

# THE SHOCKING TRUTH ABOUT ELECTRICAL SAFETY



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# ELECTRICAL SAFETY //

Electrical safety is an important aspect of aircraft maintenance, as a malfunction or failure of an electrical system can have catastrophic consequences. Therefore, it is important that aircraft maintainers are well-informed and trained in electrical safety protocols.

First and foremost, aircraft maintainers should be aware of the risks involved in working on electrical systems. Electric shock, burns and fire are potential hazards from working with electrical systems. To mitigate these risks, personnel should always follow established safety protocols and wear appropriate personal protective equipment (PPE), such as insulated gloves, safety goggles and flame-retardant clothing.

In addition to PPE, aircraft maintainers must also use special tools and equipment designed for electrical work. For example, tools such as insulated screwdrivers and pliers help prevent electric shock and reduce the risk of short circuits. Aircraft maintainers must regularly inspect tools and equipment to ensure they are in good condition and free from defects.

Another important aspect of electrical safety in aircraft maintenance is proper training. Personnel should receive training on the specific electrical systems they will be working on as well as general electrical safety procedures. Training should cover topics such as how to safely handle electrical components, how to identify potential hazards and how to respond in the event of an electrical emergency. By properly training personnel on these topics, you could prevent damage to aircraft systems, components and personnel.

Technicians must thoroughly understand the electrical systems they work on in order to take measures to prevent breakdowns. This includes knowledge of system design, operation and maintenance requirements. Maintainers can spot potential problems before they become issues when they have a deep understanding of the electrical systems they work with and maintain.

Proper grounding is another important aspect of electrical safety in aircraft maintenance. Grounding is the process of connecting electrical equipment to the earth, and this connection helps prevent electrical shock and reduces the risk of fires. Aircraft maintainers should ensure that all equipment is properly grounded before beginning work on electrical systems.

Proper maintenance and inspection of electrical systems is critical to ensuring electrical safety in aircraft maintenance. Regular inspections and maintenance can help identify potential issues before they become problems and prevent failures. This includes checking for loose connections, worn or damaged components, split, overheated, chaffed or damaged wiring, signs of arcing and signs of corrosion.

A simple way to prevent electrical mishaps is to use lockout tags. These tags notify maintainers that they cannot apply electrical power to the aircraft. This can be done by placing a sign at the entrance of the cockpit, the external power receptacle and in the aircraft discrepancy book.

Finally, it is important for aircraft maintainers to have a high level of situational awareness when working on electrical systems. This means you should be aware of potential hazards, such as exposed cables and damaged components, and take appropriate precautions to mitigate the risks. Personnel should also be aware of their surroundings and potential sources of ignition, such as fuel or other combustible materials.

# ELECTRICAL SAFETY

Maintainers must be highly safety-focused when operating and working on aircraft, aircraft electrical components or avionic components. By following established safety protocols, publications, using appropriate PPE and tools, receiving proper training, understanding electrical systems, grounding equipment, maintaining and inspecting systems, and maintaining situational awareness, maintenance personnel can help prevent electrical accidents and ensure the safety of themselves and their fellow maintainers.



*Cover: Sgt. Tyler W. Envall, an H-1 avionics technician with the 24th Marine Expeditionary Unit's Aviation Combat Element, Marine Medium Tiltrotor Squadron 365 (Reinforced), conducts 90-degree gear box wiring of a UH-1Y Huey aboard the USS Iwo Jima. Marines conduct flight maintenance around the clock to maintain mission readiness for all MEU aircraft. (U.S. Marine Corps photo by Sgt. Devin Nichols)*