CROSSFEED

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MANAGEMENT

Class C Mishap Summary

By ADCS(AW/SW) Gary Dennis

From Nov. 26, 2003 to March 22, 2004, the Navy and Marine Corps had 15 Class C's that involved 17 aircraft. The damage total was $1,929,847.

● An F-18C was being towed from the forward part of catapult No. 2 to the second spot on the three row. Another Hornet already was chocked and chained in that spot, the pilot was in the cockpit, the engines were running, and the wings were folded. A qualified tow-tractor driver supervised another driver who was under instruction (UI).

The move crew made a left turn to position the aircraft next to the other aircraft, and the director gave the stop signal. The UI driver did not respond, so the director gave the stop signal again. He urgently followed with the two-handed stop signal (*Where was the whistle?—Ed*). It was too late; that aircraft's outboard, leading-edge flap struck the port horizontal stabilator of the parked aircraft.

The tow-tractor driver was not proficient and didn't recognize the signal. The qualified driver didn't pay attention and was not in position to see the signals. This incident caused $50,222 in damage.

● An S-3B was being prepped for an FCF and was configured with an AERO-1D fuel tank on wing station No. 6. It also had aerial-refueling store (ARS) on wing station No. 5. Unqualified maintainers then did release-and-control checks without a team leader and safety observer. They jettisoned the ARS onto the tarmac, causing $53,165 in damage.

● While doing a fastener-integrity check on an F-14D, an airman completed the deck portion of the inspection and opened the canopy to do the front cockpit. He was not egress qualified. He opened the panel for the canopy-jettison handle, instead of the normal canopy-handle panel in the ladder well.

The airman reached for the handle, squeezed it, pulled on the device, and jettisoned the canopy onto the deck behind the aircraft. No one was injured, but the mishap cost $104,005.

More than half of the Class C mishaps reported this period were due to human error. The aviation department at the Naval Safety Center offers a maintenance-malpractice presentation designed to point out mishaps involving human-error and to raise your safety awareness. Get one scheduled, and continue to read this summary in future issues, so we can eliminate these preventable mistakes.

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

BATTERY SAFETY

NiCad Thermal Runaway

By ATCS(AW) Wallace Williams

I want to focus on battery safety and thermal-runaway procedures. Three mishaps recently have been reported on NiCad batteries that overcharged in the aircraft during flight. Fortunately, aircrew noticed the condition and took appropriate actions to prevent fire or toxic fumes in the aircraft.

How many maintainers would know what to do if a runaway were to happen on deck and during a maintenance evolution? Not many, so I want to share information with the fleet on how to handle this situation.

"World-class organizations do not tolerate preventable accidents." –Donald Rumsfeld, SecDef

An excerpt from an article printed in the summer 2003 issue of *Mech* (reprinted with permission from *Touchdown-the Australian Navy Aviation Safety and Information Magazine)* gave a good explanation of thermal runaway: "[It] is a condition in which the current for a fully charged nickel-cadmium battery rises out of proportion to the impressed-voltage level. This condition is caused when heat from oxygen recombination, an inherent property of most rechargeable batteries, causes the battery's voltage to drop, as it gets hot."

In event of a thermal runaway, electrical power should be isolated, and no attempt should be made to handle or move the battery for at least 30 minutes. After this period or when the battery is cool enough, carefully remove the vent caps of the affected cells. Make sure you wear a facemask, gloves and protective apron when doing this work.

During a safety survey, I always look at the posted thermal-runaway procedures and often find that squadrons inadequately address the potential situation.

I tell each activity they should use ORM to help them to develop tailored procedures. Start with a review of the battery manual (NA 17-15BAD-1, Chapter 4), and use that reference as a basic template. Each aircraft's maintenance manuals also should be reviewed to evaluate the type of batteries and their location—whether in the aircraft or on the charging bench. Procedures then must be tailored for any particular situation.

The basic procedure is to isolate the battery electrically, allow gases to vent, remove it if possible, cool it if possible, minimize damage to surrounding components, and then notify the base fire department. Once the battery is cooled and removed from the aircraft, disposal issues must be addressed.

These thermal-runaway procedures must be easy to follow and must be used to train personnel. Following the five-step process of ORM will help you develop safety procedures and SOP.

Senior Chief Williams was a maintenance analyst at the Naval Safety Center. He recently transferred to the Fleet Reserve.

AIRFRAMES/CORROSION

Alodine Storage Requirements Have Changed

By AMC(AW) Michael Malley

Alodine currently is used in three different forms: Turcoat Liquid Accelagold, MIL-C-81706 (8030-00-823-8039); Touch-N-Prep Coatings, Alodine 1132 SEMPEN (8030-01-460-0246); and a powder that is mixed with distilled water and is the same as Alodine 1201. The storage requirements for these items are critical, and serious problems can occur when stored with other reactive items.

Alodine 1201 has been reclassified as a corrosive in the HMIRS, with a hazard-characteristic code (HCC) of "C1," instead of the current HCC "D3." This product no longer is classified as an oxidizer. The SEMPENs (Alodine 1132) are classified as oxidizers and are identified with HCC "D3."

This change now makes the chemicals incompatible with each other, despite the fact they do the same job. The Navy Environmental and Health Center (NEHC) made these changes and additions to the HMIRS-system website on March 7, 2003. The point of contact at NEHC is Gene Kostinas, DSN 377-0746.

HMC&M supervisors must ensure these types of Alodine are stored separately. If you currently have an MSDS for Alodine 1132 from the manufacturer, I suggest you print a new one from the HMIRS website at www.dlis.dla.mil/hmirs.

Alodine is a chemical-conversion coating used to treat aluminum before a primer coat is applied. In other words, it's a pre-paint treatment. Do not confuse Alodine with AMS-M-3171, Type VI, chromic acid brush-on treatment, which is used on magnesium. They cannot be mixed or used on the other types of metal. Alodine is for aluminum alloys only. Alodine turns the metal surface an iridescent gold or yellow color. Furthermore, Alodine 1132 uses air-drying to treat the metal, but Alodine 1201 immediately must be rinsed with fresh water once the desired surface color is reached. If Alodine 1201 dries on the aluminum alloy surface, it will start to corrode that surface and will turn it a dark brown or black color. This reaction is why it has been reclassified as a corrosive.

This fact also raises another question: Is it OK, now that Alodine 1201 has been reclassified, to store it with other C1 chemicals, such as chemical paint stripper. One stripper, MIL-R-81294, contains methylene chloride, a very nasty chemical. NEHC told me, "Yes." They get paid the big bucks