



The Safety Corner

From the Marine Corps Center for Lessons Learned February 29, 2008



Flight Deck Safety

This issue of the Safety Corner highlights flight deck safety.

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From the Director: What is the most dangerous occupation in the military? Is it a truck driver, mechanic, grunt, EOD, electrician, or computer repairman? This question is frequently debated throughout the services. For many occupations, danger is part of the job description, and those of us who work in dangerous environments are well aware of the hazards.

It's no secret that there are many dangerous work places in the world, and the flight deck has been called one of the most dangerous. When flight deck operations are underway, personnel in different color shirts are running around in what looks like a "goat rope". On the flight deck, each colored shirt designates an individual with his/her own distinct responsibility, and each must be vigilant to prevent serious injury or death.

Because the flight deck is a dangerous place, safety is paramount, and great lengths are taken to spread the safety message through safety stand-downs, familiarization, and briefings. The next time you go aboard ship and flight deck operations are underway, remember, it might look like a goat rope, but flight deck personnel are a well oiled machine and move with the precision of the 1972 Miami Dolphins.

You are welcome to pass on and post this newsletter for widest dissemination. Log on the www.mccll.usmc.mil to download previous editions of the Marine Corps Center for Lessons Learned Safety Corner as well as our Monthly Newsletters. I look forward to your feedback so we can raise awareness, reduce risk and maintain a high level of readiness.

Semper Fidelis,
Col Monte Dunard, Director MCCLL
Email : monte.dunard@usmc.mil.
Telephone: 703.432.1286 DSN: 378.1286



USN AVIATION CLASS A MISHAPS in FY08

- 27 Feb 08 (CNAL/VAW-125) E-2C port prop failed to feather during FCF and subsequent emergency landing.
- 12 Feb 08 (CNAP/VAQ-136) EA-6B Aircraft lost over water during large force exercise.
- 21 Jan 08 (CNAP/VAQ-136) EA-6B had engine bay fire during high power turn (Ground Mishap).
- 16 Jan 08 (CNAL/HM-15) MH-53E impacted terrain during night flight. 4 scouts on board with 3 fatalities.
- 07 Jan 08 (CNAL/VFA-105 & VFA-11) F/A-18E and F/A-18F had a midair collision in the North Arabian Gulf.
- 09 Nov07 (CNAP/HS-2) H-60 aircraft impacted water while in transit to CVN. No fatalities.
- 01 Nov 07 (CNATRA/VT-22) T-45A aircraft crashed and destroyed from engine failure.
- 11 Oct 07 (CNAL/VFA-87) F/A-18A+ crashed in the water.
- 01 Oct 07 (CNATRA/VT-21) T-45A crashed in the landing pattern.

USMC AVIATION CLASS A MISHAPS in FY08

- 13 Feb 08 (VMA-542) AV-8B suffered engine failure during RTB join-up.
- 28 Nov (VMA-513) AV-8B was destroyed as a result of engine failure. No fatalities.
- 06 Nov 07 (2nd MAW/VMMT-204) MV-22B aircraft had nacelle fire on short final landing.

The observations and recommendations contained in The Marine Corps Center for Lessons Learned (MCCLL) Safety Corner represent the considered judgment of Marines who have identified safety issues in their units. The purpose of this newsletter is to apprise other Marines of these safety recommendations and to encourage them to enter their own lessons into the Marine Corps Lessons Management System (LMS).



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Carrier Design

Aircraft carriers have two basic configurations. The most common has a flat top deck that serves as a take off and landing area for airplanes.

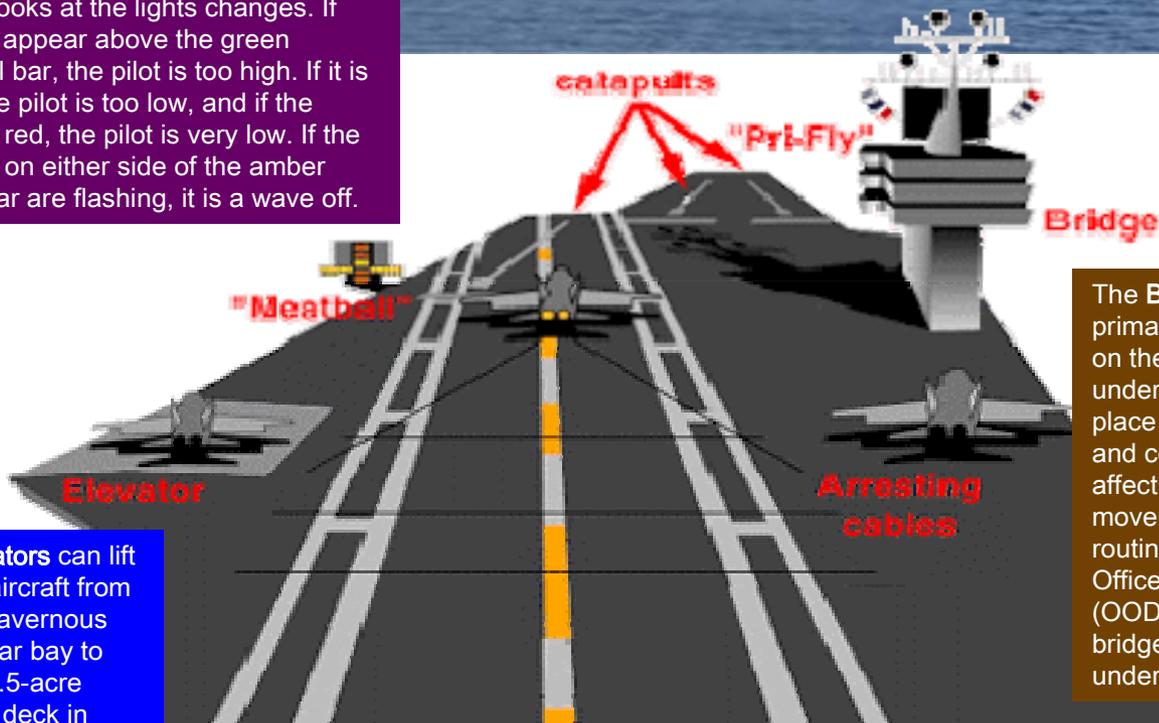
The second configuration, not used by the United States but common among other countries, has a 'ski-jump' at one end of the flat deck that helps launch the aircraft.

Primary Flight Control ("Pri-Fly") is the control tower for the flight operations on the carrier. Here, the "Air Boss" controls the takeoffs, landings, those aircraft in the air near the ship, and the movement of planes on the flight deck, which itself resembles a well-choreographed ballet.



Meatball lights aid the pilot in lining up for the landing. In the center are amber and red lights with Fresnel lenses. Although the lights are always on, the Fresnel lens only makes one light at a time seem to glow, as the angle at which the pilot looks at the lights changes. If the lights appear above the green horizontal bar, the pilot is too high. If it is below, the pilot is too low, and if the lights are red, the pilot is very low. If the red lights on either side of the amber vertical bar are flashing, it is a wave off.

Catapults are about 300 feet long and consist of a large piston underneath the deck. Above the deck, only a small device engages the aircraft nose gear. The catapult has two rows of slotted, cylindrical piping in the trough beneath the flight deck. When the planes are ready for takeoff, the aircraft handlers on the flight deck guide the plane onto the catapult and hook up the catapult to the plane's nose gear.



Elevators can lift two aircraft from the cavernous hangar bay to the 4.5-acre flight deck in seconds.

The **Bridge** is the primary control position on the ship when it's underway, and the place where all orders and commands affecting the ship, her movements, and routine originate. An Officer of the Deck (OOD) is always on the bridge when the ship is underway.

Arresting cables stretched across the deck bring the plane to a complete stop. The cables are set to stop each aircraft at the same place on the deck, regardless of the size or weight of the plane. Four 1.375-inch-thick steel cables run 2-5 inches above the deck at 35-40 foot intervals and connect with a hydraulic cylinder below the deck, which serves as a giant shock absorber.



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Flight Deck Don'ts

- Do not come on deck during flight operations without wearing proper flight deck gear.
- Do not wear jewelry such as chains or wrist bracelets while on the flight deck or in a work center.
- Do not have sleeves or goggles up during flight operations.
- Do not walk close to the aircraft with engine turning. Stay at least 25 feet away from all intakes and propellers.
- Avoid jet exhaust by at least 150 feet when possible.
- Never walk under propellers even though they are not turning. Always walk around.
- Never cross under the belly of a taxiing aircraft in front of the landing gear.
- Never place yourself to the outboard side of aircraft taxiing or being towed to or from the bow.
- Never come up on the flight deck via the bow catwalks during launch operations. Use the island structure.
- Never come up on the flight deck via port catwalks during launch operations. Use island structure.
- Never turn your back to the landing area during recovery.
- Do not cross behind jet blast deflectors while aircraft are at high power settings being readied for catapult launch.
- Do not sit anywhere on the flight deck during recovery operations.
- If blown down by jet exhaust, grab a padeye or any immovable object and hold on; do not try to stand up.
- Do not walk in front of aircraft while arming or de-arming forward firing ordnance.
- Do not place yourself near arresting gear wires during aircraft recovery or gear maintenance or while the wire is pulled out with the tractor.
- Never start an aircraft that has a fueling hose attached.
- Do not leave power cables lying on the deck. Always stow them in the catwalk.
- Do not stand in front of mobile fire fighting equipment.
- Never cross elevator stanchions while they are in the raised position.
- Do not feel you are Superman. The "it can't happen to me" syndrome has been clearly disproven over the years.
- Do not stand in front of a jet starting unit's (huffer) exhaust.
- Do not loiter on the flight deck. If you do not have work to do, stay below.

Navy Rescues Seaman Blown Overboard

Source: Associated Press

Michael Harris of Dillsburg, Pa., was standing in a gully directly behind an EA6B Prowler on the USS Constellation when the pilot fired up the engine. The force sent the sailor overboard as two other sailors nearby tried to grab him, said Navy Lt. Wendy Snyder. Harris, who was working on the flight deck for the first time, plunged 65 feet into the water.

"He was definitely in the water a good seven hours and was very, very lucky because the estimated survival time is roughly 4 1/2 hours," said CDR Jacquie Yost, a spokeswoman for the Navy's Third Fleet. "He spoke to his mother once he got back to the ship."

Harris, 21, was not spotted until 7:20 a.m. though the fleet immediately launched search-and-rescue helicopters including those from the USS Constellation, USS Valley Forge and USS Kinkaid and inflatable boats. "Though they started the search immediately, you've got darkness out there, it was real dark," she said.

A flare in Harris' life vest didn't work, his helmet, with a strip that glows in the dark, was knocked off in the fall, and no one heard a whistle he used. Finally, at day break, Harris unleashed a dye pack that turned the water around him fluorescent green. A helicopter from the USS Bunker Hill spotted him, and he was picked up by a helicopter from USS Constellation.

"Needless to say, we've been incredibly lucky. Thank the good Lord," said Capt. John Miller, Constellation's Commanding Officer. Harris is based out of Lemoore Naval Air Station, located near Fresno.

The Constellation was located just off the coast of Southern California and had been conducting exercises before heading to the North Arabian Gulf region near Iraq, CDR Yost said. Harris was taken by helicopter to Balboa Naval Hospital in San Diego. He was treated for dehydration, but otherwise suffered no broken bones or serious injuries.



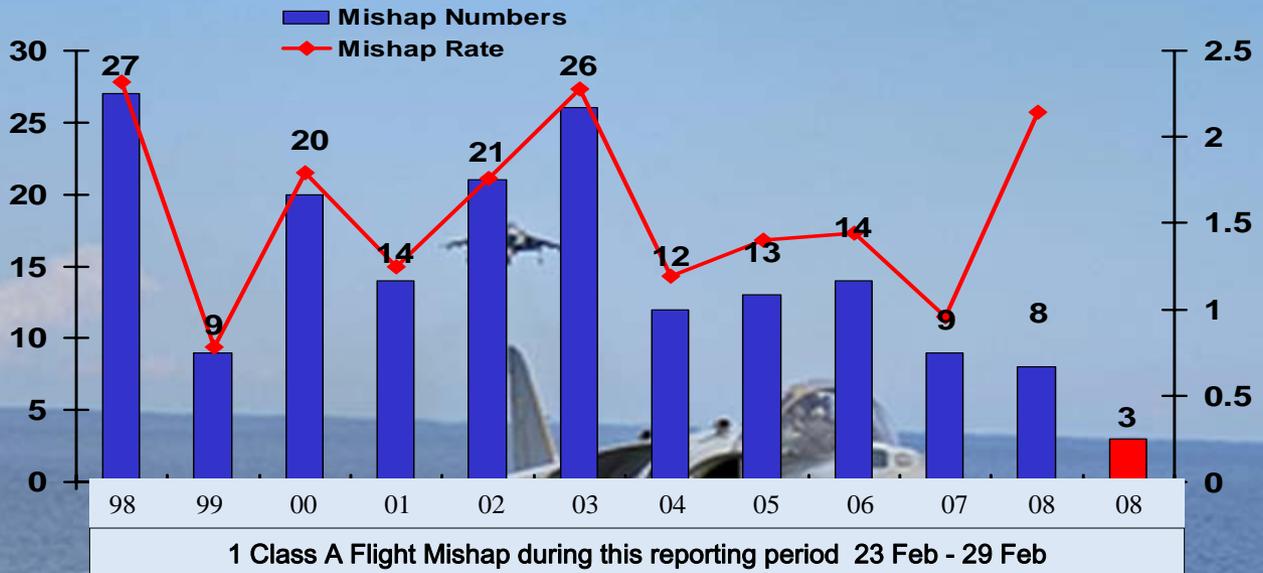


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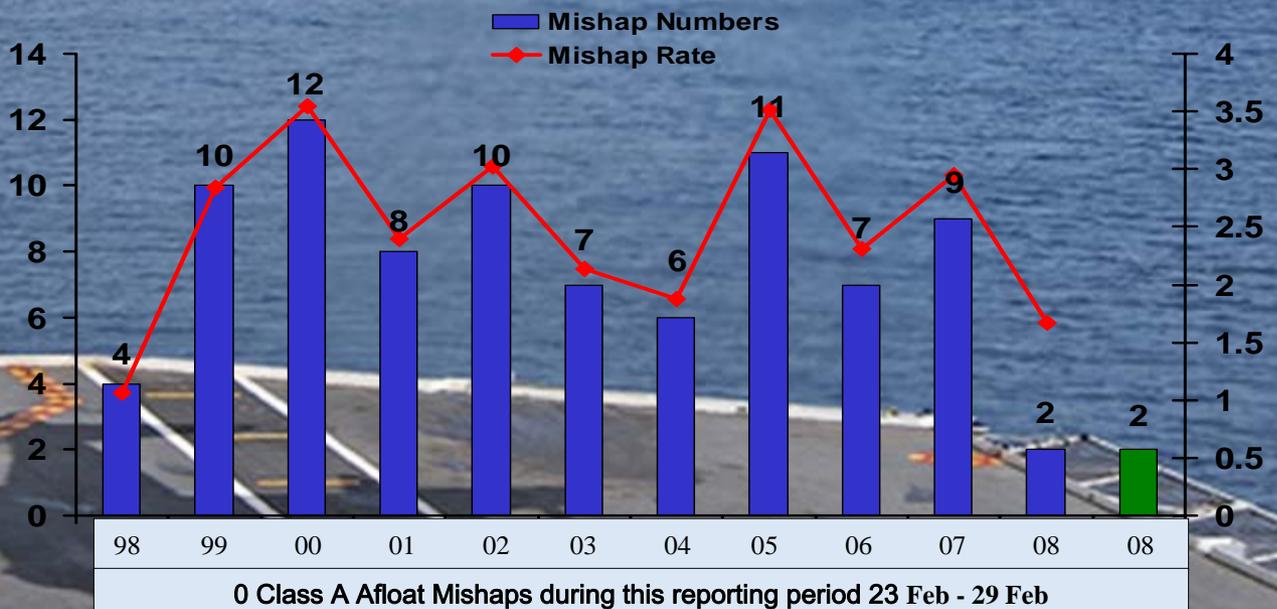


CLASS A FLIGHT MISHAPS



CLASS A MISHAPS/MISHAP RATE FY COMPARISON:	<u>28 Feb 08</u>	<u>28 Feb 07</u>
	8 / 2.14	1 / 0.28
	FY07 MISHAPS/MISHAP RATE:	9 / 0.96
10-YEAR AVERAGE (FY98-07) MISHAPS/MISHAP RATE:	16.5 / 1.54	

CLASS A AFLOAT MISHAPS



CLASS A MISHAPS/MISHAP RATE FY COMPARISON:	<u>28 Feb 08</u>	<u>28 Feb 07</u>
	2 / 1.88	8 / 6.32
	FY07 MISHAPS/MISHAP RATE:	9 / 2.95
10-YEAR AVERAGE (FY98-07) MISHAPS/MISHAP RATE:	8.4 / 2.54	



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Colors On The Flight Deck

Much goes into flight operations aboard today's modern U.S. Navy aircraft carriers and other ships that routinely carry helicopters. Preparations for a launch resemble a well-choreographed ballet. Those involved in the process have specific, clearly-defined roles, and are easily recognizable by the color of their jerseys.



Purple
Aviation Fuels



Blue
Plane Handlers
Aircraft Elevator Operators
Tractor Drivers
Messengers and Phone Talkers



Green
Catapult and Arresting Gear Crews
Air Wing Maintenance Personnel
Air Wing Quality Control Personnel
Cargo-handling Personnel
Ground Support Equipment (GSE) Troubleshooters
Hook Runners
Photographer's Mates
Helicopter Landing Signal Enlisted Personnel (LSE)



Yellow
Aircraft Handling Officers
Catapult and Arresting Gear Officers
Plane Directors



Red
Ordnancemen
Crash and Salvage Crews
Explosive Ordnance Disposal (EOD)



Brown
Air Wing Plane Captains
Air Wing Line Leading Petty Officers



White
Squadron Plane Inspectors
Landing Signal Officer (LSO)
Air Transfer Officers (ATO)
Liquid Oxygen (LOX) Crews
Safety Observers
Medical Personnel



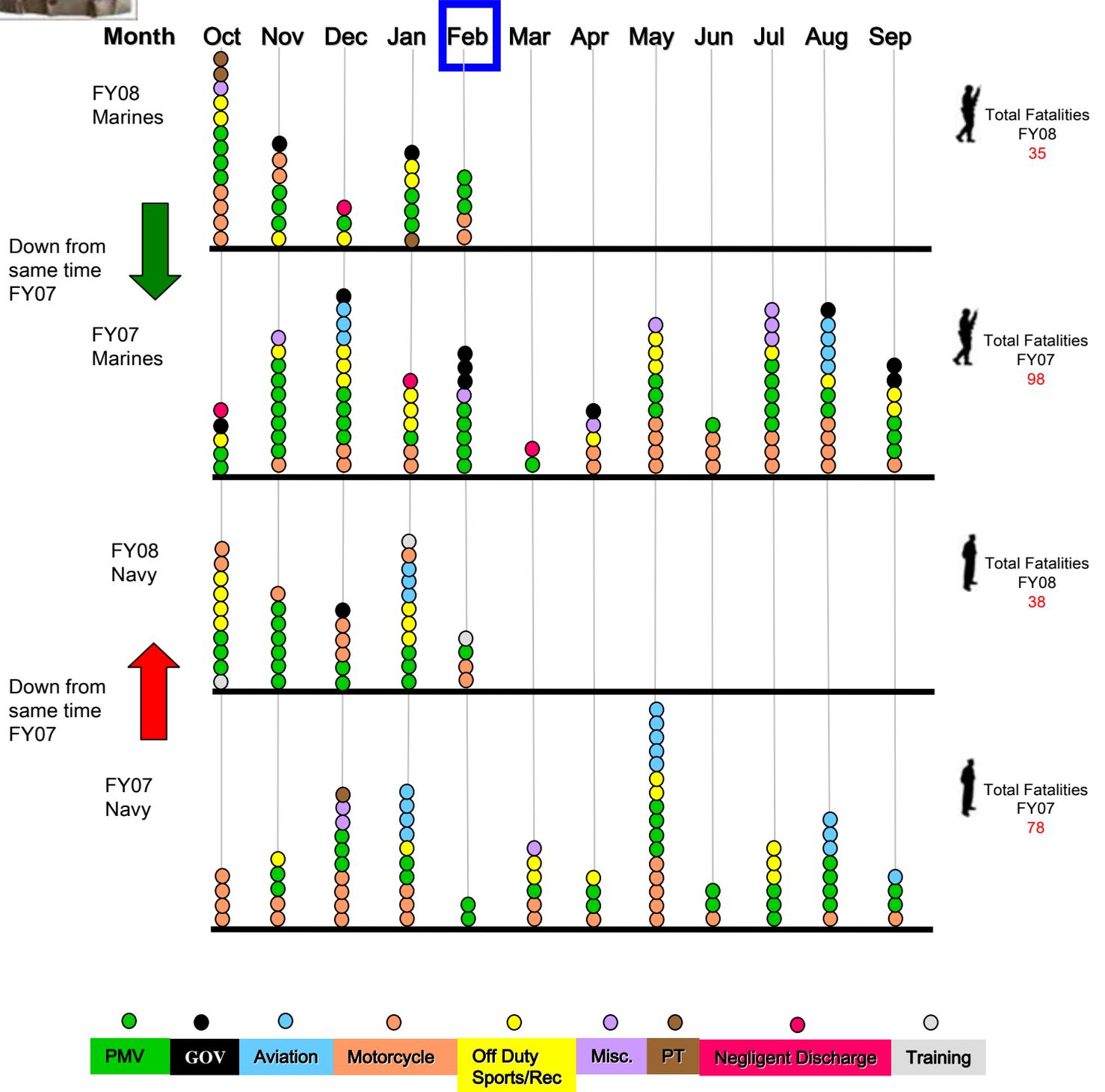
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Safety doesn't happen by accident.
Author Unknown

Fatality Summary as of 29 February 2008



Total Fatalities FY08
35

Total Fatalities FY07
98

Total Fatalities FY08
38

Total Fatalities FY07
78

Down from same time FY07

Down from same time FY07