

## Aircraft Exterior Washing Procedures and Best Practices

Sofema Aviation Services (SAS) [www.sassofia.com](http://www.sassofia.com) considers the task of exterior aircraft washing, reviewing best practices and general guidance and tips for the optimum outcome.

### Introduction

Exterior aircraft washing is more than just an aesthetic task. It's a vital maintenance activity that, when done correctly, can extend the life of the aircraft's paint and help in early detection of potential issues.

- Always prioritize safety, use the right tools and techniques, and consider the environmental impact of your washing activities.
- Before washing, ensure the aircraft is properly grounded to prevent static electricity.
- Wear appropriate safety gear, including non-slip shoes, gloves, and safety goggles.
- Before washing the exterior of an aircraft, it's essential to take precautions to protect sensitive components from water and cleaning agents

### Preparation

- Ensure the aircraft is in a safe and appropriate location for washing.
- Make sure the aircraft is properly grounded.
- Ensure that all power sources are turned off, and the aircraft is safe to approach.
- Engine blanks, often referred to as engine covers or plugs, are used to prevent water and cleaning agents from entering the engine during washing.
  - Ensure the engine has cooled down before installing the blanks.
  - Insert the engine blanks into the engine intakes and exhausts. Ensure they fit securely and are clearly visible.
- Pilot Head Covers
  - Place covers over the pilot tubes. Ensure they are securely attached and won't be dislodged during washing.
- Static Vent Covers
  - Cover the static vents with appropriate covers to prevent water ingress.
- Seal or cover any other external openings, such as APU intakes, air vents, and exhaust ports.
- Protect sensitive areas like avionics bay vents, sensors, and antennas.
- Ensure the gear doors are closed or protected.

- Close all windows, doors, and hatches. Check seals for integrity.
- Remove or secure any loose items from the aircraft's exterior.

Very Important Note – See the following [https://en.wikipedia.org/wiki/Aeroper%C3%BA\\_Flight\\_603](https://en.wikipedia.org/wiki/Aeroper%C3%BA_Flight_603)

Aero Peru crashed and killed 70 persons because in preparation for the wash tape was placed over the static ports.

To ensure such an accident does not ever happen again – blanks should be the responsibility of engineering personnel and a tech log entry should be made to record the fitting of seals, blanks and undercarriage locks etc. The entry should be only be cleared when the aircraft is returned to normal configuration.

### **Choose Appropriate Cleaning Agents**

When cleaning an aircraft exterior, it's crucial to use the right cleaning agents and techniques to ensure the safety, longevity, and appearance of the aircraft.

- Always prioritize products specifically designed for aircraft use and follow the manufacturer's guidelines.
- pH-Neutral Soaps and Detergents: These are mild and won't harm the aircraft's paint or underlying materials. They effectively remove dirt, grease, and other contaminants without being too harsh.
- There are specialized cleaners available in the market specifically designed for aircraft exteriors. They are formulated to be effective yet gentle on aircraft surfaces.
- For areas with heavy grease or oil buildup, like around the engine or landing gear, a degreaser may be necessary. Ensure it's safe for aircraft use.
- Alkaline or Acidic Cleaners are sometimes used for tough stains or specific contaminants.
  - However, they should be used with caution and only when necessary, as they can be harsh on the aircraft's surfaces.
  - Always follow the manufacturer's recommendations and rinse thoroughly after use.
- Insect Removers: Insects can be a significant problem for aircraft, especially on leading edges and the nose area. Specialized insect removers can be used to safely remove bug residues.
- Brighteners: These are sometimes used to brighten up aluminum surfaces on an aircraft. However, they often contain strong chemicals and should be used with caution.
- Anti-Static Agents: These can be applied after cleaning to reduce static buildup on the aircraft's surface.

### **Washing Technique:**

- **Soft Brushes and Mops:** Use soft-bristled brushes or mops to apply the cleaning solution. Start from the top and work your way down to prevent dirty water from running over clean areas.
- **Circular Motions:** Use gentle circular motions to clean. This helps lift and remove dirt more effectively.
- **Rinse Thoroughly:** After washing a section, rinse it thoroughly to remove all cleaning agent residues.
- **Special Attention Areas:**
  - **Leading Edges and Undercarriage:** These areas tend to accumulate more dirt and bugs. They might require a bit more scrubbing.
  - **Windows and Canopies:** Use a gentle cleaner designed specifically for aircraft windows. Avoid ammonia-based cleaners as they can cause haze or damage some aircraft windows.

### **Special Considerations:**

- **Avoid Abrasives:** Abrasive cleaners or tools can scratch the aircraft's paint or damage its surface. Always use soft brushes, sponges, or cloths.
- **Avoid Strong Solvents:** Some solvents can damage paint or weaken the aircraft's materials. Always check the product's compatibility with aircraft materials before use.
- **Always Follow Manufacturer's Recommendations:**
  - Always refer to the aircraft manufacturer's cleaning guidelines.
  - Specific recommendations and cautions for cleaning the aircraft model in question should be followed.

### **Environmental Considerations:**

- Ensure that the cleaning agents used are environmentally friendly and disposed of correctly.
  - Some cleaning agents can be harmful to the environment.

### **Always Rinse Thoroughly:**

- After using any cleaning agent, it's essential to rinse the aircraft thoroughly to ensure no residue remains, which could corrode or damage the aircraft's surfaces.

### **Post-Wash Inspection**

- After washing, remove all covers and blanks.
- Conduct a thorough post-wash inspection to ensure no water or cleaning agents have entered sensitive areas.
- Check for any signs of corrosion, damage, or wear that might have been revealed during the wash.

- Dry the aircraft thoroughly. This can be done using clean, soft cloths or by allowing the aircraft to air dry.

### **Special Note**

Always refer to the aircraft's maintenance manual or manufacturer's guidelines when preparing for and conducting an exterior wash.

### **Next Steps**

Please see the following training course <https://sassofia.com/course/aircraft-servicing-cleaning-and-detailing-2-day/> for questions or comments please email [team@sassofia.com](mailto:team@sassofia.com)