

# WINTER IS COMING: MAINTAINING THE MAINTAINER IN A COLD WEATHER ENVIRONMENT

By: Aircrew Survival Equipmentmen Senior Chief Petty Officer Will Morgan  
Naval Safety Command



Photo by: Nicholas Tenorio

Souda Bay, Greece (Feb. 13, 2004) – Fleet Logistics Support Squadron FOUR ZERO VRC-40 ground maintenance personnel prepare to move their C-2A Greyhound aircraft, currently assigned to USS George Washington (CVN 73), into the protection of a hangar as a freak snow storm hits the largest Greek Island.



## **WINTER IS COMING: MAINTAINING THE MAINTAINER IN A COLD WEATHER ENVIRONMENT**

With the winter months approaching, the requirements for aircraft inspections, service, repairs, and/or modifications remain the same, but, as maintainers, we are faced with a different type of challenge. Maintenance performed in exposed and unprotected environments places personnel at a higher risk of injuries and increases the potential for a mishap. Cold conditions can certainly be uncomfortable, but moreover, can limit the capabilities and dexterity of our appendages as a result of layered or heavier protective clothing. Additionally, when exposed to the significantly lower temperatures in many places we operate, the body loses heat faster than it can be produced. Be aware of the “cocoon effect,” a phenomena where people in extreme cold weather, bundled up in layers of clothing, begin to physically and mentally withdraw from the task at hand. With prolonged exposure to these conditions, the body will use up all its stored energy to try and keep up with thermal heat loss. As Jack Frost takes over, the body sinks to abnormally low temperatures resulting in hypothermia.

To successfully accomplish the mission, all personnel must be aware of the threats associated with performing aircraft maintenance in cold-weather environments. Below are signs and symptoms that can vary but are essential for us to be mindful of to prevent injuries.

### Initial Symptoms

- Shivering
- Fatigue
- Loss of coordination
- Confusion and disorientation

### Advanced Symptoms

- No shivering
- Blue skin
- Dilated pupils
- Slowed pulse and breathing
- Loss of consciousness



Photo by: MC3 Benjamin Ringers



## **WINTER IS COMING: MAINTAINING THE MAINTAINER IN A COLD WEATHER ENVIRONMENT**

The best-case scenario would be to perform all aircraft maintenance in the comfort of a heated hangar; however, we are not always afforded that luxury. The unique challenges accompanying the winter months must be anticipated and planned for at all levels.

Maintenance leadership must prepare for the projected environments that the squadron will be required to operate in and ensure proper planning and outfitting occurs to minimize the risks of operating in those environments. They must also monitor the environmental factors and the effects on aircraft, equipment, and personnel to determine the most effective and applicable methods for maintaining and preserving mission-readiness. Notably, maintenance tasks may require significantly more time to complete in extremely cold-weather scenarios. When preparing for aviation maintenance, leadership is responsible for preventing cold weather injuries and must consider the following factors:

- Ensure maintenance personnel are educated about previous cold weather injuries, prevention, recognition and treatment of cold weather injuries.
- If a hangar/shelter is not available, rotate personnel as needed. Predict and supply additional personnel as needed.
- Supply and ensure proper clothing and personal protective equipment are worn.
- Modify the maintenance schedule if needed to limit exposure to the elements.
- Never let maintenance personnel work alone. Employ the buddy system.
- Plan for and provide additional time to complete tasks, especially those that must be completed in the elements.
- Supply warming areas and supervise the use.

Unique challenges require unique concerns. Here are some important considerations for successfully performing aircraft maintenance in these frigid environments.

- Gloves are a must! Moisture on hands tends to freeze skin to metal. This tip applies to the aircraft, support equipment and tools.
- Wear approved removable insulation. Items such as wool or fleece vest or shirt can be added or removed as necessary.
- Ensure that the outer protective layer of clothing and gloves is windproof and water resistant with a hood.
- Requisition and use approved portable heaters for warming areas of the aircraft that require work without gloves.
- Cover the face and ears. Up to 80% of heat loss is through the head and neck.
- Wear eye protection and furthermore, in areas with snow, protect against snow blindness.
- Maintain hydration even if you're not sweating.
- Be aware of reduced dexterity, especially when climbing the aircraft.
- Report any suspected cold weather injuries suffered by yourself or other personnel to a supervisor.



## **WINTER IS COMING: MAINTAINING THE MAINTAINER IN A COLD WEATHER ENVIRONMENT**

As members of the most dynamic and powerful Naval and Marine Corps force in the world, we must continue to adapt our approach to meet the demands of the environment and the mission. We serve in many different locations and with the continuing changes to the mission, it is essential for all personnel, from unit leadership and supervisors to the individual wrench turners to remain knowledgeable and aware of the dangers and challenges that we might encounter. If we maintain a team-centric focus and look out for one another, we are sure to preserve and protect our most valuable assets, our people. As always, the Naval Safety Command is here for you! Please reach out with any questions or requests for support.

Photo by: MC3 Benjamin Ringers

