



# SHIP SAFETY BULLETIN

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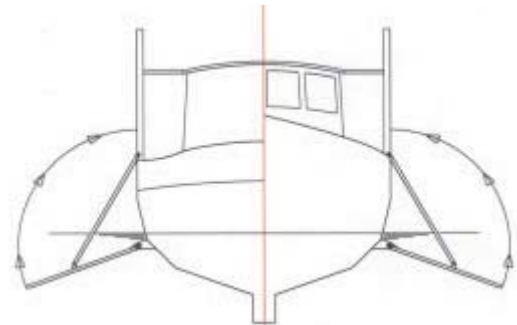
**Subject: FISHING VESSEL SAFETY:  
Hinged Fins as Anti-Roll Devices**

**Purpose**

To inform fishing vessel owners, masters, and operators of certain safety concerns raised by the installation of experimental hinged fin type anti-roll devices.

**Description**

Hinged fin anti-roll devices have recently been installed on a number of fishing vessels. The device is fastened to the hull bilges with hinges. When lowered and held in place in the working position by a vertical sliding arm (see diagram), the device is intended to reduce a vessel's rolling motion.



**Safety Concerns**

Previous Ship Safety Bulletins have highlighted risks related to vessel modifications, including the addition of anti-roll devices.

Anti-roll devices may provide a more comfortable working platform by reducing the rolling motion, but they do not improve a vessel's stability. In some circumstances, an anti-roll device can hide a deteriorating stability condition and provide a false sense of safety. A malfunction of the device may also create an immediate stability risk.

These hinged devices are not approved by Transport Canada. Transport Canada is not aware of them having been designed to a recognized standard, approved by other administrations, or certified by classification societies.

To validate and certify an innovative device, extensive engineering studies are normally conducted together with a program of trials to define all parameters and establish the operating limits.

**Keywords:**

1. Anti-roll
2. Fin
3. Stabilizer

**Questions concerning this Bulletin should be addressed to:**

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Owners of commercial vessels automatically receive Bulletins.

The anti-roll device should have operating instructions that explain the operating limits, including details on when and how the device should be used safely.

### **Risk to Safety**

Possible risks of using this type of device:

<b><u>Vessel sinking</u></b>	Hull damage may occur if the fin hits something while underway. The risk is higher on composite or wooden hull vessels.
<b><u>Sudden vessel heel</u></b>	Damage to a fin or loss of a hinge may cause the fin to twist. If this occurs, particularly at speed, it may cause the vessel to heel sharply and suddenly. Crew may lose their footing and/or be thrown into objects or even overboard.
<b><u>Reduced stability</u></b>	The dragging effect of the fins may decrease vessel stability in heavy seas, increasing the risk of capsizing. The effect of ice accretion on stability must also be considered when operating in certain areas that have icing conditions.
<b><u>Loss of control</u></b>	A twisted fin may suddenly turn the vessel abeam to the sea or affect the ability to steer in other ways.
<b><u>Hazardous working practices</u></b>	Repair or recovery of a damaged fin or sliding arm may require improvisation - with associated risk of injury to crewmembers.
<b><u>Ice damage</u></b>	Operations where the fins may hit ice can result in damage to the device or the hull, resulting in one or more of the situations described above.

### **Recommendation**

Vessel owners, masters and operators are reminded of their responsibilities for the development of procedures for the safe operation of the vessel and for dealing with emergencies.

Before installing the device, review the operating instructions and consider the risks carefully, including the weight effect on stability. Make sure you understand how the device may affect your vessel and that using the device, given the risks, makes sense for your operation. If you do install the device, or have already installed one, you, as owner, master or operator have legal responsibilities for vessel safety. These include:

- Having operating procedures in place so that the device is used safely, including racking the device when conditions do not permit fishing operations.
- Training the crew on how to use the device and making sure they understand the device's operating limits so that they do not put the vessel in danger because they did not know when and how the device should be used.

Additional information and guidance on the risks from adding an anti-roll device can be found in the following bulletins available at [www.tc.gc.ca/eng/marinesafety/bulletins-menu.htm](http://www.tc.gc.ca/eng/marinesafety/bulletins-menu.htm) :

SSB 01/2008	Fishing Vessel Safety: Record of Modifications
SSB 04/2006	Safety of Small Fishing Vessels: Information to Owners/Masters about Stability Booklets
SSB 01/2005	The Use of Passive Anti-Roll Tanks (ART) on Small Fishing Vessels
SSB 15/2000	The Use of Roll Damping Paravane Systems