Safety Aloft Guidelines

Background
Short of loss of a vessel, the most catastrophic event any sail training programme might experience is a fall from the rig leading to serious injury or death. All successful sail training operators place safety at the heart of their programme. A pivotal part of Sail Training International's mission encourages this safety culture and seeks to assist where it can in enhancing safety standards. Prevention of falls from the rig is one of the hallmarks of any sailing safety culture. As an industry we are only as good as the weakest player and as such we need to strive to achieve high standards to ensure that the industry gets better and safer.

Nearly all operators of Class A sail training Tall Ships have their own guidelines or regulations for working aloft. The following guidelines dealing with safety aloft serves as both a survey of best practices throughout the STI Class A fleet and a support document for creating or building upon current existing directions. All guidance provided below is solely a recommendation. STI understands that each sail training programme is unique, with its own sets of platforms, equipments, objectives, and methods. There is no stated or implied suggestion that any guidelines are or should be mandated by STI or any other authority. Application of them will be at the discretion of vessel owners, operators and captains.

Introduction
STI Class A Tall Ships Forum member programmes span an impressive array of target trainees and an equally broad set of objectives. Sample groups include the disabled, youth-at-risk, merchant marine candidates, and naval midshipmen and cadets. No set of mandated safety standards could adequately address such a disparate range of communities or their equally wide range of desired outcomes. Additionally, the topic of safety aloft covers a wide range of hardware, equipment, training, and procedures. The combination of each of these sub-topics makes it virtually impossible to create universal safety aloft standards. The guidelines provided here attempt to cover a broad range of application and are necessarily general in nature. STI's guidelines for Class A Tall Ship operators serve to provide a broad base from which programme designers and implementers may construct tailored safety aloft programmes. They are presented in categories covering the major components of successful sail training programmes collected from contributing Class A operators.

Responsibility
Responsibility for a vessel, crew, and trainees rests inextricably with the master or commanding officer. Delegation of responsibility for the conduct of a safety aloft programme on board can often be delegated to a trusted subordinate. These include mates, sail masters, first lieutenants, or boatswains. Such persons should make a conscious decision that it is safe to go aloft before anyone starts aloft.

STI discourages requiring trainees to go aloft. Going aloft can be encouraged and supported, but the ultimate decision regarding readiness to do so should lie with the trainee.
Supervision
No trainee should go aloft alone.

Experienced crew members should accompany trainees going aloft until those trainees have shown themselves to be competent.

A supervisor or designated observer on deck is recommended whenever personnel are aloft.

Going aloft and sail evolution checklists are recommended.

Medical Considerations
Medical screening of all personnel going aloft is highly encouraged. Any physical or medical limitations should be documented and accounted for. This screening is an ongoing process that extends past the medical practitioner's evaluation. Potential effects of fatigue and/or seasickness, illness, etc. must be continuously monitored. Specific anticipated medical conditions (for example heart conditions, learning disabilities) should be identified and addressed proactively. Also, diabetics and epileptics might be specifically limited by the severity of their condition and specific instructions should be provided, based on their condition, detailing what precautions are to be taken while aloft and which particular parts or levels of the rig they are restricted to.

Member ships should have in place procedures for recovering personnel from an arrested fall. Trained and currently certified medical personnel should be available whenever personnel go aloft.

Drugs and Alcohol
No personnel known to be under the influence of recreational drugs or alcohol should be allowed aloft. Some drugs taken for genuine medical reasons (including some seasickness remedies), prescribed or otherwise, can have debilitating side-effects and operators should assess whether to allow personnel undergoing such treatment aloft accordingly.

Rig
Standing and running rigging should be certified by a proper authority and inspected regularly. A rigorous formal preventative maintenance programme for all components of the rig is strongly advised.

Whenever possible, running rigging should be properly and neatly laid out prior to executing any sail evolution. Running rigging should be secured immediately afterwards.

Fall arrest systems of the static line and shunt type (similar to those used in rock climbing) should be fitted to all masts which need to be climbed in order to gain access to sails. (STI strongly recommends the above systems, but recognises that some operators will not wish to fit fall arrest systems as described above, due to conflict with their particular training programme goals. If so, they should consider fitting short vertical safety jackstays to enhance the safety of personnel negotiating futtock shrouds and other areas of the mast where particular difficulty may be encountered.)

On square rigged ships and other vessel types where personnel have to move away from the mast, onto yards or spars, a safety (Jarvis) jackstay and static wire safety jackstays
should be fitted to such yards and spars. The Jarvis jackstay should be in addition to any jackstay the sail is secured to. The wire jackstay should be so rigged that personnel can clip in at the truss and may traverse to the yardarm without unclipping. Truss cranelines should be fitted to facilitate transferring from the mast to the yard on the weather side when braced sharp up.

All equipment designed to prevent falls should take into account the specific rig of the vessel. Such equipment should comply with all relevant legislation and operators should be guided by regulations such as, but not limited to the following:

1. National Maritime Occupational Health and Safety regulations
2. Code of Safe Working Practice for Seafarers
3. Relevant national standards for equipment
4. Any other legal requirement as set by their individual surveying bodies

Safety aloft regimes should explicitly include the bowsprit and areas near headsail standing and running rigging.

Vessels with unique rig equipment such as telescoping stuns’l booms should develop specific safety aloft procedures tailored to the use of this equipment.

Equipment
No topic generates more spirited discussion than the use of harnesses and other fall arresting equipment aloft, the appropriate types to be used, when and if they should be mandated, and how they should be employed. Consensus among the fleet is in favour of the harness. STI recommends sail training programmes test across the range of harnesses and fall arresting gear, identify the appropriate models of this type of equipment for specific sail rigs and programmes in concert with the goals of the training programme require their use. STI recommends full body harnesses, certified to national standards and fitted with double lanyards.

Training
STI recommends all personnel, including trainees who participate in a sail training programme by going aloft, receive formal training on proper procedures and techniques for doing so prior to climbing for the first time. Participation in this training should be documented in writing.

Permanent crew should participate in refresher training, preferably on at least an annual basis.

A suggested list of training topics include,

- Receive permission from the appropriate designated authority prior to laying aloft and report in when back on deck.
- Dress properly for laying aloft and for weather conditions. Full fingered gloves should be discouraged. Appropriate footwear should be encouraged.
- Remove and leave all unnecessary gear on deck. Knives, marlinespikes, pliers, cameras, etc. must be secured to the person by a lanyard.
Use only a properly fitted and certified safety harness in good condition and to an appropriate national standard. Inspect prior to donning. Personnel "touch-check" each other’s harness.

Know the status of all radio transmitters before going aloft and avoid restricted areas.

Whenever possible, lay aloft on the weather side only.

Move only one hand or foot at a time, one hand for the ship and one hand for yourself.

Description and identification of standing and running rigging.

Grasp, stand on or clip in to standing rigging or fixed gear only, never take hold of running rigging or ratlines. (Do not clip in to backstays unless they are fitted with ratlines, or similar, which will prevent vertical descent).

No unnecessary risks.

No skylarking, acrobatics, grandstanding, haste, or competitions in the rig. Cloud walking on sails, descents or ascents other than by approved paths through the rig should be forbidden. An example is a descent via a backstay.

No unnecessary noise.

As soon as a person aloft stops moving or needs to work, clip in immediately unless already attached to a fall arrest device, safety stay, or other such equipment. A secondary point of clip-in is recommended, if possible.

When aloft, work sails from the windward side. While on the bowsprit, stay on the windward side of the headsails.

Stay well clear of all headsail and staysail sheets.

Do not lay out onto a yard until it is secured (all braces are taut and, if the sail is not set, it is in its fixed lifts). Where fall arrest systems allow, clip in before transferring to or from the yard. Announce the fact that you are laying out on the yard.

Avoid straddling shrouds and sitting or standing on yards.

While working on deck, never cast off or move running rigging while personnel are moving or unclipped in the rig.

Take extra care bracing yards when personnel are aloft. Avoid bracing yards with personnel on them whenever possible. Ensure that no personnel (in the shrouds or on the yards) will become trapped as the yards are braced sharp up to the (lee) rigging.

Take extra care to ensure that sails are kept under control whenever personnel are in the vicinity, aloft or on the bowsprit.

Helmsmen should take special care not to inadvertently luff up when personnel are on the bowsprit.

When on the fo’c’sle be aware of flying blocks ("widow-makers").

Review of previous accidents aloft, their cause, and programme responses to prevent the accident in the future.

**Operational Risk Assessment**

Every STI member should have in place a codified method to assess and mitigate operational risk. A risk assessment should be completed prior to every sailing evolution or other event that involves personnel aloft. Items that might be covered in a risk assessment include proper supervision, evolution planning, crew and trainee selection and job assignment, crew and trainee fitness, environmental considerations, the complexity of the evolution, and any equipment shortcomings that must be compensated for.