

# WORK ZONE

## REDUCING MISHAPS BY 50%

### *Reducing Maintainer Deaths and Injuries*

A look at mishap data from the Naval Safety Center's SIMS-WESS database from FY94 through FY03 shows that 145 Navy, Marine Corps, and civilian maintainers (flight-line workers) died in aircraft-related or off-duty incidents. These numbers do not include aviators, aircrew or aircraft-passenger deaths.

This study raises some intriguing questions: Why do some maintenance ratings have a higher number of incidents? Why do some ratings have two to five times the mishap rate of others? Are some jobs simply more hazardous than others, or do their people simply take more risks? Do traffic mishaps directly link to the jobs that Sailors perform, their skill level, or their lifestyle? Does education, mental ability, or common sense play a role? How much does bravado at work carry over to off-duty events? When does "work hard, play hard" become troublesome?

#### **How many maintainers have died since FY94:**

On duty: 11

In traffic (PMV): 96

At home, during sports or recreation: 38

#### **What is the breakdown of on-the-job deaths?**

Fell off aircraft (overboard) – 1

Ejected in hangar – 1

Towing or taxiing aircraft – 2

Crushed by engine can – 1

Walked into prop, rotor blades – 2

Killed by damaged rotor blades – 1

Crushed by collapsed landing gear – 1

Driving support equipment – 2

#### **What ratings had the most traffic deaths and injuries?**

From FY94 to FY03, the average mishap rate for all ratings was 45.93. The ratings listed below were two to five times greater than the average and accounted for 31.7 percent of all injuries and deaths:

Rate	Population	No. of injuries/deaths and total	PMV mishap rate (per 100,000 people, per year)
AW3	425	7/2 – 9	211.76
AZAN	412	5/3 – 8	194.17
PRAN	375	4/2 – 6	133.33
ADAN	1,834	19/5 – 24	130.86
ABE2	472	3/3 – 6	127.12
ABF3	567	5/2 – 7	123.46
ABAN	1,261	13/1 – 14	111.02
AM3	1,935	13/8 – 21	108.53
AO3	1,758	9/6 – 15	85.32
AZ3	525	3/2 – 5	95.24
Total/ Avg.	9,564	81/34 – 115	120.24
<b>All Ratings</b>	<b>79,040</b>	<b>248/96 – 363</b>	<b>45.93</b>

The top-five ratings with the most traffic deaths, ignoring population: AM3–8, AD3–6, AO3–6, AT3–5, and ADAN–5.

#### **Which ratings had the most home-, sports- or recreation-related deaths and injuries?**

From FY94 to FY03, the average mishap rate for all ratings was 65.59. The ratings listed below were two to four times greater than the average and accounted for 22 percent of all mishaps:

Rate	Population	No. of injuries/deaths and total	Shore mishap rate (per 100,000 people, per year)
AW3	425	9/1 – 10	235.29
ABF3	567	10/0 – 10	176.37
PR3	389	6/0 – 6	154.24
AS3	663	10/ 0 – 10	150.83
AZAN	412	5/1 – 6	145.63
AS2	782	11/0 – 11	140.66
AD3	1,668	23/0 – 23	137.89
AE3	1,315	17/1 – 18	136.88
AE2	1,713	20/2 – 22	128.43
PRAN	375	5/0 – 5	133.33
Total/ Avg.	8,309	116/5 – 121	145.62
<b>All Ratings</b>	<b>79,040</b>	<b>512/38 – 550</b>	<b>69.59</b>

The top-five ratings with the most shore deaths, ignoring population: AT2 – 6, ATAN – 4, AT3 – 3, AE2 – 2, AEAN – 2, AM2 – 2, AMC – 2, AZ1 – 2 (eight are listed because of ties).

#### What can be done to reduce these incidents?

- Leaders in each of these groups should brief their troops on the number and frequency of mishaps and look for possible causes of these exceptionally high mishap rates.

- Every Sailor or Marine should redouble their efforts to reduce mishaps of all kinds. They must ask what is the worst possible thing that could happen before doing a job, playing a sport, working on a car, or driving home at night. Use the ORM process to identify and assess hazards, make risk decisions, and implement controls: Wear protective equipment, drive slower, put your car on jack stands, take off jewelry, and avoid dangerous activities.

- Take home the lessons learned at work. Goggles are required on the job; why not use them at home? Steel-toed boots have saved many a toe and foot; do you think they would work off duty? Use ORM at home or during outdoor activities.

- Don't accept perceived pressure. Ask questions. Sometimes, what may seem like a "rush job" really isn't. Even a truly critical job that must be done ASAP can be reviewed to point out dangerous pitfalls to avoid. An injury or death is not an acceptable price for a completed job. Plus, a mishap, during a critical job would not save time, will be more costly, and will have a higher impact.

- Continue training in ORM, MORM, MRM, groundcrew coordination training, and human factors in maintenance. Make sure the knowledge and experience gained through these programs is not lost when leaving the base.

When discussing these stats with senior people in some ratings, the *Mech* editor found a few possible answers. An ABCM said, "My people work in a fast-paced and hazardous environment. Maybe that environment carries over when they get in their cars to drive home or when they are off duty." He added, "ABs are known to work hard and play hard. That might be a factor." An old ET, who converted to AQ before retiring as an AT, said, "The AEs and ATs tend to be very bright people, and they can fix any complicated electrical or electronics problem. However, many of these intelligent Sailors lack common sense." The study didn't find definitive answers to obvious questions, but maintenance leaders and *Mech* readers should review these stats and see what they can do to change this apparent problem.

**For a list of all ratings and mishap rates, go to the Mech website at [www.safetycenter.navy/mil/media/mech/default.htm](http://www.safetycenter.navy/mil/media/mech/default.htm). You'll find a list of the top-10 ratings with the highest number of deaths and injuries (not mishap rates).**