



## **Service life and Retirement**

It is the position of Robertson Harness to endorse a 10 year lifecycle with a five-year service period from date of first use on all fall protection harnesses.

Lanyards and Lobster Claws carry a maximum three year service life.

Robertson Harness assumes a 7 year max lifecycle on seat style harnesses with a 5 year service life.

Full body harnesses carry a 10 year lifecycle.

\* Our guideline only applies to products demonstrating no visual damage and that knowingly has not been exposed to chemicals, abnormal heat, or excessive ultraviolet light.

It is possible that the equipment will last longer depending on its care and use.

\* These extended projections are absolute maximums that are not intended to be prolonged for any circumstance. Robertson provides this recommendation as a general guideline, and is not to be used in lieu of the inspection and maintenance criteria outlined in the inspection of equipment guideline.

\* Documentation is crucial with life safety gear in identifying its service period with continued inspections and a well-conceived operations manual.

Each harness and lanyard shipped by Robertson Harness is accompanied by specific instructions for use.

Robertson requires each harness and lanyard be visually inspected prior to use and regularly inspected by a Competent Person, such as defined by OSHA (Occupational Safety & Health Administration).

Following these instructions may still necessitate removing the harness or lanyard from service prior to the expiration of the life expectancy guideline. Ultimately, it is the responsibility of the end-user to determine when a harness or lanyard is unfit for use and should be removed from service. A common misconception is the assumption that the manufacturer will tell you when it's time to retire, or keep the equipment.

Herein lies the problem; the life expectancy is a general guideline and not intended to be used as an absolute. The minute Robertson ships a harness or lanyard the clock starts and thus depreciation begins. Robertson cannot definitively tell you how many spatters of this or that it takes to dispose of the harness, nor how many

traces of chlorine and at what concentration in PPM it would take to degrade the material to a given percentage. We cannot tell you (except generally) how much UV exposure and at what altitude it takes to degrade an item to a point it is worn out or too weak to use. As the manufacturer we cannot tell you the exact effect bodily fluids, sweat components (acid, alkalinity, salts), or of the amount of grit in your air, or the pollution in your work locations. We do know acid rain has acid in it and salt water has salt in it. These elements are intended to be eluded because they exponentially degrade the life of a harness.

The best and most qualified person to tell an employer when to retire equipment is a competent and qualified inspector on site.

When a harness has been involved in a severe fall, but is not obviously damaged, it must be retired immediately. If you have any doubts about the dependability of your harness, retire it and get a new one.

\* Products removed from service should be disposed of in a manner that prevents inadvertent further use.

### **Usage of a harness in relation to Zip Lines/Canopy Tours**

Hourly usage does not implicitly transfer into the life of a harness for many zip lines. We prefer the breakdown of usage in terms of cycles. Here is how we look at cycles when it comes to harnesses and lanyards.

\* A cycle is a single pass down a line, if a course consists of nine separate zip lines this equates to nine cycles on that piece of equipment.

Below are examples of typical ziplines cycles

#### **Example (1) operating 7 days a week**

|  |           |
|--|-----------|
| Cycles per day   | 200       |
| # of harnesses used daily in those cycles              | 65        |
| # of times each harness is used daily                  | 3         |
| # of times each harness is used in six months          | 548       |
| # of times each harness is used annually               | 1,095     |
| # of times each harness is used over a five years life | 5,475     |
| Initial cost of harness                                | \$52.00   |
| Cost of harness at 5,200 cycles                        | .01 cents |

**Example (2) operating 4 days a week**

|  |           |
|--|-----------|
| Cycles per day   | 400       |
| # of harnesses used daily in those cycles              | 50        |
| # of times each harness is used daily                  | 8         |
| # of times each harness is used in six months          | 832       |
| # of times each harness is used annually               | 1,664     |
| # of times each harness is used over a five years life | 8,320     |
| Initial cost of harness                                | \$34.00   |
| Cost of harness at 3,400 cycles                        | .01 cents |

**Heavy to Extreme use****Example (3) operating 7 days a week**

|  |           |
|--|-----------|
| Cycles per day   | 1,500     |
| # of harnesses used daily in those cycles              | 100       |
| # of times each harness is used daily                  | 15        |
| # of times each harness is used in six months          | 2,730     |
| # of times each harness is used annually               | 5,460     |
| # of times each harness is used over a five years life | 27,300    |
| Initial cost of harness                                | \$76.00   |
| Cost of harness at 1,900 cycles                        | .04 cents |

**Usage of a harness in relation to a ropes course.****Example (4) Full Body Harness used 6 months a year****Activity: Leap of Faith**

|  |           |
|--|-----------|
| Cycles per day   | 3         |
| # of harnesses used daily in those cycles              | 1         |
| # of times each harness is used daily                  | 3         |
| # of times each harness is used in six months          | 548       |
| # of times each harness is used over a five years life | 2790      |
| # of times each harness is used over a ten years life  | 5480      |
| Initial cost of harness                                | \$120.00  |
| Cost of harness at 744 cycles                          | .16 cents |

These graphs should serve as a guideline for the use and retirement of a harness. Because we do not have a standard set of hours or cycles indicating retirement, it is the job of the course, and it's inspector to determine if a harness needs to be retired.

Robertson Harness purposely exceeds minimum qualifications in strength and design. The degradation that is common in a 3-5 year period does not render the device worthless simply because it's exceeded a five year period.

As the manufacturer we know that a harness worn every day will likely not make the 5 year mark. For example a construction worker or an iron worker can wear out a harness in less than a year. Likewise a harness used 15 times a day in a zip line environment may only last up to a year. A harness that is used once a week or once a month, may last a lifetime. Not every use for a harness is the same; determining the service life is truly dependent on the specific use of the harness.

Further questions or concerns about the service life of a harness, please call Robertson Harness at (702) 564-4286