

Ballistic Recovery Parachutes

- <http://www.brsparachutes.com/default.aspx>
- Cirrusdesign.com

BRS Webpage

- **First Responders**
 - Firefighters
1.23MB, PDF
 - Investors (BRS 10K10Q) Large file
 - Media/Press Releases
 - Download Details for system safety and handling if you are involved with an airplane incident.
BRS AIRSAFETY PHONE 763-226-6110



You have been dispatched to this..



Solid Propellant Rocket Motor

Extraction Harness

Airframe Container Cover

Packed Parachute



It's called a Ballistic Recovery System

- They are normally **concealed** inside the aircraft.
- The **rocket** is attached to a parachute.
- If the rocket was unattached, it could climb from **sea level to 10,000 feet in 1.5 seconds.**



Only Half of the Problem

A bonfire of sticks and brush is burning on a rocky hillside. A large plume of smoke is rising from the fire, filling the upper half of the image. The ground is covered in small, light-colored rocks and some sparse vegetation. The sky is a clear, pale blue.

The Smoke is Hydrochloric Acid!

BRS Info

- Can be in ultralight aircraft
- Straps around cockpit
- Post crash geometry changes the situation

AMSAFE

- Seat belt air bag systems

History / Configurations

Part 25 Aircraft

- First generation system (V1.0) in service since February 2001
 - 96 aircraft in five fleets; over a million flight hours of service to date
- Second generation system (V1.5) – certified February 2002
 - Airbus A340-500/600, Airbus A319, A320, and A321, Bombardier CRJ-700, Airbus A330, Boeing 777
- Side Facing Application (V25) – October 2003
 - Virgin Atlantic Boeing 747, Airbus A340, and soon to be installed as a TC on the Boeing 777 aircraft

Configurations

Part 23 General Aviation Aircraft

- Third generation (V23) system (Certified April 2004)
 - Three-point, pilot/co-pilot airbag system
 - Supplemental system, not required to satisfy regulations

AAIR Transport Applications

Airbus (V1.5 econ, V25 premium)

- A380: Demonstrator (MSN 2), Economy Front Row (EFR), Life Raft Bustles
- A340-500/600: EFR, Life Raft Bustles (Virtually All Customers); Premium, VAA

Air Canada includes Economy Offset Seats

- A330-200: EFR, Cyprus
- A319/A320/A321: EFR, Air Canada



Boeing (V25)

- B747: Premium Class, VAA
- B777: Premium Class, Kenya; Premium Class VAA

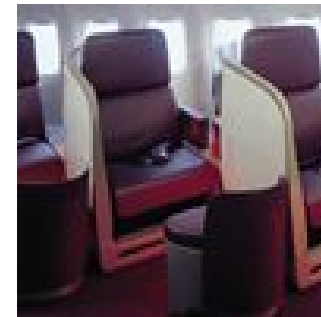


Bombardier

- CRJ 700/900: EFR, A/C Type Certified

BAE Systems (V1.0)

- Jetstream 41: EFR, A/C Type Certified



General Aviation

Adam Aircraft – A500 & A700

Aviat – Husky & 4000

Cessna – 172, 182 & 206

Cirrus – SR20 & SR22

Gippsland – GA8

Lancair - IVP

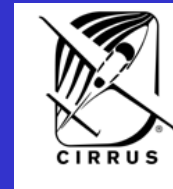
Mooney - Ovation, Ovation 2 DX,

Ovation GX, Bravo DX & Bravo GX

Zenair – CH2000

Four Winds – FX 210/T

Tiger AG58



General Aviation Applications - Current

Cessna Single Engine

- 172 and 172S Skyhawk: Pilot / Co Pilot / Rear Bench
- 182 and 182 Turbo Skylane: Pilot / Co Pilot / Rear Bench
- 206 and 206T Turbo Stationair: Pilot / Co Pilot / Middle Seats / Rear Bench

Mooney; Bravo and Ovation

- Series M20K, M20M, M20R, M20S: Pilot / Co Pilot / Rear Bench

Zenair

- Alarus CH 2000: Pilot / Co Pilot

Aviat

- Husky A1, A1A, A1B: Pilot / Co Pilot

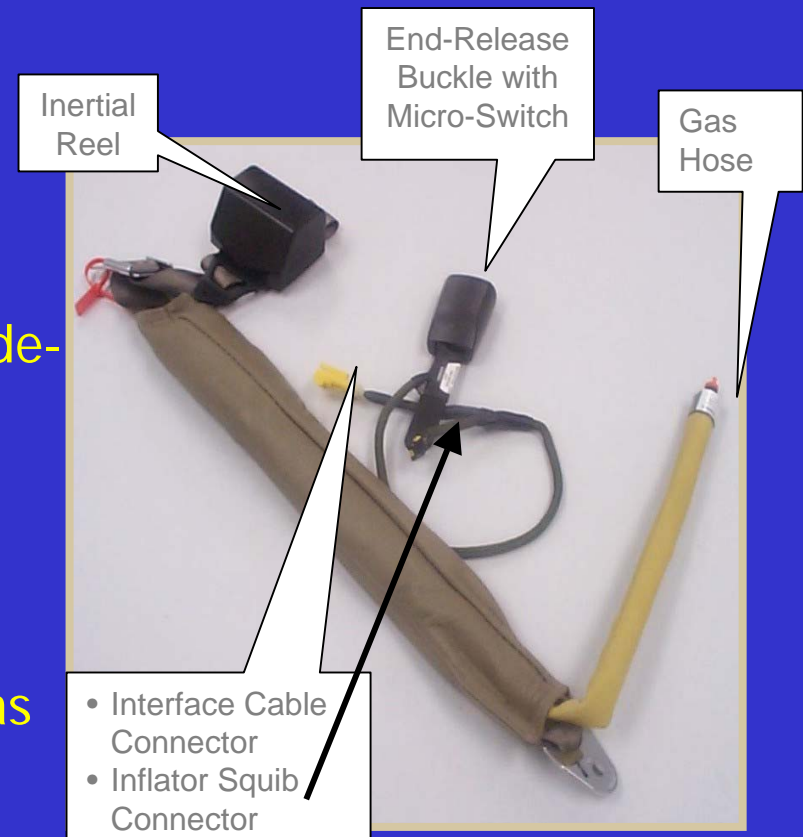
Adam

- A500: Pilot / Co Pilot

System Component Description

Three-Point Airbag Belt

- User operation - same as standard restraint
- TSO C114 three-point restraint
- Single shoulder strap inertia reel, slide-thru connector
- End-release buckle with magnetic activation switch
- Airbag attached to lap belt, covered with shroud (durable material such as leather)
- Service Life: On-Condition



Buckling Assembly Pieces

System Component Description

Four/Five-Point Airbag Belt

- User operation - same as standard 4 or 5 point restraint
- TSO C114 four or five-point restraint
- Single or double shoulder strap inertia reel, with slide-thru connector
- Airbag attached to shoulder harness, covered with shroud (usually leather)



Dual Inertia Reels

Five-point Airbag Belt



Cover with Airbag folded inside

Retractor Device

Standard webbing and anchor mechanism for four/five-point seatbelt

Buckling Assembly Pieces

Gas Hose

Four-point Airbag Belt

Other Hazards

- Composite Materials
- Accumulators
- Oxygen bottles
 - Can be aft of baggage area, overhead, or a portable unit
- Struts
- Hydraulic fluid-caustic Skydrol in transport airplanes