

MAIB SAFETY BULLETIN 1/2001

Accident to crew member on board

Grand Turk

while alongside in HM Dockyard, Portsmouth

on 24 August 2001

Issued October 2001

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This document, containing safety recommendations, has been produced for marine safety purposes, only on the basis of information to date.

The *Merchant Shipping (Accident Reporting and Investigation) Regulations 1999* provide for the Chief Inspector of Marine Accidents to make recommendations at any stage of an investigation if, in his opinion, it is necessary or desirable to do so.

The Marine Accident Investigation Branch (MAIB) is carrying out an investigation of the premature ignition of black powder in a muzzle-loading cannon, and the subsequent injury to a crew member on board *Grand Turk* while alongside in HM Dockyard, Portsmouth on 24 August 2001. The MAIB will publish a full report on completion of the investigation.

The MAIB's initial inquiries have shown evidence of safety shortcomings in relation to the cannon-firing procedures practised on board this vessel, and in particular to the safety of gun crew members.

These concerns relate to :

- Changes in the construction of the black powder cartridges
- Gun drill and training
- Time between firings.



J S Lang
Rear Admiral
Chief Inspector of Marine Accidents

SAFETY RECOMMENDATIONS

Background

Grand Turk, a 26-cannon, three-masted frigate built in 1997 in the style of vessels circa 1791, was moored alongside the north wall of HM Dockyard, Portsmouth while acting as a private guest ship during the International Festival of the Sea.

One of the pre-arranged activities on *Grand Turk* was cannon fire firing a blank charge of black powder in one of the 9-pound reproduction cannons. On Friday 24 August 2001, all six 9-pound cannons on the port side were loaded and wadded, but not primed. At 1200, the noon cannon was fired. The reloading process started immediately in the following manner:

A wet sheepskin swabber was inserted in muzzle of cannon and pushed to breech before being removed.

A wormer was then inserted in muzzle, pushed to the breech, rotated, and withdrawn.

A 400gm charge was then inserted in the muzzle and pushed to the breech by the rammer.

Before the rammer could be removed, the black powder charge ignited prematurely, causing the rammer to be ejected with some force from the cannon, striking a crewman's left hand. The use of the wormer after the swabber is thought to have uncovered burning material, which subsequently ignited the charge.

The crewman's injuries resulted in the loss of his little finger down to the knuckle, as well as serious damage to the middle finger of his left hand.

Safety Recommendations

***Grand Turk's* master is recommended to:**

1. Follow the advice given by the Keeper of Artillery, Royal Armouries, on the correct procedures and training for safe operation of period gun drill, as stated in his documents *Blank Firing on Grand Turk* and *Muzzle Loading Gun Drill*.
2. Ensure that all crew members involved in gun drill are fully conversant with the recommendations on safe operations of cannon firing, and that all gun captains are aware of their command responsibilities for the safety of themselves and their gun crew.
3. Review the current construction of the black powder cartridges immediately. Either suitable cloth or paper should be used in place of plastic bags; guidance on this issue to be obtained from the Keeper of Artillery, Royal Armouries.

***Grand Turk's* owner is recommended to:**

1. Ensure that the training and operation recommendations of the Keeper of Artillery, Royal Armouries, are put into immediate effect by the master, together with the recommendations on the construction and use of black powder cartridges.
2. Monitor, at regular intervals, the standard of gun drill training to ensure that suitably qualified and trained gun captains are always present during live firing.