

BELIZE STANDARD

BZ CP 6: 202X

BELIZE STANDARD CODE OF PRACTICE FOR HIGH ANGLE ACTIVITY TOURS (CANOPY, CANYONEERING, RAPPELLING, ZIP LINING)

**BBS
BELIZE BUREAU OF STANDARDS
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P.O. Box 430
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Belize, C.A.**

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BELIZE STANDARD
**CODE OF PRACTICE FOR HIGH ANGLE ACTIVITY TOURS (CANOPY,
 CANYONEERING, RAPPELLING, ZIP LINING)**

Committee Representation

The preparation of this standard for the Standards Advisory Council established under the Standards Act 1992 was carried out under the supervision of the Belize Bureau of Standards' Tourism and Related Services Technical Committee and the Technical Sub-Committee for Tourist High Risk Activities, which at the time comprised the following members:

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Splash Dive Center

Central Building Authority (CBA)

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**FINAL DRAFT BELIZE STANDARD
CODE OF PRACTICE FOR HIGH ANGLE ACTIVITY TOURS (CANOPY,
CANYONEERING, RAPPELLING AND ZIPLINING)**

0 FOREWORD

- 0.1 This standard was developed to address the safe operation and quality of high angle activity tours in Belize. The high angle activities covered in this standard includes canopy tours, zip lining tours, rappelling, also known as abseiling tours, rock climbing tours, canyoneering, via ferrata and any other similar activity in Belize.
- 0.2 The standard outlines minimum requirements for the safe and secure operation of any of the above mentioned tours. All parties involved in conducting any tour of this nature are required to adhere re to this standard.
- 0.3 In preparing this , assistance was derived from the following publications:
- a) Belize Standards BZS 26:2014: Standards for Health and Safety of Archaeological Reserves and Parks;
 - b) Association for Challenge Course Technology (ACCT) Standards for Challenge Courses & Zip Line Tours;
 - c) Occupational Safety and Health Administration (OSHA)/ANSI Safety Signs Systems Standard- A Clarion Implementation Guide;
 - d) National Regulation for Tour Guides, Honduras;
 - e) Belize National Code of Practice for Recreational Scuba Diving, SI 57 of 2016;

1 SCOPE

This standard specifies general requirements for high angle activity tours in Belize and specific minimum requirements for each, namely, canopy tours, zip lining tours, rappelling, also known as abseiling tours, rock climbing tours, canyoneering, via ferrata and any other similar activity. The standard also applies to the below areas:

- a) operational health and safety, emergency response and equipment for the above mentioned high angle activities; and
- b) avoiding and minimizing impact to the environment;

2 NORMATIVE REFERENCE

The following referenced documents are indispensable for the application of this standard. The latest edition of the referenced documents, including any amendments apply:

- 2.1 Standards
 - a) BZS 26:2014: Belize Standard for Health and Safety of Archaeological Reserves and Parks;
- 2.2 Legislations and Regulations
 - a) Belize Tourism Board (Tour Guide and Tour Operators) Regulations, Chapter 275;
 - b) National Institute of Culture and History, Chapter 331;
 - c) Environmental Protection Act, Chapter 328
 - d) Belize Building Act 2003;
 - e) Professional Engineers (registration) Act, Chapter 326:03;
 - f) Labour Act, Chapter 297;

3 TERMS AND DEFINITIONS

For the purposes of this standard, the following definitions shall apply:

- 3.1 **Accident** means an unplanned/unwanted event that results in injury, ill health or damage to property.
- 3.2 **Assistant System Operator (ASO)** means a person who has completed the first part of the system operator training consisting of safety of equipment in the respective system, and whose obligations are ensuring that participants are not touching their equipment; act as a spotter in order to point out any animal activity or other points of interest. This person may be a systems operator (SO) trainee.
- 3.3 **Belaying** means a variety of techniques climbers use to exert friction on a climbing rope so that a falling climber does not fall or does not fall very far. It is the act of applying friction at the other end of the rope whenever the climber is not moving, and removing the friction from the rope whenever the climber needs more rope to continue climbing.

NOTE: Belaying is an important part of the climbing chain of safety and one of the most important skills that any novice climber must master to become a safe climber.
- 3.4 **Cable** means a wire or synthetic rope of different specifications.
- 3.5 **Canopy tour** means a guided expedition through the upper levels of a forest most commonly by means of zip lines or aerial walkways with intermediate platforms. The tour includes a briefing or guided explanation and view of the area's landscape, flora, fauna and admiration of scenic views.
- 3.6 **Canyoneering** means an outdoor activity that combines route finding, rappelling, problem solving, swimming, and hiking.

- 3.7 **Carabiner/karabiner** means a metal clip or metal loop with spring-loaded locking and non-locking gates used to quickly and reversibly connect components like harnesses and ropes, most notably in safety-critical systems.
- 3.8 **Chief System Operator (CSO)** means a high angle activity senior system operator with the additional responsibility of coordinating and supervising the activities of the tour and other system operators. The CSO is the highest authority on the tour while it is in operation even above those of the manager or the owners of the tour system in questions of safety and security.
- 3.9 **Child** means a person who is between the ages of 6 to 17 years.
- 3.10 **Disability** means an evolving concept referring to persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others.
- 3.11 **Emergency** means any situation that requires extraordinary procedures and/or personnel to resolve the issue.
- 3.12 **Freelance Guide** means a tour guide that works on a part time basis or on specific days when he is required by a tour operator.
- 3.13 **Freelance System Operator** means a system operator that works on a part time basis or on specific days when he is required by a tour operator.
- 3.14 **Hand Brake System** means an active breaking system whereby a participant controls their rate of deceleration by adjusting the amount of hand pressure applied to the cable or coated, dynamic or static rope.
- 3.15 **Harness** means a set of straps connected together used to connect a person to a zip line or a rope for rock climbing or rappelling.
- 3.16 **High Angle Activity (HAA)** means an activity or tour that is carried out in an area or place that is steep and exposed and requires the participant(s) to be secured with rope, ladders, mechanical devices and other equipment to ascend to, or descend preventing them from falling from an altitude. For this standard, high angle activity refers to canopy, zip lining, rappelling, also known as abseiling, rock climbing, multi-pitch climbing, canyoneering, via ferrata and any other similar activity.
- 3.17 **High Angle Activity Facility** means a designated location that includes buildings, structures, trails, and equipment where a high angle activity tour occurs.
- 3.18 **Incident** means an unplanned event that does not result in personal injury but may result in property damage or is worthy of recording.
- 3.19 **Lanyard** means a piece of rope or webbing certified to be used for securing a climber or a participant to a safety line or an anchor point.

- 3.20 **Loading/unloading area** means the space, platform or structure within immediate proximity to the respective high angle activity being carried out where participants are either attached to or are unattached from the zip line pulley or trolley.
- 3.21 **Natural anchor** means any simple anchor point that nature provides; for example, trees or rocks that are used in high and low tension installations.
- 3.22 **Near Miss** means an unplanned/unwanted event that, while not causing harm, has the potential to cause injury, ill health or property damage.
- 3.23 **Participant** means someone who takes part in any activity of a high angle tour in Belize.
- 3.24 **Personal Safety System** means a secondary or independent system that has a fall arrester or fall protection that prevents injury to a participant.
- 3.25 **Rappel/belay device** means a metal device attached to a person's harness or anchor and which a belayer uses to hold the rope. There are two basic types of belay devices: passive/standard and auto-locking.
- 3.26 **Rappelling/abseiling** means the act of having a controlled descent of an inclined or vertical drop using a rope and a rappel device that provides friction attached to a harness.
- 3.27 **Rock climbing** means the act of climbing on steep rock or cliff surfaces with the use of ropes and other safety climbing equipment.
- 3.28 **Staff** means individuals fully employed, part-time employed or working under contract hired by a high angle activity (HAA) tour operator in Belize and includes but is not limited to Chief System Operators (CSO), System Operators (SO) Guides (SOG), Freelance Guide and Freelance SO/Guide, and Assistant System Operators (ASO).
- 3.29 **System Operator (SO) Guide (SOG)** means the person that acts as a high angle tour, health and safety officer that takes participants safely through the tour. Responsibilities include promoting the tour, greeting the participants, explaining how the tour operates, filling out the necessary paperwork, correctly equip participants, monitor the participants throughout the tour, explain and demonstrate techniques, connect and disconnect participants from the various elements of the tour, ensure that security measures are being followed at all times and return the participants safely to the ground.
- 3.30 **Tour** means any prearranged journey to one or more destinations led by a tour guide.
- 3.31 **Tour Guide** means a person in possession of a valid tour guide licence granted by the Belize Tourism Board (BTB), whose main occupation is showing tourists the national attractions, and generally watching over the safety while doing so.

- 3.32 **Tour Operator** means an individual, company, or entity that executes localized high angle activity/tour packages to guests and offers lodgings, meals and guided tours to pre-selected tourist facilities in Belize by air, sea or land.
- 3.33 **Trainee** means a person that is not completely qualified in all aspects of a respective high angle activity. This person may only operate under the direct supervision of the CSO, a trainer, or other qualified personnel recognized by the BTB.
- 3.34 **Zip lining tour** means a guided tour consisting of a transportation system with cable stretched between points of different elevations, a pulley, and a harness for attaching a rider/zip liner who moves by gravity between stations.
- 3.35 **Zip line** means a pulley system(s) suspended on a cable line mounted on an incline suspended between support structures. A person is attached to the zip line by a trolley system that traverses from one station or point to another. It enables a user propelled by gravity to travel from the top to the bottom of the inclined cable by holding on to the free moving pulley.

4 GENERAL REQUIREMENTS FOR OPERATION OF ALL HIGH ANGLE ACTIVITY TOURS

4.1 Operation of the High Angle Activity Tour

All tour operators involved in the provision of high angle activity tours shall:

- 4.1.1 Possess a valid Tour Operator license issued by the Belize Tourism Board (BTB);
- 4.1.2 Adhere to the Belize Tourism Board’s current regulations for tour operators at all times;
- 4.1.3 Adhere to any and all legislation governing the establishment and operation of any high angle activity facility;
- 4.1.4 Ensure that the design of all constructed High Angle Activity Systems be done by a registered structural/civil engineer with previous experience in design and construction in the related activity, submitted to the Central Building Authority (CBA) for approval, and shall be constructed by a qualified contractor. Use of the High Angle Activity system shall not commence until it has been inspected and approved by the Central Building Authority (CBA);

NOTE 1: The approval of designs of High Angle Activity Systems shall be in conformity with the Central Building Act.

NOTE 2: Approval or a “no objection letter” from the CBA shall be presented to the BTB when applying for a Tour Operator license.

4.1.5 Disclose, in writing, the minimum requirements for the engagement in any high angle activity tour to every potential participant and actual participant;

4.1.6 Ensure that relevant staff advise participant(s) on the below prior to the provision of the tour:

a) Tour being undertaken is considered to be of high risk;

NOTE: A zip line or canopy tour shall not be offered to someone pregnant, with recent or recurring injuries, muscular or skeletal disorders or with medical conditions;

b) Minimum acceptable age, height and weight as per the system's specifications;

c) Physical endurance required for the tour;

d) Shoes and clothing required for the tour;

NOTE: No open toe shoes shall be acceptable

e) Long hair shall be adequately secured to prevent entanglement with equipment;

f) All jewellery, including body piercing jewellery shall be protected or removed;

4.1.7 Be present with participants where walking distances that are part of the tour between platforms are more than 50 meters (165 feet) to guide them through in order to adhere to ratios, as per the Belize Tourism Board (Tour Operators) (Amendment) Regulations, 2005;

4.1.8 Maintain the below documentation for a period of a minimum of six (6) years. The documentation shall include, but is not limited to:

a) maintenance history reports;

b) liability forms and/or consent forms (if applicable);

c) daily work log;

d) evacuation plan;

e) daily tour logs;

f) training and refresher schedules;

g) copies of certifications for staff and systems; and

- h) copy of inspection report made by the tour operator's respective accredited certification agency;

4.1.9 Have a main office where the below shall be produced forthwith:

- a) relevant licenses, permits and certificates displayed for public viewing;
- b) have a list of all tour(s) being offered, along with their prices in Belize currency made visible;
- c) promotional material on the tour(s);
- d) a clean waiting area for guests; and
- e) clean restroom(s) for use by guest(s);

4.1.10 Keep a written record of each of the below at all times:

- a) participants log for each tour;
- b) incident and/or accident reports;
- c) inspection/audit reports of the tour operator's facility and system used for the tour;
- d) emergency action plan (EAP);
- e) inventory of tour operator's equipment;
- f) updated copy of maintenance log for equipment;
- g) record of daily zipline inspection signed by the Chief Systems Operator; and
- h) weekly inspection records of the tour gear and equipment;

NOTE 1: Records are to be kept a minimum of 6 (six) months on site thereafter at an appropriate location for a minimum of six (6) years.

NOTE 2: Clauses C, E, F, G and H shall have pertinent information including details of the date and time of any inspection, modification or repair and the identification of the person performing these tasks.

4.1.11 Develop and ensure the proper implementation of a documented standard operating procedure (SOP) for daily operations and should be updated regularly;

- 4.1.12 Ensure that specialized equipment and infrastructure are in place and used in the event that the tour is provided to any participant with disability (ies), and that relevant staff has the necessary certified respective training to assist such participants;
- 4.1.13 Have a written Emergency Action Plan (EAP) that addresses emergency procedures for each type of high angle activity tour offered. It shall include clear procedures that take into account unique local hazards, the capabilities of local emergency services and training required by the staff. It shall identify and define actions to mitigate existing and potential hazards and risks to participants and staff and how to respond to emergencies. The EAP shall include a minimum of:
- a) evacuation routes inclusive of signage;
 - b) emergency communication system;
 - c) emergency evacuation plan;
 - d) emergency extrication plan for mass casualty;
 - e) emergency extrication plan in the event of participant(s) get injured;
 - f) emergency trail (s);
 - g) environmental hazards;
 - h) emergency numbers;
 - i) first aid kit (s) strategically located throughout the high angle activity facility and specify their locations on site;
 - j) 1 trauma kit at the high angle activity facility and specify its location on site;
 - k) identification of a core emergency response team; and
- Example: Rapid Intervention Team (RIT)
- l) emergency protocols to be followed;
- 4.1.14 Have signs throughout the high angle activity facility at key locations as per Occupational Safety and Health Administration (OSHA) Standards for Safety Signs systems. These include signage displaying the below information:
- a) Exit signs;
 - b) Evacuation Routes;

- c) Directional signs;
- d) Maximum capacity limit of each platform (weight or number of persons);
- e) Maximum capacity of limit of the traverse;
- f) Maximum capacity of decks;
- g) Maximum capacity of stairs;
- h) Danger/Caution signs;
- i) Restriction signs as per clause 5.3 below; and
- j) Safety instruction signs;

4.1.15 Maintain a file for each permanent and part-time staff member that shall include a copy of the following documents:

- a) Social Security card;
- b) valid professional training certificates, licenses and credentials where applicable;
- c) current address;
- d) employee contact number (s);
- e) emergency contact name and phone number;
- f) valid Belize tour guide license where applicable;
- g) job description; and
- h) proof of other staff trainings and certification;

4.1.16 Have an employee manual that shall be provided to all members of staff. A record of each staff members' signature to confirm that they received a copy of the same shall be in file by the tour operator;

NOTE: Records are to be kept a minimum of 6 (six) months on site thereafter at an appropriate location for a minimum of six (6) years;

4.1.17 Have maps and diagrams informing the participant(s) about the complete procedure of the tour to be undertaken displayed at a central location. This shall include but is not limited to:

- a) layout of the tour;
- b) general rules of the high angle activity facility;
- c) requirements for participation in the activity; i.e, age, height, health conditions etc.

- d) safety equipment required for the activity undertaken;
- e) proper use of the safety equipment;
- f) label of platforms; and
- g) conditions under which the respective activity shall not be undertaken; i.e, storms, floods, electric storms, excessive rain, excessive wind; presence of potential harmful swarms or groups of insects, reptiles or any other animals;

4.1.18 Ensure a record of the below for inspection/audit purposes is available at the high angle activity facility:

- a) parameters given by the qualified contractor that designed or constructed the system;
- b) certification of the system;
- c) copies of recommendations made by respective accredited certification agency;
- d) maintenance records of the system and equipment;
- e) log of the use of the system and equipment with detailed numbers;
- f) ensure appropriate gear is utilized, which may include:

- i. Rescue/Climbing Helmet;
- ii. Gloves;
- iii. Rescue/Climbing Harness;
- iv. Other relevant Personal Protective Equipment (PPE's);
- v. Connectors;
- vi. Descender (s);
- vii. Rope clamps;
- viii. Anchors;
- ix. Pulleys;
- x. appropriate head lamp;
- xi. Adequate amount of carabiners/karabiners as per the respective operation manual; and
- xii. Webbing and lanyards as per the respective operation manual;

NOTE 1: Records are to be kept a minimum of 6 (six) months on site thereafter at an appropriate location for a minimum of six (6) years;

NOTE 2: All equipment shall be maintained as per manufacturer's specifications

NOTE 3: All equipment shall be certified by a recognized certification body approved by the national competent authority.

4.1.19 Have an efficient communication system;

NOTE: A communication device or devices may be used where applicable;

4.1.20 Ensure that the equipment listed below for a high angle tour are provided for each participant:

a) Helmet;

NOTE: Construction and rafting helmets are prohibited, especially the imitation construction style helmets as they are not considered adequate nor safe for a high angle activity;

b) Personal Safety Systems;

c) Gloves;

d) Adequate amount of carabiners/karabiners as per the respective operation manual;

NOTE 1: All equipment shall be maintained as per manufacturer's specifications.

NOTE 2: All equipment shall be certified by a recognized certification body approved by the national competent authority.

4.2 General Health, Safety and Emergency Requirements

The below shall be adhered to by the tour operator and its respective representatives in order to ensure the health and safety of guests participating in the tour. The tour operator shall:

4.2.1 have a written Emergency Action Plan (EAP) as per 4.1.13 above;

4.2.2 ensure that all staff is fully familiarized with the EAP and signs a document annually indicating such;

4.2.3 ensure that emergency equipment is readily available at all times, as identified in the respective EAP. Emergency equipment shall include, but is not limited to:

a) First aid kits available at the main office and at the high angle activity facility.

NOTE: The first aid kits shall be well kitted at all times with non-expired contents;

- b) One (1) Trauma kit at the high angle activity facility and specify its location on site;
- c) Communication System (s) to be used at the high angle activity facility;

4.2.4 notify the Belize Tourism Board (BTB) immediately in the event of any incident, near-miss, or accident that may result in the serious injury or death of a participant; Any other incident or accident shall be reported within twenty-four (24) hours;

4.2.5 ensure that only certified high angle activity system operators, platform assistants, and trainees under supervision, as per clause 4.3.4, that are involved in the tour be allowed to operate the tour (s);

NOTE 1: All participants that are not certified employees of the tour operator shall be deemed only participants and not allowed to operate a tour regardless of their previous climbing experience or certification.

NOTE 2: Platform assistants and trainees shall not increase the ratio of 1:15.

4.2.6 conduct a safety briefing to participant (s) at the beginning of every high angle activity tour, in a language clearly understandable to all participants that shall include, but is not limited to:

- a) instructions to follow before, during and after the tour;
- b) do's and don'ts during the tour;
- c) signals for the operation of the high angle activity;
- d) principal forms of communication for the operation of the high angle activity; i.e, hand, voice, whistle, mobile radios and light signals etc. and
- e) emergency protocols to be followed;

4.2.7 have liability waivers available for each participant(s) to sign. The liability waiver shall be explained thoroughly to the participant(s) by a representative of the tour operator; The waiver shall consist of at least the below:

- a) name and logo of the tour operator;
- b) acceptance of risk clause;
- c) recommendations for the tour;

- d) limitations for participation on the tour; and
- e) name, signature and date filled by each participant;

NOTE: Parents sign on behalf of their children under eighteen (18) years old;

4.2.8 advise all its relevant staff and tour participant(s) that the consumption of alcoholic beverages, illegal drugs and prescriptive drugs prior to or during a tour shall not be allowed.

NOTE: Prescriptive drugs include, but are not limited to, sedatives and psychotropic drugs and any other that may impede participant's performance.

4.3 Staff Requirements

- 4.3.1 Staff shall be professionally groomed and attired at all times as per respective tour operator's policies;
- 4.3.2 Staff shall have all relevant licenses pertaining to their respective job available upon request;
- 4.3.3 Tour guides shall be clearly identifiable and in possession of their tour guide license at all times;
- 4.3.4 Where staff is directly involved in the provision of the actual high angle activity tours outlined in this code of practice, they shall be trained and have valid certification available upon request, as per the operator's respective certification, for essentials needed for the tour(s); i.e at least all of the below:
 - a) The use and operation of their respective high angle activity system by a recognized training body in the specific system involved;
 - b) First Aid;
 - c) Cardiopulmonary Resuscitation (CPR);
 - d) ropes training for high angle activities;
 - e) high angle rescue skills; and
 - f) principles and ethical conduct training;

NOTE 1: 4.3.4 (f) refers to ethics and professional practices related to participant(s) personal space when putting on and removing (donning and doffing) equipment on participant (s) and any other circumstances throughout the duration of the tour(s);

NOTE 2: The above mentioned trainings and certifications are a minimum requirement for all high angle activities; though it is not limited to the above. As per their discretion, tour operators may provide additional training and certifications to their staff;

NOTE 3: The track record and experience information of the recognized training body (ies) shall be made available to inspectors and auditors approved by the Belize Tourism Board (BTB) when requested.

4.4 Liability

4.4.1 It is recognized that there are inherent risks when involved in a high angle activity/tour and as a result, a tour operator offering any high angle activity tour shall adhere to the following liability and safety requirements to mitigate associated risks related to high angle activities:

- a) public liability or tour operator insurance;
- b) passenger liability insurance for each boat or vehicle; and
- c) insurance for each type of tour.

4.4.2 High Angle Activity/tour participants shall be given a liability waiver to sign prior to any high angle activity/tour. A parent or guardian shall sign a liability waiver on behalf of any participant under the age of eighteen (18) years;

5 SPECIFIC REQUIREMENTS FOR CONSTRUCTED SETTINGS (ZIP-LINING, CANOPY TOURS, CHALLENGE COURSES AND AND VIA FERRATA)

In addition to all general requirements, zip lining and canopy tour operators shall:

5.1 Obtain a systems inspection from a certified national, regional or internationally accredited certification body approved by the national competent authority and keep record or certificate of said inspection;

NOTE: Records are to be kept a minimum of 6 (six) months on site; thereafter at an appropriate location for a minimum of six (6) years;

5.2 Not allow two (2) participants traversing on a zip line at the same time except for:

- a) In the event children are attached/tandem to a tour guide;
- b) Rescue operations; and

- c) In the presence of panic and/or vertigo attacks attached to a System Operator (SO);

5.3 Participants to Zip lining/Canopy tours shall adhere to a minimum height limit of forty (40) inches;

NOTE 1: Adequate harnesses shall be used for each participant as per manufacturer’s specifications;

NOTE 2: Children may be allowed to traverse the zip lines attached to a tour guide with a written consent of the child’s parent or guardian;

5.4 In addition to the general training requirements for High Angle activities, also possess the below training with documentation to support it:

5.4.1 System Operators (SO) Guides (SOG):

- a) Shall complete a minimum of a basic SO training course by an accredited agency recognized by the BTB.

5.4.2 Chief System Operators (CSO):

In addition to qualifications required to be a System Operator, a chief system operator shall:

- a) have a clean safety record;
- b) have a minimum of six months of experience on the respective high angle system; and
- c) be able to evacuate the tour participants in the event of any incidents or accidents under any circumstances;

6 SPECIFIC REQUIREMENTS FOR NATURAL SETTINGS (ROCK CLIMBING AND RAPPELLING TOURS)

In addition to general requirements, rock climbing and rappelling tour operators shall ensure that the relevant staff adheres to the below:

6.1 Tour guides directly involved in the provision of a Rock Climbing tour shall, in addition to the general training requirements for high angle activities, also possess the below training with valid certification to support the same for the below:

- a) Rock Climbing type 1 (basic), 2 (Intermediate) and 3 (Advanced) training;
- b) Advanced Wilderness and Remote First-Aid training;
- c) Emergency skills required for different emergency scenarios in rock climbing;

Example: Pick-off, rescuing a climber that passes out while climbing, harness pathology (Compartment Syndrome) etc.;

6.2 Tour guides directly involved in the provision of a rappelling and/or a canyoneering tour shall, in addition to the general training requirements for high angle activities, also possess the below training with valid certification to support the same for the below:

- a) Rappelling type 1 (basic), 2 (Intermediate) and 3 (Advanced) training;
- b) Advanced Wilderness and Remote First-Aid training;

6.2 Any forms of communication used shall be clearly stated to the participant (s) prior to the rock climbing or rappelling tour;

NOTE: hand, voice, whistle, mobile radios and light signals may be used;

6.3 In addition to equipment needed for all high angle activities as per clause 4.1.18 (f) above, the below are additionally required for activities in this section:

- a) belay glove (s);
- b) belay/rappel device (s);
- c) climbing Rope; and
- d) belay rope (s);

NOTE 1: Ropes utilized for each respective high angle activity shall be in conformity with manufacturer's specifications.

NOTE 2: All equipment shall be maintained as per manufacturer's specifications

7 REQUIREMENTS FOR CONSTRUCTION OF HIGH ANGLE ACTIVITY SYSTEMS

Any construction of a high angle activity facility shall obtain:

- a) Environmental Clearance from the Department of the Environment;
- b) Approval from the Central Building Authority;
- c) Site Inspection and Permit from the Belize Forestry Department;

8 CARE AND HANDLING OF TOUR ELEMENTS

8.1 Wires and Cables

- 8.1.1 Wires and cables shall be maintained as per design and manufacturer's specifications;
- 8.1.2 Only first quality new wire shall be used and shall be guarded from corrosive environment;
- 8.1.3 Kinked wire or cable is unsuitable for use on tours;
- 8.1.4 Any wire and/or cable in which the lay is damaged or the core has been exposed is unsuitable for use on tours;
- 8.1.5 Wire struck by lightning shall be retired immediately;

8.2 Synthetic Rope

Synthetic rope shall be maintained as per design and manufacturer's specifications;

8.3 Rope

- 8.3.1 Rope shall be protected from abrasion by shrouds or other protective devices in locations where contact with foreign objects may reduce the bearing capacity during its normal life span;
- 8.3.2 Rope shall be protected from solvents, corrosive chemicals and hydrocarbon;
- 8.3.3 Rope shall be stored in a well-ventilated area away from anything that may reduce its integrity;
- 8.3.4 Ropes shall be removed after a day's use and stored properly;
- 8.3.5 Ropes shall be washed with phosphate free detergent;

9 LOADING

- 9.1 The Tour Operator shall have a copy of inspection report and recommendations regarding loading made by tour operator's respective accreditation agency;
- 9.2 Regular use shall not exceed twenty percent of its rated breaking strength;
- 9.3 Tension on traverses shall be calculated based on the load limits of the anchoring system and shall not exceed 155 degrees when using wire rope;
- 9.4 Wires used for platform support shall be installed in such a way that they can be adjusted to ensure a balanced load is maintained during the lifespan of the platform;

- 9.5 “Balance loading” shall be done to maintain the integrity of the system in order to avoid concentrating stress on any of the supporting limbs of the tree or compression related injuries due to torque being inadvertently applied to the vertical axis of the trunk;
- 9.6 Anchors shall be inspected as per the respective tour operator’s accreditation agency and administered by the CSO as required; tree growth and load balance indications shall be taken into consideration when adjusting;
- 9.7 Load equalization shall be engineered by a system designer when designing a zipline system;

10 ANCHORING

10.1 Anchoring (Constructed Settings)

- a) The Tour Operator shall have a copy of inspection report and recommendations regarding anchoring made by tour operator’s respective accreditation agency;
- b) All anchors shall be strong enough to withstand forces in excess of five times the forces they will encounter under normal use;
- c) Anchors shall be shimmed when coming in contact with trees;
- d) Anchors shall not endanger the life or integrity of the tree holding it;
- e) Sufficient surface area shall be calculated into anchoring interface in order to take into consideration the tolerance of the tree to withstand pressure or surface compression;
- f) Locked off self-equalizing systems shall never automatically abrade the supporting structure;

10.2 Anchoring (Natural Settings)

- a) All anchors shall be strong enough to withstand forces in excess of five times the forces they will encounter under normal use.
- b) Anchors shall not endanger the life or integrity of the tree or cave systems holding it.

11 PLATFORMS

- 11.1 The design and constructions of platforms shall be done by certified and registered companies or engineers in Belize with knowledge and previous experience designing and building these kinds of structures;

- 11.2 Use of platforms shall not commence until it has been inspected and approved by the Central Building Authority (CBA);
- 11.3 All materials, components, and equipment used in the construction of tour elements shall be used as per manufacturer's and designer's specifications;
- 11.4 Platforms shall be equipped with double rails and toe boards;
- 11.5 The weight capacity of each individual element shall be strictly adhered to and is calculated not to exceed the safety margin for the weakest element in the system or to exceed the recommendations of the manufacturer and designer;
- 11.6 Platform surfaces shall be treated with non-slip coatings;
- 11.7 Platforms shall not be bolted or nailed to living trees under any circumstances;
- 11.8 Platforms shall be installed in a manner which precludes endangering the life or structural integrity of the tree or trees supporting them;
- 11.9 Caution shall be exercised when mounting metal platforms to avoid creating a situation whereby human beings are turned into lightning rods or fusible links between the ground and traverse or support cables;

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**Annex A (Informative):
High Angle Activity Facility Selection Considerations Prior to Establishing a High Angle
Activity Facility**

- A1 Prior to the selection of an area for a high angle activity/tour, the below shall be taken into consideration:
- A1.1 A high angle tour operator should avoid areas that are subject to landslide, flash floods or any type of erosion and any area that may be prone to catastrophic events; whether these may be seismic, geothermic or any other type that can adversely affect the safe operation of the system.
 - A1.2 A high angle tour operator should conduct a geotechnical analysis to ensure that the ground is not rendered unstable or unsafe for tours.
 - A1.3 A high angle tour operator should have its trail design approved by the relevant local authority or land owner prior to starting construction.
 - A1.4 A high angle tour operator should abide by local laws and regulations as per the damaging or interfering of any animal habitats or species while constructing.
 - A1.5 A high angle tour operator's plan should be of low impact for general use when offered to the general public and provide safe access for all advertised demographic groups.
 - A1.6 Stairs must be of standard pitch and level.
 - A1.7 Trails must be level side to side with adequate drainage to prevent erosion.
 - A1.8 Trees must be of good health and free from disease or infestation.
 - A1.9 Dead branches must be cut when they may endanger the operation of the tour.
 - A1.10 Trees must not be subjected to coring or drilling analysis
 - A1.11 Nails, screws, spikes or bolts may not be used on trees under any circumstances.
 - A1.12 Precautions must be taken to avoid people treading on the root systems of support trees.
 - A1.13 All connections made to living trees must be calculated to avoid compression injuries.
 - A1.14 Metal must never remain in contact with trees.
 - A1.15 When dealing with rocks, only Stainless Steel may be used in the manufacture of specialty jigs, connectors, anchors and fittings unless nonferrous materials are indicated.

- A1.16 Rock anchors' efficiency must be calculated not to exceed working loads by a factor of 15 or certified by an engineer.
- A1.17 Anchors on questionable rock must be installed as a picket system with weight dispersal over a sufficiently wide area so as to assure the 15:1 safety ratio or as certified by an engineer.
- A1.18 Manufacturer's installation guidelines must be adhered to unless calculated steps are taken to exceed perceived reductions in efficiency by redundancy.
- A1.19 Animal harassment is not permitted.
- A1.20 All personnel will be connected to a safety line at all times. A double line redundancy crossover system will be used by guides on themselves and on participant without exception. Participants will not handle security equipment.

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**Annex B (Informative):
Environment and Behavioural Expectations of High Angle Activity Participants**

- B1 The following requirements are expected from high angle activity participants. The Tour operator reserves the right to share the below with participants prior to the tour.
- B1.2 It is prohibited to engage in a high angle activity/tour without the authority, supervision, and guidance of an operator or employee acting within the scope of the employee's employment or duties with the operator;
- B1.3 It is prohibited to drop, throw, or expel any object from a zip line or canopy tour except as authorized by an operator;
- B1.4 It is prohibited to perform any act that interferes with the running or operation of a zip line or canopy tour; and
- B1.5 It is prohibited to engage in any harmful conduct, or wilfully or negligently engaging in any type of conduct that causes or contributes to the injury of any person.

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