



 Insurance



Environmental risks and liabilities facing airport fixed base operators

An AXA XL environmental whitepaper





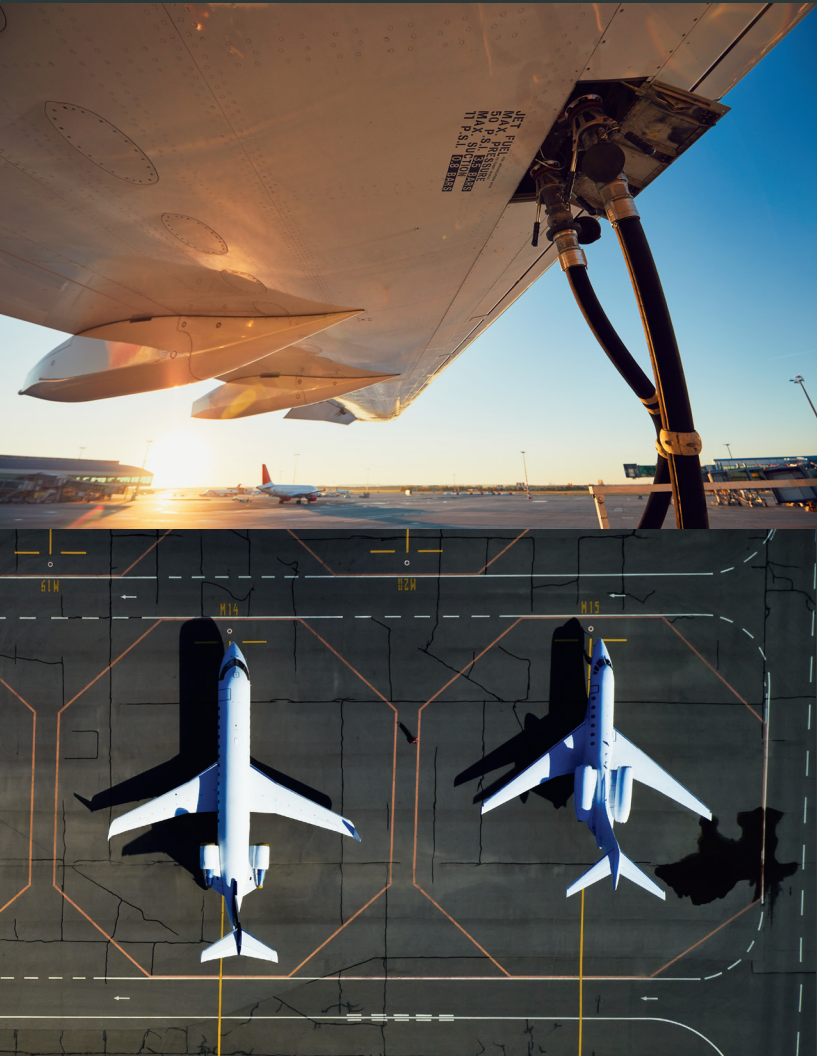
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A Fixed Base Operator (FBO) is an individual or firm operating at an airport that provides general aircraft services such as maintenance or other flight-related support.

FBOs are defined by the US Department of Transportation Federal Aviation Administration (FAA) as “...a commercial business granted the right by an airport sponsor to operate on an airport and provide aeronautical services such as fueling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance, flight instruction, etc.”

Some FBO services have environmental exposures that can result in costly pollution liability claims for bodily injury, property damage, remediation expense, and associated legal defense expense. It is imperative that airport sponsors and FBOs establish sound risk management programs that proactively address environmental and safety risks. This paper provides an overview of the FBO industry and focuses on related environmental exposures and best management practices.



Airport sponsors and authorities

In the United States, an airport sponsor can be either a public agency or a private owner of a public use-airport that obtains funding from the FAA and must comply with FAA regulations.

They are the entity that is legally, financially, and otherwise responsible for assuming all the obligations required to obtain and maintain federal assistance and grants. FBOs are typically solicited by airport sponsors via a request-for-proposal (RFP) and contract bidding process.

Similarly in Canada, the Civil Aviation Directorate, also known as Transport Canada Civil Aviation (TCAA,) is the entity responsible for the safety of national air transportation systems, including ground based operations of airport authorities and FBOs. A distinct difference with the United States is that Transport Canada typically owns most large airports and leases them to airport authorities. TCAA regulatory oversight includes governance of Approved Maintenance Organizations and other support services. It is estimated that across Canada,

there are over 70 FBOs providing support services at both large and small airports. These private companies provide services that are generally acknowledged to alleviate stress on airport authorities and airport infrastructure.

Airport sponsors and FBOs must navigate a complex set of regulations that are designed to ensure the safety, efficiency and equitable management of airport operations and aircraft. The FAA has prepared an Airport Compliance Manual for agency personnel that serves as a guidance handbook for providing oversight of airport sponsor obligations and FBO operations. In part, this helps ensure equitable FBO contracts, sponsor management, and access to FBO services by airport customers



FBO operations

FBOs provide general aviation services to aircraft maintenance, parts & repair, and operations businesses, charter-management companies, and corporate flight departments.

Generally, FBOs support the aircraft owners, operators, and customers and have buildings and other assets on a larger airport property. FBO's typically operate on property leased from the airport sponsor/owner or may sublease space from another commercial operator. FBOs may also operate from a leased or owned parcel adjacent to the airport property; however, this "through-the-fence" access is generally limited by the airport sponsor to avoid competition with similar on-airport FBO services.

In the United States, the National Air Transportation Association (NATA) represents the FBO industry and has approximately 2,300 member companies, which range in size from large international firms to smaller, single-location independent operators. Most FBOs doing business at airports of high-to-moderate traffic volume are non-governmental organizations (i.e., either privately- or publically-held companies). Worldwide, larger chain FBOs may operate at more than 60 airport locations, while smaller independent companies may operate at 10 or less.

The most recent NATA data estimates that in the United States alone, there are approximately 5,800 public use airports and 3,800 FBOs. These airports have unique operating characteristics that result in diverse FBO service needs. Fuel management and refueling services, however, generally tend to dictate the number of FBOs needed at a site. Fuel sales also tend to be the biggest factor in FBO profitability in the United States, whereas, internationally revenues are derived primarily from a variety of "handling charges."

Approximately 80% of the larger airports (>3,000 feet paved runway) in the United States have just one or two FBOs. The number of FBOs at a site is typically limited by the airport sponsor in an effort to drive more competitive service pricing. Conversely, smaller airports may not have enough traffic to support more than one FBO.

Many factors weigh into airport sponsor's decisions on how to use FBOs at their location. To assist airport operators in selecting an appropriate FBO operating model, the National Academies of Sciences, Engineering, and Medicine's Transportation Research Board recently issued guidance via the Airport Cooperative Research Program. ACRP provides industry-driven research and is sponsored by the FAA. Their 2018 publication explores the tools airports use to decide how FBOs will be used to provide fueling, flight continuation services, maintenance, and concierge services. They note that decisions about which options work best for an airport depend on the unique local economic conditions, details of the area's general aviation market, and the level of interest private FBOs have about operating at a particular location.

FAA regulations prevent airport sponsors from issuing a single, exclusive management contract to one entity simply for convenience purposes. However, exceptions can be granted if more than one FBO would prove to be unreasonably costly or impractical and result in reducing space available for lease under an existing FBO agreement. The FAA regulates airport sponsors to ensure equitable rental/lease rates are applied to FBO contracts. Airports may engage a third party contract manager or self-operate FBO programs.

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FBO services

FBO’s can be full service companies or may only offer specialized aeronautical services such as ramp services, aircraft parking/storage, aircraft sales, ground schools, flight training, aircraft maintenance or avionics and electronic systems installation/repair.

The FAA refers to specialized FBOs that operate as “single-service providers” as Specialized Aviation Service Operations (SASOs). These special FBOs may also be a hybrid operation that provides multi- or full-service support for certain specialized classes of aircraft such as high performance jets, piston powered aircraft, commercial aircraft, or private aircraft and flying clubs.

Specialized FBO services for flight crews and passengers include in-flight catering/food preparation, food services/restaurants, lounges, restrooms, showers, aviation supplies, and personal products. FBOs may also provide aviation professional services or offer ground transportation services. FBO tenants can also provide on- and off-airport clients with specialty services such as aerial photography, surveying or geophysical services, air ambulance, crop dusting, aerial advertising, or sightseeing.



Regulatory compliance

While the FAA does not specifically regulate FBOs, certain activities directly supporting aircraft operations need to comply with FAA standards.

This includes aircraft maintenance, fueling, de-icing, storage/parking, flight training, and other commercial carrier services. Airport sponsors are obligated to ensure FBOs, as contracted tenants and service providers, comply with FAA regulations.

Airports and FBOs are also subject to a variety of federal, state/provincial, and local environmental regulations. FBOs and the larger airport operator must also comply with air emission, wastewater, stormwater, tank management, and waste management regulations and permit requirements. Premises exposures and regulatory compliance, particularly at older airport facilities, may also include asbestos containing materials, lead base paint, and indoor air quality or mold.

FBOs providing or supporting specialty service areas may have additional and unique compliance requirements. For example, FBOs providing services to aerial application contactors (crop dusters) must comply with permitting and certifications needed for handling of pesticides/herbicides.

Pre-existing pollution conditions

Airports are strategically located near population centers and appropriate locations for new facilities can be difficult to site. Thus, most airport locations are well-established with long operating histories subject to numerous expansions or reconfigurations. Sites may have a history involving military, commercial, or private aircraft use and maintenance. These activities have typically involved hazardous material use (solvents/ oil), on-site waste management/disposal, tank/piping releases, refueling spills or other hazardous material spills. Airport property expansion may have also resulted in areas with historic/urban fill of questionable content. Some airports with historic military or private security training operations may also have areas with shooting/target ranges that could result in lead-contaminated soils or concerns regarding unexploded ordinance.

FBOs must perform appropriate environmental due diligence before leasing (or purchasing) on-airport or off-airport property to ensure their future operations are not held accountable for historic site impacts. Due diligence typically includes a Phase I Environmental Site Assessment completed in accordance with industry standards (i.e., ASTM 1527-21) to identify recognized environmental conditions. Furthermore, FBOs should carefully review lease and environmental indemnity language to understand due diligence obligations prior to occupying a space or terminating a lease. Legal language may also require compliance with environmental regulations/permits and coordination with the larger airport compliance efforts. FBOs may also be subject to on-going environmental, health and safety audits/inspections by the airport sponsor (or regulatory agencies).

Contractor pollution liability

Many airport authorities have master FBO facility and/or ground lease agreements, which require FBOs to invest in specific ground support equipment and commit to providing a minimum level of required services. Depending on the services an FBO is providing, airport operating agreements may also impose a variety of general liability and pollution liability risks on their operations. Insurance requirements may be mandated in these lease or operating agreements along with claim resolution protocols.

FBOs must remain aware of the liabilities imposed by operating contracts and lease agreements, particularly for those services that insurance carriers may not intend to cover. For example, an FBO may be responsible for aircraft fueling or defueling, but the airport sponsor may also make them contractually responsible for underground tank and fuel hydrant system integrity and management. These are higher risk exposures that are not typically covered by insurance programs without extensive engineering and underwriting review.

Similarly, FBOs may be expected to contractually assume generator liability for airport sponsor or airport customer hazardous waste management and disposal. Typically, insurance carriers will need to understand the controls implemented by the FBO for hazardous waste storage and off-site disposal facility selection/auditing prior to granting blanket Non-owned Disposal Sites (NODS) coverage.

FBOs must have appropriate risk management programs to address a variety of operational and environmental risks. While some of these exposures can be covered under contractor pollution liability policies, some are more appropriate to be covered under premises pollution liability policies. AXA XL has the ability to provide coverage for both, subject to appropriate underwriting and contract review. Specialized coverage for issues such as FBO contracts with airport authorities or environmental fines and penalties can be provided on a case-by-case basis with submission and review of required documentation.

FBO operational risks



Maintenance Aircraft maintenance, machine shops, repair and cleaning, building/hangar maintenance and general airport ground maintenance operations may utilize cleaners, solvents, oils, greases, adhesives, sealers, treatment additives, paints, and coatings that contain a variety of hazardous and nonhazardous materials. Storage may include small aboveground tanks, totes, 55-gallon drums, five gallon containers, and smaller consumer size containers. Proper storage and use protocols are essential in preventing environmental impacts or security concerns from maintenance materials. Historically, chlorinated solvent use (i.e., trichloroethylene – TCE, etc.) for parts degreasing has resulted in the most widespread impacts to soil and groundwater at airport properties.



Storage tanks Smaller airport operations may rely on underground storage tanks, while larger airports may need to maintain numerous large aboveground tanks in a tank farm with secondary spill containment. Both underground and aboveground fuel tank systems must be equipped with appropriate leak detection systems, overfill prevention/alarms, cathodic protection and/or be subject to periodic integrity testing. Refueling may be conducted via on-airport tanker trucks, or as airports increase in size, fuel may be dispensed via underground pipelines known as a hydrant system. Periodic integrity testing of tanks, hydrant systems, and other underground fuel piping is an essential risk management practice.



Wastewater FBOs generate sanitary wastewaters from aircraft maintenance/cleaning, hangar floor cleaning, crew/passenger restrooms, and food preparation areas. FBOs may also collect aircraft lavatory wastes via pumping into waste carts/trucks. This is typically replaced with a “Blue Juice” mixture of water and disinfecting/deodorizing concentrate powder. There is a risk of accidents and spills from vacuum hoses and lavatory collection vehicles. Larger airports may have on-site wastewater treatment plants or be connected to the city sewer, thereby eliminating the need for FBOs to have a separate discharge permit.



Solid/hazardous waste management FBOs generate waste ranging from municipal trash, to waste oils and hydraulic fluids, to hazardous spent solvents. Waste disposal vendor selection and due diligence on ultimate disposal locations is essential for minimizing long term generator liability. Sound waste management practices (container labeling, segregation, secondary containment, etc.) can also help demonstrate standard of care in the event a historic environmental impact is identified at the larger airport property and the FBO’s contribution to the problem is investigated.



Re-fueling FBOs involved in fuel management and refueling operations may have numerous environmental exposures. Depending on the size of the airport and variety of aircraft serviced, different types of gasoline aviation fuel (avgas) and jet fuel may be managed. Generally, an airport sponsor will have one or more FBOs focused on re-fueling operations; however, airports may also allow commercial self-service fueling by pilots/crew at pumps installed by an FBO (or the airport sponsor). These self-service fueling facilities may or may not be attended. Fuel management operations can result in environmental impacts from gradual leaks from tanks and piping, catastrophic spills from overfilling of tanks or aircraft, vehicle accidents, or damage/failure of tanks, piping, or hoses. Proper bonding and grounding protocols must also be employed when dispensing fuel to prevent fires/explosions. Appropriate fire prevention, electrical/hot work/ignition source, spill response, emergency planning and training programs are imperative when managing fuels. Strong and reliable communication systems to support these operations are also essential, particularly at busy airports.



Fire suppression/fire fighting FBOs may be engaged in maintaining fire suppression systems or providing emergency response services including firefighting. Contaminated firefighting water has the potential to impact soils and nearby water bodies if not properly managed. Fuel storage areas, refueling area, and aircraft emergency responses may employ the use of aqueous film forming foams (AFFF) to prevent or respond to flammable liquid fires. Most of these foams have historically contained per- and polyfluoroalkyl substances (PFAS), which have contaminated soil and groundwater supplies as numerous commercial airports and military bases. Even if there are limited emergency applications, impacts can still result from these “forever chemicals” during on-going training exercises or equipment testing. PFAS continue to be found at airport properties and threaten drinking water/groundwater resources. PFCs are an emerging class of contaminants that are coming under increased regulatory scrutiny.



De-Icing The use of glycol compounds for deicing aircraft is also a stormwater contamination concern, as well as salt compounds used for roadway/runway de-icing. Most large airports have designated deicing areas and systems for collection and recycling of glycol compound runoff. This can be a primary service for certain FBOs in northern climates, which requires compliance with stormwater discharge permits.



Stormwater FBOs have the potential to contaminate stormwater from outdoor storage areas, maintenance operations, fuel tank farm containment areas, and refueling areas. Hangars may be equipped with trench drains for collection of stormwater or hazardous material spills. FBOs are often covered under and must comply with the larger airport’s stormwater pollution prevention plan.



Claim scenarios

The following scenarios are taken from actual claims submitted to, and actively managed by AXA XL's claims team.

Airport fuel hydrant leaks

An airport and their FBO used a hydrant system (underground fuel delivery pipeline) for many years. During maintenance of the system, it was discovered that a valve leaked in the fuel hydrant system. Over a long-period of time, jet fuel leaked from this valve at a rate that went undetected by the leak detection system. Over time, significant contamination of the aquifer underlying the airport occurred, resulting in a remediation order from the local/county environmental authority.

Although the airport had initially installed and operated the hydrant system, the current FBO's contract made it responsible for preventing and responding to spills/releases and overall environmental compliance. AXA XL's claims counsel and consultants worked with the FBO and airport to reach a settlement and develop a remediation work plan. A risk assessment was performed to ensure that there was no harm to airport users or employees from volatile organic compounds (VOCs) in groundwater. A long-term remediation project involving monitored natural attenuation for 20 years was implemented. Costs are expected to exceed \$400,000, but are still significantly less expensive than an active groundwater treatment system.

Use of de-icing fluids impacts wetland

An airport in the northern United States routinely used propylene glycol for de-icing activities, which were performed by several FBOs at multiple locations. Long term use of the de-icing agent resulted in offsite discharges including impacts to an adjacent wetland. Further, the local regulatory authority reduced the stormwater discharge limits for parameters such as the biological oxygen demand (BOD), which resulted in routine exceedances. The airport considered a centralized de-icing area, but due to the physical constraints of the airport, this was deemed impractical and expensive. Faced with significant fines and a potential consent order, the airport was forced to take action so flight operations were not impacted.

AXA XL's environmental claims counsel and a technical consultant worked with the FBOs and airport to prepare a plan for smaller de-icing areas with an improved collection system. Discharges were routed to a central engineered wetland to provide passive treatment of the propylene glycol and meet storm water permit requirements. Construction of the engineered wetland and storm water conveyance systems cost under \$2 million and saved the airport from over \$13 million in non-compliance costs and fines. This was accomplished with limited disruption to airport operations and no impact to flight schedules. The FBOs incurred some legal defense expense and a portion of the construction expense.

Storage and repair of older, radium-containing aircraft instruments

Based on recent US EPA guidance, an airport determined that one of its FBO tenants, an avionics repair firm, had a large amount of potentially radioactive aircraft instruments stored in their warehouse for many years. The luminescent paint used in these aircraft instruments (new and used) contained radium, which continued to emit measurable radiation and pose potential health hazards. These instruments were mixed together with thousands of other aircraft parts in the warehouse. The state regulatory agency inspected the site, and a primary concern cited was the potential for a catastrophic fire to result in ingestion/inhalation of radium smoke/soot and generation of contaminated fire-fighting water.

The tenant could not afford to sort and dispose of the radium-contaminated instruments and filed for bankruptcy. The state regulatory agency notified the airport of impending enforcement action and the airport decided it was necessary to dispose of the instruments as low level radioactive waste. An AXA XL technical consultant worked with the airport to determine the level of risk and appropriate disposal requirements. A third-party consultant was hired to assist with proper hazard identification and disposal of the radium instruments. All costs and expenses associated with the consulting services and instrument disposal fell within the airport's self-insured policy retention of \$500,000.

Long-term use of airport tank farm leads to soil and groundwater contamination

A small airport serving as a regional transportation/shipping hub was owned by a local municipality and operated by a single FBO. They used a tank farm from the 1940s through 2013, which led to discovery of significant soil and groundwater contamination during replacement of aboveground fuel tanks and underground piping. The release was reported to the state regulatory agency and soil remediation was deemed necessary prior to installation of new fuel tanks. The extent of groundwater contamination was unknown.

AXA XL's claims team retained a consultant to respond to the regulatory agency and prepare a remediation work plan, which allowed the new tank erection to proceed without further delay. Soil excavation and confirmation sampling was completed around old tank and piping areas. The regulatory agency also required additional groundwater monitoring wells to assess the extent of contamination. Because the airport was in a more remote region, this resulted in higher remediation costs due to increased professional time and materials fees. The extent of VOC groundwater contamination was defined and found to be localized. Cost of the remediation was capped to just slightly under \$1 million, but just as importantly, responsive claim handling allowed the airport to continue operations and avoid any business interruption expenses.

AXA XL's claims counsel and consultants worked with the FBO and airport to reach a settlement and develop a remediation work plan.

Risk management

FBOs must clearly understand the extent of assumed contractual environmental liabilities they are responsible for at each of their airport operating locations.

This may include historical, pre-existing pollution liabilities or exposures presented by day to day management of hazardous chemicals and wastes, wastewater, storm water and de-icing fluids. Strong working relationships and communication practices with airport sponsor management and other airport staff is critical.

Risk management controls should include pre-lease agreement due diligence to establish the environmental condition baseline of premises and other assets. Operational risks should be addressed by routine inspections/compliance audits, fire safety protocols, security measures, and emergency response plans that include appropriate spill response equipment. Training of key FBO staff on environmental responsibilities, best management practices, and emergency response is also essential.

As a component of a sound risk management program, AXA XL can provide pollution insurance policies to assist FBOs and airport authorities. AXA XL offers a Pollution and Remediation Legal Liability policy that can provide coverage for fixed real estate assets, airport locations with historical environmental risks, and operational activities that have potential third-party bodily injury and property damage risk.

FBOs can also obtain Contractor’s Pollution Liability coverage (or a stand-alone policy) to cover specific airport contracting activities. Pollution policies can be structured to provide first and third- party remediation coverage for unknown pollutants, exacerbation of known contamination, and a variety of third-party claims and related legal defense expense. AXA XL has a variety of policy enhancements available to address exposures associated with specialty FBO services.

FBOs must use an effective combination of contract management, environmental and safety compliance, risk management practices, and insurance programs to avoid impacts to their profitability and ensure long-term success.

Operational risks should be addressed by routine inspections/compliance audits, fire safety protocols, security measures, and emergency response plans that include appropriate spill response equipment.

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