Monitoring Program can be obtained by the individual or anyone with a legitimate need to know.

b. **Requirements of Requests for Individual Records**. The request for an individuals radiation dosimetry record must be submitted in writing to the PHS Project Manager and must be accompanied by a release authorization, signed by the individual whose radiation dosimetry records are being requested. See paragraph 14 below. The request must include the individual's last name, first name, middle initial, social security number, and the period the individual was registered on the PHS Personnel Monitoring Program.

13. **Occupationally Exposed Females**. Occupationally exposed females will be instructed about prenatal exposure risks to the developing embryo and fetus. The instruction will include the information provided in enclosure (12) and should ensure exposed females understand the following.

a. **Embryo-Fetus**. The embryo-fetus is more sensitive to radiation than the adult.

13. b. **Maximum Permissible Dose Equivalent to the Fetus**. The National Council on Radiation Protection has recommended that during the entire gestation period, the maximum permissible dose equivalent to the fetus from occupational exposure of the expectant mother should not exceed 500 mrem.

c. **Responsibility to Inform Employer**. It is their responsibility to inform their employer when a pregnancy is known or suspected.

14. **Request for Radiation Dosimetry Records**.

a. A sample letter request for radiation dosimetry records is provided as Figure 11-1.

Project Manager
USPHS Personnel Monitoring Program
HFZ-60, Room C-322
Center for Devices and Radiological Health
5600 Fishers Lane
Rockville, Maryland 20857

Gentlemen:

Please forward to me the radiation exposure records for the following individual:

Name
Social Security Number
Dates of Employment

These records are needed for the following reasons: (Give reasons.)

Sincerely,

Name and Title of individual requesting the records

Encl: (1)Release Form (signed by individual whose records are being requested)

Figure 11-1

14. b. **Release Form**. A sample release form for radiation dosimetry records is provided as Figure 11-2.

RELEASE FORM FOR RADIATION DOSIMETRY RECORDS

I hereby give my permission for the Project Manager, USPHS Personnel Monitoring Program, to release my radiation exposure records to (name, title and company of individual requesting the records.)

_____
(Signature)
Name of individual whose records are being requested

Figure 11-2

PRENATAL HEALTH RISK (U.S. NUCLEAR REGULATORY COMMISSION)

1. **Possible Health Risks to Children of Women Who are Exposed to Radiation During Pregnancy.**

   a. Studies have shown that the risk of leukemia and other cancers in children increases if the mother is exposed to a significant amount of radiation during pregnancy. According to a report by the National Academy of Sciences, the incidence of leukemia among children from birth to 10 years of age in the United States could rise from 3.7 cases in 10,000 to 5.6 cases in 10,000 children if they were exposed to 1 rem of radiation before birth (a "rem" is a measure of radiation). The academy has also estimated that an equal number of other types of cancers could result from this level of radiation. Although other scientific studies have shown a much smaller effect from radiation, the Nuclear Regulatory Commission wants women employees to be aware of any possible risk so that the women can take steps they think appropriate to protect their offspring.

   b. An employee working with radiation sources may be exposed to more radiation than the general public. However, the Nuclear Regulatory Commission has established a basic exposure limit for all occupationally exposed adults of 1.25 rems per calendar quarter, or 5 rems per year. No clinical evidence of harm would be expected in an adult working within these levels for a lifetime. Because the risks of undesirable effects may be greater for young people, individuals under 18 years old are permitted to be exposed to only 10 percent of the adult occupational limits. This lower limit is also applied to the general public.

   c. The National Council on Radiation Protection and Measurements (NCRPM) recommends limiting the occupational exposure of pregnant women to 0.5 rem. This is done because the unborn child may be more sensitive to the effects of ionizing radiation than the mother. Other scientific groups, including the International Commission on Radiation Protection, have also stressed the need to keep radiation doses to unborn children as low as reasonably achievable.

1. d. The Coast Guard is now required to inform all individuals who work in a restricted area of the health protection problems associated with radiation exposure. This instruction would in many cases include information on the possible risks to unborn babies. The regulations also state that licensees should keep radiation exposures as low as reasonably achievable. According to the International Council on Radiation Protection and Measurements vigorous efforts should be made to keep the radiation exposure of an embryo or fetus at the very lowest practicable level during the entire period of pregnancy.

e. It is the Coast Guard's policy to take all practicable steps to reduce radiation exposure. The advice of the Radiation Safety Officer should be obtained to determine whether radiation levels in working areas are high enough that a baby could receive 0.5 rem or more before birth. If so, the alternatives that might be considered are:

(1) Reduce exposure, where possible, by decreasing the amount of time spent in the radiation area, increasing distance from the radiation source, and using shielding.

(2) If pregnant, ask for reassignment in areas involving less exposure to radiation. If this is not possible, consider leaving the job. If such steps are taken, do so without delay. The unborn child is most sensitive to radiation during the first three months of pregnancy.

(3) Delay having children until no longer working in an area where the radiation dose to an unborn baby could exceed 0.5 rem.

(4) Continue working in the higher radiation areas, but with full awareness that there is some small increased risk for an unborn child.

(5) The following facts should be noted to help make a decision.

(a) The first three months of pregnancy are the most important, so make the decision quickly.

1. e. (5) (b) In most cases of occupational exposure, the actual dose received by the unborn baby is less than the dose received by the mother because some of the dose is absorbed by the mother's body.

(c) At the present occupation exposure, the actual risk to the unborn baby is small, but experts disagree on the exact amount of risk.

(d) There is no need to be concerned about sterility or loss of ability to bear children. The radiation dose required to produce such effects is more than 100 times larger than the Nuclear Regulatory Commission's dose limits for adults. A person who works in an area receiving only 0.5 rem per three month period, could receive 1.5 rems in nine months, and the unborn baby could receive more than 0.5 rem, the full term limit suggested by the NCRPM. Therefore, to restrict an unborn baby's exposure as recommended by the NCRPM, be aware that the 0.5 rem limit to the unborn baby applies to the full-nine month pregnancy.

f. <u>Discussion of Radiation</u>.

(1) The amount of radiation an individual receives is called the "dose" and is measured in "rems." The average individual in the United States accumulates a dose of one rem from natural sources every 12 years. The dose from natural radiation is higher in some states such as Colorado, Wyoming, and South Dakota, primarily because of cosmic radiation.

(2) Natural background radiation levels are also much higher in certain local areas.

(3) Many people receive additional radiation for medical reasons. The estimated average surface skin dose from one radiographic chest x-ray is 0.027 rem. The estimated average surface skin dose per abdominal x-ray is 0.62 rem.

(4) Radiation can also be received from natural sources such as rock or brick structures, from consumer products such as television and glow-in-the-dark watches, and from air travel.

1. f. (5) Radiation, like many things, can be harmful. A large dose to the whole body (such as 600 rems in one day) would probably cause death in about 30 days, but such large doses result only from rare accidents. Control of exposure to radiation is based on the assumption that any exposure, no matter how small, involves some risk. The occupational exposure limits are set so low, however, that medical evidence gathered over the past 50 years indicates no clinically observable injuries to individuals due to radiation exposures when the established radiation limits are not exceeded. This was true even for exposures received under the early occupational exposure limits, which were many times higher than the present limits. Thus the risk to individuals at the occupational exposure levels is considered to be very low. However, it is impossible to say that the risk is zero. To decrease the risk still further, licensees are expected to keep actual exposures as far below the limits as is reasonably achievable.

(6) The current exposure limits for people working with radiation have been developed and carefully reviewed by nationally and internationally recognized groups of scientists. Remember, however, that these limits are for adults. Special consideration is appropriate when the individual being exposed is, or may be, an expectant mother, because the exposure of an unborn child may also be involved.

g. <u>Prenatal Irradiation</u>.

(1) The prediction that an unborn child would be more sensitive to radiation than an adult is supported by observations for relatively large doses. Large doses delivered before birth alter both physical development and behavior in experimentally exposed animals.

(2) The National Academy of Sciences also noted that doses of 25 to 50 rems to a pregnant human may cause growth disturbances in her offspring. Such doses substantially exceed, of course, the maximum permissible occupational exposure limits.

1. g. (3) Concern about prenatal exposure at the permissible occupational levels is primarily based on the possibility that cancer (especially leukemia) may develop during the first 10 years of the child's life. Several studies have been performed to evaluate this risk. Although contradictory results have been obtained, most of the evidence suggests a relationship between prenatal exposure and an increased risk of childhood cancer.

2. **Summary**. Occupational exposures to radiation are being kept low. However, qualified scientists have recommended that the radiation dose to an embryo or fetus as a result of occupational exposure of the expectant mother should not exceed 0.5 rems because of possible increased risk of childhood leukemia and cancer. Since this 0.5 rem is lower than the dose generally permitted to adult workers, women may want to take special actions to avoid receiving higher exposures, just as they might stop smoking during pregnancy or might climb stairs more carefully to reduce possible risk to their unborn children.

DETERMINING THE COST OF PROPERTY DAMAGE.

1. Mishap Property Cost Determinations: The property damage cost of a mishap is the total cost of Coast Guard property damage, and non-Coast Guard property damage resulting from Coast Guard operations. Multiple resources may be damaged or destroyed by a single event, and are therefore reported as a single mishap. Only direct costs are to be used in determining mishap damage costs. Costs for transportation (personnel & property), salvage, temporary additional duty, setting up equipment to facilitate repair, etc., are not direct costs and are not be included in the total mishap cost estimate. The following guidelines are provided for mishap cost determinations:

   a. Destroyed, Missing, or Abandoned Coast Guard Aircraft, Cutter or Small Boat Cost. Although the acquisition cost is fixed at time of purchase, subsequent modifications may change the resource cost. Structural and engine overhaul costs also change quickly due to the prevailing market cost of labor and parts. Commandant (G-WKS) will coordinate with G-OCA, G-OCU, G-OCS, G-SEA and G-SEN to determine the acquisition and overhaul costs of an aircraft, cutter or small boat.

   b. Coast Guard Property Damage. Includes the actual cost of parts and direct repair work hours. Parts cost will include the replacement cost of damaged or destroyed parts or the cost to repair damaged parts. Work-hour costs are computed at the standard rate of $18 per work-hour. Work-hour costs do not include time used in setting up equipment for the actual repair work. Neither is the time used in removing, replacing, and inspecting undamaged parts and components solely to satisfy technical manual inspection requirements. Direct work-hours include:

      (1) Cumulative work-hours required to remove, repair, and replace damaged equipment.

      (2) Work-hours required restoring the equipment to serviceable condition, if economically repairable.

      (3) Work-hours required to remove and replace undamaged components to gain access to damaged assemblies and/or components.

      (4) Work-hours required removing and replacing a part if the part is not economically repairable.

   c. Overhaul/Rework Costs. If a repairable item can be economically overhauled, use the overhaul cost vice replacement cost for that particular item. Some large items (e.g., transmissions, engines) have fixed overhaul costs, contact ARSC or Commandant (G-WKS) for these costs. If there is no established overhaul cost, estimate the repair cost as **20%** of the item's replacement cost (current stock system price). Work-hour costs for removal, installation, etc. must be included in the total cost estimate.

   d. Replacement of Damaged Components. Removing a damaged component and replacing it with a new or used component to decrease cost and the work-

hours required for purposes of mishap classification is prohibited. If a like component is installed so equipment is available for operations, use the best estimated work-hour costs to remove, repair, and replace the damaged component for mishap classification.

e. Cost of Non-Coast Guard Property. Non-Coast Guard property damage and non-government property damage resulting from Coast Guard operations are reportable. All costs are in current dollars as of the date of the mishap. Use the best estimate of repair or best estimate of replacement cost whichever is lower.

2. Damage NOT Included in Mishap Damage Cost Estimates.

a. Damage caused by salvage or fire fighting operations. If damage occurs as a result of salvage or fire fighting or in transporting the wreckage, this damage shall be reported in the Coast Guard Salvage Report and the final Mishap Analysis Report.

b. Expected damage to Coast Guard experimental or prototype systems incurred during authorized testing.

c. Authorized intentional destruction of Coast Guard equipment and property.

OPTIONAL FORMAT FOR MAB PROGRESS MESSAGE
(Add or delete sections as appropriate)

PRIORITY
FM: (UNIT PLAD)//(MAB//
TO: COMDT COGARD WASHINGTON DC//G-WKS/G-OCA/G-SEA/G-WKH//
INFO: OTHER APPROPRIATE ADDRESSEES
BT
UNCLAS FOUO//N05100// OR//N0375 (FOR AVIATION)//
**////////////

UNIT INSTRUCTION 5100.xx

Subj: PRE-MISHAP PLAN

Ref: (a) Safety and Environmental Health Manual, COMDTINST M5100.47

1. PURPOSE. This instruction establishes guidance for mishap response and reporting at Coast Guard Unit. Reference (a) provides additional guidance.

2. ACTION. All *[appropriate unit levels and personnel, i.e. department heads]* shall ensure compliance when a reportable mishap occurs as per reference (a).

3. DISCUSSION. It is Coast Guard policy that mishaps be reported. Prompt mishap investigation and reporting provides supervisors and mangers with information to prevent mishaps and prioritize resources.

4. PROCEDURE.

a. Rescue and recovery phase. *(List personnel assigned rescue and recovery responsibility e.g., duty section, clinic, local EMS, fire department, etc. Either include phone numbers for each or provide specific direction where to find these, i.e. recall lists)*

b. Responsibilities:

1)
2)
3) (etc.)

Responsibilities for the Permanent Unit Mishap Board, for drug and alcohol testing, release of information to the public (per COMDTINST M5728.2 (series)), next of kin notification (per Personnel Manual, COMDTINST M1000.6 (series)), obtaining of Critical Stress Incident De-brief, etc. should be specifically assigned with alternates

c. Preservation of evidence: Unit personnel shall secure the mishap scene and collect any information which may hold clues to the cause of the mishap. The mishap scene provides the most perishable information, so gathering on scene/onboard evidence, taking photographs, and making diagrams of the scene are the first investigative priorities. Additionally, the following evidence should be preserved and collected for the investigation:

1) Maintenance record(s) of equipment involved
2) Training records of those involve in the mishap.
3) Service records of those involve.

4) Medical records of those involved.
5) Unit/deck log
6) Engineering logs.
7) Standard bearing book.
8) Standing orders, night orders, morning orders.
9) Inspection log/records.
10) Weather and sea state observed at the mishap scene, and forecast/analysis data from nearest NWS or FAA facility.

d. Reporting. The following procedures shall be followed, as appropriate, when a mishap is reported:

1) Responding personnel shall make an initial determination as to the severity of the mishap.
2) Responding personnel shall use the unit recall list to contact the *(appropriate personnel, e.g., CO, OIC, XO, OOD, Safety Officer, Unit Safety Coordinator)*.
3) Immediately report all class A & B mishaps to Commandant via telephone through the chain of command.
4) A preliminary message shall be sent for class A & B mishaps as per reference (a) within 12 hours.
5) Class C & D mishap reports shall be initiated by the first line supervisor and submitted to the *(CO/OIC or OX/XPO)* within ## days of the mishap.
6) Reporting format shall be in accordance with reference (a).

e. Investigation of mishaps.

1) Commandant will assign a Mishap Analysis Board (MAB) to investigate most class A & B mishaps. Preservation of evidence shall be undertaken with the assumption that an MAB will convene. Every MAB shall produce a Mishap Analysis Report (MAR) in accordance with reference (a).
2) MAB's are not normally assigned for off duty personnel not on Coast Guard property involved in a class A or B mishap, (e.g., private vehicle, sporting event, hobby, or authorized outside employment). Appropriate local authority (e.g., local police or fire department) normally will investigate these mishaps. Unit shall produce MAR in accordance with reference (a) and incorporate local authority findings in report unless directed otherwise by Commandant.
3) All class C & D mishaps shall be analyzed and investigated per reference (a). The Unit safety board shall review all such reports.

CO/OINC Signature

SAMPLE MISHAP ANALYSIS KIT

1. TOOLS AND EQUIPMENT

   Tape Measure & Ruler

   SLR, 35 mm Camera

   Spare color, and black & white film

   Micro-cassette recorder

   Spare cassette tapes

   String

   Chalk

   Plastic Bags/Assorted Sampling Bottles

   Flashlight

   Spare batteries for all equipment

   Small Knife

2. ADMINISTRATIVE SUPPLIES

   Accident Investigator's Guide

   Grease Pencil

   Permanent Marker

   Note pads & Graph Paper

   Clipboard

   Pens and Pencils

   Tags & Sticky Notes

3. PERSONAL PROTECTIVE EQUIPMENT

   Rubber and Leather Gloves

   Ear plugs

   Protective glasses

   Hard Hat

(SAMPLE)

MEMORANDUM OF UNDERSTANDING
BETWEEN
UNITED STATES COAST GUARD (unit)
and
(fire department)

This Agreement, entered into this _____ day of _____, between the United States Coast Guard (CG unit) and the (fire department) is for the purpose of providing fire protection, the protection of life and property from fire and firefighting, and the provision of emergency medical services, by the (fire department) to the (CG unit). The (fire department) and (CG unit) agree that:

1. On request made to (fire department) via telephone number (000) by a representative of the (CG unit) designated in this agreement, firefighting and/or emergency medical services equipment and personnel of the (fire department) shall be dispatched to the (CG unit) as determined and directed by (fire department).

2. Any dispatch of equipment and personnel pursuant to this agreement is subject to the following conditions:

a. All requests for fire or emergency medical equipment and personnel shall be made by telephone, unless that number is inoperative or unavailable for any reason.

b. Any request for aid under this agreement will include a description by the (CG unit) representative of the type or nature of the fire or emergency to which response is requested, and will specify the location to which the equipment and personnel are to be dispatched: however, the amount and type of equipment and number of personnel to be furnished will be determined by the (fire department).

3. The (fire department) equipment and personnel will report to the main gate of the (CG unit). The (CG unit) shall provide an escort to meet the equipment and personnel at the main gate and guide the (fire department) personnel to the location where emergency services are to be rendered. All actions of the (fire department) fire and rescue equipment and personnel in responding to the emergency shall be at the sole direction of the (fire department).

4. Reimbursement to the (fire department) for cost of firefighting on the (CG unit) is governed by section 2210, Title 15, United States Code, and the implementing regulations

set forth at part 151, Title 44, Code of Federal Regulations. Any such claim for reimbursement for firefighting cost may also include costs associated with emergency medical services to the extent normally rendered by a fire service in connection with a fire.

5. All equipment used by the (fire department) in carrying out this agreement will, at the time of action hereunder, be owned by, under the control of, or being employed in accordance with existing Mutual Aid Agreements, and all personnel acting for the (fire department) under this agreement will, at the time of such action, be an employee or volunteer member of the (fire department) or acting in accordance with existing Mutual Aid Agreements.

6. As an aid to implementing this agreement, members of the (fire department) with prior arrangement with the Commanding Officer or his designated representative are invited to tour the facility for the purpose of preparing a pre-fire plan. This plan may be reviewed biennially.

This agreement shall become effective upon the date subscribed by the last signatory and reviewed on a yearly basis.

By: _____ Date: _____
Commanding Officer

By: _____ Date: _____
Fire Department Administrator

Assigning Safety & Health Hazard Risk Assessment Codes (RAC)

RAC's are used to predict the relative risks associated with unabated safety and health hazards in the living & working environment. The RAC system is based on two factors: mishap probability and mishap severity. Following is a matrix to be used in assigning safety and health RAC's. For safety and environmental health the frequency (probability) of a mishap occurrence and its effects (severity) are used to define the risk. For occupational health hazards real or estimated measures of actual exposures (probability) along with potential medical effects of exposure (severity) are used to define the risk.

1. HOW TO USE THIS MATRIX

First. Determine MISHAP PROBABILITY by using chart #1 for safety and environmental health hazards or chart #2 for occupational health hazards (I, II, III or IV).

Second. Determine potential MISHAP SEVERITY by using chart #3 (A, B, C or D)

Third. Using the results from charts #1 or 2 and 3, use chart #4 to determine the RAC (1, 2, 3, 4 or 5).

CHART #1: SAFETY or ENVIRONMENTAL HEALTH MISHAP PROBABILITY

I	**Frequent:** one or more events per year.
II	**Likely:** several events during the life of a system or during a members career.
III	**Infrequent:** one event during the life of a system or during a members career.
IV	**Unlikely:** assume will not happen during the life of a system or during members career.

CHART #2: OCCUPATIONAL HEALTH MISHAP PROBABILITY (Exposure Dose; Measured or estimated without consideration for the use of PPE)

Level of Exposure	**Duration**	
	< 30 days/year	**30 days/year or more**
Less than (<) ¼ STEL or 8 hr TLV	**IV**	**IV**
Between ¼ and ½ STEL or 8 hr TLV	**IV**	**III**
Greater than (>) ½ but less than (<) STEL or 8 hr TLV	**III**	**II**
Equal or greater than (>) STEL or 8 hr. TLV	**III**	**I**

CHART #3: SEVERITY

	People	Property	Mission
A	Injury or illness resulting in death or a permanent total disability (Illnesses include: asbestosis, lung cancer, AIDS from blood exposure)	Cost of damage is $1,000,000 or greater	Inability to accomplish a critical mission
B	Injury or illness resulting in permanent partial disability (Illnesses include: elevated lead in small children, isocyanate sensitization, Hepatitis C)	Cost of damage is greater than $200,000 but less than $1,000,000.	Major impact on ability to accomplish a critical mission. Significant command attention.
C	Injury or temporary reversible illness resulting in loss of time from work beyond the day on which it occurred (Illnesses include: metal fume fever, adult elevated lead, food poisoning)	Cost of damage is greater than $20,000 but less than $200,000.	Moderate impact on ability to accomplish a critical mission. Limited capability but able to respond if needed.
D	Injury or temporary reversible illness requiring more than simple first aid treatment (Illnesses include: eye irritation, sore throat, mild poison ivy)	Cost of damage is greater than $1000 but less than $20,000.	Minor impact on ability to accomplish a critical mission. Operational nuisance.

CHART #4: RISK ASSESSMENT CODE

PROBABILITY	SEVERITY			
	A	B	C	D
I	**RAC 1**	**RAC 1**	**RAC 2**	**RAC 3**
II	**RAC 2**	**RAC 2**	**RAC 3**	**RAC 4**
III	**RAC 3**	**RAC 3**	**RAC 4**	**RAC 5**
IV	**RAC 4**	**RAC 5**	**RAC 5**	**RAC 5**

2. RISK DESCRIPTION AND ACTION FOR HAZARD ABATEMENT

RAC Number	Action
1	Stop operation, abate the hazard immediately through the use of engineering controls, administrative/work practice controls, or PPE. For occupational health hazards enroll personnel in OMSEP.
2	Use engineering controls, administrative/work practice controls, or PPE s to immediately control the hazard. If feasible & practical abate the hazard within 6 months. For occupational health hazards enroll personnel in OMSEP.
3	Use engineering controls, administrative/work practice controls, or PPE to control the hazard. If feasible & practical, abate the hazard within the normal 3 - 4 year engineering cycle. For occupational health hazards enroll personnel in OMSEP.
4	Maintain surveillance, abatement not required
5	Abatement and surveillance not required.