



# Naval Safety Center

## LESSONS LEARNED



LL 22-01

### SHIPBOARD LADDER MISHAPS (EPISODE III)

#### *"Ah, my old enemy ... stairs!" — Po, Kung Fu Panda 2*

For Sailors, Marines, and civilian mariners, ladders (vertical and inclined) are a normal part of shipboard life, and they aren't easy to navigate. The mishap numbers are relatively consistent from year to year: Shipboard ladder falls account for about 25% of all lost or affected workdays on ships and subs. Yes, something as "simple" as traversing up or down a ladder accounts for more lost work than any other shipboard mishap. Last year, based upon our own informal (*unofficial*) divisional count, there were more than 360 afloat ladder-related mishaps.

Two Naval Safety Center studies looking at four years of data found that most ladder injuries are due to human error in judgment and spatial awareness. Helpful tip: Around 75% of ladder injuries happen when personnel are descending the ladder. On the flip side, two of the most severe types of injuries in the data occurred while ascending ladders, so going up isn't a walk in the park either.



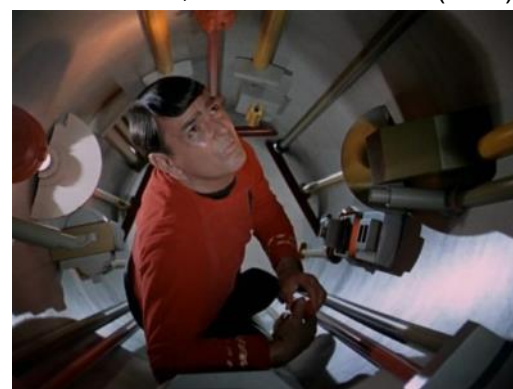
Shipboard ladders are hazardous, and they have been for more than 100 years. The threat is part of your daily life, so the question is, "What can you do about it?" Until someone invents an engineering solution, only YOU can protect you. Real stories help give life to the statistics, so here are a few examples of instances we hope we all can learn from:

- First impressions are lasting. A Sailor was giving a tour of department workspaces to newly checked-in personnel. He was more focused on providing the tour than he was on his footing. He stepped down into a ladderwell, misjudged the steepness, caught his left heel on a step, and fell down the ladder. He landed awkwardly on his right leg, injuring his knee. — *It wasn't part of the intended tour, but he accidentally gave a ladder-safety lesson to the new check-ins that they will remember (so will he).*
- "The Rock" would be proud. When a casualty in aft steering was called away over the 1MC, a Sailor dutifully responded. He was "hurriedly descending" a ladderwell with a repair kit when he slipped and fell the rest of the way. Despite his pain, he completed the repair before reporting to medical. How much pain? Whatever pain a fractured right elbow and pulled muscle in his right knee would cause. — *We honor this young man's determination and dedication to duty, if not his ladder safety prowess. Please emulate his sense of duty, but slow down on the ladders, and keep a solid handhold.*

***Ladders are hazardous all the time, but you definitely need to have a healthy fear when you are descending one.***

- I thought it was safer to be a Culinary Specialist. A Sailor was coming down a ladderwell, carrying cookware in both hands. He tripped on the steps, and, since he had no hands to hold the railings, he fell. First, he hit the back of his head on the ladder, and then the cookware hit him in the face. He wound up with a busted lip, a bruised forehead, chipped teeth, and a concussion. — *The report notes that the Sailor "was attempting to make the fewest trips possible" and thus increased the probability of a mishap by using two hands to carry the cookware. When we were young, we learned a sailing adage: "One hand for yourself, and one hand for the ship." One hand on a railing and two feet for the steps is the minimum to reduce the chances of falling.*

- Are Velcro boots an option? A Sailor was descending a ladder “with untied boot laces” (*why, oh why?*) when his lace got caught on the side of the ladder (*we aren’t surprised*), causing him to trip and fall down the ladder. While falling, he tried to catch himself (*unsuccessfully*) and hit his back. He was lucky to walk away with a lumbar spine contusion and a heavy dose of ibuprofen. — *Just like they taught you in kindergarten, tie your shoes.*
- Look, Ma! No hands! A Sailor was descending a steep, inclined ladderwell. About halfway down, he only had a small part of his heel on the step. His heel slipped off, and he fell. Why? According to the report, he “had a clipboard in one hand but was not holding onto the handrail with the other hand.” He landed on his left foot with his leg fully extended, tearing his Anterior cruciate ligament (ACL). The initial report said 21 days of light duty, but there was likely more. — *If you choose not to use the handrails even when you have both hands and rails, you are asking to get hurt. Please be wise.*
- Eyes front, people. The ship was in modified material condition ZEBRA, where all hatches below the third deck are closed. A Sailor was ascending a ladderwell from the fourth deck to the third deck and didn’t look up. Why? He “thought he was already on the third deck.” He wasn’t, so he hit his head (*hard*) on a closed scuttle. — *Please keep your head up and eyes out.*
- “We can’t take Warp 7 much longer, Captain!” A Sailor reached the top of a ladderwell from the reactor spaces and realized he had forgotten tools for maintenance he was going to conduct. He descended the ladderwell, got his tools, and rushed back up (*his ORM warning light should have been flashing at this moment*). He tripped on the top step, fell, and fractured his right hand. — *Please don’t rush. Remember, “Slow is smooth, and smooth is fast.” If you break your hand, the Romulans may catch us.*



### Key takeaways / Lessons Learned

Ladders are a routine part of life on Navy vessels, but we can’t just blindly assume the risk. It hurts us (*literally*) and reduces operational readiness. OPNAVINST 5100.19F lists basic shipboard ladder safety procedures that must be followed to “prevent personal injury,” but here are our quick LL division highlights.

1. **Slow down.** Just like the fire drills in elementary school, “Walk, don’t run.” Rushing may seem faster, but when you wind up incapacitated on the deck, it isn’t. Live long and prosper.
2. **“One hand for yourself; one hand for the ship.”** Remember that old sailing proverb. It means you should always reserve at least one hand to keep yourself from falling overboard. The saying applies to shipboard ladders too.
3. **Ladders are not a good place to multitask.** Just go up or down. Climb now, text later.
4. **Be aware of conditions.** Condensation, oil, or temporary shipyard equipment add to the hazards. Clean up the slip hazards, and use the handrails.
5. **Use three points of contact.** With two hands and two feet, you’ve got four possible points. If you are carrying things with both hands (*or there are no handrails, like from the flight deck to the catwalk*), the maximum contact points you’ll have is two — and that’s with both feet flat on the deck. The moment you pick up one foot to step, you’re down to one...and that’s when the bad stuff usually happens.
6. **Try the Trailing Hand Technique.** The THT is a simple idea that simply changes your hand placement on the ladder railing. If you aren’t familiar with it, you can download the brief on our website.

*And remember, let’s be careful out there...*