

## Airbag Considerations

*Airbags only save lives if used correctly. Listed are some things to consider when using seatbelt mounted airbags in aircraft:*

- The crash sensor will only respond to a sustained, high-G force impact in the forward direction. Turbulence and hard landings will not result in deployment.
- Unlike dash-mounted airbags, seatbelt-mounted airbags deploy away from the occupant. Therefore, they are safe for use by children old enough to not require a child seat.
- Airbags should be disconnected when a child seat is installed.
- Industry tests show that a seatbelt-mounted airbag can reduce the load in the seatbelt web during an accident by up to 40%.



Photo courtesy of AmSafe

## How Do Airbags Get Installed In General Aviation Aircraft?

Many new general aviation aircraft are equipped with seatbelt-mounted airbags at the factory. For older aircraft, airbags can be retrofitted. Airbag installation is a major design change, and requires a Supplemental Type Certificate (STC).

There are STCs available to install airbags in many general aviation aircraft. You can find out if an approved installation is available for your aircraft by checking the STC listings at: <http://rgl.faa.gov/> and searching for “airbag” or “inflatable restraint”.

If an STC is not available for your aircraft, contact an STC holder for airbag installations to let them know you are interested in purchasing airbags for your model airplane.



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### Airbags Save Lives!



Airbags deployed and both occupants received only minor injuries. Photo courtesy of AmSafe.

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# Airbags

The Federal Aviation Administration Alaskan Region recently completed a study of all fatal and serious injury accidents in Alaska from 2005-2010.

One of the conclusions is that airbags had the potential to save up to 50 of the 113 lives lost during that time.

According to the National Highway Traffic Safety Administration, a total of 22,466 lives were saved by airbags in automobile crashes from 1987 to 2006. Their analysis indicates that when an airbag is used together with a seat belt, automotive fatalities are reduced by 11 percent.



Aircraft sustained typically non-survivable impact. Airbag deployed and although the pilot sustained severe injury, he survived. Photo courtesy of AmSafe.



Aircraft stalled and cartwheeled. The aircraft was destroyed, but the airbags deployed and the occupants evacuated without life-threatening injuries. Photo courtesy of AmSafe.

## How Can Airbags Reduce Injuries and Fatalities In Aircraft Accidents?

Airbags reduce injuries in two ways:

1. Reduce impact with aircraft structure.
2. Reduce seatbelt loads, leading to less severe internal injuries.

Many aircraft accidents in Alaska occur in remote terrain where help will take time to arrive. Airbags can reduce the severity of injuries to occupants, enabling them to get out of the aircraft and do what they need to do to survive until rescued.

Some types of accidents for which airbags can reduce serious injuries and fatalities are stall/spin accidents, engine failures, and landing or takeoff accidents.

## How Are Airbag Installations In Aircraft Different From in Automobiles?

Most automotive airbags are installed in the dash and inflate towards the occupant. Due to lack of space in most aircraft instrument panels, aircraft airbags are installed as part of the seatbelt assembly. Therefore, they inflate away from the occupant, making injury as a result of airbag deployment extremely unlikely.



Photo courtesy of AmSafe.

For this reason, pregnant women and children old enough to not require a child seat do not need to be concerned about the airbag injuring them during deployment. Children seated in infant or child seats should have the airbag disabled.