

ICY CONDITIONS DURING AIRCRAFT MAINTENANCE

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Icy Conditions during Aircraft Maintenance

Performing aircraft maintenance during the winter can be challenging, mainly because the winter months produce potential hazards for maintainers and aircraft that we don't have to worry about during the summer. Being aware of these winter hazards helps us reduce injury to personnel and damage to aircraft. So, what are some of the dangers that may arise during the winter?

During the summer, getting on top of the aircraft to perform maintenance has its hazards, especially after a rain shower or wash job. While rain is slick and caution must be used in the summer working on wet aircraft surfaces, that same rain or aircraft wash water can create ice on the surfaces in the winter. This inherently creates greater potential for injury if extreme caution is not exercised and proper fall protection is not utilized. There is also great potential for dew or frost to form on upper aircraft surfaces overnight during the winter and because it is so thin, people get a false sense of security, thinking it is harmless due to being so difficult to detect.

When ice is suspected on top of the plane, alternate means should be considered to mitigate the risk associated with getting on top of the aircraft. One of those alternate means can be using ladders that haven't been exposed to the elements and haven't had the chance for ice to form on the steps. Technicians are also encouraged to use maintenance stands, if at all possible, that have been kept indoors/out of the elements or covered up to perform inspections or complete maintenance. These stands typically have a grated surface that significantly decreases the risk of slipping. If time permits, the ideal practice would be to hangar the aircraft and allow the surface of the aircraft to dry, or keep the aircraft in the hangar until just prior to the flight. Doing so will allow pre-flight inspections and any required servicing or maintenance to be done in the hangar shielding flight and maintenance crews from adverse elements such as freezing winds, ice, freezing rain and snow.

The winter months not only have a high potential to produce slick surfaces, depending on where the unit is operating, but the winter environment can also produce chunks of ice that have the potential to damage the aircraft. During morning FOD walk downs or any FOD check throughout the day, we should also pay attention to ice on and around the aircraft before performing maintenance and turns. When participating in FOD walk down in the winter months, especially in cold environments, particular attention should be given to the pad eyes in the area where the aircraft launches and maintenance turns will take place. Common areas for ice formation are engine intakes, upper skin surfaces, ledges and other voids where water can collect and become ice.



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If the ice is not cleared from the area where it formed, it can damage propellers, engine fan blades and/or cause other damage to the aircraft. Not only can it damage aircraft, but it can also become a projectile and hit personnel that are involved in aircraft run up or those in the vicinity. Becoming familiar with the common areas for ice formation on your particular platform can significantly help reduce ice-related incidents.

While this article only touched on ice hazards associated with aircraft maintenance and flight support operations in cold winter environments, there are many more hazards. Technicians and helicopter/V-22 crewmen have experienced frostbite injuries. Line personnel and technicians have suffered burns associated with warming hands and bodies with heat being projected from running support equipment or auxiliary power units (APUs). Support equipment windows, windshields and mirrors can be frosted, obstructing the operator's view. Technicians have run diesel-powered support equipment in enclosed spaces without properly venting harmful exhaust gases, outside the enclosed maintenance bay or hangar. Working in extreme cold and windy conditions can also cause distraction and fatigue much quicker than working in optimal environmental conditions. Technicians have rushed work and missed steps to minimize their exposure to adverse elements.

The list of hazards associated with supporting aviation operations and maintenance during winter can go on and on. This safety gram aims to raise awareness, so we must be vigilant while working during the winter. Maintenance leaders must look out for their personnel and ensure technicians are rotating out of the adverse conditions, and when possible, maintain aircraft and/or conduct inspections inside of environmentally controlled hangars. If precautions are not taken, we could cause more work by damaging aircraft or injuring our people. Every season presents its own set of unique challenges, but understanding some of those risks can help us better mitigate them. While we always focus on meeting our mission, those same efforts must be given to protecting those assets needed to make the mission. You're the first line of defense in helping mitigate risks and reduce mishaps. If something is unsafe, then stop the evolution and assess it. We can't afford to damage aircraft or injure our personnel.