



GENERAL AVIATION HANDBOOK

This handbook has been developed to provide the general aviation tenant with Rules and Regulations regarding the use of facilities on City of Phoenix Airports.

The information contained in this publication is not meant to be all-inclusive but, rather, to provide answers to commonly asked questions and to supplement the Aviation Department Aircraft Storage Permit.

Non-conformance with these Rules and Regulations may be cause for revocation of a tenant's aircraft storage permit.

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WASH RACKS/MAINTENANCE BAYS

As a result of Environmental Protection Agency (EPA) storm water regulations, **the practice of allowing wash water to discharge into the City storm water system is strictly prohibited.** All washing or cleaning of aircraft, airport vehicles and ground equipment is restricted to designated wash areas that are connected to the industrial wastewater (sanitary sewer) system. Restricting the number of areas for washing or cleaning eliminates the risk of a direct discharge of wash water and wash water evaporating on the apron or a hangar floor.

A tenant may chose to use a private company for aircraft cleaning or washing. The tenant shall be responsible for any operation on the Airport by a private party he/she has engaged.

At the present time, the City of Phoenix provides aircraft wash racks at its Airports to facilitate aircraft cleaning and to properly dispose of any soaps, detergents or residue resulting from aircraft washing. Tenants should be aware that there are limitations regarding these facilities. **The dumping of any excess fluids such as waste oil, solvents or other cleaning agents is expressly prohibited.** Collection drums have been provided for the disposal of liquid waste.

Oil/water interceptors are built into the drainage system at the wash racks and are designed to separate oil from water so it will not enter the wastewater system. The oil/water interceptors are not designed for dumping but, rather, to handle the residual oil, dirt and soap when an aircraft is washed. Interceptors are pumped out periodically after being tested for hazardous waste contents.

Do not wash parts or do paint stripping with any hazardous products such as Methylene Chloride or Methyl Ethyl Ketone (MEK) in the wash racks or maintenance bays.

Limited touch-up painting or refinishing may be done in a maintenance bay utilizing aerosol spray cans. **The use of an air compressor for painting is prohibited. The use of a maintenance bay for painting or stripping by a commercial operator is prohibited. Paint stripping is strictly prohibited without prior approval of the Airport Manager.** Approval may be granted for painting small parts within specific guidelines developed with the Airport Manager and the Environmental Programs Coordinator.

ENVIRONMENTAL/WASTE SITES

Combustible or flammable liquids, including pre-flight fuel samples, antifreeze and petroleum waste products may not be discharged or released into storm drains, wastewater (sanitary) systems or onto the ground or apron.

The Airport provides two separate types of collection drums. One container is designated for the disposal of waste aircraft engine oil only. The second container is designated for all other aviation liquid waste such as cleaning solvents, degreasers, paints, thinners and other hazardous liquids. Solvents or other hazardous liquids disposed of in the "waste oil only" drum preclude the ability to recycle waste oil. A small amount of a hazardous substance disposed of in the "waste oil only" drum will contaminate that container, resulting in the entire drum having to be shipped and disposed of as a hazardous substance.

Waste disposal drums are available for non-commercial general aviation tenants. Commercial operators are prohibited from using the containers for disposal of their generated wastes.

Soaps, chemicals, fuels, trash, etc., will be stored in such a manner that rainfall will not wash residues to the storm drain system. Discharges to storm drain systems or onto the ground or apron may require the responsible party to remediate the discharge to State and/or Federal clean-up standards. All spills or releases should be reported immediately to the Airport Manager at the Airport or to Operations.

Trash dumpsters have been placed at various locations on the Airport for the tenants' use. Used tires, batteries and hazardous liquids may not be placed in trash receptacles for disposal since these items cannot be placed in landfills. Containment areas have been provided for the disposal of used aircraft tires and batteries at the waste sites. Please contact the Airport Manager if you have any questions regarding the disposal of any item.

T-HANGARS/STORAGE/VEHICLE PARKING

The aircraft and storage space permitted must be compatible in size to allow the hangar door(s) to be fully closed. If the hangar door(s) cannot be fully closed, then that aircraft cannot continue to be stored in the hangar.

In addition to the aircraft identified on an Aviation Department Aircraft Storage Permit, only items related to aviation may be stored in T-Hangars. **Motor homes, boats, clothing, files and furniture (except as outlined below) may not be stored in a T-Hangar.**

A maximum of two passenger vehicles may be parked in a T-Hangar for a short term, while the aircraft is in use. On a case-by-case basis, and at the discretion of the Airport Manager, motorized carts or bicycles may be stored for use as transportation on the Airport. Motor homes, boats, recreational vehicles and trailers (other than aircraft transport trailers) will not be permitted to park long term in any Airport parking lots. Vehicles found in violation of City Ordinance, including unregistered or inoperable vehicles are subject to tow at the owner's expense.

Furniture may be used in a T-Hangar as long as it is limited to:

- Two tables or workbenches, one sofa and four utility chairs.

The use of prefabricated metal shelves, workbenches and cabinets made of fire resistant materials is encouraged.

There is no restriction on adequate shelving and cabinets to store aircraft related equipment, tools and supplies. There is a stipulation, however, that **a clear, thirty-six inch aisle width be maintained from the most remote section of the T-Hangar to the exit.**

Tenants may be requested to remove or have cleaned any furniture or work surface that appears to be impregnated or soaked with combustible or flammable liquids.

Oily rags and other oily waste material may only be stored in properly marked metal containers with tight fitting lids.

Where no separate personnel exit is provided, the sliding hangar doors shall remain open at least thirty-six inches while the T-Hangar is occupied.

T-Hangars have a v-shaped opening at the top of their interior partitions. If a fire should occur in a hangar, the Fire Department may use this v-shaped opening to run a stream of water to or from an adjoining hangar. Shelving or items on shelves shall not extend above the top of interior partitions.

Three spare aircraft tires and two spare aircraft batteries may be stored in a T-Hangar. **Batteries may only be charged while a tenant is in attendance. Aircraft batteries shall not be connected to a charger when installed in an aircraft located inside or partially inside a T-Hangar.**

WARNING: Sulfuric acid (battery acid) is not flammable but highly reactive, capable of igniting combustible materials on contact and reacts violently with water. It also attacks many metals, releasing hydrogen gas, which is highly flammable. Hydrogen gas can also cause asphyxiation by displacement of air in a confined space. Do not store sulfuric acid near nitrogen gas or other combustible materials.

Additionally, flammable gases and vapors will form explosive mixtures with chlorine. Chlorine reacts explosively and forms explosive compounds with many common chemicals, especially turpentine, fuel, hydrogen gas and finely divided metals. Liquid chlorine should not be used for cleaning purposes in a T-Hangar.

Labels are the most common source of available information and can be found on all original chemical containers. Labels should include the identity of the chemical, name and address of the manufacturing company and physical and health hazards. The label might also include storage and handling instructions and suggested safety precautions.

Material Safety Data Sheets (MSDS) provide important information on a chemical. The sheet lists information such as composition, hazards, first aid, fire fighting measures, handling and storage, stability and reactivity. The product manufacturer must provide an MSDS upon request. The local supplier may also be able to provide a copy of the MSDS sheet.

Flash Point (FP) applies to combustible and flammable liquids. The flash point of a liquid is the **minimum** temperature at which it gives off enough vapors to ignite when an ignition source is available. Flash points can be found on an MSDS.

OSHA and NFPA definitions for classifying combustible and flammable chemicals vary significantly. In order to simplify the definitions, the Aviation and Fire Departments have developed storage amounts based upon a flash point of 100° F.

Combustible and flammable liquids must be in their original labeled containers and may not be stored in a T-Hangar in amounts that exceed the following:

- A total of **six (6) gallons of flammable liquids with a FP below 100° F**. Products labeled as "spontaneously combustible" will be counted toward the six (6) gallon flammable limit.
Examples: Acetone, MEK, most aerosol sprays, black wing walk, and gasket adhesive.
- A total of **sixty (60) gallons of combustible liquids with a fp at or above 100° F**.
Examples: Hydraulic fluid, oil (lubricating, motor and turbine), mineral spirits, torque seal.

When sprayed or mixed, liquids can assume the characteristics of lower flash point (fp) liquids. Flash points are determined in laboratories under controlled conditions. This means the fp could change in a T-Hangar environment due to the surrounding heat, dryness, container size and other fumes existing in the hangar.

WARNING: Although the chemical contents of an aerosol spray may have an FP above 100° F, manufacturers commonly incorporate propane or isobutyl as a propellant, which is extremely flammable under pressure. Therefore, any container utilizing a propellant of this type will be counted toward the six-gallon flammable limit.

Oxygen, nitrogen or any compressed gas in a cylinder or portable tank **must be secured** to a fixed location or secured to a portable cart designed for the cylinder(s) or tank(s). Compressed gas cylinders or tanks must have pressure relief devices installed and maintained. Cylinders or tanks not in use shall have a transportation safety cap installed.

Removing interior panels or partitions or drilling in the T-Hangar floor in order to install any bench, winch or other piece of equipment is strictly prohibited without the prior approval of the Airport Manager.

MAINTENANCE

No maintenance (except as specified in the Aviation Department Aircraft Storage Permit) or hazardous activities are to be conducted inside a T-Hangar. **Operations that include any of the following are prohibited in a T-Hangar: fuel service or handling, use of flammable liquids, painting, paint stripping, doping, cutting, grinding or welding.**

TOOLS

Non-spark producing tools may be utilized in T-Hangars. Electrical equipment such as sanders and buffers are permitted for use in a T-Hangar provided they are operated at least eighteen inches above the hangar floor.

Spark producing tools and devices are not to be operated in a T-Hangar. Aircraft maintenance bays are available for aircraft maintenance activities that may involve grinding, electric sawing or drilling.

The final determination regarding the safety of any operation such as cutting, grinding or drilling may depend on the material being used rather than the tool. Aluminum typically will not spark, whereas steel or iron is likely to spark. The Airport Manager will have discretion in this area.

IGNITION SOURCES

Smoking is not permitted in any T-Hangar or maintenance bay. "NO SMOKING" signs must remain visible and not blocked or obliterated.

Sources of ignition, such as cooking appliances, heating elements or any device that could produce a flame or spark, may not to be operated in a T-Hangar.

FIRE EXTINGUISHER

T-Hangar tenants are responsible for acquiring a fire extinguisher with a U/L rating of at least 2A/20BC. The 2A/20BC rating on the extinguisher indicates the contents can be used for extinguishing Class A, B, or C fires. The Class A rating is for paper and other solids, Class B for liquids and Class C for extinguishing electrical fires. The fire extinguisher shall be mounted in a conspicuous location along an exit path or adjacent to the exit door. **The top of the extinguisher may not be more than five feet above floor level. Fire extinguishers must be professionally serviced or replaced annually.**

T-HANGAR ELECTRICAL SYSTEM AND MODIFICATIONS

Aircraft T-Hangars are designed and classified for storage or limited servicing of aircraft. Some tenants; however, desire additional amenities such as radios, portable fans, coffee makers, refrigerators and power tools.

The electrical system serving the T-Hangar was not designed for the additional electrical loads that some of these appliances require. In addition, an electrical circuit may service multiple aircraft storage spaces. Should one or more individuals overload a circuit, this may cause a circuit breaker to trip, which will cut off electrical service to the hangar(s). If tenants experience any difficulty, they should contact Operations for assistance. **A tenant shall not attempt to reset a tripped circuit breaker.**

Certain electrical appliances or tools are not suitable for use in some areas of the T-Hangar. In order to provide a reasonable degree of safety for persons and property from electrical hazards, please consider the following:

- Certain areas of aircraft T-Hangars are classified as hazardous locations. Hazardous locations are areas where the possibility exists for flammable or ignitable concentrations of volatile vapors or liquids. Some of the contributing factors to the creation of hazardous locations are aircraft fuel and other fluids used in an aircraft and during routine maintenance.
- The entire floor space of the T-Hangar up to a level of eighteen inches above the floor is designated a hazardous location.
- Areas within five feet both horizontally and vertically above aircraft power plants, fuel tanks, the upper surface of the wings and extending down to the floor level are hazardous locations.
- Electrically operated appliances, tools, portable lighting equipment and other electrically operated equipment are not permitted to be used or installed in any of these hazardous locations unless specifically approved for such use. Electrical equipment approved for use in these areas must be labeled or marked by the manufacturer with "SUITABLE FOR USE IN A CLASS 1, DIVISION 11 LOCATION."
- Electrical extension cords, for use with portable equipment only, must be Underwriters Laboratory (U/L) or Factory Mutual (FM) approved. All extension cords shall be of the heavy-duty type, three wire (two current carrying conductors and a grounding conductor) and must be disconnected when the tenant is not in the T-Hangar.
- **Outlet connectors or extension cords designated for indoor or household use may not be used.** Power strips may be used as long as they are of the heavy-duty type and disconnected when the tenant is not in the T-Hangar.
- **Refrigerators may remain plugged in so long as they are elevated eighteen inches above the hangar floor and are not connected to any electrical outlet with an extension cord.** Tenants are encouraged to use small capacity energy efficient refrigerators.

- Appliances that are not functional, such as refrigerators or evaporative coolers, may not be stored in a T-Hangar.

Before doing any electrical additions or changes to the aircraft T-Hangar, a tenant must receive prior written approval from the City of Phoenix Aviation Department. Upon approval, **only a State of Arizona licensed electrical contractor may do the work.** The contractor will be responsible for securing a building permit, requesting inspections from the City of Phoenix Development Services Department and coordinating access to the airfield with Aviation Department staff. Under most circumstances, an over-the-counter permit may be obtained with a minimal fee paid at the time the permit is issued. The contractor will be required to provide a drawing of the proposed work and a copy of the Aviation Department approval letter to receive a permit. **Receipt of an approval letter from the Aviation Department does not relieve tenants of their responsibility to obtain a building permit and coordinate the necessary inspection(s).** After final inspection, the tenant shall submit the "green tag" to the Airport Manager.

NOTE: Procedures for Phoenix Goodyear Airport may vary. Please check with the Airport Manager.

AIRCRAFT FUELING

Aviation fuel may not be dispensed into or removed from the fuel system of an aircraft within a T-Hangar. For any fueling or defueling operation, the aircraft must be a minimum of twenty-five feet outside of the T-Hangar. Twenty-five feet will be measured from the front of the hangar to the aircraft fuel filler cap.

Disposal of pre-flight fuel samples on the apron or ground is prohibited. This practice has been deemed unlawful by the Arizona Department of Environmental Quality.

Several options for the proper disposal of fuel samples are available to tenants.

- Waste disposal sites have been provided around the Airport for the proper disposition of pre-flight fuel samples.
- The use of fire rated containers in T-Hangars (up to the six-gallon maximum for flammables) for temporary storage prior to disposal.
- The use of gasoline separator jars or a similar product. **Note:** The City of Phoenix Aviation Department makes no representation, expressed or implied, regarding the use, safety or availability of these products.

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