

# How do you prepare military drones for long-term storage?

Preparing **military drones** for long-term storage requires systematic cleaning, controlled environmental conditions, proper battery management, and protective packaging. Without proper preparation, drones can suffer battery degradation, moisture damage, corrosion, and electronic component failure. This comprehensive guide covers the most important questions about protecting valuable military equipment during extended storage periods.

## What happens to military drones during long-term storage without proper preparation?

Military drones stored without proper preparation face multiple deterioration risks, including battery degradation, moisture damage, corrosion of metal components, electronic circuit failure, and mechanical wear. These issues can render expensive equipment inoperable and compromise mission readiness when the drones are needed again.

Battery degradation represents one of the most immediate threats. Lithium-ion batteries, which power most modern drones, naturally discharge over time. If left completely discharged for months, the battery cells can become permanently damaged or lose significant capacity. Temperature fluctuations during storage accelerate this degradation process.

Moisture poses another significant risk. Humidity can infiltrate drone housings, causing corrosion on circuit boards, sensors, and metal components. Water damage often affects sensitive electronics like GPS modules, cameras, and flight control systems. Once moisture enters these components, repair costs can exceed replacement values.

Dust and contaminants accumulate on exposed surfaces and can penetrate moving parts like gimbal mechanisms and rotor assemblies. This contamination affects performance and can cause mechanical failures during operation. Additionally, temperature extremes can cause plastic components to become brittle and seals to deteriorate.

## How do you clean and inspect a military drone before storage?

Thorough cleaning and inspection involve removing all dirt and debris, checking for damage, testing all systems, documenting the drone's condition, and ensuring all components are dry before storage. This process prevents contamination from causing long-term damage and establishes a baseline for post-storage assessment.

Begin by powering down the drone completely and removing the battery. Use compressed air to blow out dust and debris from motors, sensors, and crevices. Clean the exterior with a soft, lint-free cloth slightly dampened with isopropyl alcohol. Avoid getting moisture near electronic ports or openings.

Inspect the propellers for cracks, chips, or warping. Check the gimbal and camera for smooth operation and secure mounting. Examine all cables and connectors for wear, corrosion, or damage. Test the landing gear mechanism, if present, and verify that all protective covers and lens caps are available.

Document any existing damage with photographs and written descriptions. Record flight hours, battery cycle counts, and any maintenance performed. This documentation helps track the drone's condition over time and

guides post-storage inspection procedures.

Ensure all components are completely dry before proceeding to storage. Even small amounts of trapped moisture can cause problems during long-term storage. Allow the drone to air-dry in a clean environment for several hours after cleaning.

## **What environmental conditions are needed for military drone storage?**

Optimal storage conditions require temperature control between 15–25°C, relative humidity below 50%, adequate air circulation, protection from direct sunlight, and contamination-free environments. These conditions prevent moisture damage, temperature-related component stress, and environmental contamination that can compromise drone functionality.

**Temperature control** is fundamental for protecting electronic components and battery systems. Extreme temperatures can cause expansion and contraction that damage circuit boards and housing seals. Storage areas should maintain consistent temperatures within the recommended range to prevent thermal stress.

Humidity management prevents moisture-related damage to electronics and metal components. Use dehumidifiers or climate control systems to maintain relative humidity below 50%. In particularly humid environments, consider using desiccant packs within storage containers for additional moisture protection.

Air circulation prevents stagnant conditions that can promote mould growth and moisture accumulation. However, avoid direct airflow over stored equipment, which can introduce dust and contaminants. Filtered ventilation systems work best for maintaining air quality without contamination risks.

Light protection prevents UV damage to plastic components and camera sensors. Store drones in dark environments or use opaque covers to block light exposure. Some camera sensors can be permanently damaged by prolonged light exposure during storage.

Contamination prevention requires clean storage environments free from dust, chemicals, and corrosive substances. Industrial storage areas should be separate from workshops or chemical storage to prevent airborne contaminants from affecting sensitive equipment.

## **How do you handle batteries and electronics during drone storage preparation?**

Battery storage requires maintaining charge levels between 40–60%, storing in cool, dry conditions, periodic monitoring, and using proper storage modes. Electronics need protection from static discharge, moisture barriers, secure cable management, and regular condition checks to prevent degradation during extended storage periods.

For lithium-ion batteries, charge levels between 40–60% provide optimal storage conditions. Fully charged batteries can degrade faster, while completely discharged batteries may become permanently damaged. Most military drone batteries have storage modes that automatically maintain optimal charge levels.

Store batteries separately from the drone in temperature-controlled environments. Battery storage areas should remain between 10–20°C for best results. Check battery charge levels monthly and recharge if they drop below 30%. Document charge cycles and storage dates for maintenance tracking.

Protect electronic components from static discharge by using anti-static bags or conductive foam when handling sensitive parts. Ground yourself before touching circuit boards or connectors. Static discharge can

cause invisible damage that only becomes apparent when the equipment is used again.

Manage cables properly by securing them to prevent stress on connectors. Coil cables loosely to avoid sharp bends that can damage internal wires. Use cable ties or Velcro straps to keep everything organised and prevent tangling.

Cover all electronic ports and connectors with protective caps or tape to prevent dust and moisture infiltration. Remove any memory cards or data storage devices and store them separately in protective cases.

## **What packaging and protection methods work best for stored military drones?**

Professional storage requires custom-fitted cases with foam interiors, moisture barriers, shock protection, and secure mounting systems. These [maatwerk verpakkingsoplossingen](#) provide maximum protection against physical damage, environmental hazards, and handling risks during long-term storage of valuable military equipment.

Custom cases designed specifically for each drone model offer the best protection. These cases feature precision-cut foam interiors that hold the drone and accessories securely without pressure points that could cause damage. Hard-shell cases made from materials like aluminium or high-impact plastic provide excellent protection against impacts and environmental hazards.

Foam protection systems should use closed-cell foam that does not absorb moisture or release particles. The foam should support the drone's weight evenly and prevent movement during transport or storage. Cut-outs for accessories like controllers, batteries, and spare parts keep everything organised and protected.

Moisture barriers such as vapour-barrier bags or desiccant systems prevent humidity from affecting stored equipment. These barriers are particularly important in varying climate conditions or when storage areas lack precise humidity control. Combine barriers with desiccant packs for maximum moisture protection.

Shock protection becomes important if stored drones might be moved or transported. Cases should feature reinforced corners, secure latching systems, and cushioned interiors that absorb impacts. For valuable military equipment, cases meeting MIL-STD specifications provide tested protection levels.

At Faes, [we specialise](#) in developing protective packaging solutions for defence applications, including storage systems for sensitive military equipment. Our experience with regulated sectors helps ensure that storage solutions meet the demanding requirements of military organisations while providing long-term protection for valuable assets. If you need guidance on storage solutions for your military drones, [contact our team](#) for expert advice tailored to your specific requirements.

## **Frequently Asked Questions**

### **How often should I check on military drones during long-term storage?**

Inspect stored military drones monthly for the first three months, then quarterly thereafter. Check battery charge levels, look for signs of moisture or pest intrusion, and verify that protective seals remain intact. Document any changes in condition and address issues immediately to prevent progressive damage.

## **What should I do if I discover moisture damage during a storage inspection?**

Immediately remove the drone from storage and place it in a dry, warm environment with good air circulation. Do not power on the equipment until completely dry. Use desiccant packs or a dehumidifier to accelerate drying, then have qualified technicians inspect all electronic components before returning to service.

## **Can I store different types of military drones together in the same facility?**

Yes, but maintain separation between different drone models and their accessories to prevent cross-contamination and mix-ups. Use clearly labelled storage areas and maintain detailed inventory logs. Ensure that larger drones don't create vibrations or environmental changes that could affect smaller, more sensitive equipment nearby.

## **How do I prepare a drone for storage if it was recently used in harsh environments?**

Allow the drone to return to room temperature gradually, then perform extra-thorough cleaning with particular attention to salt, sand, or chemical residues. Inspect seals and filters more carefully, as harsh conditions may have compromised protective barriers. Consider professional maintenance inspection before storage if the drone was exposed to extreme conditions.

## **What's the maximum recommended storage duration before mandatory maintenance?**

Most military drones should undergo comprehensive maintenance inspection after 12-18 months of storage, regardless of condition. Battery systems may need attention sooner, typically every 6-12 months. Always consult manufacturer guidelines and military maintenance protocols, as requirements vary by drone model and mission criticality.

## **How do I safely transition a drone from long-term storage back to operational status?**

Begin with a systematic inspection checklist covering all components documented before storage. Gradually recharge batteries using appropriate charging protocols, test all electronic systems in a controlled environment, and perform calibration procedures for sensors and flight controls. Conduct a supervised test flight in a safe area before returning to full operational status.

## **Are there special considerations for storing drones with classified or sensitive equipment?**

Follow your organisation's security protocols for classified equipment storage, which may include additional physical security measures, access controls, and documentation requirements. Sensitive sensors or communication equipment may require removal and separate secure storage. Coordinate with security personnel to ensure storage procedures meet classification requirements.