USER INSTRUCTIONS MANUAL

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April 2015

This document contains 36 pages

IMPORTANT: Make sure this user instructions manual is the latest version available.
## REVISION HISTORY

<table>
<thead>
<tr>
<th>Revision</th>
<th>Sections affected</th>
<th>Changes</th>
<th>Date</th>
</tr>
</thead>
</table>

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WARNINGS AND IMPORTANT NOTICES

You will find on this page, and throughout this user instructions manual, many warnings and important notices that must be considered seriously when using this product.

DEFINITIONS:

A WARNING note means that if the information is not thoroughly followed, there is a risk of serious injury or death to the user or surrounding people.

A CAUTION note means that if the information is not followed, there is a risk of injury and/or damage to the equipment.

Important: This manual is intended to meet the Manufacturer's Instructions as recommended by OSHA, and should be used as part of an employee training program.

Important: This manual contains information and instructions specific to BAMBI LONGLINES only. Make sure this User Instructions Manual is the latest version available. Consult the SEI INDUSTRIES Ltd. website at www.sei-ind.com to view document revisions, important Updates and other notices.

Important: Products manufactured by SEI INDUSTRIES Ltd. are intended for use by professionals trained and experienced in the use, inspection, and maintenance of these products.

Warning: This product is designed for underslung helicopter external load situations only. The user must read and understand the instructions in this manual before using this equipment. Manufacturer's instructions must be followed for the proper use and maintenance of this equipment. Alterations or misuse of this equipment, or failure to follow instructions, may result in serious injury or death. If you have questions on the use, care, or suitability of this equipment for your application, contact SEI INDUSTRIES Ltd.

Important: This document does not replace a complete training necessary for the use of this product. Excellent technical knowledge in helicopter external load operation is required.

Important: Before using this equipment, record the product identification information from the ID label in the inspection and maintenance log at the end of this document. Make sure this User Instructions Manual is readily available with the longline. Contact SEI INDUSTRIES Ltd. to obtain additional copies of this manual.

Important: It is the responsibility of the user to document and maintain a product use, inspection and maintenance logbook. SEI INDUSTRIES Ltd. supplies inspection criteria and guidelines, forms and log sheets which may be used as an example. It is the responsibility of the user to adapt and design their own inspection and maintenance system.
1. DESCRIPTION OF THE BAMBI LONGLINES

1.1 APPLICATIONS: BAMBI LONGLINES are designed for Class B, C or D helicopter external load applications as defined by:
- Canadian Aviation Regulations 2012-1 (CARs) Part 1 - General Provisions, Subpart 1 - Interpretation, 101.01
- FAA Order 8900.1, Volume 3, Chapter 51 Part 133 External Load Operations, Section 1, 3-4083 - Classes of Authorization
- US DOI ARA No. 1406-08-80, Supplement B22.1 - Definitions

1.2 PURPOSE: The BAMBI LONGLINES are to be used as part of an external cargo load system. Applications include: Part of a BAMBI BUCKET system, transport of cargo nets, underslung loads, airborne survey instruments and other non-human external cargo loads (NHEC). In all cases, the operator or type-certificate holder must ascertain that the rotorcraft external load attaching means and the rotorcraft comply with the conditions and operations specifications as directed by the applicable aviation authority.

WARNING: BAMBI LONGLINES are not designed for use as Human External Cargo (HEC) or short-haul ropes. Contact SEI INDUSTRIES Ltd. for specific information on such applications.

1.3 SPECIFICATIONS:

Highlights:
- Designed with a 7:1 (minimum) safety factor
- Each longline is proof-loaded to a load not exceeding its Working Load Limit, according to the Cordage Institute recommendations (CI 1401-06)
- Each longline is subjected to strict in-house quality control measures and is individually serialized and supplied with a certificate of compliance
- Sub-components are individually certified by their respective manufacturers
- Possibility of annual recertification and repair

Conformity Chart:

<table>
<thead>
<tr>
<th>Longline type</th>
<th>Diameter</th>
<th>WLL</th>
<th>Safety factor</th>
<th>Conforms to (refer to standards requirements on page 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard UHMWPE</td>
<td>Less than 1/2” (13 mm) or more</td>
<td>Less than 4500 lbs</td>
<td>7</td>
<td>US DOI ARA 1406-08-80, ASME B30.12-2011, US DOI 351 DM1 rev. 02/2010, ASTM F1701-05</td>
</tr>
<tr>
<td>Dyneema® fiber</td>
<td>Less than 1/2” (13 mm) or more</td>
<td>Less than 4500 lbs or more</td>
<td>7</td>
<td>√</td>
</tr>
</tbody>
</table>

* See note
Essential requirements (these are only excerpts; make sure to refer to the complete standards):

US Department of the Interior, Aircraft Rental Agreement, Solicitation No. D11PS30354, Helicopter Synthetic Longline Requirements Exhibit:

- "Helicopter synthetic longlines shall be constructed from the HMWPE or HMPE (high molecular weight polyethylene) family of rope fibers"
- "Minimum rope diameter shall be ½ inch"
- "A factor of safety of 7 shall be used for helicopter synthetic longlines"


ASME B30.12-2011, Handling Loads Suspended from Rotorcraft, Section 12-2.5.2:

- "The minimum rope diameter should be ½ in."
- "Synthetic helicopter longlines should be constructed from the HMWPE or HMPE (high molecular weight polyethylene) family of rope fibers"
- "Synthetic helicopter longlines, including rope terminations, shall have a minimum breaking strength of seven times the rated or working load"


ASTM F1701-05, Standard Specification for Unused Rope with Special Electrical Properties:

- Passes all dry and wet electrical tests

* Note: Although the UHMWPE fiber longline, only without a zippered or hook-and-loop protective jacket, passed the dry test under lab conditions with new material, one cannot assume that in field conditions the dielectric properties would be maintained. The UHMWPE fiber longline with a zippered or hook-and-loop protective jacket did not pass the dry test of this standard.

Reference: [http://www.astm.org/DATABASE.CART/HISTORICAL/F1701-05.htm](http://www.astm.org/DATABASE.CART/HISTORICAL/F1701-05.htm)

Other normative references:

Refer to FAA, national standards and applicable local, state and federal requirements for your specific ruling in your jurisdiction.

Cordage Institute
- CI 1500-02 : Test Method for Fiber Rope
- CI 1401-06 : Safer Use of Fiber Rope
- CI 1907-09 : HMPE Fiber Rope – Extra Strength 12-Strand Braid Construction
- CI 2001-04 : Fiber Rope Inspection and Retirement Criteria
- CIB 1.4-9701 : Fiber Rope Technical Information and Application Manual

Materials:

**Rope**
- Ultra-high molecular weight polyethylene (UHMWPE) Dyneema® fiber (12-strand braid construction) with urethane coating

**Protective Jacket**
- Heavy-duty textured nylon or urethane-coated fabric with heavy-duty zipper or sturdy hook-and-loop fastener

**Hardware**
- Heavy-duty Nylite™ spool and shackle assemblies
- Heavy duty stainless steel fused thimbles, available with or without alloy pear-shaped ring, individually proof-tested by manufacturer
Heat and chemical resistance:

**WARNING:** UHMWPE (Dyneema®) fiber has a relatively low melting point. Do not subject BAMBI LONGLINES to excessive heat.

### Heat and Chemical Resistance of UHMWPE fiber

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point</td>
<td>140°C - 150°C (284°F - 302°F)</td>
</tr>
<tr>
<td>Resistance to short-term heat</td>
<td>70°C (158°F)</td>
</tr>
<tr>
<td>UV-Resistance</td>
<td>Excellent</td>
</tr>
<tr>
<td>Resistance to acids</td>
<td>Excellent</td>
</tr>
<tr>
<td>Resistance to alkali</td>
<td>Excellent</td>
</tr>
<tr>
<td>Resistance to most materials</td>
<td>Excellent</td>
</tr>
<tr>
<td>Resistance to water</td>
<td>Excellent</td>
</tr>
<tr>
<td>Aviation jet A fuel (ISO 1817 test liquid F)</td>
<td>RTCA DO160 Excellent</td>
</tr>
<tr>
<td>Hydraulic fluid (ISO 1817 test liquid 103)</td>
<td>RTCA DO160 Excellent</td>
</tr>
<tr>
<td>Lubricating oil (ISO 1817 test liquid 101)</td>
<td>RTCA DO160 Excellent</td>
</tr>
<tr>
<td>Solvents and cleaning fluid (Isopropyl alcohol)</td>
<td>RTCA DO160 Excellent</td>
</tr>
<tr>
<td>De-icing fluid (Ethylene glycol)</td>
<td>RTCA DO160 Excellent</td>
</tr>
<tr>
<td>Insecticide (Pyrethroid pesticide)</td>
<td>RTCA DO160 Excellent</td>
</tr>
<tr>
<td>Fire extinguishant (Protein, Fluoroprotein)</td>
<td>RTCA DO160 Excellent</td>
</tr>
</tbody>
</table>

(Reference: DSM Dyneema® literature)

### Heat and Chemical Resistance of Polyamide (Nylon)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point</td>
<td>215°C - 260°C (419°F - 500°F)</td>
</tr>
<tr>
<td>Resistance to short-term heat</td>
<td>130°C (266°F)</td>
</tr>
<tr>
<td>UV-Resistance</td>
<td>Good</td>
</tr>
<tr>
<td>Resistance to alkalis</td>
<td>Good at low concentration</td>
</tr>
<tr>
<td>Resistance to acids</td>
<td>Predominantly good</td>
</tr>
<tr>
<td>Resistance to petroleum based products</td>
<td>Good</td>
</tr>
<tr>
<td>Creep</td>
<td>Slight creep under load</td>
</tr>
</tbody>
</table>

(Reference: DSM Dyneema® literature)
Details of top-end splice with fused thimble, lockstitch, whipping and ID tag:

- Lock stitching (contrasting color thread)
- Whipping (contrasting color thread)
- Fused thimble
- ID Tag (shown in hook-and-loop protective wrap)
- Ring (optional)

Details of top-end splice with Nylite™ shackle, lockstitch, whipping and ID tag:

- Lock stitching (contrasting color thread)
- Whipping (contrasting color thread)
- Nylite™ spool and shackle assembly
- ID Tag
Details of bottom-end splice with marked fused thimble, lockstitch and whipping:

- Lock stitching (contrasting color thread)
- Whipping (contrasting color thread)
- Fused thimble with permanent markings

Details of bottom-end splice with marked Nylite™ shackle, lockstitch and whipping:

- Nylite™ spool and shackle assembly (permanent marking on spool)
- Whipping (contrasting color thread)
- Lock stitching (contrasting color thread)

Labelling:
One of these labels must be permanently attached to one end of the longline and be fully legible:
### Additional features:

**Electrical cable:**  
- As required for the Bambi Bucket and accessories

<table>
<thead>
<tr>
<th>Protective Jacket:</th>
<th>Available options:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Double zipper jacket, gives redundancy in closure system and separates electrical wire(s) from rope but still allows fast and easy inspection of the longline, with integral connection to the top thimble (requires one bottom end-cover)</td>
<td></td>
</tr>
<tr>
<td>2- Double zipper jacket with external helix to limit vibration of longline at high speed (requires one bottom end-cover)</td>
<td></td>
</tr>
<tr>
<td>3- Single zipper jacket, allows fast and easy inspection of the longline (requires top and bottom end-covers)</td>
<td></td>
</tr>
<tr>
<td>4- Hook-and-loop jacket with internal divider</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End-Covers:</th>
<th>2.5 m (8') or 3.6 m (12') zippered end-covers with hook-and-loop cinch strap</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Top end-cover has warning label with TOP identification</td>
<td></td>
</tr>
<tr>
<td>- Bottom end-cover has reflective band</td>
<td></td>
</tr>
</tbody>
</table>

| Weighted End-Cover: (Optional) | 2.5m (8') zippered end-cover with weight inserts for the bottom end of longline to reduce excessive rope movement without a load. Weight: Up to 25 lbs (11 kg) |

<table>
<thead>
<tr>
<th>ID Tag:</th>
<th>Soft printed ID tag protected by hook-and-loop wrap or stainless steel ID tag with permanent markings, including:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- (Note: Refer to bottom thimble or Nylite spool for back-up markings of working load limit, serial number, and manufacturing date)</td>
<td></td>
</tr>
<tr>
<td>- Mfg name</td>
<td></td>
</tr>
<tr>
<td>- Part number</td>
<td></td>
</tr>
<tr>
<td>- Description</td>
<td></td>
</tr>
<tr>
<td>- Serial number</td>
<td></td>
</tr>
<tr>
<td>- Date of manufacture</td>
<td></td>
</tr>
<tr>
<td>- Working load limit</td>
<td></td>
</tr>
<tr>
<td>- Minimum break strength</td>
<td></td>
</tr>
</tbody>
</table>

| Carry Bag: | Made of 1000D textured nylon or urethane-coated fabric, with a document pocket for instructions manual |
1.4 ASSEMBLY:

BAMBI LONGLINES with protective jacket are shipped pre-assembled. Should you require replacing or removing the jacket, end-covers, wires or rope, follow these instructions to make sure that you install them properly to retain efficient aerodynamic properties.

1.4.1 Double-zipper protective jacket installation:
Make sure you have enough room to lay the longline on a flat and clean surface. Locate the top end of the longline, i.e. the end with the ID tag. Locate the top end of the jacket, i.e. the end with the red UP label.

- Open protective jacket and bring all 4 zipper sliders at the top end.
- Insert longline top end in the opening of the inner jacket, from the inside and out.
- Insert the thimble connector webbing, located inside the outer jacket, through the thimble or the small rope eye (for Nylite terminations) and fasten the heavy-duty plastic buckle. A minimum length of 2" (5 cm) of webbing should exceed from the buckle.
Zip close the first zipper slider of the outer jacket all the way to the other end, and “park” the zipper slider in the padded slider cover. The length of uncovered rope at the bottom end should be at least 30 inches (75 cm) shorter than the end-cover you will install (see section 1.4.4).

Zip close the first zipper slider of the inner jacket all the way to the other end. Make sure to place the protective webbing correctly underneath the zipper as you close the zipper. “Park” the zipper slider in the padded slider cover.

Insert electrical wire(s), if applicable, in the opening of the outer jacket, from the inside and out.
1.4.2 Single zipper protective jacket installation:
Make sure you have enough room to lay the longline on a flat and clean surface. Locate the bottom end of the longline, i.e. the end without the ID tag.

- Open protective jacket and bring zipper slider at the end.

- Insert longline bottom end (and electrical wire if applicable) in the zipper opening, from the inside and out.

- Pull the jacket up a few feet and zip close the zipper approx. 1 feet (30 cm). Before zipping further, slide the jacket towards the thimble until the fabric gets snug around the rope.

- Zip close the zipper slider all the way to the other end, and “park” the zipper slider in the padded slider cover. The length of uncovered rope at both ends should be at least 30 inches (75 cm) shorter than the end-covers you will install (see section 1.4.4).
1.4.3 Hook-and-loop protective jacket installation:
Make sure you have enough room to lay the longline on a flat and clean surface. Locate the bottom end of the longline, i.e. the end without the ID tag.

Open both outer and inner portions of the protective jacket.

Insert longline in inner jacket, starting 3 to 5 feet (1 to 1.5 m) from the bottom end of the longline, and join hook and loop fasteners of the inner jacket.

Insert electrical wire(s), if applicable, and join hook and loop fasteners of the outer jacket.

Make sure the hook and loop are fastened correctly by pressing them firmly along the whole length of the longline. The length of uncovered rope at both ends should be at least 30 inches (75 cm) shorter than the end-covers you will install (see section 1.4.4).
1.4.4 End-covers installation:

For longlines requiring 2 end-covers, locate the top-end of the longline, i.e. where the ID tag is attached to the longline. Install the end-cover with the UP indicator at the top-end of the longline.

Lay the longline with the installed protective jacket on the open end-cover. The hook-and-loop cinch strap must be towards thimble.

Align the hook-and-loop strips on the outside of the jacket and the inside of the end-cover and press firmly together. The hook-and-loop should overlay on a length of at least 30 inches (75 cm).
Insert the thimble connector webbing, located inside the end-cover, through the thimble or the small rope eye (for Nylite™ terminations) and fasten the heavy-duty plastic buckle. A minimum length of 2” (5 cm) of webbing should exceed from the buckle.

Electric wire should be installed parallel to the longline (not spiraling), must move freely and not go through the thimble connector webbing or the ID tag attachment cord.

Close the zipper and then close the hook-and-loop cinch strap. If the longline has a metal ID tag, it must be secured underneath the hook-and-loop cinch strap.

**WARNING:** Do not allow the ID tag to hang and flap in the wind.
Zipper slider must be held in place with the hook-and-loop cinch strap.

Do not use tape, ties or other material to close or fasten the end-covers and jacket, or to cinch or squeeze rope or electrical wire, as this will impair wire movement.

Do not thread the electrical wire through the ID tag attachment cord or pear-shaped ring.
1.4.5 Weighted end-cover installation:

When required, the standard bottom end-cover of a BAMBI LONGLINE can be replaced by a weighted end-cover if the longline is flown without a load.

Make sure you have the properly sized weighted end-cover for your longline/wire/jacket combination. Contact SEI INDUSTRIES Ltd. for more details.

Remove the standard end-cover at the bottom of the longline, and install the weighted end-cover the same way a standard end-cover is installed (follow steps in section 1.4.4). Make sure all straps and hook-and-loop fasteners are properly tightened.

Note that you can adjust the total weight by removing or adding weight strips in the end-cover. Contact SEI INDUSTRIES Ltd. if additional weight strips are required.

1.4.6 Safety pin alternatives for Nylite™ shackle (applies to longlines equipped with Nylite™ assemblies):

Even though the Nylite™ shackles are provided by the manufacturer with a spring-style safety pin, the manufacturer allows replacing this pin by a cotter pin (preferably stainless steel) or by a stainless steel split ring.

![Standard spring-style safety pin provided with Nylite™ shackles](image1)

![Cotter pin replacement option](image2)

![Split ring replacement option](image3)
2. LIMITATIONS

Consider the following application limitations before using this longline:

2.1 WORKING LOAD LIMIT: The working load limit determined for BAMBI LONGLINES uses a design factor of at least 7:1, based on minimum breaking strength ratings for new rope. It is up to the user to determine if the working load limit is appropriate for the intended use and conditions of the rope which may have deteriorated over time and as a result of use.

Certain environmental conditions and dynamic loading situations may require the downgrading of the working load limit to take into consideration these factors of critical use conditions.

2.2 ANCHORAGE: Each anchorage point for the longline must be designed, installed and used under the supervision of a qualified person.

2.3 CRITICAL USE CONDITIONS: The user should always review the design factors and frequency of inspections of BAMBI LONGLINES™ if:
   - Loads are not accurately known
   - Operators are poorly trained
   - Operating procedures are not well defined
   - Inspections are infrequent
   - There is a chance of shock loads or accidental dynamic loadings
   - It is used at high temperatures
   - There are chemicals nearby
   - It has been in service indefinitely
   - It is continually under tension
   - It may be subject to sharp bends or excessive wear

If one or more of the above conditions are present, it is preferable to reduce the working load. Serious accidents can thus be prevented. Consult SEI INDUSTRIES for a revision if required.

2.4 ENVIRONMENTAL HAZARDS: Use of this equipment in areas with environmental hazards may require additional precautions to prevent injury to the user or damage to the equipment. Hazards may include, but are not limited to: heat, chemicals contamination, electrical fields, electrostatic discharges, moving machinery, corrosion, gases and sharp edges.

2.5 TRAINING: This longline must be used by persons trained in its correct application and use (see Section 4).
3. SYSTEM REQUIREMENTS

**CAUTION** IMPORTANT: Do not modify the original product by altering, adding or removing components, unless approved in writing by SEI INDUSTRIES Ltd.

3.1 COMPATIBILITY OF COMPONENTS: SEI INDUSTRIES Ltd. equipment is designed for use with SEI-approved components and subsystems only. Substitution or replacements made with non-approved components or subsystems may jeopardize compatibility of equipment and may affect the safety and reliability of the complete system.

3.2 COMPATIBILITY OF CONNECTORS: Connectors are considered to be compatible with connecting elements when they have been designed to work together in such a way that their size and shape do not cause their gate mechanism to inadvertently open regardless of how they become oriented. Contact SEI INDUSTRIES Ltd. if you have any questions about compatibility.

3.3 MAKING CONNECTIONS: Only use connectors that are suitable to each application. Ensure all connectors are compatible in size, shape, and strength. Do not use equipment that is not compatible. Ensure all connectors are fully closed and locked.

3.4 EXTERNAL CARGO HOOKS AND OTHER CONNECTING HARDWARE: It is the responsibility of the user to ensure that longlines and connecting hardware are compatible with the cargo hook it will be connected to. Refer to cargo hooks operating manual for confirmation. Contact cargo hook manufacturers if you have any questions about compatibility.

3.5 REMOTE CARGO HOOKS AND OTHER REMOTE DEVICES (CAROUSELS, GRAPPLES, ETC): It is the responsibility of the user to ensure that longlines and connecting hardware are compatible with the remote devices. Refer to the remote devices operating manual for instructions and limitations. Contact the hook or other remote device manufacturers if you have any questions about compatibility.

3.6 SWIVELS: If necessary and when appropriate, use a swivel that is compatible in strength and function with the other external cargo hardware. Refer to the swivel manufacturer’s instructions for correct use and limitations.

4. TRAINING

It is the responsibility of the buyer/user to make sure they are familiar with this helicopter external load product, and are sufficiently trained in the correct care and use of this equipment. This product must only be used by competent persons. The user must be aware of the operating characteristics, application limits, and the consequences of improper use of this equipment.

**CAUTION** IMPORTANT: Gaining an adequate apprenticeship in appropriate techniques and methods of safety is your own responsibility. Inspection training should be repeated on a periodic basis under the supervision of competent persons*.

*Competent person: (OSHA) One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
5. OPERATION AND USE

WARNING: Do not alter or misuse this equipment. Consult with SEI INDUSTRIES when using this equipment in combination with components or subsystems other than those described in this manual. Use caution when using this equipment around moving machinery, electrical hazards, chemical hazards and sharp edges.

Before each use of this equipment, carefully inspect it to assure that it is in serviceable condition. Check for worn or damaged parts. Inspect the rope for wear, cuts, burns, breaks, frayed edges or other damage. Make sure that all hardware is present and secure, and inspect it for sharp edges, burns, cracks or corrosion. Refer to section 6 for further inspection details. Do not use if inspection reveals an unsafe condition.

5.1 OPERATIONAL RISKS: Consider all factors that affect your safety at any time during use. The following list gives some important points to consider when planning your system:

- **Anchorage**: Select a compatible and certified anchorage point to attach the longline to. Do not load the longline in any other manner than from approved anchor point straight to load attachment point.

- **Sharp edges**: Avoid working where the longline, subsystem, or other system components will be in contact with, or abrade against unprotected sharp edges. Do not loop the longline around small diameter structural members. If working with this equipment near sharp edges or rough surfaces is unavoidable, protection against cutting must be provided by using a heavy pad or other means over the exposed sharp edge or rough surface (contact SEI INDUSTRIES Ltd. for additional options).

- **Abrasion**: Take special care to protect your longlines from abrasion. Abrasion damage is the most common cause of early longline retirement. This damage occurs most often when your longline, when under tension, comes into contact with rough or sharp edges, the inside edges of shackles, bollards, or any other potential hazard that might be found in the surrounding environment. Using longline jackets will help minimize this problem. Remember, a longline under tension is more susceptible to damage than one that is not.

- **Heat and friction**: Longlines that are made of Dyneema® fiber have a relatively low melting point. Avoid any excessive abrasion which may cause melting or glazing of the fibers and avoid contact with any source of direct heat (motors, mufflers, welding equipment, grinders, etc.)

- **Chemicals**: Although the Dyneema® fiber used in BAMBI LONGLINES offers excellent chemical resistance, great care should be taken in order to minimize exposure. Protect your longline from exposure to harsh chemicals. Do not allow your longline to come in contact with any compounds containing acids or alkalines, oxidizing agents or bleaching compounds. Be especially careful to avoid contact with battery acid and acid fumes.

- **High-temperature (fire-fighting)**: Dyneema® fiber has a relatively low-melting point and should be used with precaution when doing longline work in fire-fighting operations.

- **Performing underslung operations near high-voltage power lines**: Be extremely careful when operating a longline near powered electricity lines to prevent static discharge/electrical arc. In such work situations, never use a remote hook (electrically-activated) and remove electrical wire (or other conductive material) from your synthetic longline assembly. Refer to a competent person to validate work method in these situations. Barry supplies longlines with excellent dielectric properties. Contact SEI INDUSTRIES Ltd. to discuss your specific requirements.
- **Protective jacket:** If the longline fabric protective jacket, with either a hook-and-loop or zipper closure, is defective or becomes worn or damaged, there is a risk that it could open while flying. The opened and unattached jacket may create a "wing" effect that could cause the longline or remnant parts of the jacket to fly in the tail rotor.

  As with any components of a longline, the protective jacket must be inspected before each use and replaced if worn or defective. It should also be installed properly as per manufacturer’s instructions. Flying speed when using a longline should be adjusted accordingly, and if the pilot perceives a problem, he/she should slow down immediately, visually identify the problem and land securely as soon as possible.

- **Accidental dynamic loading:** Nearly all helicopter external load work is subject to dynamic loading to some degree. Whenever a load is picked-up, stopped, moved or swung, there is an increased force due to the acceleration or dynamics of the movement. The more rapidly or suddenly such actions occur, the greater the forces.

  Your longline is **not** designed to absorb the energy of an accidental dynamic loading. Accidental dynamic loading may occur when, in extreme cases, the forces sustained by the rope may be two, three or even more times the static load (ex: When picking up a lift on a slack longline, using a longline to stop an accidentally falling object, if the longline gets snagged, etc.). Care must be taken to avoid this. Loads should be handled slowly and smoothly to minimize the dynamic load. If an accidental dynamic loading does occur, retire your longline!

  Users should also be aware that dynamic effects are greater on low elongation ropes such as Dyneema® fiber ropes, and that dynamic effects are more significant on a short longline as opposed to longer ones.

  **WARNING:** "Slingshot“ loading (intended dynamic loading) of the BAMBI LONGLINES may cause premature failure of the longline and connecting hardware.

- **Recoil (snap-back) effect:** Even though rope made of Dyneema® fiber has a minimal risk of dangerous snap-back (ref. DSM Dyneema® documentation), combination of a longline made of Dyneema® fiber with protective jacket, protective end-covers, electrical wires, hydraulic hoses and other accessories might affect recoil properties. Recoil is the phenomena whereby the broken ends of a tensioned rope draw back rapidly after break. This may also be referred to as "snap-back".

  **WARNING:** When using longlines, there is always a risk of main or tail rotor strike if the longline, connected accessories or load fail during transport.

- **Longline ditching:** When disconnecting the longline from the helicopter in flight, do so from a maximum hovering height of 1.5 m (5 ft) above the ground, unless your SOP (Standard Operating Procedures) prevents you from doing so. Dropping the longline from a greater height will permanently damage the longline and its components and may be hazardous to ground personnel.

- **Landing:** Plan your landing zone to allow room so the helicopter will not land on the longline.

- **Avoid stepping or passing over your longline:** Besides the possibility of cutting the longline, stepping or passing over a longline will grind dirt into the strands and increase the possibility of internal abrasion which may cut filaments and lead to longline failure.

- **Personal protective equipment:** Ground personnel should always be wearing protective glasses, helmet, gloves and other required personal protective equipment specific to the task when manipulating a longline, remote hook or external cargo load.
- **Torsion fatigue:** The repeated twisting of a longline will cause internal abrasion and premature wear, and will decrease the longline's strength. Always ensure that there is no twisting or torsion of the longline and use appropriate swivels as required.

**Knots:** A knot in a longline may reduce its strength significantly. Make sure there are no knots in the longline before using it. If a knot was made in the longline and the longline is subsequently loaded, then the longline must be removed from service, the knot must be removed, and a proper inspection must be made by a competent person before the longline is put back in service.

**WARNING:** Never use a longline with knots.

- **High-cycle lifting:** Be extremely vigilant that every hook-up of the load is secure and that the crew does not become complacent due to the repeated nature of the work. Also be aware that the longline will age more rapidly and may necessitate being withdrawn from service earlier (refer to section 6 of this manual).

- **Multiple loads:** If and when permitted, extreme care should be practiced whenever multiple loads are carried to avoid twisting, spinning, torsions, abrasion, friction, etc.

- **Static discharge:** Static discharge along the longline is a common occurrence, particularly in wet conditions of snow, rain, fog and high humidity. Flying dust or snow can also increase static build-up. Larger helicopters will also develop more static build-up. It is a good practice to touch ground with the helicopter, longline or cargo before on-ground personnel is allowed to come in contact with the load, or to use a static discharge wand. If the ground is covered with snow, the use of a grounding rod may be necessary to ground the helicopter.

**WARNING:** Static electricity is dangerous and may cause injury or death.

- **Flying speed:** Adjust helicopter flying speed according to load carried. If necessary, add a weighted end-cover at the bottom end of the longline. Caged hooks and other heavy remote hardware may also help create distance from the tail rotor.

**WARNING:** The helicopter pilot should exercise extreme caution when flying with an unweighted longline. It is the pilot's responsibility to understand and control the dynamics of flying a helicopter with a weighted or unweighted longline.

- **Floor cut-out (Hell hole):** For helicopters (ex. Mi-8, Mi-17) with an internal hook and a cut-out in the floor (also known as Hell hole), unless there is a counter-indication preventing this, the user (under guidance of a competent person) should install an extension lanyard made of steel cable of sufficient strength, which will pass through the cut-out hole, and make a compatible connection to the longline under the helicopter.

*Example of a steel lanyard through a cut-out hole on a Mil Mi-171:*
5.2 CONTROLLING CONTINGENT RISKS: There are two main categories of contingent risks.

The first category includes the risks that crew members who handle the BAMBI LONGLINES face directly. These individuals are required to observe the prevailing conditions, especially changes in how the longline is used. The person responsible for these products should be aware of all information regarding the safe use of longline.

When the individual responsible for longline safety leaves the site, work should be immediately stopped, unless he or she has passed on key instructions concerning proper use of the longline. Before the last person responsible for longline safety leaves the job site, work should be discontinued, and he or she should:

- Store the longline (longlines)
- Remove the load from the longline
- Inform the supervisor of any hazards
- Take all the necessary precautions related to the specific job.

The second category of contingent risks encompasses all risks that anyone not directly involved in the use of longline faces. It is virtually impossible for those responsible for the use of longline to be continually on the lookout for such dangers. To minimize the risk of accidents they can nevertheless do the following:

- Obtain all information regarding the use of longline, especially with regard to longline limitations
- Make sure that longline installations and connections are adequate
- Establish and/or respect working loads limits
- Post instructions on the proper use of longline
- Keep informed of all activities which may exceed a longline’s limitations (e.g. high temperature, exposure to chemicals, shock loading, overloading)
- Inspect all longlines periodically and systematically.

6. INSPECTION

**WARNING:** Improper care and use of your BAMBI LONGLINES can result in serious injury or death. Never use these products for any other than their intended purpose.

This document may only be used by persons who are competent in the inspection of synthetic longlines in accordance with the SEI INDUSTRIES recommendations found herein this User Instructions Manual, which is provided with each longline and is also available on the Barry website.

6.1 INSPECTION FREQUENCY: It is important to continually monitor the condition of your longline by doing regular inspections. There are three types of mandatory inspections:

- Initial inspection performed on a new longline prior to using it for the first time.
- Pre-use inspection performed before each use of the longline.
- Formal inspection performed at least once per year (or more frequently if deemed necessary due to intensive use, unknown use conditions, etc.).

6.2 INITIAL INSPECTION: Every longline, prior to being put in service, must be inspected to make sure it is complete and has not been damaged during transit between the supplier and the user.

6.2.1 Initial inspection procedure:

A. Make sure that your longline is complete as ordered (i.e. protective end-covers, protective jacket, ring, electrical wire, electrical terminations, etc., as applicable), and that the provided rope sample for inspection purpose is present.

B. Do a visual inspection of the complete longline while removing it from its bag to make sure it has no apparent damages.
C. Check the longline’s ID tag and make sure it matches the info on the provided Certificate of Compliance.

D. File the provided (or your own) inspection logbook with the longline’s part number, serial number, date of manufacture, date of purchase and date of first use.

E. Validate that the copy of the User Instructions Manual provided with your longline is the latest revision (consult the SEI INDUSTRIES Ltd.) and keep it with the longline.

6.3 PRE-USE INSPECTION: The pre-use visual and tactile inspection must be performed before each use of the longline by the user as long as this person is trained or qualified to identify damages according to this Manual.

Use is defined as from the moment a longline is attached to the helicopter hook until the time when it is removed from the hook to terminate a continuous cycle of external load lifts. If these recommendations are not applicable due to the nature of the work being done, then the user may refer to a competent person to establish their own pre-use inspection frequency.

6.3.1 Pre-use inspection procedure:

A. Make sure you have enough room to lay the longline on a flat and clean surface, as it should be thoroughly inspected both visually and manually over its entire length.

   Inspect the complete longline and accessories as per inspection criteria (section 6.5). The protective jacket should be opened to expose the longline to do a visual inspection of the rope.

B. If the inspection is satisfactory, and none of the retirement criteria (refer to section 6.6) are observed, then the longline may be used after the protective jacket and other components have been re-installed properly (refer to section 1.4).

   If the inspection is unsatisfactory, the longline should not be put in service. It should be tagged accordingly and either be inspected formally (refer to section 6.4), sent to SEI INDUSTRIES Ltd. for repair/refurbishing or destroyed if it appears to the inspector that it is beyond repair or meets the retirement criteria (refer to section 6.6). A note in the logbook should be made accordingly. In the case of loss or destruction, please notify SEI INDUSTRIES Ltd. with the serial number identification so that SEI INDUSTRIES can update its logbook of manufactured products.

6.4 FORMAL INSPECTION: Every BAMBI LONGLINES and its documentation must be inspected at least annually by a competent person (other than the user or person who performs the pre-use inspections).

6.4.1 Formal inspection procedure:

A. During formal inspections, the inspector should have all the significant information pertaining to the longline being inspected, such as:

   - The manufacturer’s product recommendations
   - Knowledge of whether a recall has been made on the product
   - A sample of the longline rope to be inspected that has yet to be used

B. Make sure you have enough room to lay the longline on a flat and clean surface, as it should be thoroughly inspected both visually and manually over its entire length.

   Inspect the complete longline and accessories as per inspection criteria (section 6.5). The protective jacket should be opened to expose the longline to do a visual inspection of the rope.

C. If the inspection is satisfactory, and none of the retirement criteria (refer to section 6.6) are observed, then the longline may be used after the protective jacket and other components have been re-installed properly (refer to section 1.4).

   If the inspection is unsatisfactory, the longline should not be put in service. It should be tagged accordingly and either be sent to SEI INDUSTRIES Ltd. for repair/refurbishing or destroyed if it appears to the inspector that it is beyond repair or meets the retirement criteria (refer to section 6.6). A note in the logbook should be made accordingly. In the case of loss or destruction, please notify SEI INDUSTRIES with the serial number identification so that SEI INDUSTRIES Ltd. can update its logbook of manufactured products.
**D.** Complete the inspection form and inspection log sheet provided at the end of this manual (or use your own inspection logbook that minimally contains the inspection requirements found in this manual).

**6.5 INSPECTION CRITERIA:** Longline inspection should be performed in a clean and well-lit place. The visual and tactile inspection should be done on the entire length and surface of each longline that is to be inspected.

It is expected that a longline will be left in normal service if no significant damage is identified. However, when a longline is considered to be damaged, in accordance with the inspection and evaluation criteria, a decision must be made to repair, downgrade, or retire the longline based on the results of inspection.

**6.5.1 IDENTIFICATION LABEL INSPECTION:** The identification label or steel hangtag must be permanently attached to the longline and be fully legible. If the longline has a steel ID hangtag, it should be inspected for sharp edges or other damages that could eventually cut rope fibers.

**6.5.2 ROPE INSPECTION:** Every portion of the rope should be inspected visually and manually for defects or damages. The following list is not exhaustive and does not exclude the possibility of other types of longline degradation and/or manufacturing defects.

<table>
<thead>
<tr>
<th>NEW LONGLINE AND LONGLINE HISTORY:</th>
<th>A sample of unused longline is required at all times for comparison to other longlines in use, along with the longline’s inspection record and history. SEI INDUSTRIES supplies a sample of new rope in a sealed pouch with each longline. Keep this rope sample as it is essential to the proper and complete inspection process.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXCESSIVE ABRASION:</strong></td>
<td>If 25% or more of the fibers are damaged, withdraw the longline from service and determine the cause. A longline showing excessive external and internal abrasion must also be removed from service. Light external abrasion is acceptable if no internal abrasion is observed.</td>
</tr>
<tr>
<td><strong>CUT STRANDS:</strong></td>
<td>Longlines made of 12-strand rope that have 2 adjacent partly cut strands or a completely cut strand should either be retired or the cut section should be removed and the remaining longline re-spliced.</td>
</tr>
</tbody>
</table>
**MELTING OR GLAZING:** Rope showing melting or glazing caused by excessive heat, which can be the result of intensive abrasion. This area will be extremely stiff. Unlike fiber compression, the melted area cannot be mitigated by flexing the rope. The melted area should be cut out and re-spliced or the longline should be retired from service.

**DISCOLORATION:** A change in the color of the fibers may be caused by exposure to chemicals. Determine the source and if the longline has been in contact with damaging chemicals, destroy the longline.

**COMPRESSIONS:** Rope exhibits fiber-set due to compression. Visible in the area where the rope is loaded, it often has a slight sheen on the contact area. Do not confuse with melting or glazing. For braided ropes without an extruded jacket, this condition is often corrected by flexing the rope. Jacketed ropes must be inspected for damages in the extruded jacket. Remove from service if a cut is observed, or if an inconsistency in the internal fibers is felt.

**EXTERNAL AND INTERNAL ABRASION:** Pictures show examples of moderate external abrasion. For braided ropes, if moderate external abrasion and internal abrasion of the fibers are observed on the same rope, than the longline must be retired from service. For ropes with an extruded jacket, heavy external abrasion may have created damage to the internal fibers. The longline must then be retired from service.

**CUT JACKET:** Longlines made with jacketed rope must not show any cuts on their extruded jacket. Remove from service if any cut is observed.
6.5.3 SPLICE INSPECTION: Splice terminations at each end of the rope must be carefully inspected. The spliced eyes should not have opened and allow the thimbles to be easily removable. Inspect the lockstitch and make sure the thread is not broken or frayed. Verify the whipping and make sure that the sewing thread is not cut.

6.5.4 HARDWARE INSPECTION: All hardware components used in conjunction with longline products should be inspected. All hardware (thimbles, Nylite™ assemblies, hooks, rings, mechanical terminations) should not show any damage or sharp edges, any kind of permanent deformation or any corrosion. Pear rings and thimbles should be checked visually for incorrect shape, cracks, nicks, gouges, deformation, damage from chemicals and unusual wear. Hardware components that are damaged must be replaced, if possible, or the longline must be retired from service.

6.5.5 PROTECTIVE JACKET AND COVERS INSPECTION: The protective jacket and end-covers should be free of tears or other damages. Seams should be inspected for loose or broken thread. Zippers should close and open properly (all teeth should engage). Hook-and-loop fasteners should be free of dirt which reduces their effectiveness. All jacket and end-cover attachment straps and buckles should be properly attached as per the assembly instructions of this manual (section 1.4). Longlines must not be used without properly installed jackets and covers that are in good working condition. If required, contact SEI INDUSTRIES for replacement jackets and covers for your specific longline.

6.5.6 ELECTRICAL COMPONENTS INSPECTION: Electrical cable and plugs should be inspected, and damages (cut or stripped cable, broken plugs) must be repaired or components replaced.

6.6 RETIREMENT CRITERIA:

When to retire your longline: The following is a list of general guidelines that can assist you in deciding when to retire a longline.

- **Age:** The longline was manufactured more than 4 years ago.
- **Overuse:** The longline has been in use for more than 2000 hours or is simply "worn out" from use.
- **Abrasion:** If longline strands are reduced by 25% or more through abrasion, or if excessive external and internal abrasion is observed.
- **Fiber strands cut:** The longline is displaying two or more adjacent partly cut strands or one or more completely cut strand.
- **Melting or glazing:** Caused by heat sources or intensive abrasion.
- **Cut jacket:** A longline with an extruded jacket has one or more cuts.
- **Dynamic loading:** Longline that has been subjected to accidental dynamic loading.
- **Overloading:** Longline that has been subjected to the kind of overload for which it was not designed, such as towing or lifting heavy objects beyond the working load limit.
- **Chemical contamination:** Unless the chemical is specifically known to be harmless, it should be considered a contaminant.
- **Texture inconsistency:** Soft, mushy places or hard spots (localized or over an extended area).
- **Diameter inconsistency:** A visible change in diameter, localized diameter reduction, flat area, lumps and bumps in longline.
- **Loss of confidence:** The longline was used by persons who you suspect may not have taken proper care of it.
- **Modifications:** The longline was modified or altered without the written consent of Barry.
- **Identification:** The information on the age and working load limit of the longline is not visible or legible anymore.

**IMPORTANT:** A longline is not as valuable as human life. If for any reason you do not feel comfortable using your longline, retire it immediately.
7. MAINTENANCE AND STORAGE

7.1 CLEANING: A dirty longline should be cleaned by hand in cold water with small amounts of mild soap only, rinsed thoroughly and then air-dried in a cool ventilated dark room. Do not use bleach or bleach substitutes and do not dry the rope in a dryer. An excessive buildup of dirt, paint, diesel, fuel, hydraulic oil, etc. may prevent the longline from working properly, and in severe cases degrade the longline to a point where it weakens and should be removed from service. More information on cleaning is available from SEI INDUSTRIES Ltd.

7.2 STORAGE: Store the longline in its transport bag, in a cool, dry, clean environment out of direct sunlight. Although UHMWPE (Dyneema®) fiber is very resistant to chemical immersion, avoid areas where chemical vapors may exist. When storing the longline, make sure it is not compressed. Thoroughly inspect the longline after extended storage.

7.3 REPAIRS: Additional maintenance and servicing procedures must be completed by SEI INDUSTRIES Ltd. Do not attempt to disassemble the splices or mechanical terminations. Only SEI INDUSTRIES may make repairs to this equipment.

8. LIFETIME

8.1 MAXIMUM LIFETIME: The maximum lifetime (including storage time) of a BAMBI longline is 4 years after manufacturing date, on the condition that regular inspections prior to each use do not reveal an anomaly. The actual lifetime depends on the intensity and the frequency of use as well as the environment. An exceptional circumstance might limit the product lifetime to a single use. A longline that was not formally inspected at least once per year should be removed from service and replaced, unless stated otherwise by the manufacturer after a thorough inspection.

Average Residual Break Strength of $\frac{1}{2}$" Diameter Longlines
A continuing study of the residual break strength of longlines, used in diverse conditions by different operators, revealed that on average, a longline that is 4 years-old has lost 50% of its initial (new) strength. This graph shows the average curve of strength loss of $\frac{1}{2}$" longlines, which can help in evaluating the residual strength of a $\frac{1}{2}$" diameter longline. Note that this is an average curve only, as some longlines tested had lost more than 50% of their initial strength after only 1 year of use. Only an actual break test can definitively give the actual residual break strength of a longline. This can be done through the recertification of a longline (consult with SEI INDUSTRIES).
8.2 MAXIMUM HOURS OF USE: SEI INDUSTRIES recommends that a longline be taken out of service after a maximum of 2000 hours of use. The longline may be used for a longer period if annual recertification allows.

8.3 RECERTIFICATION: Annual recertification and refurbishing can be performed by SEI INDUSTRIES Ltd. to maintain and extend the service life of your longlines (certain conditions apply). Contact SEI INDUSTRIES Ltd. for more information on recertification procedure.

9. INCIDENT/FAILURE REPORTING

In the unfortunate situation that a BAMBI LONGLINE is involved in an incident or a failure, please notify SEI INDUSTRIES Ltd. immediately so that prompt corrective measures can be taken by SEI INDUSTRIES Ltd.

Complete information concerning the incident (date, location, load quantity and type, helicopter make and model, operator information, details as to event and consequence, etc.) must be communicated to SEI INDUSTRIES Ltd.
10. **WARRANTY**

SEI INDUSTRIES Ltd. (the company) agrees to grant a warranty for a period of one year from the date of purchase of Bambi Bucket systems on the following conditions:

a) The company’s sole obligation under this warranty is limited to repairing or replacing, at the company’s sole discretion, any product shown to be defective.

b) The company’s products are not guaranteed for any specific length of time or measure of service, but are warranted only to be free from defects in workmanship and material for a period of one year to the original purchaser.

c) To the extent allowable under applicable law, the company’s liability for consequential and incidental damages is expressly disclaimed. **The company’s liability in all events is limited to and shall not exceed, the purchase price paid.**

d) This warranty is granted to the original purchaser of Bambi Bucket systems and does not extend to a subsequent purchaser or assignee.

e) The company must receive notification in writing of any claims of warranty from the original purchaser which must give details of the claimed defect in the product.

f) Where the original purchaser is claiming under warranty, the product must be returned to the company for inspection with all transportation and duty charges prepaid.

g) The warranty does not extend to any product that has been accidentally damaged, abraded, altered, punctured, abused, misused or used for a purpose which has not been approved by the company.

h) This warranty does not apply to any accessories used with the product that are not supplied by the company and any warranty on such accessories must be requested from the manufacturer or dealer of the accessories.

i) In the event the original purchaser does not give notice of a warranty claim, within one year of the original purchase of the product, it is understood that the purchaser has waived the claim for warranty and the purchaser and/or any subsequent purchaser must accept the condition of the product, without warranty.

j) Any technical information supplied by the company regarding the product is not a condition of warranty but rather is information provided by the company to the best of its knowledge.

k) There are no implied warranties nor is there any warranty that can be assumed from any representation of any person, except the company itself.

**Exclusions**

l) This warranty is void if the product is not installed, used and/or maintained in accordance with the operations manual supplied by SEI INDUSTRIES Ltd.

m) All Bambi Buckets systems and equipment are designed and manufactured with substantial safety margins. It is the responsibility of the user to ensure that the product is maintained in accordance with product manual(s).
Dyneema® is a trademark of DSM. Use of this trademark is prohibited unless strictly authorized. Nylite™ assemblies are Samson Rope Technologies products.

**FORMAL INSPECTION FORM**
FOR BAMBI LONGLINES

<table>
<thead>
<tr>
<th>Model #:</th>
<th>User identity (company)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial #:</td>
<td>Name:</td>
</tr>
<tr>
<td>Length:</td>
<td>Address:</td>
</tr>
<tr>
<td>WLL:</td>
<td>Phone:</td>
</tr>
<tr>
<td>Manufacturer:</td>
<td>Fax:</td>
</tr>
</tbody>
</table>

**Age and Service Life Information**

<table>
<thead>
<tr>
<th>Date of manufacture:</th>
<th>Date of purchase:</th>
<th>Date of first use:</th>
</tr>
</thead>
</table>

**Part A - Information Check**

<table>
<thead>
<tr>
<th>Description</th>
<th>Yes</th>
<th>No</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have the latest product documentation (User instructions manual)?</td>
<td></td>
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<tr>
<td>Was there a recall on this product?</td>
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<tr>
<td>Do you have a new rope sample for comparison?</td>
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</tbody>
</table>

**Part B - Visual and Tactile Inspection**

Refer to section 6.5 INSPECTION CRITERIA of the User Instructions Manual

<table>
<thead>
<tr>
<th>Part to inspect</th>
<th>Verify</th>
<th>Pass</th>
<th>Fail</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification label</td>
<td>Permanently attached to longline, fully legible, no sharp edges or damaged attachment cable (steel ID hangtag)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rope</td>
<td>Excessive abrasion, cut strands, melting, glazing, discoloration, compressions, external/internal abrasion, cut extruded jacket</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Splices</td>
<td>Spliced eye tight on thimble, lockstitch thread not broken, whipping thread not cut</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardware (thimbles, Nylite™, rings, hooks)</td>
<td>Damages, sharp edges, corrosion, incorrect shape, cracks, nicks, gouges, chemical damages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protective jacket and covers</td>
<td>Tears, broken seams, zipper and hook-and-loop functionality, straps and buckles condition</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Electrical components</td>
<td>Cut or stripped electrical cable, broken plugs</td>
<td></td>
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</tbody>
</table>

**Part C - Inspection Conclusion**

Refer to section 6.6 RETIREMENT CRITERIA of the User Instructions Manual

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Verify</th>
<th>Pass</th>
<th>Fail</th>
<th>Comment</th>
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<tbody>
<tr>
<td>Age</td>
<td>Maximum 4 years</td>
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<tr>
<td>Overuse</td>
<td>Maximum 2000 hours of use</td>
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<tr>
<td>Abrasion</td>
<td>Max. 25% of strands</td>
<td></td>
<td></td>
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<tr>
<td>Fiber strands cut</td>
<td>No two adjacent partly-cut strands or one fully-cut strand</td>
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<tr>
<td>Melting /Glazing</td>
<td>Caused by heat or abrasion</td>
<td></td>
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<tr>
<td>Dynamic loading</td>
<td>Accidental dynamic loading</td>
<td></td>
<td></td>
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<tr>
<td>Overloading</td>
<td>Loading beyond WLL</td>
<td></td>
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</table>

**Verdict:** The product is fit to remain in service  The product is unfit to remain in service

**Part D - Inspector identification**

<table>
<thead>
<tr>
<th>Name:</th>
<th>Signature:</th>
</tr>
</thead>
</table>

BAMBI LONGLINES - USER INSTRUCTIONS MANUAL rev.0
**Formal Inspection and Maintenance Log Sheet**

Note: Each log entry should have a corresponding inspection form

<table>
<thead>
<tr>
<th>Inspection Date</th>
<th>Inspection Items Noted</th>
<th>Corrective Action</th>
<th>Maintenance Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved By:</td>
<td></td>
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Approved By:    Verdict: Fit ☐ Unfit ☐
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