Military operations carry inherent risks of injury or death of personnel or damage to equipment. These risks can be reduced or avoided through situational awareness. Each year lives and many man-hours are lost due to injury, disrupting the training pipeline and wasting millions of dollars. Many of these result from accidents, most of which could have been prevented.

Most accidents are the result of actions performed incorrectly, either knowingly or otherwise, by people who fail to exercise sufficient foresight, lack the requisite training, knowledge, or motivation, or who fail to recognize the hazards and risks involved. To achieve a significant reduction in accidents, hazards must be reduced and personnel must learn to recognize the remaining hazards and work safely around them. Operational risk management must be an integral part of planning, training and operations for Marine Corps units.

It is hoped this information will be used as an adjunct to an aggressive accident prevention program and that it will assist in the attainment of the highest degree of safety awareness.

Mishap Definitions

Mishaps are unplanned events or a series of events, which interfere with or interrupt a process or procedure and may result in a fatality, injury or occupational illness to personnel or damage to property. The Marine Corps safety reporting program classifies mishaps by severity. There are three primary classifications of mishaps:

**Class A Mishap.** The resulting total cost of damages to DoD or non-DoD property in an amount of $1 million or more; a DoD aircraft is destroyed; or an injury and/or occupational illness results in a fatality or permanent total disability.

**Class B Mishap.** The resulting total cost of damages to DoD or non-DoD property is $200,000 or more, but less than $1 million. An injury and/or occupational illness results in permanent partial disability, or when three or more personnel are hospitalized for inpatient care (beyond observation) as a result of a single mishap.

**Class C Mishap.** The resulting total cost of damages to DoD or non-DoD property is $20,000 or more, but less than $200,000; a nonfatal injury that causes any loss of time from work beyond the day or shift on which it occurred; or a nonfatal occupational illness that causes loss of time from work or disability at any time.
**Marine Corps FY09 Fatalities**
69 Marines died in mishaps:
- Private Motor Vehicle: 43 (62%)
- Aviation: 3 (4%)
- Ground Operational, Excluding MV: 5 (7%)
- Operational MV: 4 (6%)
- Off-duty Shore/Recreation: 14 (20%)

**Notes:**
- Flight Mishap rates: The number of mishaps per 100,000 flight hours.
- Afloat rates: The number of mishaps per 100 ships per year.
- Other rates: The number of mishaps/fatalities per 100,000 personnel per year. Rates are used to normalize data and account for changes in flight hours, ships, and personnel (e.g. downsizing), allowing valid comparisons. Historical comparisons (e.g. 'best year') use FY 81 - present data, except that statistics involving Marine non-aviation data start in FY 88.

<table>
<thead>
<tr>
<th>Category</th>
<th>FY08</th>
<th>FY09</th>
<th>Change+/-</th>
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<tbody>
<tr>
<td>Marine FY09/08 Fatality Comparisons</td>
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<tr>
<td>FY08 Marine Aviation Fatalities</td>
<td>0</td>
<td>3</td>
<td>+3</td>
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<tr>
<td>FY08 Marine Ground Fatalities</td>
<td>5</td>
<td>5</td>
<td>0</td>
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<tr>
<td>FY08 Marine Operational Motor Vehicle Fatalities</td>
<td>6</td>
<td>4</td>
<td>-2</td>
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<tr>
<td>FY08 Marine Off-Duty Recreational Fatalities</td>
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<td>14</td>
<td>+4</td>
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<tr>
<td>FY08 Marine Private Motor Vehicle Fatalities</td>
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</tr>
<tr>
<td>FY08 Marine Motorcycle Fatalities</td>
<td>25</td>
<td>14</td>
<td>-11</td>
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</table>
# Navy FY09/08 Fatality Comparisons

<table>
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<tr>
<th>Category</th>
<th>FY08</th>
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<th>Change+/-</th>
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<tbody>
<tr>
<td>Navy FY09 Fatalities</td>
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<tr>
<td>60 Sailors died in mishaps:</td>
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<tr>
<td>Private Motor Vehicle:</td>
<td>32 (56%)</td>
<td>19 (17%)</td>
<td>-15</td>
</tr>
<tr>
<td>Aviation</td>
<td>6 (10%)</td>
<td>6 (10%)</td>
<td>0</td>
</tr>
<tr>
<td>Surface Ships/Submarines:</td>
<td>4 (5%)</td>
<td>4 (5%)</td>
<td>0</td>
</tr>
<tr>
<td>Operational Diving:</td>
<td>1 (2%)</td>
<td>0 (0%)</td>
<td>-1</td>
</tr>
<tr>
<td>Ashore Operational, Excluding MV:</td>
<td>6 (10%)</td>
<td>11 (17%)</td>
<td>-15</td>
</tr>
<tr>
<td>Off-duty Shore/Recreation:</td>
<td>11 (17%)</td>
<td>11 (17%)</td>
<td>0</td>
</tr>
<tr>
<td>Notes:</td>
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<tr>
<td>Flight Mishap rates:</td>
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<tr>
<td>Afloat rates:</td>
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<td>Other rates:</td>
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<tr>
<td>Flight Mishap rates:</td>
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<td>Afloat rates:</td>
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<tr>
<td>Other rates:</td>
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</tbody>
</table>

## Notes:
- Flight Mishap rates: The number of mishaps per 100,000 flight hours.
- Afloat rates: The number of mishaps per 100 ships per year.
- Other rates: The number of mishaps/fatalities per 100,000 personnel per year. Rates are used to normalize data and account for changes in flight hours, ships, and personnel (e.g. downsizing), allowing valid comparisons. Historical comparisons (e.g. 'best year') use FY 81 - present data, except that statistics involving Marine non-aviation data start in FY 88.
Navy and Marine Corps
Military Operational Fatality Rates
As of 30 Sep 09
Rate is Fatalities per 100K personnel per year

Navy and Marine Corps
Private Motor Vehicle Fatality Rates
As of 30 Sep 09
Rate is Fatalities per 100K personnel per year

Navy and Marine Corps
Off-Duty/Recreational Fatality Rates
As of 30 Sep 09
Rate is Fatalities per 100K personnel per year

Navy and Marine Corps
Physical Training Fatality Rates
As of 30 Sep 09
Rate is Fatalities per 100K personnel per year

Navy and Marine Corps
Aviation Class A Flight Mishap Rates
As of 30 Sep 09
Rate is Fatalities per 100K flight hours

Navy and Marine Corps
Shore/Ground Class A Mishap Rates
As of 30 Sep 09
Rate is Class A Events per 100K personnel per year

UCL = Upper Confidence Level
LCI = Lower Confidence Interval
450 recorded mishap events from multiple sources*
184 events (41%) involve some type of rollover/tip-over
♦ 104 Fall initiated: occurred due to ledge, slope or ground surface collapse
♦ 38 Maneuver initiated: swerving maneuver on flat ground or terrain
♦ 10 Impact Initiated: hitting object caused rollover
♦ 32 Unknown

♦ Seven rollover events have resulted in 11 fatalities; 7 by drowning and 4 by gunner blunt force trauma. To date there have been 221 reported rollover injuries.
♦ Two members of the Iraqi Security Forces/Iraqi Army received fatal injuries from MRAP mishaps. Eight other local nationals have received fatal injuries in seven accidents.

266 other mishap events include:

<table>
<thead>
<tr>
<th>Event</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Accident with other vehicles</td>
<td>69</td>
</tr>
<tr>
<td>Personal Injury – Falling off/tripping</td>
<td>26</td>
</tr>
<tr>
<td>Personal Injury – Crushing or laceration (doors, hatches, Rhino, turret)</td>
<td>75</td>
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<tr>
<td>Power Line Related</td>
<td>17</td>
</tr>
<tr>
<td>Fire</td>
<td>32</td>
</tr>
<tr>
<td>Other, i.e. terrain impact, hit objects, failed to set parking brake, etc.</td>
<td>47</td>
</tr>
</tbody>
</table>

*CENTCOM SIGACTS, Unit Safety Gram/Red-Hash, Safety Centers. Data includes CONUS, OIF and OEF.

MRAP Rollover OIF vs OEF rate per 1,000 Fielded Vehicles*
MRAP Trends (continued)

RO Fall Initiated

Road/Ground/Bridge Collapsed or gave way:
- By Canal/Embankment/Ditch: 42
- By Culvert: 3
- By Bridge*: 3
- Canal/Embankment/Ditch: 29
- Canal/Embankment/Ditch during a maneuver/turn: 19
- Terrain incline: 2
- While backing: 5
- Fell off water causeway: 1

Total: 104

* One bridge collapse 28 May 09 not included due to no rollover

RO Maneuver Initiated

- Loss off control/speed: 11
- Transitioning surface (hard/soft): 7
- Making a turn (flat surface): 5
- Avoiding road objects/potholes: 4
- Avoiding other vehicles: 5
- Tire blew/speed: 2
- Overcorrection: 2
- Towing: 2

Total: 38

RO Impact Initiated

- Jersey barrier: 3
- Median, curb, pillar: 3
- Sand berm: 1
- Other vehicle: 3

Total: 10
A "close call" or accident without injury is easy to shrug off and forget. But, there is a danger in brushing off accidents that don’t hurt, harm or cause damage. When a "close call" happens, it should immediately send up a red warning flag that something was wrong, unplanned, unexpected, and could happen again. The next time it happens, it could result in serious damage, injury or even death.

For every accident there are usually several contributing factors, most of which can be controlled. The best way to prevent the reoccurrence of an accident is by looking at those “close calls.” By investigating the root causes of an accident, steps can be taken to eliminate the hazard and improve the system.

Sometimes there are multiple causes for an accident involving:
- Equipment (unguarded machinery)
- Environment (terrain)
- People (procedures not understood/or not followed)
- Management (allowed shortcuts)

Don’t rush to judge. Examine the facts and find what’s missing. Look for immediate and underlying causes. An immediate cause may be an unsafe condition like a mechanical failure or it could be an unsafe action by a Marine or Sailor. The underlying cause could be poor maintenance, a missing part, unfamiliar terrain, work area, or a lack of training.

All incidents should be reported to prevent the accident from occurring again. Solutions may involve maintenance controls, administrative controls, additional training, or increased communication. Hazard awareness is key to preventing accidents before they happen. Take steps to eliminate hazards as soon as they are discovered. Learn the real lesson from close calls. They can happen again and again until they cause injury. You never know when an incident may be repeated and result in an injury or death.

The following safety pyramid attributed to Frank Bird (E. Scott Geller, 2001) provides a statistical ratio between unsafe behaviors, near misses, and incidents causing minor and major injuries.

This photo really needs no further explanation.

Popular Places
### Marine Corps FY10 Fatalities

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Victim</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 Nov 09</td>
<td>Camp Pendleton, CA</td>
<td>LCpl</td>
<td>Died in automobile mishap when his POV was hit by HMMWV.</td>
</tr>
</tbody>
</table>

### USMC OPERATIONAL MOTOR VEHICLE FATALITIES

06 Nov 09 (San Diego, CA) Sgt died in a motorcycle mishap when he collided with another vehicle.  
17 Oct 09: (Murrietta, CA) SSgt died in a motorcycle mishap when he collided with a vehicle that pulled out into his lane of travel.  
09 Oct 09 (Escondido, CA) LCpl was in a minor two-vehicle mishap and was being treated by emergency medical personnel at the scene when he was struck and killed by a third vehicle.  
01 Oct 09 (New Bern, NC) PFC died in an automobile mishap after he struck the back of a school bus that was stopped at a railroad crossing.

### Navy Short FY10 Fatalities

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Victim</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Oct 2009</td>
<td>Norfolk, VA</td>
<td>PO1</td>
<td>Died while participating in command departmental PT.</td>
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</tbody>
</table>

### USN PHYSICAL TRAINING CLASS A MISHAPS

13 Oct 09 (Chesapeake, VA) PO2 died in a motorcycle mishap. E-5 on second motorcycle is in critical condition.  
11 Oct 09 (Oahu, HI) PO2 died in a motorcycle mishap when he lost control and collided with oncoming traffic.  
05 Oct 09 (Holden, MA) PO3 died in a single motorcycle mishap when he struck a tree.  
01 Oct 09 (Chocowintiny, NC) PO2 died in a motorcycle mishap when he lost control and then struck an oncoming vehicle.

### USN PRIVATE MOTOR VEHICLE FATALITIES

12 Oct 09: (Wahiawa, HI) PO2 died in a recreational parachuting mishap when his primary and reserve parachutes failed to open.
Fatality Summary as of October FY10

Discretion will preserve you, understanding will keep you.

<table>
<thead>
<tr>
<th>Month</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
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<th>Jul</th>
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<td>Off Duty/Recreational</td>
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Total Marine Fatalities FY10: 6

Total Marine Fatalities FY09: 69

Total Navy Fatalities FY10: 6

Total Navy Fatalities FY09: 60

Down from FY09

No Change FY09

Note: This report has been compiled from publicly available information and is not official USMC policy. Although information has been gathered from reliable sources the currency and completeness of the information reported herein is subject to change and cannot be guaranteed.