

When should the parachute system be deployed?

Although a parachute system isn't a replacement for proper pilot training, competent skills, and good judgment, there may be life-threatening emergencies in which a pilot or passenger will decide that parachute deployment is safer than other options. Included among these scenarios are:

- Mid-air collision
- Pilot incapacitation
- Structural failure
- Stall/spin on approach
- Loss of control
- Engine failure

How does the BRS System work?

The system consists of a bundle that includes a container for the parachute assembly and a solid-fuel rocket. The bundle is mounted in the baggage compartment of the airplane, behind the seating area. The pilot or passenger may activate the system by pulling one of the two red handles located within easy reach of both the front and rear seats in the cabin. When the system is activated, a solid-fuel rocket ignites and bursts through the top of the airplane's fabric cover. The rocket pulls the parachute from its container until the suspension lines and airframe harness are fully extended, and the parachute inflates.

How many BRS systems have been installed in aircraft?

More than 30,000 BRS parachute systems have been installed, in a wide range of aircraft types.

How many lives have been saved by BRS systems?

As of October 2015, more than 300 lives have been saved by BRS parachute systems.

Does the system have any negative attributes?

Other than cost and weight, the only slight downside to the system is the volume it occupies, which is relatively small. None of these has a significant impact on the performance or utility of the aircraft.

How complicated is it to operate the system?

Operating the system is simple. The user pulls the deployment handle and the system does the rest automatically, in the proper sequence and timing.

What is the maximum speed you can deploy the parachute?

The parachute may be deployed up to the Carbon Cub's never exceed speed (Vne).



What is the minimum altitude that you can deploy the parachute?

The distance required to deploy a parachute depends directly on airspeed. Recorded altitude activations of 100 ft. or less have saved lives. As a safe practice, no altitude limitation should be contemplated to allow activation. Just pull.

How fast does the system take effect?

The parachute will stabilize the aircraft and significantly decelerate just seconds after the deployment handle is pulled.

How hard is the shock of the parachute opening?

It can vary depending on airspeed and other factors, but it's generally less than 4Gs.

At what attitude does that airplane descend under parachute?

When the rocket is activated, the aircraft will sharply pitch up. This allows the fuselage and wings to help slow the aircraft and minimize stress on the parachute and system mounting points. The aircraft will then quickly stabilize under the open parachute canopy at zero forward airspeed and descend in a level attitude with the nose slightly lower than the tail.

What is the expected vertical descent rate?

The descent rate is a function of weight and density altitude, but the target is approximately 25 feet per second (fps) at 5,000 feet density altitude.

How hard is the landing after deploying the chute?

On tests of the BRS system in aircraft similar to the Carbon Cub, forces at touchdown have been shown to be well within human tolerances in the most severe parachute-landing conditions - flat concrete, landing straight down, on wheels.

Can I change my mind and land normally once the system is deployed?

No. The entire deployment sequence is automatic. Once the handle is pulled, you're committed to parachute descent.

Can the airplane be repaired after a successful deployment?

Depending on the conditions of weight, density altitude, and type of landing surface, damage to the aircraft may or may not be repairable. However, many cases have been recorded where the airplane was returned to service.

Can the system be accidentally deployed?

Accidental firing is extremely unlikely. The system is designed to fire only with a deliberate, two-step action by the pilot or passenger in the airplane. The deployment handle requires a pulling force of 30-40 pounds to cock and fire. Although firing the system requires only a short pull of the handle, the user has to first pull it several inches to cock it. The system can't be made to fire by hitting it, dropping it, or any other condition the aircraft is likely to encounter.



Can the BRS system be used as a drag parachute in the event of brake failure or impending runway overshoot?

No. The BRS system isn't designed for use as a drag parachute. The canopy is far too large for this purpose. Attempting to use the system this way may result in injury or death.

Who is BRS Aerospace?

BRS is the company that developed the very first practical ballistic parachute system for light aircraft more than 35 years ago. The company has built more than 30,000 ballistic parachute systems since 1980, and in 1993 they became the first to receive FAA approval to install an emergency parachute system on a certified aircraft.

Carbon Cub BRS System

Is a BRS system available for all Carbon Cub models?

Although BRS systems are still under development for some Carbon Cub variants, there are currently configurations available for most models.

Can the BRS system be retrofitted to existing Carbon Cubs?

The system can be retrofitted to some Carbon Cub models. The system is immediately available for retrofit on the existing fleet of LSA Carbon Cubs for gross weight up to 1320 lbs. (1,430 lbs. on floats). A BRS model for retrofit on the fleet of existing EX, EX-2, and FX experimental aircraft, for gross weight up to 1865 lbs., is currently under development.

For LSA aircraft, does the system need to be installed by CubCrafters?

No. The system can be installed by any competent A&P.

Can an amateur builder safely perform the initial installation on Carbon Cub kits?

Yes. Like the Carbon Cub kits themselves, the BRS system doesn't require any parts fabrication or special technical skills for installation.

How long would it take to install the BRS system in a kit myself?

Although installation time can vary depending on the skills and experience of the builder, 4-5 hours is the average installation time for a BRS system.

How much weight does the BRS system add to a Carbon Cub?

The BRS models offered on Carbon Cubs weigh between 31 and 40 pounds installed.

Where is the unit mounted on the Carbon Cub?

The parachute, lines, and harness are housed in a special container mounted in the baggage compartment, behind the cabin of the airplane.



How does the parachute deploy from the fuselage?

When the deployment handle is pulled, a rocket bursts through the fabric cover of the aircraft, with the parachute and harness following in an automatic sequence.

How often does the BRS system need to be serviced?

The Carbon Cub's BRS system requires inspection during each aircraft annual, a parachute repack every 6 years, and a rocket refresh every 12 years.

Who can perform maintenance and inspection of the system?

These services, as well as installation of retrofit systems on fleet aircraft, can be performed at CubCrafters' Yakima, Washington facility or by select CubCrafters Authorized Service Centers.

How much does servicing cost?

Today's repack price would be around \$2,000 for the parachute and an additional \$2,000 at the 12-year mark for the rocket.

Does the BRS system need special care when other parts of the aircraft are being serviced?

The mechanic should be fully aware of the parachute system and its routing. Before any maintenance is performed on the aircraft, it is critical that the detent pin is secured in the red activation handle.

Has the BRS system been tested in an actual inflight deployment from a Carbon Cub?

No. There hasn't yet been an actual deployment in-flight of a BRS system on a Carbon Cub. However, BRS has conducted more than 35 airborne tests in various airplanes. Inflight deployments included:

- In power-off stall with slow entry
- A full turn spin each direction
- At a normal 100-knot cruise speed
- In 2-G turn at maneuvering speed
- At never exceed speed (Vne)

Without actual inflight testing of the system, can I be confident it will work?

You can be absolutely confident it will perform as designed. BRS has 35 years of experience, with over 30,000 installations. Out of these, not one installation on record has ever failed to deploy properly. The dynamics of the extraction, deployment, and deceleration are well known for aircraft similar to Carbon Cubs.

