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ON APPROACH

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PROTECTING YOUR AIRCRAFT

FROM ENVIRONMENTAL AND CRITTER DAMAGE IN YOUR HANGAR

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Owning an aircraft is a remarkable experience, but it comes with the responsibility of proper care and maintenance—both in the air and on the ground. For many pilots and aircraft owners, the hangar serves as a sanctuary, protecting their investment from harsh weather conditions. However, simply parking your aircraft in a hangar doesn't guarantee full protection. Various environmental factors lurking inside the hangar can cause damage over time if left unaddressed. From moisture and temperature swings to pests and dust, these threats can quietly undermine your aircraft's performance, safety, and value.

The good news is that protecting your aircraft from environmental damage doesn't require a massive budget or complicated systems.

THROUGH SIMPLE, PRACTICAL STEPS, WHAT WE CALL "HANGAR HACKS"

With these you can safeguard your plane and extend its operational life while potentially avoiding expensive repairs and aircraft damage.

FIGHTING MOISTURE: THE INVISIBLE ENEMY

One of the biggest challenges aircraft owners face in hangar storage is moisture. Even though hangars shelter aircraft from rain and snow, they often cannot fully control humidity and condensation, especially in climates near bodies of water or areas with wide temperature fluctuations. Moisture that accumulates on metal surfaces, inside avionics bays, or in control cables encourages corrosion, which is one of aviation's most insidious foes.

Electric Dehumidifiers

Corrosion can silently compromise the integrity of structural parts and sensitive electronics. Preventing it starts with controlling the moisture levels inside the hangar. Many owners find that investing in an electric dehumidifier is the most effective solution. By maintaining the relative humidity between 40 and 50 percent, a dehumidifier helps reduce condensation build-up and keeps corrosion-causing moisture at bay. Modern units with automatic draining and built-in hygrometers are easy to maintain and monitor, making them well worth the investment.

Desiccant Packs & Fans

In addition to dehumidifiers, placing desiccant packs—such as silica gel or activated clay—inside the cockpit, cabin, or storage lockers can help offer targeted moisture control. These passive solutions absorb residual humidity in smaller, enclosed spaces. Furthermore, promoting good air circulation with fans helps prevent pockets of stagnant, moisture-laden air from forming. While fans don't remove moisture directly, they help stabilize the environment by reducing cold spots where condensation tends to occur.

KEEPING PESTS AT BAY

Pests might not be the first thing that comes to mind when thinking about hangar storage, but rodents, birds, and insects pose a real risk to your aircraft. Rodents, in particular, are notorious for chewing on wiring harnesses, insulation, and upholstery. Birds can build nests in engine intakes or control surfaces, creating hazards for your next flight. Even small insects can infest avionics bays, causing electrical shorts or blocking critical ventilation openings.

Ultrasonic Pest Repellents

To deter these uninvited guests, there are several practical steps you can take. Ultrasonic pest repellents, which emit high-frequency sounds inaudible to humans, can discourage rodents and some insects from settling in your hangar. However, it's important to verify that these devices don't interfere with sensitive avionics if placed close to the aircraft.

Insect Repellents

Repellents for insects, especially spiders, can also be a big help. One pilot who shall remain nameless might have gone to the local farm co-op store and asked the staff, "What is the most poisonous stuff you have for spiders?" Then he mixed it a little heavier than recommended in the sprayer and got all the edges of his hangar. I get it, I hate spiders too. But I swear, it wasn't me. The good news is that I hear he no longer has spiders at his hangar or the dock by his boat. Keeping up on this can really keep the spiders and other crawly critters from making your hangar, or your plane, their home.

Entry Point Blocking

Blocking entry points is equally important. Small holes and gaps in the hangar structure should be sealed with steel wool or expanding foam, both of which are effective at keeping small critters from sneaking in.

Hangar Maintenance

Maintaining a clean, clutter-free hangar is essential in discouraging pests. Food sources, garbage, or even birdseed near the hangar will attract rodents. Regularly sweeping and removing debris from the hangar floor removes nesting materials and limits shelter opportunities for pests.

Covers & Plugs

Another key defense is to use pitot tube covers, engine intake plugs, and exhaust covers when your aircraft is stored. These physically block rodents and birds from entering delicate systems, helping to maintain system integrity.

Pest Checks

Finally, incorporate pest checks into your monthly maintenance routine. Look under seat cushions, inside avionics bays, and beneath cowlings for signs of nesting, droppings, or chew marks, and address any issues promptly.

Many planes have experienced damage from mice, bugs, and other pests when the owners don't keep them out of their hangar. Don't let it be your plane.

MANAGING TEMPERATURE SWINGS

Temperature control within the hangar may seem like a luxury, but in many climates, it is essential to prevent damage caused by thermal cycling. As temperatures rise and fall, aircraft materials expand and contract. Repeated cycles can stress seals, cause cracking in composite materials, and accelerate the breakdown of wiring insulation. Battery life is also heavily influenced by temperature, with extreme cold reducing capacity and extreme heat accelerating degradation.

Hangar Maintenance

For owners in colder regions, installing a thermostatically controlled heater in the hangar can prevent freezing temperatures that threaten fuel systems, hydraulic lines, and batteries. It's crucial to use aviation-approved heating devices designed to operate safely in enclosed spaces to avoid fire hazards.

Insulating the Hangar

Insulating hangar doors and walls can also help stabilize internal temperatures, reducing the range of daily temperature swings and lowering energy costs if you heat or cool the space.

Maintainers & Preheaters

Battery maintainers and engine preheaters are invaluable in cold weather. A smart battery tender ensures your battery remains charged without overcharging, prolonging its service life. Engine preheaters reduce engine wear during cold starts by bringing oil and metal components up to temperature before flight.

Mats for Wheels

For the tires, placing reflective floor mats or thermal mats under the wheels prevents cold from seeping into the rubber and reduces the risk of flat spots caused by extended static loading on cold floors.

KEEPING YOUR HANGAR CLEAN AND ORGANIZED

Dust, dirt, and fluid drips may seem like minor annoyances, but over time, these factors degrade aircraft finishes and components. Dust acts as an abrasive, slowly wearing down paint and clear coats. Leaked oil, hydraulic fluid, or fuel can cause corrosion if not cleaned promptly, and accumulated grime creates an environment ripe for pests.

Oil Catching Mats

Don't forget to have some oil-absorbent material, a few pieces of cardboard, or oil dry rags to catch any that gets on the floor as well. It will keep it from getting on your shoes and getting transferred into the cabin of your aircraft. Put them under the engine and landing gear. These mats catch drips before they stain or damage the floor, making it easier to detect leaks early.

Your aircraft is a valuable asset that deserves protection not just during flight but every hour it spends on the ground. The hangar is more than just a parking space—it's a controlled environment where proper care can prevent expensive damage and enhance safety.

Whether you're a weekend flyer or a full-time pilot, investing time in proper hangar management is investing in your peace of mind. A well-maintained hangar environment is a silent partner in your flight safety, ensuring your aircraft is ready for every journey ahead.

ABOUT JASON BLAIR

Jason Blair is an active single- and multi-engine instructor and an FAA Designated Pilot Examiner with over 6,000 hours total time, over 3,000 hours instruction given, and more than 3000 hours in aircraft as a DPE. In his role as Examiner, over 2,000 pilot certificates have been issued. He has worked for and continues to work with multiple aviation associations with a focus on pilot training and testing. His experience as a pilot and instructor spans nearly 20 years and includes over 100 makes and models of aircraft flown. Jason has published works in many aviation publications, a full listing of which can be found at www.jasonblair.net*.