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The movie “Maximum Overdrive” brings to life Stephen King’s nightmarish vision of a normal day in middle America gone hay-wire. The plot centers on machines of all sorts, from trucks to soda machines, suddenly taking on a murderous life of their own and indiscriminately maiming and killing friendly middle-American people. Does this sound absurd? Yes. But it impresses upon the viewer a powerful image of the latent homicidal tendencies dwelling in the machines around which we shape our lives.

Three weeks into deployment aboard an LSD 41-class ship, a fireman apprentice preparing for engineering-casualty-control drills entered his own little twilight zone and almost became the main course for a blood-thirsty, main-propulsion diesel-engine clutch. The oddity of this incident is that a metal-mesh safety guard was in place to protect innocent flesh from the powerful rotating clutch. Not to be deterred, a malevolent ghost in the machine struck with blinding fury and dragged the Sailor, leg-first, toward certain doom.

Surely this machine had been waiting years for such an opportunity to present itself. This fateful night, the 2A main-propulsion diesel-engine’s clutch dutifully was answering a flank bell at 520 rpm. The fireman apprentice stood on the walkway aft of the clutch preparing to secure the controllable-pitch propellers’ lube-oil-purifier system before engineering drills began. He was intent on closing a valve located in an awkward, obstructed position a few feet from the rotating clutch face. He knelt to operate the valve, located near the rotating clutch.

He appeared safe from danger because a bright yellow safety guard shielded him from the rotating machinery. Overlooked by everyone was an eight-inch gap below the bottom of the safety guard. This portion of the clutch was exposed because a pipe keeps the mesh guard from extending farther down. Also, a complete mesh guard would block access to a valve handwheel located beneath the clutch and deckplate.

As the fireman reached to operate the lube-oil valve, he pushed his right foot against the angle iron along the deck edge nearest the clutch. With



Caught in

sudden brutality, the machine seized the moment! It lashed out, grabbed the Sailor’s foot, then instantly jerked it back through the eight-inch gap to the spinning clutch face that is ringed with fang-like bolts. The machine greedily sank these fangs into the victim’s boot and swallowed hard, propelling the victim’s boot and lower leg upward into the unyielding stationary safety guard with the bone-crunching ferocity of a ravenous wolf.

Skeptics try to explain this event in the logical terms of risk management. The hazard to soft human flesh posed by the massive machinery is catastrophic in severity. However, the existing mesh safety guard is an engineering control that

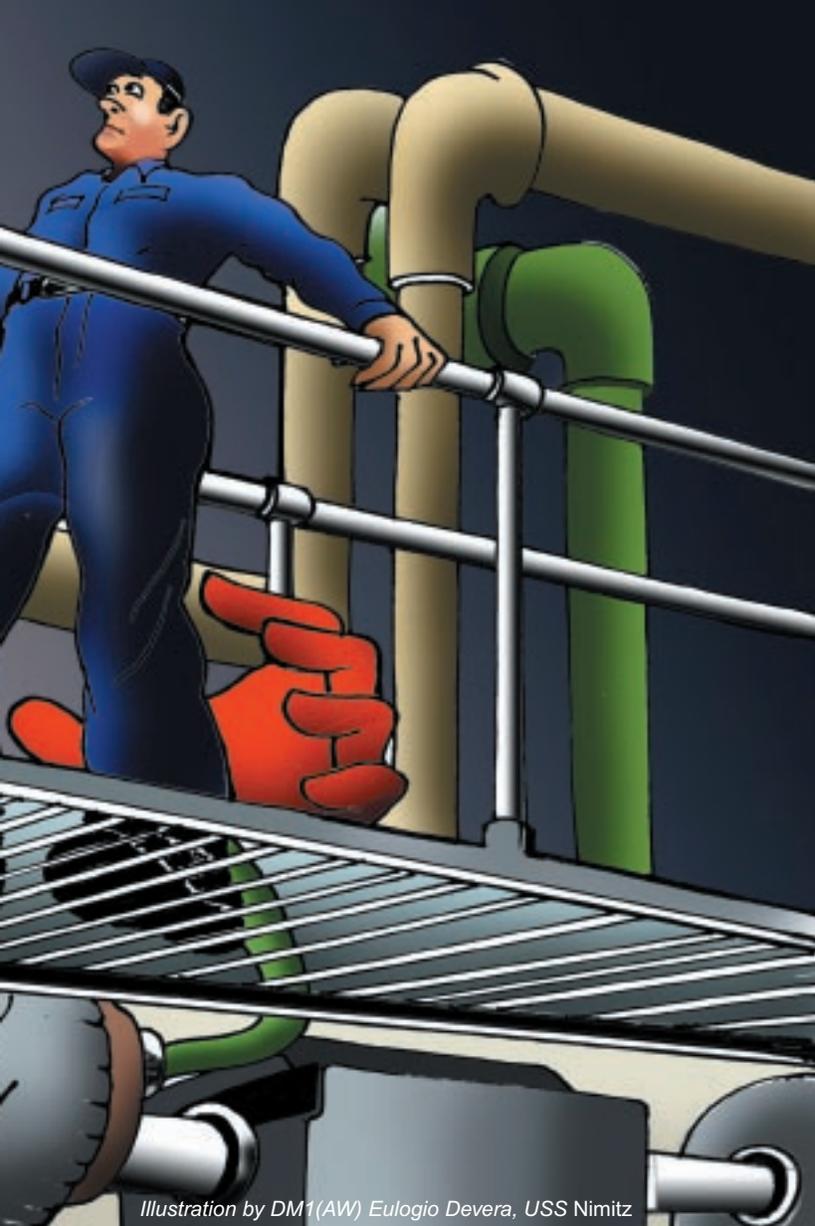


Illustration by DM1(AW) Eulogio Devera, USS Nimitz

This macabre tale has an interesting twist. The heroes of the story are a strong-hearted shipmate and a weak-soled work boot proudly bearing a made-in-China logo. A fellow fireman witnessed this vicious attack and quickly pulled the victim from the evil machine's hungry jaws. This heroic act was made possible only by the irony of the victim's relatively cheap and commercial, off-the-shelf, steel-toed boot getting torn from his foot like a banana peel. Had the victim been wearing a sturdier boot or had he tied his laces tighter, the machine almost certainly would have tasted the blood it so desperately craved. Sadly, the victim did not escape unharmed. The protruding bolts at the edge of the clutch face flung the victim's leg into the bottom of the clutch guard with such violence that, in addition to tearing away the boot, it broke the victim's right tibia, ankle and big toe.

The victim lost more than 40 days of work and lived sedately in the ship's medical ward for most of his recovery. Following this incident, the ship's crew muzzled the menacing clutch by welding a flip-up movable extension to the bottom of the existing safety guard. Interestingly, the clutch assembly on sister main engine No. 2B is not crowded by surrounding piping or valves and has a safety guard extending down far enough to make similar contact impossible.

The machine failed to satiate its hunger this night. No doubt, it will wait patiently in faithful service to us human masters until another occasion to strike comes along. The Hollywood solution in "Maximum Overdrive" was to destroy these mechanical beasts in a spectacular explosion of noise and fire. In the real world, this option is a little extreme. Instead, we must rely upon the knowledge and judgment of operators, supervisors and safety observers alike to keep the world and our shipmates safe from "the machines." ☺

The author wrote this article while he was safety officer aboard an LSD 41-class ship, and he recently transferred to USS George Washington (CVN 73).

lowers to almost zero the probability of harm. Tragically, the safety guard designers did not fully consider the likelihood of a person contacting the bottom of the clutch face at a near-right angle through the narrow gap; such contact seemingly requires deliberate effort.

What works in the vacuum of a design laboratory does not always account for the full range of human factors and the subtle dynamics of propulsion-plant operations. Such complexities are the reason why supervision and situational awareness are so critical in preventing "freak" mishaps. A true skeptic does not believe in accidents and monsters—only in probabilities.