

BAe-146 Next Generation Airtanker
Frequently Asked Questions

Q. Why do you have to download on retardant at some airtanker bases?

“Density Altitudes” affect all aircraft. During the fire season, it is not unusual to see high density conditions that adversely affect aircraft performance at all high elevation airports. This resulting air density reduces a wing’s lift and reduces power output of the aircraft engines.

Altitude is the main driver of this correction and takes very little increase in altitude to start affecting aircraft performance. To put it more simply, this means that “high and hot” affects an aircraft’s performance at all high elevation airports. This resulting air density reduces a wing’s lift and reduces power output of the aircraft engines.

Next Generation Aircraft have performance charts that go into exacting detail as to the predicted performance of an aircraft on takeoff based on temperature, wind, runway length, and slope.

This results in a possible reduction of the amount of retardant an aircraft can carry based on conditions.

Q. Why do you overfly some airtanker bases?

Next Generation Aircraft will have the capability of traveling at 450 plus MPH. This speed advantage will make it possible for an aircraft to fly to another airtanker base that has longer runways and faster fueling services. This will result in delivering the largest load of retardant and, many times, quicker turnaround times for the firefighters on the ground.

We need to view this more as gallons delivered to the ground. Because of the speed of these jet airtankers, distances between airtanker bases and the fire mean very little. The airtanker bases at large airports have longer runways, meaning the airtanker can haul more retardant. Example: T-40 can haul 2850 gallons of retardant from Mesa-Gateway Airtanker Base even though it is very hot there. The field elevation is very low and has a long runways(12,000 feet). T-40 flying from Silver City Airtanker Base can only haul 1900 gallons because the field elevation is close to 6,000 feet and 90 degrees with a 7,000-foot runway. The difference in time delivered may only be 5 minutes.

This information is discussed with either the Lead Plane, Air Attack or Incident Commander before this decision is made. The Pilot in Command will divert based on unsafe conditions of any airtanker base which may include but not be limited to weather.

Air Attack or Lead/ASM should pass this information to the dispatch office. In the event the closest airtanker base is being overflown, the dispatch office shall notify SWCC.

Q. What is meant by MEL?

Minimum Equipment List - Is an FAA approved document that allows an aircraft to fly with certain items(s) inoperative. All of the Next Generation Aircraft will have an approved MEL that outlines how certain items may be deferred until an item may be replaced or repaired.

Q. What is a Ground Power Unit (GPU)? Is it part of the MEL for this aircraft?

Jet airtankers do not have a battery large enough to start the main engines. They have a smaller engine called an APU that is started by battery. This auxiliary engine (APU) in turn starts the main engines. (Even the P3 had this.) Sometimes the onboard APU breaks down and a GPU has to be used, but only certain airports have this capability.

The GPU/ground support equipment is equipment that supports Next Generation Aircraft. This unit either provides ground power in the form of electricity or air to support aircraft systems such as starting engines.

Next Generation Aircraft have APUs (Auxiliary/Aircraft Power Units) which supplement aircraft systems in flight.

The second part of the question asks if the GPU is part of the MEL for the aircraft. The answer is that it is a solution to defer or MEL the APU in the case of the BAe 146. We can then continue with the firefighting mission with the support of Ground Power Unit.

Q. Why does it take longer to get off the ground (15 minutes per legacy contract)?

There are more systems with multi-engine jet aircraft, therefore creating longer checklists. This is very apparent on the first mission of the day. Succeeding missions usually take less time.

Responding to a fire initiates a long list of actions the Pilot in Command must take to comply with FAA Federal Aviation Regulations.

FAR 91.03 requires each pilot in command, before beginning a flight, to become familiar with all available information concerning that flight. For a flight not in the vicinity of an airport (Airtanker Base), weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed.

The FAA has defined 20 miles as the limit for flight in the vicinity of an airport (Airtanker Base).

The PIC must consider airport elevation, runway slope, aircraft gross weight, wind and temperature.

Every flight the BAe146 completed this past summer represented a NEW arrival at that particular airport. This required the PIC to consider all of the above conditions. In MOST cases the 15 minute requirement was met. In cases where it was NOT able to be met, dispatches were beyond the local area which required flight planning and unexpected flight delays at Towered Airports.

The pilots are still learning the nuances of this aircraft and because it is so much faster, there is less time spent in the air going to a fire. In the past, this time was spent gather intelligence about the fire area and reload base, and now this time is not available, so it has to be done on the ground. This includes checking weather at the departure end, fire area, and reload base, and checking airport capabilities.

Q. How much lead time should the ASM/Lead have before launching the BAe-146?

Flight Crews on Next Generation Aircraft will be qualified to complete Initial Attack assignments. However, it is advantageous to have Lead/ASM platforms, if available, to assist in assessing drops and mitigating risk. Leads may be mandatory at the request of Airtanker PICs to evaluate visibility, escape routes and difficult drops. Differential airspeeds are a consideration of the different Aircraft.

Launch the ASM/Lead, or at least give them a "head-up" so pre-flight duties can save time at an airtanker base.

Q. Whose responsibility is it to return an airtanker to contract availability?

Two events occur when an Aircraft is fixed after a maintenance discrepancy. The operators of the Next Generation Aircraft will have a Return-to-Service Procedure that will involve many facets, which include but are not limited to, necessary paperwork and quality assurance inspections being completed. Once the operator returns the aircraft to airworthy status, the next step is to have the aircraft returned to "Contract Availability."

Mr. Gil Elmy of Region 4 has been designated as the primary Agency Maintenance Officer that needs to be contacted for an aircraft to be returned to "Contract Availability."

Q. What is the difference between restricted and standard category fixed wing aircraft?

This may be found at CFR 21.175 - The FAA has defined Categories for Aircraft Certification. Depending on where a specific aircraft is certified will determine specific requirements that aircraft will be required to comply with.

This is not to be confused with Limited and Standard category helicopters.

Q. Which category does the BAe-146 fall under?

Standard Airworthiness Transport Category - The aircraft has received FAA approval to maintain this category with Supplemental Type Certificates (STC) for the Tank System.

Standard Transport Category is the highest category. This is the same category as a commercial airliner, which means following the pre-flight rules and regulations.

Q. What category does the P2V fall under?

Special Airworthiness Restricted Category – This category has many limitations and was the common Category for Firefighting Aircraft.

Q. Are there different pre-flight procedures for the BAe-146 as compared to the P2V?

All aircraft require preflight action. The length and differences will pertain to aircraft type. The BAe146, in addition to the standard exterior walk around inspection, has an extensive flight deck safety check and cockpit check that prepares the aircraft for the first flight of the day.

There are differences, but the overall response time should not be affected when comparing the BAe146 to the P2V. The P2V gets out of the pit faster due to the fact they carry less retardant, but has to warm up the round motors and light the jets. This is normally done in the run-up area away from the pits.

Q. Do maintenance issues require you to be at or near larger FBO's?

A general answer to this question is no. Most Next Generation Aircraft will have one engine out capability if flights are necessary to a maintenance base. Some FBOs (Fixed Base Operators) are better at providing aircraft support (Airline Level) than smaller airports and may be needed to comply with MEL limitations.

Q. Can this airtanker fly in adverse weather conditions?

Next Generation Aircraft are better adapted to fly in adverse weather. However, common summer convective activity that develops into significant thunderstorm activity will limit flights. We must all remember the Pilot in Command has the final decision making authority when decisions regarding weather are made.

Q. What do VFR and IFR mean?

VFR – Visual Flight Rules - Requires 3 miles of in-flight visibility up to 10,000 feet where visibility requirement goes up to 5 miles in-flight Visibility

IFR – Instrument Flight Rules - Flight Conditions below 3 miles of in-flight visibility (with some variables).

Q. Can you fly IFR while loaded with retardant?

It should always be remembered that Aerial Firefighting is a VISUAL mission.

Next Generation Aircraft will have the capability to fly a load of retardant in IFR conditions. But there are many factors affecting this capability when you have to comply with IFR rules.

Flying through stratus cloud layers in coastal regions and limited weather are possibilities.

In Next Generation Aircraft, it is advantageous to get as high as possible for fuel conservation. All aircraft are limited to 250 knots up to 10,000 feet. VFR flight has a limit of 18,000 feet of altitude. Aircraft will have to file IFR for flight levels above 18,000 feet.

We often see this in aircraft entering or leaving the GACC and going to a fire. They might file IFR.