



MARINE SAFETY ALERT

Inspections and Compliance Directorate

August 6, 2001 (estimate / reformatted 2014)
Washington, DC

Safety Alert 02-01

PASSENGER VESSEL SAFETY ALERT

From: G-MOC and [ICCL](#)

To: Industry, ICCL members, MSO's, Area and District M staff

CRUISE SHIP SUFFERS STEERING PROBLEM WITH RESULTING INJURIES

Background: The cruise ship NORWEGIAN SKY while approaching the Strait of Juan de Fuca en route to Victoria, B.C. with 2,975 persons, made a sudden unexpected hard turn to port. The vessel was operating on trackpilot when it suddenly received a signal to go to a new heading of 270 instead of the intended track of 090. The NACOS 45-3 Trackpilot navigation system had received an erroneous signal either due to equipment malfunction, or human error, or both. This caused the vessel to take an unexpected and violent turn. The vessel heeled to starboard at least 8 degrees while rudder movements fluctuated between amidships and port 45 until the swing of the vessel was controlled using the non-follow up control at the main steering console on the bridge. 78 persons were injured, most of them resulting from the falling of unsecured objects such as arcade games, display cases, and tables. The technician called in to troubleshoot the Trackpilot system was unable to replicate the occurrence.

Lessons Learned: While the casualty investigation for the NORWEGIAN SKY is ongoing, there are several initial "Lessons Learned" that can be shared as follows:

1. Securing for Sea

Owners and operators of passenger vessels should review procedures and processes to ensure that large items of equipment and other heavy objects are adequately secured to prevent movement or toppling in the event of sudden or violent ship movements. Of particular concern are video games and other large items found in children's recreation spaces, casino equipment, display cases and individual shelving (especially glass) within retail stores, or any other heavy objects that could shift or topple during a sudden or violent movement of the ship.

2. Trackpilot Systems

Trackpilot systems are complex navigation systems designed to be used in confined waters. Training and familiarity with the system are an important component of their safe use. Trackpilot malfunctions, in certain close quarter scenarios or heavily trafficked waterways, could result in a serious marine casualty such as a grounding or collision. Trackpilots have operational limits such as rudder limits that must be established and activated once the trackpilot is engaged. For example, proper rudder angle settings would limit the rudder to small course change increments

even if a large variance in input data is perceived by the sensors. Trackpilot's should be capable of being disengaged instantly in the event of a malfunction or improper operation. Owners and operators of passenger vessels should develop operational guidance and training programs to assure proper and correct trackpilot programming, crew familiarity and should develop and test contingency plans to assure proper crew response in the event of a trackpilot malfunction or failure.

This safety alert is provided for informational purpose only and does not relieve any domestic or international safety, operational or material requirement. Developed by the Office of Investigations and Casualty Analysis. For questions or concerns please email hqs-pf-flidr-cg-inv@uscg.mil.