



The petitioner supports its request with the following information:

The petitioner states under this exemption that the special purpose operations of the Air Tractor model AT-602 would be agricultural or fire-fighting.

The Air Tractor model AT-602 is basically an AT-502A with a longer wingspan, a larger hopper, and an increase in the certificated gross weight. The gross weight of the airplane will be 9,200 pounds; it will be powered by a Pratt & Whitney PT6A-45R turboprop engine, and it will have a stall speed of 72 mph.

The petitioner states that, in order to meet the additional requirements of § 23.562(d), a larger, heavier, and more expensive airframe will be required. The larger airframe would have the following negative effects:

1. The airplane would have a lower stall speed. This would result in a larger wing, and a larger and heavier fuselage and empennage. The cruise speeds and performance would be less; therefore, the aircraft would not be as effective fighting fires and maneuvering in mountainous terrain. A larger engine would be required, which would be more expensive, and would place a larger burden on State and National Forest Protection agencies that may purchase this airplane.
2. Agricultural Operators have been able to stay in business, despite higher inflation costs, by moving to larger turboprop powered aircraft with high applying speeds and cruise speeds to do their job. A speed or performance reduction for the aerial applicator will result in higher application prices, which will result in higher food prices.

The petitioner states that this airplane employs additional compensating crashworthiness design features, which are as follows:

1. The pilot is located aft of the chemical hopper; therefore, there is no large item of mass that threatens to collapse the cockpit should a crash occur.
2. The cockpit is surrounded by a steel tube welded structure that has longerons of 4130N steel tubing 1 3/8x .058 in size. There has never been a case of cockpit collapse in a crash due to the large tubing that has been elected in the cockpit area.
3. The airplane has a spring steel landing gear with tremendous crash energy absorption capabilities. Unlike fixed-stroke landing gears, the spring steel gear will deflect a surprising amount while soaking up crash energy.
4. The seat used in the AT-602 was originally designed for military helicopter use and features a cantilever lower bucket that will yield and deflect as much as 8 inches to absorb forces from vertical impacts. No Air Tractor pilot has ever sustained permanent back injuries from a crash. The seat is part number 10529-1.

The lap belt and shoulder harness are American Flight Safety (AM-Safe) part numbers 443220 (belt) and 500702 (harness).

5. The military lap belt, when installed, is rated as a 5,000-pound restraint system that includes a shoulder harness.
6. The AT-602 incorporates integral fuel tanks located in the inboard strongest part of the wing between the two spars. The tanks are constructed of .063 thick aluminum alloy with close rivet spacing of MS20470AD5 rivets. This type of construction makes the tanks virtually burst-proof. During AT-602 certification testing, the tank was pressure tested to 60 psi.
7. To further lessen the possibility of post impact fires, the fuel hoses are flexible to permit fuselage yielding without failure of the hose. The hoses are routed on the L/H side of the fuselage to the firewall. The electrical cables are routed on the R/H side. This feature lessens the chance of torn electrical cables becoming an ignition source.
8. The AT-602 is powered by a PT6A-45R turboprop, which is much more reliable than a piston engine. This engine shows a shutdown rate of once every 167,000 hours.

Comments on published petition summary:

A summary of this petition was published in the FEDERAL REGISTER for public comment on April 27, 1995 (60 FR 20792). The comment period closed May 17, 1995. No comments were received.

The Federal Aviation Administration's (FAA) analysis is as follows:

To obtain the exemption, the petitioner must show, as required by 14 CFR § 11.25(b)(5), that: (1) granting the request is in the public interest; and (2) the grant of the exemption would not adversely affect safety, or that a level of safety will be provided equal to that provided by the rule from which the exemption is sought.

The FAA has carefully reviewed all of the information contained in the petitioner's request for exemption, current FAA policy related to restricted category certification for agricultural and fire fighting purposes, and the intended operation of this airplane.

The Air Tractor model AT-602 is planned to be type certificated at 9,200 pounds and will meet the restricted category requirements of 14 CFR § 21.25. Section 21.25 requires, in pertinent part, that an airplane may be type certificated in the restricted category for special purposes, such as fire fighting or agricultural operations, if there is no feature or characteristic of the airplane that makes it unsafe when it is operated under the limitations prescribed for its intended use, and if the airplane meets the airworthiness standards for an aircraft category except for those requirements that the Administrator

finds inappropriate for the special purpose for which the airplane is to be used. The FAA has determined that the stalling speed airworthiness requirements are appropriate for agricultural airplanes and similar special purpose airplanes in the restricted category. However, the FAA has also recognized that, for restricted category airplanes, as long as the public is not endangered, it is not necessary to issue an equivalent level of safety to any standard airworthiness requirement that the Administrator determines to be appropriate for the intended special purpose. The intent of this philosophy is to place the minimum possible burden consistent with public safety on the applicant for a type certificate in the restricted category.

The FAA agrees that the proposed exemption would be in the public interest provided operations are limited to those operations in the petition. As noted by the petitioner, these airplanes will be operated for the purpose of fire fighting and agricultural operations. The FAA also agrees that the pilot restraint system and the additional crashworthiness design features provide some compensation for the reduction in the level of safety caused by the increased stall speed.

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Pursuant to the authority contained in 49 U.S.C. §§ 40113 and 44701, formerly §§ 313(a) and 601(c) of the Federal Aviation Act of 1958, as amended, delegated to me by the Administrator (14 CFR 11.53), Air Tractor Incorporated is hereby granted an exemption from 14 CFR § 23.562(d) to the extent necessary to allow certification of the model AT-602 airplane having a stall speed greater than 61 knots. This exemption is subject to the following condition:

The pilot must be provided with a pilot restraint system consisting of an Air Tractor design pilot seat, part number 10529-1, and an American Safety (Flight Systems, Inc.) seat belt, part number 443220, and shoulder harness system, part number 500702.

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