

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	Crash survival characteristics	Crew factors	Communication
Physiological conditions	Escape systems	Maintenance factors	Coordination
Psychological status	Egress mechanisms and procedures	Support and facilities	Performance
Social events	Survival factors	Supervisory factors	Engineering
Behavioral reports	Supporting information (photos; witness reports)		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. INSTRUCTIONS FOR COMPLETING QUESTIONNAIRES.

- 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.