



## REASSESSMENT OF THE RESPONSE TO MARINE SAFETY RECOMMENDATION M96-06

### Shore-based fire-fighting capabilities

#### Background

In the early morning hours of 31 December 1994, a fire broke out in the conveyor belt system of the *Ambassador* during the unloading of a cargo of rock phosphate. The fire subsequently spread to the vessel's accommodation, and the combined efforts of the ship's crew and several shore-based fire departments were required to bring the fire under control before it was fully extinguished, some 28 hours later. There was no damage to harbour installations, no serious injury and no reported pollution as a result of the fire.

The Board determined that, when the conveyors were stopped, a section of one of the conveyor belts ignited, probably because the belt was in contact with an overheated roller. The roller probably overheated due to a bearing failure or to being jammed with refuse which ignited after contacting the overheated bearing.

The Board concluded its investigation and released report M94M0057 on 9 October 1996.

#### Board Recommendation M96-06 (November 1996)

In the last 10 years, there have been 386 occurrences involving fires or explosions on board ships in Canadian ports; approximately 32 per cent of these occurred in the winter months. Some 20 per cent of all the occurrences happened in ports under Ports Canada's jurisdiction; the remainder occurred in smaller locations under Transport Canada's Harbours and Ports or in Department of Fisheries and Oceans (DFO) harbours. Shortcomings in the fire-fighting capabilities of some ports and harbours were evident in these occurrences. For example, an inadequate water supply and a lengthy distance to the fire hydrant hampered the fire-fighting efforts in freezing temperatures on an out-of-control fire in the loop conveyor belt system of the *Algosoo* undergoing repairs at Port Colborne, Ontario, in 1986 (Report CCG MCI-442). Three years later, in September 1989, again at Port Colborne, it took the local fire department some 12 hours to fight another conveyor belt fire on board the *H.M. Griffith* (CCG MCI-540).

In July 1991 in Vancouver Harbour, British Columbia, a fire destroyed the Kitsilano Canadian Coast Guard Base and four vessels (TSB Report No. M91W0003). The fire response craft at the scene were not equipped to fight a fire of a large magnitude. Nor did the city water line have adequate pressure; it subsequently broke while being used to fight the fire. In the recent occurrence at Belledune, New Brunswick, inadequate knowledge of shipboard fire-fighting techniques, by both the ship's crew and shore-based fire brigades, led to confusion.

While most vessels are equipped with an on-board, self-contained fire-fighting system, capable of mitigating the danger posed by fires at sea, these same vessels can have their fire-fighting capability severely limited in port, as much of their main and auxiliary equipment is not running and/or readily available. It is not just the vessels that are vulnerable to extensive damage by shipboard fires when in port; vessel fires at dockside also present a serious hazard to port facilities and installations (as evidenced in the occurrence at Kitsilano).

Within ports and harbours, the responsibility for providing an emergency response plan, including fire-fighting assistance for vessels in port, generally rests with the port management. These plans often rely on municipal fire departments for fire-fighting support, many of which do not have personnel properly trained to fight shipboard fires. The Board believes that, with the ever-present risk of on-board fires, a well trained and equipped fire response team is essential in order to minimize the consequences of an out-of-control fire in the close confines of a port or harbour. Therefore, given that some Canadian ports and harbours appear to lack the proper facilities and resources to effectively contain shipboard fires occurring within their jurisdiction, the Board recommends that:

The Department of Transport conduct a special audit of fire-fighting facilities at Canadian ports and harbours under its jurisdiction to ensure that an adequate year-round capability exists to contain shipboard fires.

**TSB Recommendation M96-06**

### **Transport Canada's response to Recommendation M96-06 (February 1997)**

The Department is responsible for the safety and security of its clients and public in the use of public port facilities under its control and administration of Canada. The Department's public port facilities comply with the Fire Commissioner of Canada standards.

The public port facilities, in the majority of cases, are not supervised on a full-time basis. Some selected public port facility sites are supervised, not full time, but on a need basis by Ministerial fees-of-office appointees.

Pursuant to Section 8.(1) of the *Public Harbours and Port Facilities Act*, the Governor-in-Council may, by order, declare a public harbour. A public harbour so declared need not necessarily include a public port facility. Often, the private facilities so located are independently supervised by their respective owners/operators without government involvement. A declared public harbour can have a mix of private and public port facilities, and a non-declared harbour can also have a mix of private and public port facilities, each being individually supervised by their respective owners/operators.

The majority of the public port facility sites have only a small voluntary local fire-fighting force trained and equipped to handle small and simple fires. Their training generally does not include entering and fighting fires in restricted places.

At present, there are no legislated requirements for public harbours and ports to enter into fire-fighting activities aboard vessels. In consideration of the labour laws and legal liabilities, the involvement of shore-side personnel on ship-board fires is always based on an on-scene assessment of the incident and situation by the local fire-fighting force designed and equipped to handle simple fires.

Departmental officials, through fees-of-office appointees, do encourage, where possible, the coordination and exchange of fire-fighting plans (terminal/quay and ship) between the public port facility operators and the ship operators.

The Minister of Transport notes the recommendation. Departmental officials will contact the Executive Director, Canadian Association of Fire Chiefs, to assist in an audit to identify any risks and take the necessary steps to mitigate them.

### **Board assessment of the response to Recommendation M96-06 (March 1997)**

The response indicates that the Canadian Association of Fire Chiefs (CAFC) is responsible for the standards and training of shore-based fire brigades. As such, Transport Canada (TC) will contact the CAFC to

“assist in an audit to identify any risks and take the necessary steps to mitigate them”. In addition, TC proposes to issue a Ship Safety Bulletin to domestic ship operators and agencies for foreign vessels on operational readiness for cold weather conditions. However, there is no specific implementation plan nor schedule for any of the intended actions, nor was any additional information available to TSB staff when they contacted TC officials following the response.

Given that no assurance has been provided that the stated actions will take place in the near future, the responses to all three recommendations (recommendations M96-06, M96-07, and M96-08) can only be assessed at this time as having **Satisfactory Intent**.

### **Board reassessment of the response to Recommendation M96-06 (April 2005)**

TC developed a survey in conjunction with the Canadian Association of Fire Chiefs and distributed the survey in September 2003 to over 150 different fire departments across Canada. The actions taken by TC address the intent of the recommendation to carry out an audit. The reassessment is changed from “Satisfactory in Part” (October 2004) to “Satisfactory Intent.”

The file was assigned an **Inactive** status in 2005.

### **Transport Canada’s response to Recommendation M96-06 (November 2014)**

In its response in 2014, TC indicated that 18 ports are now operated as Canada Port Authorities (CPAs). CPAs are federally incorporated, autonomous, non-share capital corporations that operate at arm’s length from the federal government. CPAs are not Crown corporations under the meaning of the *Financial Administration Act*. CPAs operate their core activities - those activities related to shipping and navigation - as agents of the Crown. However, there is no

directive power under the legislation that allows the federal government to direct or influence the actions of the respective CPAs. Each is governed by a board of directors nominated by port user groups and various orders of government. Each operates according to business principles and has the authority and flexibility to determine strategic direction and make commercial decisions. CPAs are expected to be accountable and open to Canadians. TC therefore recommends that the recommendations be sent directly to the individual Port Authorities.

The 18 CPAs are entirely responsible for administering, managing, and operating, on a stand-alone basis, the port for which they are accountable. All questions pertaining to the administration, management, and operations of a port should be addressed directly to appropriate port authority.

Transport Canada Marine Safety and Security (TCMSS) has no authority or responsibility vis-à-vis the ports and its regulations are intended for ship crew to be able to fight a fire at sea and not be dependent on shore installations. The only equipment that TC is responsible for is the shore connection on board the vessel, but again it is an obligation for the ship; TCMSS does not have authority to ask the ports to have compatible equipment or even have equipment.

In addition, when the recommendations were last assessed, fire safety at ports was part of the *Boat and Fire Drill Regulations*. It is no longer part of these regulations. It was removed at the urging of the port authorities as it was a duplication of their efforts.

**Ports owned by Transport Canada:** TCMSS does not believe that these recommendations should apply to the few small ports that are still owned by Transport Canada (TC). TC currently owns 50 public ports and public port facilities. Budget 2014 announced the creation of a new Port Transfer Asset Program, in which TC expects to divest the remaining ports under its administration. By removing itself from the ownership and operation of these ports, the onus will be on the new port operator, if applicable.

Of the 50 facilities currently operated by TC, 41 are operating as commercial facilities. The 50 facilities can be categorized as follows:

- 10 facilities have more than 10 vessel visits per year;
- 4 have between 5 and 10 vessel visits per year;
- 24 have fewer than 5 vessels visits per year;
- 3 are classified as non-facilities such as breakwaters or canals; and
- 9 have reached the end of their useful operating lives and have been closed and are no longer used.

As a result of the changes in operating conditions and increased preparation for fire services in the past 8 years, TC's position is that the ultimate responsibility for ensuring that shore-based fire departments receive the appropriate training lies with the various jurisdictions under which the divested ports now operate. The smaller fire departments where these facilities are located have come to recognize the advantage of preparing themselves to respond to the types of emergencies that may take place as a result of ships frequenting the ports.

Since 2006, the residual risk identified in the recommendations has been drastically reduced. Therefore, TC believes that these recommendations should be considered fully satisfactory for the 50 small ports still owned by TC, which will be divested in the near future.

### **Transport Canada's updated response to Recommendation M96-06 (February 2015)**

Follow-up information provided by Transport Canada (TC) indicated that the 50 Canadian ports under its responsibility will soon be divested and that the onus for firefighting safety will be on the new port operators.

TC also provided information that had been previously given to the TSB in 2002, which indicated that some firefighting awareness sessions were provided to the ports in 2001, and that a series of courses were given by two consultants on behalf of TC to make community fire departments aware of the differences involved in fighting fires onboard a vessel. A total of 49 presentations were given across Canada at various locations including Canada Port Authorities, public ports, and to fire and town officials; these were completed in 2002. TC also provided the community fire departments with the International Fire Fighting Shore Connection for combating fires on board foreign flagged vessels that may not have North American standard hose connections.

TC also reiterated the categorization of the 50 facilities currently under its responsibility. There was no change.

Subsequently, on 01 April 2015, the Board changed the status of this recommendation to **Active**.

### **Board reassessment of the response to Recommendation M96-06 (March 2016)**

When the recommendation was issued in 1996, Transport Canada (TC) had regulatory authority over most of Canada's ports, but had begun to transfer port facilities ownership and operations to interested parties. In 1998, the control of 18 ports was effectively given to individual Canada Port Authorities (CPA). These ports were deemed critical to Canada's domestic and international trade, and accounted for a large portion of the total international and domestic cargo handled in Canada. Although the CPAs fall under federal legislation, they operate as fully commercial self-sufficient entities with no federal funding, and are independent of TC. Of the original 549 ports under TC's responsibility, TC's response indicated that only 50 ports remain to be transferred, and that the onus for firefighting safety will be on the port operators.

Over the past 20 years since the recommendation was issued, there have been 228 reports to the TSB of fires on board vessels secured at Canadian ports. Of these, 56 occurred at ports now under the authority of the CPAs. The remaining 172 fires occurred at ports other than those under CPA authority. Some of these include ports that have yet to be transferred by TC. Most of these ports have limited commercial activity when compared to the CPAs, and the local shore-based firefighting resources may be limited. In some cases, a volunteer fire service may respond. Of the 50 ports soon to be transferred, 9 have been closed or are no longer used.

Vessels are equipped with on-board, self-contained firefighting systems that are designed to mitigate the danger posed by fires at sea. However, a vessel's firefighting capability may be limited while in port, as trained crew members may not be on board, and the main or auxiliary equipment may not be running and/or readily available. In port, a vessel's firefighting capability is complemented by shore-based fire brigades. Therefore, it is important to ensure that the shore-based firefighting capability is available year-round. Of the 228 reports of fires on board vessels secured at Canadian ports, 61 occurred during the winter months. Fighting a shipboard fire at a port during the winter may present additional challenges. For example, freezing temperatures may hamper shore-based responses because of an inadequate water supply or the lengthy distance to the fire hydrant. Follow-up information obtained from the CPAs indicated that 5 of the 18 ports had a year-round capability to respond to shipboard fires; 1 port reported that it was a seasonal port and that a year-round capability was not required. Further information is required to determine the extent to which the safety deficiency associated with the recommendation remains or has been addressed at other non-CPA ports.

Since this recommendation was first issued in 1996, Transport Canada's jurisdiction over the ports has changed, and its responsibility has devolved to the port operators for their operations. Although some CPA ports have indicated a year-round capability to respond to shipboard fires, many other CPA and non-CPA ports may not have this capability. Consequently, the safety deficiency associated with the recommendation may still exist at those other ports.

The reassessment of this response is **Satisfactory in Part**.

#### **Next TSB action**

Noting the responsibility for fire-fighting now rests with port operators, the Board will take into account the effectiveness of the port's response to a ship-based fire in future investigations.

This deficiency file is **Closed**.