



1300 E. International Speedway Blvd • DeLand, FL 32724 USA
Tel: +1.386.738.2224 • Fax: +1.734.8297 • www.performancecodesigns.com

DATE: Tuesday, November 21, 2006

TO: CPS

RE: 365-Day Parachute Repack Cycle (Main and Reserve)

Performance Designs, Inc. recognizes many factors may affect opening times of a packed, stored main parachute. Some of these factors are beyond the control of Performance Designs, Inc. Currently, too many of these variables exist to accurately quantify a maximum timeframe for which a main parachute may remain packed until use.

Therefore, Performance Designs, Inc. recommends the end user pay very close attention to the following list of items. These items should be considered while the main parachute remains packed and stored.

Factors that can affect the main parachute opening time include, but are not limited to:

- **The chemical reaction that occurs between rubber** (rubber bands) **and brass** (deployment bag grommets). If left in contact with each other, a reaction between the rubber bands and brass grommets causes deterioration of the rubber. This can severely change the opening characteristics by creating a line dump scenario.
- **Excessive temperature.** High temperatures, while increasing the elasticity of rubber, also decrease its strength.
- **Rubber degradation due to extended shelf life or storage conditions.** If rubber is stored in excessive heat or for long periods without use, it can degrade and/or become brittle (dry rot).
- **Zero-porosity fabric has the potential to maintain its packed, brick-like shape over time.** A remote possibility exists for the layers of packed fabric to take a set in its stored position after being compressed for some length of time. The longer the layers of fabric are compressed, the more potential for the fabric to take a set.



1300 E. International Speedway Blvd • DeLand, FL 32724 USA
Tel: +1.386.738.2224 • Fax: +1.734.8297 • www.performancecodesigns.com

PD recommends the following in order to minimize some of these factors:

- Ensure the use of non-brass (i.e. stainless steel) grommets on the D-bag to prevent the brass-rubber reaction.
- Performance Designs, Inc. recommends the following storage conditions for the canopies: temperatures ranging between 60°F and 75°F and humidity ranging from 30% to 60%. For long-term storage and storage outside those ranges, we recommend representative samples be tested and/or inspected to ensure no harmful conditions have occurred during storage.
- Replace all rubber bands when packing if there is a chance the parachute will be stored for an extended period of time. Use rubber bands with a recent manufacture date. Also make sure to exercise the rubber bands by stretching them. If a packed parachute has been dormant for a year, the rubber band may have become brittle and the user runs the risk of premature breakage.

As long as the aforementioned conditions and factors are controlled and adherence to the guidelines is exhibited, Performance Designs, Inc. has no objections to the use of a 365-day repack cycle.

If you have any further questions or comments, please do not hesitate to contact Performance Designs, Inc.

Sincerely,

Bill Coe
Performance Designs, Inc.
President



Parachute Equipment
Manufacturing, Sales, Service

1300 E. International Speedway Blvd.
DeLand, Florida 32724
Telephone: (386) 738-2224
Fax: (386) 734-8297

Repack Cycles

28 April 20, 2004

Performance Designs Inc authorizes repack cycles of up to one year. Per the PD Series Ram-Air reserve manual, "Currently up to one-year repack cycles are authorized for Performance Designs reserve canopies when cared for properly". This is applicable to the PR series, TR series, and tandem/bundle reserves currently being build by Performance Designs Inc. Proper care includes keeping the entire system clean, dry, limited exposure to UV light, not overheating, and no exposure to degrading elements"

In fact Performance Designs Inc. recommends increasing repack cycles to one year. This recommendation is based on several facts. Performance Designs Inc. has been building reserves for nearly 20 years and has built over 30,000 reserves. Many users are already at or beyond one year repack cycles, and there have been no reported functional or age related issues with any of the materials used in Performance Designs Inc. reserves. Performance Designs Inc has done break-away tests on PD series reserves packed for over one year and found that there is no significant difference in opening times between reserve canopies packed for 120 days and the canopies that were packed for over one year.

Each repack does damage to the canopy. The handling and manipulation of the fabric causes it to increase in permeability. Therefore for optimum service life and performance unnecessary repacks on any PD canopy build out of 0-3 cfm materials should be avoided.

Bill J Coe

A handwritten signature in cursive script that reads "Bill J Coe".

President