



Naval Safety Command

LESSONS LEARNED



EYE-RELATED MISHAPS

"Last time I trusted someone, I lost an eye." – Nick Fury

According to the Centers for Disease Control and Prevention (CDC), every day, about 2,000 U.S. workers sustain a job-related eye injury that requires medical treatment. That adds up to about 700,000 a year. Nearly one million Americans have already lost some degree of sight due to an eye injury.

You might think that eye injuries primarily occur in manufacturing, construction, or trade jobs, but nearly 40 percent of work-related eye injuries occur in offices, healthcare facilities, laboratories, and similar environments.

And that doesn't account for injuries at home. Most eye injuries result from small particles or objects striking or scraping the eye, but penetration injuries (*yikes!*), chemical burns, and thermal burns are even more damaging. As you can guess, most injuries happen when the person isn't wearing eye protection or if the "eyepro" is improper or ill-fitting. The number of eye-related mishaps in our Navy-Marine database was "eye-opening," so here are some real-life scenarios for us to learn from:



Question: The eye-pro is right, but can you spot the things that aren't?
(See right margin for answers)

- **I'll wear them...later.** A maintainer was pouring cleaning compound into buckets in preparation for cleaning aircraft. He wasn't wearing any eye protection. On the third bucket, the cleaning compound splashed into his face and eyes. A coworker saw what happened and escorted him to the head to wash. As his eyes grew irritated and red, supervisors sent him to the naval hospital. — *Chemical or non-vented goggles are required when using this solution to wash aircraft, so it'd make sense to wear the goggles when preparing the chemicals. It's essential to wear Personal Protective Equipment (PPE) from start to finish of all maintenance, including safety goggles when mixing cleaning solutions.*

- **Virtual vs. Reality.** After completing various grinding operations during working hours, a Sailor later returned to his workshop to play video games after work was secured. He absentmindedly swiped his hand in the area that he had done the grinding, and then he touched his eye. He immediately felt a piece of metal shaving pierce his eye (*owwww!*). After trying in vain to get the shaving out using his hands, eye drops, and the emergency eyewash station, he reported to medical. — *He failed to recognize the hazards surrounding him and nearly caused himself permanent harm. Just because working hours are over, doesn't mean the hazards go away. The work isn't over until clean-up is done.*

- **"Right" Glasses – Wrong Job.** A civilian employee was tasked with drilling holes in the underside of a trailer. He was positioned on his back under the trailer with the work area directly above him about 18 inches away. As he drilled, metal shavings from the drill point fell into his eyes through the gap between his safety glasses and face. He tried to "brush" the metal shavings out of his eyes and tried rinsing his eyes with water, but it didn't help. He notified his supervisor and was sent for medical treatment. — *The report notes the employee's safety glasses met all required ANSI Z87+ standards¹, but they weren't the right choice for the job, based on the position of the work area in relation to the employee. Glasses or goggles with a face seal would've been better. Developing a Job Hazard Analysis or SOP that covers proper PPE for this type of job would also be a proper mitigation.*

Answers: Sleeves rolled up; no gloves, headphones instead of hearing protection.

¹ANSI Z87+ are American National Standards Institute standards for impact resistance. Important factors, but just because glasses are impact resistant, doesn't necessarily mean they are protective from dust or metal shavings. For dust or splash protection, look for a code on the glasses /goggles that begins with the letter "D." For more info web search ANSI Z87.

- Nothing about this was good. Two Marines were attempting to remove the turbocharger of an HMMWV ("Humvee"). The exhaust hose was fused on due to excessive heat, and Marine 1 was inside the HMMWV trying to use a screwdriver to pry off the hose. The screwdriver slipped off the hose, and the momentum carried the screwdriver into his left eye, rupturing it. He was immediately sent to the emergency room (ER) for surgery. As of the time of the report, the full extent of the eye damage was unknown. He was given 14 days of convalescent leave. — *The technical manual (TM) was inadequate and did not apply risk controls. The TM didn't require PPE for this task, nor did it state how to remove an exhaust hose that had been fused in place. The organization owed these Marines better guidance, but that is when the real-time risk management should kick in! If you find yourself faced with a scenario of improvising a tool, wearing no PPE, and prying towards yourself, warning bells should be going off in your head! Stop and reassess. Please (PLEASE!) remember and apply this to yourself.*
- Did he wear PPE? "NAAAAAAH". While checking on farm animals that he owns, an off-duty service member noticed a goat had his head and a leg stuck in a hay feeding net. He picked up the goat to relieve the net's pressure. While cutting the net away, he freed the goat's leg and, for his dedication, the report says he was "struck in the eye by a goat hoof." With an eye injury and a concussion, someone drove him (*the Sailor, not the goat*) to the hospital for wound cleaning and closure. One lost work day. — *Our farmer was complacent when attempting to cut the net from the goat's neck. He was accustomed to working with farm animals and didn't stop to consider risks (goat, net, holding in air, cutting with a knife) or mitigations. If he had asked himself "what isn't routine" about this evolution, he may have considered donning some PPE. It's the "routine" stuff that usually hurts us! This incident can teach us life-lessons for home and work too. No goats were harmed in this incident; we wish we no people were either.*



Key Takeaways

Something as simple as putting on a pair of safety glasses or goggles can prevent serious eye injuries. These injuries are painful, cause many lost workdays, and sometimes lead to permanent vision loss. In "hindsight," we know the injured folks in these examples would have worn their eye protection. Please learn from their pain, instead of learning it for yourself.

- 1. Wear the eyepro.** Always wear the appropriate safety eyewear for your job site or role, even if you are just passing through a hazardous area. Put the goggles/glasses on before you go in.
- 2. Wear the RIGHT eyepro.** When working with chemicals and liquids, always wear chemical or non-vented goggles to protect against splashing (a face shield is a good addition, but only goggles will protect you adequately). That includes when you are pouring the chemicals before doing the actual work. If working in an area with particles, dust, metal shavings, etc., wear safety glasses with side shields or goggles to protect against flying objects and keep stuff from getting past the edges into your eyes.
- 3. Keep the eyepro on.** Keep the PPE on until you are away from the hazard area or cleanup is done.
- 4. Radiation is a whole different world.** When working around hazardous non-ionizing radiation like welding, lasers, or fiber optics, use the correct special-purpose safety goggles and helmets designed specifically for the task.

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