

4. Summary (Conclusion)

There are the following characteristics found in marine accidents caused by dozing at cargo ships and tankers:

- **40% of accidents occurred in March and April, and 90% occurred between 9 p.m. and 5 a.m.**
- **80% of accidents were of grounding; 60% were of 200-500 tons.**
- **60% of accidents occurred around the Seto Inland Sea, with many grounding accidents near the narrow waterway.**
- **Almost all accidents were of vessels with 3 to 6 crew members with just one bridge watchkeeper.**
- **70% of the accidents were of the bridge watchkeeper sitting in a chair; almost all were using autopilot.**

Concerning the use of the Bridge Navigational Watch Alarm System (BNWAS):

- **20% of the vessels had the equipment but had it inactive.**
- **Of those in which the alarm did not work, in half of the cases, the sensor likely detected the operator's body movements, even dozing: In 30% of accidents, the operator likely dozed at the accidents in less than the set time (the alarm inactivation time).**

Based on the case studies of accidents investigated, the followings are crucial for accident prevention:

- Operators should **grant leave at appropriate intervals** so crew members can adequately carry out their bridge watchkeeping duties.
- Shipowners, masters and bridge watchkeepers of vessels equipped with BNWAS should **thoroughly check the system working at departure and under sail, adjust the sensor conditions such as its mounting angle, and set the time (the alarm inactivation time) to be short as possible.**
- If the bridge watchkeeper feel drowsy while on watch duty alone, **move your body and open the windows to expose yourself to the air** to prevent dozing.

A word from Director of the Analysis, Recommendation and Opinion Office

As the saying goes, "In spring, one sleeps a sleep that knows no dawn", and as the weather gets warmer in spring, we find that accidents caused by dozing also increase. In addition, some hay fever medications can also cause drowsiness, so those taking them should be careful.

Even if you have the Bridge Navigational Watch Alarm System (BNWAS), please have it work in the right manner, and be in your mind, "Don't throw pearls before swine."

We wish you all safe sailing.

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