Heat & Sun Exposure on the Flight Line

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HEAT & SUN EXPOSURE ON THE FLIGHT LINE

The flight line is an essential yet unforgiving environment. Here, personnel maintain, prep and launch aircraft, demanding rigorous attention to detail and unwavering vigilance. However, one of the most significant and often underestimated challenges faced by these dedicated service members is the exposure to extreme heat and relentless sun.

Aircraft maintainers, ground crew and other flight line personnel endure prolonged exposure to the elements, often in climates with extreme temperatures. Reflective surfaces of the tarmac and aircraft intensify the heat. In locations such as the Middle East, Southwest Asia and parts of the southern United States, flight line temperatures can soar above 120 degrees Fahrenheit. Under these conditions, the risk of heat-related illnesses, such as heat exhaustion and heat stroke, increases significantly.

Heat-Related Illnesses and Risks

Heat exhaustion and heat stroke pose immediate threats in the extreme temperatures of the flight line. According to the National Institute for Occupational Safety and Health (NIOSH), heat exhaustion results from excessive water and salt loss, usually through sweating. The illness causes symptoms like rapid heartbeat, heavy sweating, weakness, dizziness, nausea, slightly elevated body temperature and fainting. If untreated, heat exhaustion can escalate to heat stroke, where the body loses its ability to control its temperature, potentially causing permanent disability or death. Heat stroke symptoms include confusion, altered mental state, loss of consciousness and potential organ failure.

Additionally, intense sun exposure raises the risk of long-term health issues, such as skin cancer and other dermatological conditions. Chronic sun exposure without adequate protection can cause serious cumulative skin damage, including melanoma, one of the most dangerous forms of skin cancer, according to the Skin Cancer Foundation.

Mitigation Strategies, Protective Measures and First Aid

The Navy and Marine Corps have implemented various strategies and protocols to combat these dangers. Hydration is paramount; personnel are encouraged to drink water frequently to prevent dehydration, which can exacerbate heat-related conditions. The “water, rest, shade” principle is a foundational guideline, emphasizing regular breaks in shaded or cooler areas. Protective gear is also critical. Maintenance personnel are encouraged to wear sunblock and sunglasses or tinted cranial goggles to shield their eyes from harmful ultraviolet (UV) rays. Lightweight, breathable fabrics that reflect rather than absorb sunlight are often recommended to help regulate body temperature.

In the event of heat exhaustion or stroke, the following first aid steps can assist:

- Request immediate medical assistance
- Move the worker to a cool, shaded area
- Drink plenty water or other cool beverages
- Take a cool shower, bath or sponge bath
- Remove excess clothing and apply cool water to body

Training and Education

Ongoing training and education play a crucial role to ensuring flight line personnel are aware of the signs and symptoms of heat-related illnesses and know how to respond appropriately. The

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Navy and Marine Corps conduct regular safety briefings and provide resources on heat and sun exposure. This training emphasizes the importance of the buddy system, where personnel look out for one another and can quickly identify and address any signs of distress.

In summary, the flight line is an integral part of Naval and Marine Corps aviation operations, but it comes with significant challenges due to heat and sun exposure. By understanding the risks, implementing effective mitigation strategies and continually educating personnel, the Navy and Marine Corps strive to protect their Sailors and Marines from the flight line's harsh conditions. The commitment to safety ensures these essential operations can continue efficiently while safeguarding the health and well-being of the individuals who keep aircraft mission-ready.

A U.S. Marine Corps air traffic controller with Marine Aviation Weapons and Tactics Squadron One, provides support during Weapons and Tactics Instructor (WTI) course 1-24 at Marine Corps Air Station Yuma, Arizona, Sept. 28, 2023. (U.S. Marine Corps photo by Lance Cpl. Emily Hazelbaker)

Cover: U.S. Marines with Marine Aviation Weapons and Tactics Squadron One, conduct maintenance on a CH-53K King Stallion helicopter during Weapons and Tactics Instructor (WTI) course 1-24 at Marine Corps Air Station Yuma, Arizona, Sept. 29, 2023. (U.S. Marine Corps photo by Lance Cpl. Emily Hazelbaker)