

# PERFORMER FLYING AND AERIAL STUNTS

## Safety Guideline for the Live Performance Industry in Ontario

During performer flying and aerial stunts there is a much greater chance of injury in the event of an accident than during normal performance activities.

There are many different types of performer flying and aerial stunts. Most of them can be rigged in a variety of ways. This document will not deal with the specific technical details of the various types of rigging. Instead, it will provide general guidelines for the principles of safe design, rigging and performance.

“Competent person” is defined in subsection 1(1) of the Occupational Health and Safety Act. With regard to performer flying and aerial stunts, this means that all parties involved must have the knowledge and training (through adequate rehearsal) to operate and perform the effect safely. It also means that they must be aware of any possible danger involved in operating or executing the effect.

### DEFINITIONS

**Performer flying.** The operator-controlled raising or lowering of a performer who is suspended by line, rope or cable, where the performer has little or no control over the speed or direction of travel.

**Aerial stunts.** Manoeuvres or tricks assisted by line, rope or cable, where the performer has control over the speed or direction of travel.

**Aerial arena.** Any space through which a suspended performer travels. Also called **fly area**.

**Drop zone.** The space directly above or below the point at which the performer is initially suspended or lifted.

**Effect.** Any performer flying or aerial stunt.

**Hands-off catch.** Any failsafe system used to prevent an accidental fall in the event of operator or performer error. (So called because it is designed to prevent a fall even if the operator or performer were to take both hands off the line.)

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**Load-in point.** The area where the performer hooks up to the flying system.

**Operator.** A competent person responsible for running the equipment.

**Passive secondary.** A back-up component of a rigging system that only takes weight if the load-bearing component fails. Also called a redundancy system.

**Rigger.** A competent person responsible for the installation and maintenance of the flying equipment. May also be a **stunt co-ordinator** or **operator**.

**Stunt co-ordinator.** A competent person responsible for co-ordinating and staging all stunts. May also be a **rigger** or **operator**.

## **AREAS OF RESPONSIBILITY GUIDELINES**

There should be a competent person responsible for the following aspects of the effect:

1. Design: planning the system that makes the effect possible.
2. Construction, assembly and rigging: putting together the necessary equipment, installing and inspecting it before its first use.
3. Operation: running the equipment that makes the effect possible.
4. Maintenance: inspecting and testing the equipment throughout its use to ensure that it continues to operate safely.
5. Rehearsal: determining that the effect has been sufficiently rehearsed to be performed safely.
6. Pre-performance check: determining, before each performance of the effect, whether it is still safe to be performed.
7. Performance: performing the effect.
8. Communication: ensuring that everyone involved in the effect will be kept up to date with all relevant information.

All parties involved in performer flying or aerial stunts should know who is responsible for each aspect of the effect.

## **TRAINING AND REHEARSAL GUIDELINES**

1. The operator or performer should be given adequate training and rehearsal time with a rigger or stunt co-ordinator.

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2. All aerial stunts and flying systems should have an assigned rigger or stunt co-ordinator. If the assigned rigger or stunt co-ordinator is not part of the running crew or cast, a person should be trained to carry out pre-performance maintenance and inspection of all flying systems and equipment and to call for any necessary stunt or fly warm-up before the performance.
  3. If understudies or back-up operators are used, they should have full training and rehearsal by the stunt co-ordinator or rigger equal to that of the person they are replacing.

## **EQUIPMENT GUIDELINES**

1. Equipment used (ropes, lines, cables, harnesses and hardware) should be designed to support the weight of the performer comfortably and to bear live loads. The equipment should be manufactured for that purpose or be of an equivalent standard. The rigger or stunt co-ordinator should approve the use of all equipment.
2. Equipment should be rated at a minimum breaking strength to load ratio of 10 to 1.
3. All flying systems, equipment, knots and other tie-offs should be checked for wear, damage and integrity before every performance.
4. A retirement schedule for the replacement of equipment should be established by the rigger or stunt co-ordinator. The rigger or stunt co-ordinator determines which equipment, if any, needs such a schedule.

## **SYSTEMS GUIDELINES**

1. There should be clear access to the load-in point for the performer and operator.
2. When the operator is unable to hook up the performer, a competent person should be assigned to do so.
3. There should be sufficient visibility to hook up, check and operate the flying systems properly.
4. The drop zone, fly area (aerial arena) and landing point should be clear of obstruction according to the instructions of the rigger or stunt co-ordinator.
5. A hands-off catch should be incorporated into the rigging system. The system should include a method of safe retrieval of the performer or operator should the hands-off catch be used.
6. A safe communication system between the performer, operator and ground crew should be agreed upon.
7. The operator should be in a position that is secure and free from distraction.

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8. Components such as webbing, rope or cable, which are susceptible to wear due to abrasion, should be backed up with a passive secondary. The passive secondary deployment should be checked during pre-performance inspection.
  9. Static or fixed lines intended for active loads such as swinging or climbing should not be tied off directly to abrasive structures such as angle beams, which may damage or weaken the primary lines. Passive secondaries should be used when tying off load-bearing lines or ropes.
  10. Passive secondaries should be installed in positions that will minimize the shock load if any load-bearing point fails.

**NOTE:** Section 2 of the Regulations permits alternative, equivalent arrangements. With regard to performer flying and aerial stunts, this means that one type of equipment or action may be substituted for another, so long as the safety of all parties involved in the effect is at least as great as it would be without the substitution.

**NOTE:** The Foy System and similar flying systems do not usually use hands-off catches and passive secondaries, which these guidelines recommend. However, Foy is generally accepted as one of the standard systems in the industry.

## **MORE INFORMATION**

- Ministry of Labour  
[www.labour.gov.on.ca/english/hs/topics/performance.php](http://www.labour.gov.on.ca/english/hs/topics/performance.php)
- Health and Safety Ontario (health and safety association):  
[www.healthandsafetyontario.ca/](http://www.healthandsafetyontario.ca/)
- Workplace Safety & Insurance Board:  
[www.wsib.on.ca](http://www.wsib.on.ca)
- Canadian Standards Association (CSA) standards referenced in occupational health and safety legislation:  
[ohsviewaccess.csa.ca](http://ohsviewaccess.csa.ca)

## **CALL TOLL-FREE**

Call **1-877-202-0008** anytime to report critical injuries, fatalities or work refusals. For general inquiries about workplace health and safety and to report potentially unsafe work conditions, call 8:30 a.m. – 5 p.m., Monday to Friday. In an emergency, always call 911 immediately.

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## ACKNOWLEDGEMENTS

The Ontario Advisory Committee for Health and Safety in Live Performance is made up of professionals in live performance from across the province – large and small, commercial and not-for-profit, service organizations and professional associations. We have had input from individual experts both national and international. The Advisory Committee and the Ministry of Labour would like to thank the following people for their help in making this guideline possible.

\* Indicates a main committee member at the time the sub-committee was active.

- Bonnie Armstrong\*
- John Peter Jeffries\*
- Ron A. Epp\*
- Miriam Newhouse\*
- John Stead, Fight/Stunt Co-ordinator

This guideline has been prepared to assist the workplace parties in understanding their obligations under the Occupational Health and Safety Act (OHSA) and the regulations. It is not intended to replace the OHSA or the regulations and reference should always be made to the official version of the legislation.

It is the responsibility of the workplace parties to ensure compliance with the legislation. This guideline does not constitute legal advice. If you require assistance with respect to the interpretation of the legislation and its potential application in specific circumstances, please contact your legal counsel.

While this guideline will also be available to Ministry of Labour inspectors, they will apply and enforce the OHSA and its regulations based on the facts as they may find them in the workplace. This guideline does not affect their enforcement discretion in any way.