



Naval Safety Center

LESSONS LEARNED



LL 20-32

SHIPBOARD LADDER MISHAPS

♪ "I'm learning to fly, but I ain't got wings. Coming down is the hardest thing. — Tom Petty and the Heartbreakers ♪

Safe ladder movement is a core skill every Sailor (and Marine) must master, and ladders (vertical and inclined) are a normal part of shipboard life. If you've spent any time on a ship, you likely have at least one story of your foot slipping and your life flashing before your eyes right before you caught yourself (*or didn't*). There is nowhere soft to fall on ships or subs, and gravity is just waiting for a lapse in safe ladder habits. The plain truth is, despite a hundred years or so of a similar ladder environment, our naval workforce is still falling. Until someone invents an engineering solution, only YOU can protect you.



The Naval Safety Center's Knowledge Management (KM) team studied ladder injury data from OCT 2017 to MAR 2020 to help define the problem and find solutions. Research showed 768 reported ladder-related injuries in just those 2.5 years! The overwhelming majority – 68% – happened while descending a ladder, compared to 17% while climbing (*plus 12% who didn't clearly say which way they were going, and 3% who weren't going anywhere [until they fell]*). That 68% to 17% split is a 4:1 ratio of descending ladder injuries versus ascending ladder injuries! — *So, what does that mean to you? **Ladders are hazardous all the time, but you definitely need to have a healthy fear when you are descending one.***

Diving deeper, the analysts further found that 68% (*a different 68%*) of the total mishaps fell (*pun intended*) into the "slip/trip/transit" category. — *What does that mean to you? **If you are transiting a wet, oily, or icy ladder, or you are rushing, or just not paying attention, there is a good chance you will slip or miss a step (especially if you are descending).***

Real stories give life to the statistics, so here are a few examples of instances we can all learn from:

- Scuttle hatch, or torture device? A Sailor was descending through a scuttle and slipped on the ladder, causing him to fall. As he was falling, he attempted to catch himself by grasping the scuttle hatch. The hatch gave way due to a broken hold-back bracket, causing the hatch to slam closed on the Sailor's right hand. Open fracture of three fingers and eight weeks of limited duty. — *The hatch and handwheel are tempting handholds, but this hazard smashes way more Sailors and Marines than it should. Please learn, and don't use the scuttle hatch or handwheel as a handle.*
- Eyes front, people. One bright morning, a Sailor was ascending a ladder while carrying food to the mess decks. He was focused on the objects in his hand and not his surroundings. He was blissfully unaware that the scuttle above him was closed. He became very un-blissfully aware when "he hit his head on the scuttle with excessive force." He complained of a headache but "soldiered on" (*why isn't the saying "Sailored on"*) until late in the day when he reported to medical, thence to the hospital. Concussion. Two days sick in quarters and five days of light duty. — *Please look where you are going before you get there.*
- "Beware of falling poultry" While a Sailor was moving stores to the reefer deck during an underway replenishment (UNREP), a loose frozen chicken from the Sailor ahead of him fell down the ladderwell and hit him on the forehead, right between the eyes. — *Two stitches and a weird story, but no concussion. Ladders can be dangerous in unexpected ways.*

- **Wile E. Coyote.** A Sailor was trying to remove a chair from berthing. She tried to fit the chair down the ladder, but it got stuck. In a scene reminiscent of Wile E. Coyote in the Roadrunner cartoons, she tried to push it using her foot. Just like Wile E., she succeeded in breaking it free, and she fell with the chair down the ladderwell. — *None of this was a good idea. Ask for some help; Try a different route; Dismantle the chair. Any of these are better options.*
- **Beware of foxes.** While a Sailor was carrying life jackets up the ladderwell, she did not see that someone unexpectedly (*and cruelly and negligently*) left a foxtail broom on one of the steps. She accidentally slipped on the foxtail and fell to the bottom of the ladderwell. Muscle strain, lots of meds, and three days of limited duty. — *Look where you are going, and have a hand available to hold the rails! Three points of contact! And, c'mon shipmates. Don't leave stuff on the ladders.*
- **Flip flops don't have steel toes.** A Sailor was wearing shower shoes and descending a ladderwell. As they often do, the shower shoe broke, causing him to fall about five steps, striking the deck and ladderwell. Fractured right hand. Fourteen days of light duty. — *Shower shoes and ladders. We've been there and done that, and feared for our lives every time. Be wary, and use both handrails.*
- **"Learning to fly, but I ain't got wings"** While transiting the ship, a Sailor stepped over ventilation trunks to descend a ladder. He missed the top step, falling to the bottom of the ladder. Amazingly, the report states he only received an abrasion to the left arm (*we figure there were some bruises too*). The report says the Sailor's "boot tread [was] like-new condition. Ladder treads in good condition." Those facts just didn't matter, because his boots never touched the treads! — *Please watch where you step, and grab a handhold. Three points of contact, folks. Three points of contact.*

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." For the full list, see Note 1 below, 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. "Slow is smooth and smooth is fast."
2. **Ladders are not a good place to multitask.** Just go up or down. Climb now, text later.
3. **Coffee cups can be a killer.** Even if you are just carrying something small, like a clipboard or coffee cup, be more careful. And if you can put the keys, book, etc. in your pocket, do it.
4. **Be aware of conditions.** Condensation and oil make it all worse. Clean it up, and use the handrails.
5. **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. Remember the old sailing proverb, "One hand for yourself, and one hand for the ship."
6. **Try the Trailing Hand Technique.** It works! Discussed thoroughly in NAVSAFECEN LL 19-06 (Afloat) and LL 19-08 (Shore). Both are posted along with this LL on the NAVSAFECEN public website at <https://navalsafetycenter.navy.mil/Safety-Promotions/Lessons Learned>.

Note 1: OPNAVINST 5100.19F is drawn from federal occupational safety and health administration (OSHA) regulations and lists basic shipboard ladder safety procedures that must be followed to "prevent personal injury." For full details see Section B, Chapter 12, Appendix B13-B, and Section C.

To request a copy of the full "Ladder Related Injury" study by NAVSAFECEN, or to just give us feedback, contact us via email at NAVSAFECEN_CODE522_LESSONS_LEARNED@navy.mil.

And remember, let's be careful out there...