

**Guide for Conducting
Marine
Fire Investigations**

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Introduction

A shipboard fire can be a very complex event whose origin and cause may not always be obvious. Investigators may have to expend considerable time and effort before the cause can be identified. The destructive power of the fire itself compromises evidence from the outset. The larger a fire becomes and the longer it burns, the less evidence of causation will remain. In some fires, sufficient data to establish the origin and cause (i.e., evidence) do not survive, no matter how diligent the search or well prepared the searcher. Destruction of evidence may also be a result of the normal and necessary duties of fire personnel carrying out rescue, suppression, overhaul, and salvage tasks.

Responsibility for the investigation of shipboard fires may be different under different circumstances and may be dependent to a large extent upon where the ship is located when the fire breaks out. While the Flag State would always have authority and responsibility to investigate fires on board the vessels under its registry, there are other authorities that also have a valid and legal interest in conducting an investigation. If the ship is in port when a fire breaks out, the local fire service may have the primary civil responsibility to establish a fire's cause. In addition, the Port State Administration may also exert authority to investigate. If there are fatalities as a result of the fire and the fatalities are all of the same nationality, the Administration of that nationality may be considered an "Interested State" under the terms of IMO Resolution 849 (20), and as such may wish to investigate. In addition to "Official" investigative authorities, other "unofficial" investigations conducted by the vessel owner and the vessel's insurance company will also be conducted. While the owner and his insurance company have valid investigative needs, their needs are of a secondary importance to the official investigations conducted by Flag and Port State Agencies, and other official investigative authorities.

Thus, after a shipboard fire there may be many different investigative authorities and interests all wishing to examine the same fire scene and to collect the same physical evidence. Without coordination and cooperation, difficulties can arise that could compromise all of these investigations.

If there is evidence that the fire was purposely set, a crime has been committed and law enforcement authority is needed to investigate the crime. This may mean releasing the scene and evidence to a local law enforcement agency or to a Federal governmental agency. Any such transfer may cause complications in establishing lines of authority and in maintaining the chain of custody of crucial physical evidence.

In some instances it may be possible to form investigative teams composed of individuals from both law enforcement agencies and accident investigation agencies so that the continuity of the investigation can be maintained through both accident/safety and the criminal phases. In some cases, investigators may have both law enforcement and accident investigation authority, and are properly trained so that investigations are handled from start to finish by the same investigators whether the cause of the fire is accidental or criminal in nature.

Whether from a law enforcement or from a safety agency, the individuals responsible for conducting shipboard fire investigations should be properly trained. There are several specialized training programs that teach fire investigation, but such programs concentrate on the investigation

of shoreside fires in houses, hotels, and other land structures. While several excellent marine fire fighting schools exist, as far as I am aware there are no formal training facilities or programs specific to investigating shipboard fires. It is hoped that this guide will serve as a source document containing necessary information to help in the conduct of a shipboard fire investigation.

Information, including graphics, contained in this guide has been taken mainly from two sources:

1. *Marine Fire Prevention, Firefighting and Fire Safety*, published by the U.S. Maritime Administration and
2. Distributed pre-printed class notes from the U.S. Fire Academy Arson Investigation School

The chapter bibliographies were taken from these source materials. I did not check them for completeness or accuracy. As far as I am aware, neither of these source materials was copyright protected. Even so, the purpose of this manual was not to produce an original document for sale, but rather to compile a reference document that may be of help to MAIIF marine accident investigators. The pre-printed class notes referred to shoreside fires and I took the liberty to attempt to apply them to the marine environment. I take full responsibility for all errors and omissions.

Despite the fact that I drafted this document while I an employee of the U.S. National Transportation Safety Board, I worked on it entirely on my own time and used my own personal computer equipment. None of this work was performed on official time or with U.S. Government equipment. While I submitted a copy of the document to the NTSB for its use, I look at the document as my own personal work that has no official sanction.

The document is a rough draft. Please feel free to change or modify it in any way you wish.

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