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The Dangers of Doors and Hatches


U.S. Navy file photo

Shipboard doors and hatches hurt us more than you'd think and the several hundred reported mishaps over the past four years are proof. If you find yourself opening, closing, standing near, passing through, or working on these heavy and often unforgiving through-ways, this dispatch is for you. After reviewing numerous reports, it's evident that hand placement, air pressure differential, real-time risk assessment, and situational awareness are frequently identified factors of injury. Review these examples, learn from them, and exercise a healthy caution around these common fixtures. They can be more dangerous than they look.

- Stand By for Heavy Rolls! Underway and during rough seas, a Sailor was returning to his shop. He opened the door, lost his balance, tripped over the "knee knocker" and fell to the deck. As he fell, the Sailor stretched his right hand forward to stop his fall. After impact, he got back to his feet and noticed pain and "unnatural protrusions" from his hand (*Eesh, that doesn't sound good*). He was medevac'd to a medical facility where multiple bones in his hand were reset, a splint was applied and limited duty assigned for over a month. *—The task at hand (pun intended), was to get through the doorway unscathed. The Sailor was aware of the deteriorating weather and increasing sea state but did not adapt the simple act of passing through the doorway to the changing conditions. He had limited experience in heavy seas and this incident resulted in a staffing gap on the ship. Conducting relevant training that emphasizes three points of contact and giving timely communication of situational hazards are a good start toward preventing these door-to-body mishaps.*

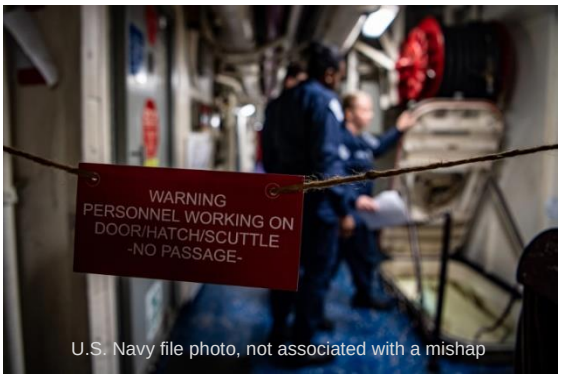
- Know the Danger Areas. Workers were removing a large, watertight ballistic hatch with a two-foot round scuttle in the middle. The hatch was in the open (vertical) position with scaffolding around the open hole for fall protection. The scuttle in the middle of the hatch needed to be opened to get a good rigging pick point. Worker 1 (W1) was positioned on the backside of the hatch (top if it was closed), and Worker 2 (W2) was in front of the hatch (bottom if it was closed) facing the scuttle's hand-wheel. To open the scuttle, W2 turned the hand-wheel. The scuttle opened faster than anticipated (*heavy scuttle + gravity*), pinching W1's right ring finger between the scuttle and horizontal scaffolding bar he held onto for support. W1 suffered a laceration, fractures to his right hand, and the tip of his ring finger had to be surgically removed. *—The work team didn't recognize that the vertical position of the ballistic hatch would have a significant effect on the speed of the scuttle hatch operation. A real-time risk assessment of the job may have identified the danger areas and precautions that would have averted a worker getting their hand crushed.*

- Little Things Lead to Big Things. As a Marine entered the berthing area, he placed his hand on the door jam. His progress was slowed, and he became distracted due to the slippery floor, which was obstructed by trash, personal items, and other debris. He hadn't made it through the doorway when the 100-pound door swung back, trapping his finger between the door and the jamb, severing his fingertip. *—There's a reason spaces are inspected. You would hope people aren't stumbling over trash and unsecured personal items in the dark during an emergency, right? Maintaining clean spaces is crucial for safety, efficiency, and overall readiness for operations at sea. In this case, there was no emergency until the untidy deck slowed this Marine down enough to lose situational awareness of his hand on the door jamb. Bonus Lesson: Don't put your hand on the door jam.*

- Pinch Point. The job was to mount a lower hatch to the yoke arm mounting fixture. During the pre-installation brief, the mechanics discussed the tendency of fastener binding to occur between the yoke arm and yoke ear on the hatch due to tight tolerance. As the installation progressed, the mechanic fitted required spacers between the upper yoke arm and yoke ear and inserted the fastener. When the fastener was partially through the yoke arm and yoke ear, it got stuck (*as they briefed it might*). To figure out what part of the alignment was causing the binding, the mechanic placed his left index finger (*please don't say "into the*

fastener hole"…) into the fastener hole (*Ugh!*) on the opposite side from where the fastener was inserted. At the same time, he manipulated the head of the fastener with his right hand. The fastener popped out, causing his finger to follow the fastener into the pinch point. The hatch pivoted, (because the partially installed fastener was no longer holding it) amputating the mechanic's left index finger at the first knuckle. *—The pre-installation brief was good to identify the risks but apparently lacked the necessary Do's and Don'ts for how to deal with them. There is often 'stored energy' or forces acting upon an object that you don't realize.* ***Never*** *use your finger as an alignment tool. Use proper tools to protect your digits.*

- Work-around Gone Wrong. Sailor 1 was giving Sailor 2 directions to get to another area of the ship. Sailor 1 showed which hatch to use and wanted to open it to further explain the route. The closed hatch sits flush with the deck and the hatch handles were stuck in the recessed position within the hatch due to corrosion, so Sailor 1 used the small padlock locking tab (fixed to edge of the hatch) as a 'make-do' handle to lift the hatch. She finished giving her directions and lowered the hatch with her finger through the hatch locking tab hole for a better grip and more control. As the hatch neared the deck, the combination of weight and gravity accelerated the last few inches of travel, severing her protruding fingertip between the hatch and deck locking tabs. *—The handles serve a purpose, but unfortunately, they couldn't be used as intended due to a lack of maintenance. When a process isn't adequately assessed and risks aren't mitigated, a quick work-around procedure can have much greater consequences than intended.*



U.S. Navy file photo, not associated with a mishap

- Unseen Forces at Work. A Sailor was returning items to the HAZMAT office located on the hangar bay level of the ship. As she entered through the water-tight door immediately in front of the HAZMAT office, she stabilized herself on the door frame with her right hand. Unexpectedly, the door slammed shut with her fingers still located along the metal door frame. Her injuries required medevac to a hand specialist, followed by surgery and significant limited duty time. The oversized door was heavy and known for slamming shut. Air pressure differential between the hangar bay and passageway caused the door to close faster as the opening decreased, and slam shut in the last 8 inches of travel. — *Unfortunately, there is little that can be done to mitigate the airflow issues. Errors in judgment, decision-making, and real-time assessment contributed to this incident. The report stated a recommendation was made to add bright, notable signage to be posted on both sides of the applicable doors to warn personnel of the hazard. Bottom line — Remember these examples and protect yourself. Take precautions every time you use a door or hatch to reduce risks, even if no one has posted a warning sign.*

Key Takeaways

1. **Atten-Hut!** Inattention is a common precondition for mishaps. It occurs when someone fails to stay ready, alert, or aware, leading to hazardous conditions or unsafe actions. This can happen during repetitive tasks, like passing through a hatch, where the routine nature of the task dulls your attention. It occurs from a false sense of security, like not expecting a door lever to drop and hit you, because it usually stays fixed. Inattention also arises from a perceived absence of threats in the environment, like not expecting an air pressure difference between spaces that forcefully opens or shuts the door. Be vigilant.

2. **How's your safety culture**? As your environment changes, your behaviors must adapt with it. In our heavy seas example, lack of experience in those conditions gave the Sailor an inaccurate expectation on how to navigate the workspace entrance. Proactive and timely communication prompting crewmembers, especially the inexperienced ones, to take extra caution (three points of contact) likely would have provoked change in his actions to pass through unscathed.

3. **"Lerts" live longer — be a "lert"**. Fixation can be described as a tight focus of attention that leads to the exclusion of comprehensive situational information, i.e., the other stuff that will bite you. There are too many examples to include here, where individuals become so focused on what lies ahead that they inadvertently neglect the door closing behind them while their hand remains on the door frame. Don't fixate. Please **be alert** to your situational information.

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