



NAVAL SAFETY COMMAND SAFETY AWARENESS DISPATCH SA 26-07



Disregarding Shipboard Alarms

Today's topic of discussion covers disregarding shipboard alarms. Before we dive into these examples, let's first discuss a phenomenon known as alarm fatigue, which is when personnel become desensitized to electronic safety alerts. Addressing alarm fatigue involves improving the culture to take alarms seriously. Human factors continue to play a significant role in how we respond to a shipboard alarm. A Sailor or Marine may display a lackadaisical attitude toward a flooding or fire alarm, especially if the alarm has proven to be erroneous in the past. If disregarding alarms becomes normalized, then a culture of non-compliance develops and that is something we cannot afford to happen. The naval enterprise needs leaders who understand risk identification and control and who promote a culture of procedural compliance within their departments and divisions. Examples below outline where these risk controls were ignored or neglected.



DON'T Disregard Further Alarms

While in port, a destroyer experienced flooding in the #3 Generator Room (3GEN), following the reinstallation of a relief valve. Improper alignment created firemain backup pressure that caused the valve to release water into the bilge in 3GEN. The engineering duty officer (EDO) was assuming both the EDO and central control station (CCS) supervisor watches. When flooding began, the damage control console (DCC) alarm sounded, displaying "Generator RM Flooding." The EDO/CCS supervisor acknowledged the alarm and ordered the sounding and security watch (S&S) to investigate. Unfortunately, that order was not acknowledged and the EDO/CCS supervisor neglected to ensure receipt, continuing to clear issues/tags to facilitate departmental work. Another opportunity to identify and correct the flooding presented itself when the petty officer of the watch (POOW) reported they had received a Summary Flooding Alarm and notified CCS, but no additional actions from the watch standers were taken (*seems like the crew had a case of "we already checked that out" thinking*). Eventually, another Sailor, who was not even on a watch, entered 3GEN and observed water on the deck. A flooding casualty was finally called away and the inport emergency team properly responded to the casualty in 3GEN. Had proper and timely focus been applied to these alarms and adequate follow-through conducted, this flooding event could have been completely avoided. —*This case is a great example of what happens when there is a lack of follow-through action on what initially may have been a minor issue. Leadership must train personnel to investigate and follow up on all alarms, even if they appear to be erroneous or redundant.*

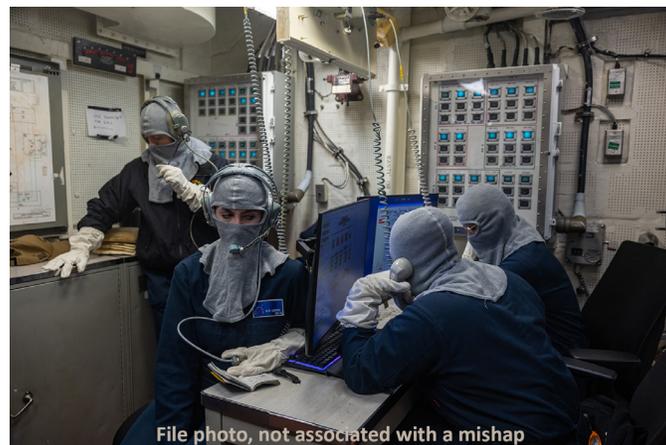
Routine Walk Through

While conducting daily walk throughs, the executive officer (XO) noticed an alarm in Auxiliary Machinery Room 1 (AUX1) was showing a steady RED warning light indicating a potential toxic gas leak. The XO immediately reported this to the EDO and the quarterdeck (QD), who subsequently notified the command duty officer (CDO). AUX1 was evacuated and secured for repair actions (*hooray, the alarm was promptly heeded*). The following investigation identified from previous logs that the alarm had been activated for at least an hour with readings well over the allowed threshold (*oh wait, the alarm was not promptly heeded*). The report identified several concerning factors. The Parasense audible alarm was in the off position, no reason was found as to why. The alarm went unnoticed for a significant time, despite hourly roves. Due to a previous incident involving false toxic gas readings, the CDO and rapid response personnel delayed their response, which resulted in a failure to execute all appropriate procedures within established timelines. —*Complacent watchstanding, procedural compliance failures and general lack of a questioning attitude are how minor situations explode into big ones. Train your people to take alarms seriously.*

Ignore the Alarm, Pay the Price

Watch standers in CCS noticed a main propulsion diesel engine (MPDE) low lube oil alarm going off. However, the supervisor neglected to act on the alarm, (immediate and controlling actions IAW EOSS), contact the designated "Oil King" or EDO, or inform follow-on watch supervisors. During the next watch, a servicemember identified

low sump levels in the MPDE and communicated to the watch supervisor that they would contact the Oil King to investigate. Unfortunately, this action did not happen and the division's leading petty officer (LPO) was contacted instead. The LPO also did not take further action to identify the cause behind the low sump level. Maintenance continued despite the completely ignored alarm. Ten hours and several watch turnovers later, the incoming EDO identified low sump levels and excessive lube oil in the bilge and ordered appropriate actions. The cause of the leak was a removed drain plug that allowed over 3,000 gallons of lube oil to drain into the bilge. Eventually, the commanding officer was notified of the \$35k in damages. —*This case started with a clear warning that was ignored. Unfortunately, what was perceived as a small problem*



File photo, not associated with a mishap

quickly grew into a major and expensive failure. There appeared to be a cultural breakdown in watch standing and inattentiveness that led to missed alarms and a lack of follow-up that increased the severity of the original problem. It was reported that one supervisor admitted to just merely acknowledging the alarms and not bothering to review them, claiming to be too tired and unfocused at the time. Safe operation of our vessels relies on a culture of procedural compliance that rigorously investigates all alarms without exception. To do anything less has proven to be costly in equipment damage and lives lost.

Refrigerated Leaks are Good. Refrigeration Leaks are Bad.

During routine in-port operations, a Parasense alarm (*refrigerant leak detection system*) in the reefer machinery room alerted the CCS Supervisor to a leak. In response to the alarm, watchstanders promptly called away a toxic gas casualty over the 1MC. The Flying Squad, followed by the In-port Emergency Team (IET), responded in accordance with the ship's Repair Party Manual. IET and Reefer Technicians identified leaks originating from a degraded thermal expansion valve on the NR2 Reefer, along with two additional leaks on joint fittings on the NR1 Reefer. Both reefers were secured and drained to mitigate any further risk until they could be properly repaired. Ventilation was established for the space using a RAM Fan and trunks. Once ventilation was operational, the Gas Free Engineer conducted atmospheric testing to confirm the environment was safe. Thirteen minutes after CCS was first alerted, the casualty was secured and the space was declared safe for personnel. —*This event is the obvious exception to the title of this dispatch and exemplifies how an alarm should be responded to, kudos to the crew for their expert response. Now for the Get Real Get Better portion of this incident. The space was reported as UNSAT on previous zone inspections (before this casualty) because of multiple issues. The faulty thermal expansion valve was identified and documented prior to the casualty; however, no temporary fix was put in place which ultimately led to a major leak, endangering the crew. It is incumbent upon the inspectors to ensure problems are understood and acknowledged. It's up to the division to take these problems seriously and resolve or elevate them to the proper level.*

Key Takeaways

Personnel must be able to instantly differentiate between benign notifications within a system and genuine, high-stakes alarms. It begins with effective acknowledgement and communication when an alarm is first received, followed by a thorough investigation. If the alarm is erroneous, corrective action that resolves the issue must immediately be taken to reduce the potential effect of alarm fatigue. Every alarm must be treated as a true call to action.

- 1. Be mindful of silenced alarms.** Silent mode prohibits audible alarm from alerting watch standers to potential hazards or errors. Consider the appropriate uses and authorities for alarm silencing requirements.
- 2. Diminish complacency.** Alarm fatigue can quickly escalate to a dangerous condition. When personnel are desensitized, they cease to treat every alarm as a critical demand for their attention that is capable of creating deadly blind spots in preventable tragedies.
- 3. Train and recognize.** Training and recognition of alarms are essential to instill instinctual prioritization of shipboard alarms. Even routine alerts must be met with the same level of focus and corresponding action.

And remember, "Let's be careful out there"