

NAFAA Performer Safety Guidelines. (Revision 2.1)

The purpose of this document is to provide a minimum set of voluntary fire performer safety guidelines that attends to the concerns of public health and safety as applied to the performing fire arts. This document is meant to supplement and clarify the NFPA 160 standards involving 'Group I' devices. It is not intended to supplant local fire codes, all diligence should be used to discover the local codes for open flame performance.

- I. Performer - NAFAA artists should act in a professional manner. They should be capable, well rehearsed, and safe each time they light up.
 - A. Capable
 1. Performers should not attempt performance under the influence of any judgment or reaction impairing substance.
 2. Performers should be in good physical health, with no temporary or permanent debilitating health issue that could interfere with the planned routine.
 - B. Practice
 1. Every practice should be performed where the artist can be reasonably assured of minimal traffic.
 2. Unlit practice tools should have some visible marking on them to insure others do not accidentally run into the tools during use.
 3. Before lighting up, the performer should be ready to spin the tool for its full duration. At least three successive practices without operational problems should be performed before a lit routine is attempted.
 4. When lit, no new moves should be attempted. If the flame lasts longer than anticipated, a spotter should assist with dousing the wicks.
 5. Each performance should be practiced lit several times to verify duration and capability before a performance is attempted.
 - C. Costume
 1. Regular performance costumes should be made of Flame Retardant or High Heat material.
 2. If not, each part of the costume should be checked for flammability, and flame retarded if possible.
 3. Before the performance, the performer should practice lit in the expected costume several times to insure safety.
- II. Safety Personnel - Each performance and lit practice should have at least one spotter ready to meet fire emergency needs, with additional spotters and guards as needed.
 - A. Guards
 1. Guards provide audience containment duties, keeping audience away from performance area, fuel station, and spinout zones.
 2. Fire safety training is beneficial with guards, but not required.
 - B. Spotters
 1. Spotters are in charge of onstage and back stage fire safety including emergent and intentional wick extinguishing.
 2. Spotters should be well aware of the various aspects of fire performance and familiar with the routine to be performed.
 3. Spotters should be trained in flame extinguishing, response times, untangling equipment and audience control.
 4. When needed, the spotter responds to the audience needs, the venue's needs, then the performer's needs, in that order.
 - C. First aid training
 1. All spotters should have at least rudimentary first aid training, particularly burn care.
 2. At least one spotter should have strong first aid or medical training.
 3. For particularly large performances, the venue should provide on-call ambulance or medical team for the event who should be aware of the duration of the performance.
 - D. Equipment
 1. Intentional extinguishing can be managed with a safety towel of damp cloth, flame treated cloth, or high heat material.
 2. Spotters should be dressed with the same care as a performer and should have a safety towel at all times.
 3. Safety personnel should be equipped with all fire safety devices they have been trained to manage. Ideally, all spotters and guards should have an extinguisher available to them.
- III. Tools - NAFAA performers should use well-maintained tools. Not only should they be constructed to prevent uncontrolled wicks, they should be regularly tested to insure capability.
 - A. Wick Attachment
 1. Wicks should be attached to the fire tool via some hard limiting method. Wire, screws or bolts should be run through the wick and device. Glues and friction should not be the primary method of wick attachment for any swinging device.
 2. Wicks should be made in such a way as to prevent loss of any part during use, either by using fireproof materials in construction, or some other method to prevent partial loss.
 - B. Handle Attachment
 1. Shafted tools (clubs, staff) should either be made of fireproof materials (metal, carbon fiber, etc) or have a protective covering that extends at least 4 inches beyond typical flame contact zones (for a spinning staff, this is 4 inches in either direction of a wick).
 2. Handles should be attached with much the same care as wicks. Balls or tethers should not depend on glue or friction to remain on the shaft; some hard device should be employed to maintain attachment.
 3. Chain grips should be made of durable materials, or augmented with metal grommets when soft goods (e.g. leather, nylon) are used, and should be vigorously checked before each use. Any sign of wear should be considered cause for replacement.
 - C. Connectors
 1. If the device has multiple connected parts or chains, the connectors attaching all parts together should be of a sealed ring type rated above the maximum possible stress that can be applied to the device.
 2. Any connectors that could be exposed to heat should be made of tempered metal; not plastics, drop forged or spring metal.

3. Drop forged connectors (snap connects, et al) should not be positioned where they could be struck by another metal piece [to prevent shattering].
- D. Checking
1. Before each use, the performer should quickly glance over each device to insure that all parts are in good condition and stable. A quick test is to grasp each wick and tug it away from the normal point of contact.
 2. Before each lit performance, special care should be used to insure all nuts, screws, and wires are tight and secure. Grips and handles should be thoroughly checked for security and the wicks should be tested thoroughly. Any sign of wear should be treated as a failure.
- E. Fueling - Tools should be soaked, splashed or basted so that excess fuel can be completely recovered and sealed or returned to proper containers
1. Always spin off excess fuel, in an area free from expected foot traffic and far from ignition sources, before performing.
 2. If available, make use of wick attachments to catch fuel before hitting the ground, avoiding the spin out zone entirely.
 3. Always mop up oily fuels before leaving. Remove oily residue from performance area between performers. Treat mops, rags, or other cleaning devices as soaked wicks.
- IV. Fuels - The basics behind fuel safety are to insure that an uncontrolled burn does not occur, and that the audience and passive safety devices are not affected. Performers should have MSDS for all fuels used and be familiar with any special needs for them.
- A. Storage and transport
1. A fuel's original retail container is usually the best choice for storage and transport.
 2. If the original container is too bulky or unavailable, then a sealed metal container is the best overall choice. Canadian performers should use governmentally issued containers of the appropriate type.
 3. Fuels should be kept out of direct sunlight, away from sparks or flame, and in vapor sealed containers.
- B. Back stage fuel
1. All primary fueling should take place in a back stage fueling area.
 2. Back stage fuel stations should be manned by a performer, guard or spotter until completely secured.
 3. Always seal fuel containers and dip buckets when not in use.
 4. When at all possible, place the fuel area outside, behind a hard wall; and have a clear corridor from the fuel area to the stage. Never move wet wicks through the audience without guard escort.
 5. If you can't have a hard wall between fuel and fire, place a spotter with a towel between and insure that fuel containers are sealed before any ignition.
 6. Audience and smoking should be restricted within 30 feet of fuel station.
- C. Open Onstage Fuel
1. If an onstage fuel reserve is needed, all effort should be made to restrict quantity and capability of accidental spills.
 2. Highly stable metal containers with self-closing lids are preferred
 3. Fuel quantities should be less than 8 oz (240ml).
 4. Unneeded fuel (i.e. after use) should be removed immediately.
- V. Performance - Each performance should be arranged so that the audience is never in danger of taking damage from the performer and so that the venue is safe as well.
- A. Separation
1. Depending on the nature of the audience (seated, drunk, familiar, passing by, etc), an adequate separation from the performer should be maintained. Barricades may be required for large audiences or certain venues.
 2. If the performer will be spinning tools, breathing fire, or otherwise producing effects that are not entirely within their field of vision at all times, the audience should be sufficiently separated to allow guards or spotters to intercept audience members attempting to enter performance area. Usually 15 feet is adequate.
 3. If the performer will be using a tool that is predominantly within their field of vision, implicitly under their control (ex. fire fingers), or the audience does not require excess management (i.e. seated or fenced), then the performer may come within a few feet keeping in mind audience flammability differences.
- B. Flame toxicity
1. Petrol fuels burnt on open wicks always produce toxic fumes, smoke, or other health hazards that are augmented in an enclosed space.
 2. Petrol fuel burning should be very limited indoors, even in well-ventilated venues. When possible, use high-proof alcohols in place of petrol fuels.
 3. For outdoor spinning, semi-enclosed areas with low wind can be as hazardous as indoor locations.
 4. Whenever petrol fuels are used, the most purified fuel is preferred: white gas or lamp oil over kerosene.
- C. Performance area
1. The performance area should be cleared of all flammable materials, or flammable materials should be treated with approved fire retarding chemicals and tested for combustibility in a safe manner before performance.
 2. Props and other terrain features should be taken into account when designing a performance, performers should not be in danger of contact with foreign objects.
 3. Careful note of sprinkler systems should be made to determine proximity to performance, possible triggers and other specifics.
 4. In the case of plant life, handle all flora as though untreated and flammable.
- VI. Clean Up - Immediately after each performance, fuel buckets should be closed and sealed, fuel returned to approved transport containers, fuel stations locked or removed from premises and any residual fuels mopped up and removed. Hot tools should be wrapped in safety cloth until they cool down. Any exotic materials (i.e. flame retardant) should be removed, locked or guarded.