

contains the manual and to write the IRAC number on this label next to the applicable publication. When done correctly, this action greatly improves safety, reduces maintenance errors, and saves man-hours.

Chief Graboski was a maintenance analyst at the Naval Safety Center. She recently transferred to the Fleet Reserve.

I've read several hazreps about botched maintenance

because of incomplete manual updates or missing changes. I've used several stories with these types of mistakes in Mech. Read the story, "A Little Nitrogen and Hydraulic Fluid" in the July-September 2001 issue for an example of how bad it can get. That issue is available on our website at www.safetycenter.navy.mil; look for the media department, and click on Mech.—Ed.

MAINTENANCE MANAGEMENT

ORM: From Concept to Flight Line

By ADCS(AW) Timothy Davis

As a workshop facilitator for operational risk management (ORM), I have had several commanding officers introduce me by saying I was there to make their command ORM-ready. Unfortunately, our workshop can only introduce Sailors and Marines to the concepts of ORM. Each maintenance department must tailor the ORM concepts to its specific flight-line operations and maintenance tasks. Several fleet commands have implemented ORM in a tangible format, with effective results.

During several surveys, these commands have shared their creative ways of reducing risk in routine maintenance tasks. The checklist below is an example from one squadron that might help you implement ORM. More examples are available on our website: <http://safetycenter.navy.mil/aviation/maintenance/default.htm>.

AIRCRAFT-MOVE CHECKLIST

1. A/C brake status:
UP DN
a. No. 1B pump operable:
YES NO
2. All stress panels installed:
YES NO
3. A/C de-armed (hangar spots only):
YES NO
4. Engines removed:
YES NO

Note:

Two or more QECs removed from an aircraft, refer to NA 01-75PAA-2-1 for ballast requirements.

POST MOVE CHECKLIST

1. A/C chocked: _____

2. Parking brake set (as required): _____
3. Secure 1B pump: _____
4. Disconnect battery: _____
5. Aircraft ladder is down: _____
6. SAR bar is stowed: _____
7. Aircraft is grounded: _____
8. Tie-down chains installed: _____
(as weather conditions dictate)
9. Disconnect towbar: _____
10. Air horns accounted for: _____
11. Install drip pans under engines (as required): _____
12. Bomb-bay doors closed (if required): _____
13. Flaps up (if required): _____
14. All plugs and covers installed: _____

I certify that I have complied with all post-move requirements.

Director's signature/date/time

The NAMP has mandated that all activities implement ORM. The ORM process is not a check in the box or one-time qualification; it must be an effective daily process and is designed to reduce injuries and to limit damage to our limited resources.

Senior Chief Davis is a maintenance analyst and ORM facilitator at the Naval Safety Center.

For more information on ORM, visit our website at www.safetycenter.navy.mil, contact Senior Chief Davis at 757-444-3520 Ext. 7247 (DSN 564), or send him an e-mail at: tdavis@safetycenter.navy.mil.—Ed.

Class C Mishaps: They Happen Everywhere...Don't Be Next!

By AMCS(AW) Steve Novak

In this summary of incidents from Nov. 1, 2001, to Feb. 24, 2002, no one died, and no airplanes were stricken from the inventory. These incidents never made it to CNN, *Navy Times*, or even your local news. The dollar amount wasn't huge, but the damage did cost \$47,510. The mishap causes were varied: lack of attention to detail, poor headwork, and failure to follow SOP. But they all were preventable.

● A petty officer fell from an F-14 and suffered a major back injury. The aircraft was parked on elevator No. 3, and three aviation electricians were troubleshooting a fuel-totalizer discrepancy. The hangar deck around the aircraft was soaked with hydraulic fluid. Each troubleshooter climbed on the aircraft; two of the technicians stood next to the wing root. The forward cockpit also was manned.

The job required the maintainers to climb up and down the aircraft boarding ladder several times. They had to monitor cockpit readings and to check the drop-tank simulator. A petty officer, who later would be injured, saw footprints outlined in hydraulic fluid on top of the aircraft. He told the other maintainers to wipe their boots before boarding the aircraft. But nothing was done to wipe the residue off the aircraft.

The technicians continued to troubleshoot the Tomcat. When the petty officer tried to step from the intake lip to the aircraft-boarding ladder, he lost his footing and fell to the deck.

A combination of factors contributed to this mishap: insufficient rest, sustained high-tempo ops, missed meals, performance and judgment errors, and a slippery surface that apparently went ignored.

● An ammunition-elevator hatch in the hangar bay was activated, opened, and then struck a parked S-3 aircraft, damaging the radome, pitot-static system, and exterior skin. Four causal factors were discovered: an improperly trained elevator operator, an inadequate training instruction, a lack of supervision, and a loss of situational awareness. The elevator operator was less than 15 feet away from the elevator itself!

● An FA-18C was parked on the flight deck after recovery and was being secured with tie-down chains. The pilot inadvertently released the parking-brake handle. This action allowed the aircraft to roll, and its outboard wing pylon struck the horizontal stabilizer of a nearby aircraft. Three more contributing factors were found: distraction with other cockpit tasks, failure to follow the taxi director's signals (he did not see them because his attention was on other tasks), and a lax attitude after the mission was complete.

Mishaps like these could happen to your sister squadron, to a different aircraft type, or, if you're not careful, to your squadron.

Senior Chief Novak is a maintenance analyst at the Naval Safety Center.

ALSS

An Update on AN/PRC-90 Radios

By PRCS(AW) Joe Revard

Safety surveys reveal many people are confused over the characteristics, uses and maintenance requirements of the AN/PRC-90 radio. I want to reduce user confusion, to increase reader's knowledge, and to talk about planned upgrades to personal, emergency radios.

The PRC-90 radio is a dual-channel, self-powered, personal, emergency-rescue radio and is pri-

marily used for two-way voice or modulated continuous-wave (MCW) communications between a downed crewman and a rescue aircraft. It has a provision for transmitting tone and swept-frequency, homing-beacon signals to guide rescue efforts. It operates on two fixed frequencies and is compatible with all UHF AM radios and UHF direction-finder groups. The distances for line-of-sight transmission depend on a variety of conditions—weather, terrain, or battery power. At 10,000