

# ACTSAFE

WITH THE FINANCIAL SUPPORT OF THE INTERNATIONAL LABOUR ORGANISATION

MINIMUM RECOMMENDED HEALTH AND SAFETY GUIDELINES FOR PERFORMERS WORKING IN LIVE SHOWS

You are a young performer, relatively inexperienced and eager to take every new opportunity to fine-tune your skills, to practice and progress in this very exciting and rewarding profession. You trust the people around you, often more knowledgeable than you, and the production that is employing you. The perception of danger is very remote: you are thrilled and ready to perform. After all, acting is what you most desire in life and you are about to make that dream become real.

You are an experienced performer and have worked on stage for a long time. You are very familiar with health and safety drills and with relevant regulations. They all sound very familiar to you. Perhaps too much for you to continue to pay attention to them as you should.

Every live stage continues to be a treacherous place to work in. It involves special hazards that must be taken seriously as some of these accidents can sometimes have dire consequences. Working hours are irregular and the back-stage is often cramped. And then there is the pressure to move on with the show, the stress and the

fatigue as the opening draws nearer. The public may suddenly be all around you and react unpredictably. When the thought crosses your mind, you naturally think “I can trust the production to look after my safety and provide me with a healthy working environment”. After all, there are regulations in place to protect workers and things must be all right. Very often this is indeed the case. But sometimes they are not enough and even then, they do not always prevent accidents from happening.

Many accidents are actually caused by a lack of foresight. They occur during rehearsals as well as on-stage and involve both experienced and less experienced performers. Regardless of who bears responsibility, they often could be avoided with a few, simple precautions. So, to reduce the risk of getting hurt and continue to enjoy this gratifying profession, you may wish to consider some plain advice. These guidelines were prepared for you by the International Federation of Actors (FIA), of which your union is likely to be a member.

We have deliberately avoided technical information and have tried to identify key hazards in our working environment, presenting some ideas on how to minimise those risks. Remember that these are not industry-approved standards and that your compliance with these guidelines may not be sufficient to protect you from hurting yourself at work. Always be vigilant and add your own common sense to all the advice and support you can otherwise get.

We hope that you will use this booklet as a simple checklist, a reminder more than everything else, and that you will continue to do so even when you feel you have gained enough experience to “know these things well”.

Also, as an additional precaution, we recommend that you always ask your union for advice before you start rehearsing or performing on stage. They will provide further guidance, including on possible higher safety measures applicable to your work.

Do not improvise or let any one else gamble with your safety and health and that of others around you. Act safe!

P4	Alcohol and drugs
P6	Animals
P8	Costumes
P10	Fire safety
P12	Firearms and weapons
P14	Lighting and electrical equipment
P16	Makeup
P18	Naked flames
P20	Outdoor events
P22	Props
P24	Pyrotechnics
P26	Rake stages and non-resilient floors
P28	Rigging and flying of performers
P30	Smoke and fog
P32	Sound and noise levels
P34	Stunts/Stage combats
P36	Temperature and ultraviolet radiation
P38	Ventilation

# Alcohol and drugs

ANY EXTERNAL SUBSTANCE THAT MAY INTERFERE WITH YOUR BODY, AFFECTING YOUR NORMAL BEHAVIOR AND YOUR ABILITY TO THINK, ACT AND REACT PROPERLY, E.G. WINE, BEER, SPIRITS OF ANY KIND, MEDICATION, MARIJUANA, LSD, AMPHETAMINES, HEROINE, COCAINE, ETC.

Regardless of the personal reasons that may lead to you assume drugs of any sort or alcohol at any given time in your professional career, you must be aware that those substances have a direct effect on your body and mind. Taken alone, or in combination with other factors or substances, they may severely affect your judgment and your ability to behave responsibly.

Medications are also drugs. They may have side effects you should be aware of before consumption.

Drugs and alcohol may reduce muscle tone, reaction time, risk perception and overall coordination, sometimes alone, other times in combination with other substances and factors. International research shows that 20% to 25% of all occupational injuries originate from drug and/or alcohol use, of which 3% to 15% result in fatal injuries.

Alcohol & drugs can seriously harm you and others around you!

\* Remember that alcohol and drug consumption is illegal in many countries and may be seriously prosecuted

\* Be careful when taking medication. Read the notice attentively to prevent any side effect from affecting your safety and that of others at work. Seek the advice of a chemist when in doubt

\* Refrain from consuming alcohol or drugs before a rehearsal or a performance. Should you choose not to do so, you should never abuse them and allow a considerable safety margin between the consumption and your professional commitments

\* Should you feel unwell due to medication, drugs or alcohol that you may have taken prior to rehearsal or performance, do not play smart. Be responsible and avoid becoming a hazard for yourself and others around you. It simply is not worth it: you may risk losing your job or even facing prosecution

\* Never drink alcohol at work and during working hours. Non alcoholic substitutes should be provided when alcohol consumption is to be portrayed on stage

\* Never take drugs at work and during working hours, except medication prescribed by a chemist and under his/her instructions

\* Always inform the person in charge of any treatment you are under, especially if requiring intake of medication before or during rehearsal or performance







# Animals

ANY KIND OF ANIMAL, WHETHER TAMED OR UNTAMED, INCLUDING PETS AND BIRDS.

Animals are not widely used in the live entertainment industry, with the notable exception of circus. However, they may be used occasionally as part of a performance. The welfare of animals requires vigilant care at all times. Equally important is to protect the health and safety of performers that may be required to handle, touch or interact otherwise with them on stage.

Animals should be handled no more than necessary. Tired animals can become distressed and irritable. Whenever possible, animals that present the least risks for humans should be selected. Rehearsals with animals should accurately recreate the conditions on stage, to ensure they familiarise with them and to reduce the risk of erratic behaviour.

Complacency and the feeling of being safe in the presence of animals may leave a performer off guard and expose him/her to a dangerous situation. The potential for zoonotic diseases - i.e. illnesses caused by infectious agents that can be shared by or transmitted between animals and humans - should also be carefully considered.

Maximum hygiene should always be ensured in the working place when animals are used in a rehearsal and during a performance. Any production intending to use animals should hire an experienced handler for the safety of performers but also of the animals.

The production should have a veterinary certification for all animals in the production, proving their eligibility and health.

\* Always ask your employer whether you will be expected to rehearse and work with animals

\* Always inform your employer about any allergies, physical condition (e.g. pregnancy) or difficulties you may have in relation to the animal in question. Enquire about any immunisation you may need in case of bites or scratches

\* Make sure you meet whoever is responsible for the animal and you are fully briefed about the best way to handle it. Also, ask details about the animal's behaviour and safety issues. Do not touch it or feed it unless you are given specific instructions

\* Should you be required to touch or handle an animal, use all precautions and stay away from its paws, its mouth and other body parts the animal can use to strike if scared

\* Do not eat, drink or smoke while handling animals

\* Avoid blind spots. Face the animal and/or keep eye control on its whereabouts, especially when at close distance. Avoid sudden movements if at all possible

\* Consider any animal as a possible source of infection or infestation, in particular those that are closer to humans in the evolutionary scale - i.e. primates

\* Deem every animal unpredictable, especially pets, and never let your guard off

\* When handling or performing with animals, always follow basic hygiene rules: wash thoroughly afterwards, especially before meals



# Costumes

ANY ITEM THAT IS WORN, NOT CARRIED OR HANDLED, BY THE PERFORMER, INCLUDING WIGS, MASKS AND FOOTWEAR.

With very few exceptions, costumes are invariably used on rehearsals and performances. Their shape, size and combination obviously change ever so often, depending on such things as the choreography, stage design, etc. Your body and your ability to move will inevitably be affected by the specific outfit you wear. Sometimes costumes may have an adverse effect on your body, impair your performance or even put you and other around you at risk. It is therefore important that you take some time to evaluate your costumes and detect any inconsistency at the earliest possible date.

Costumes should be tailored to your age and size. They should not hinder your movements unreasonably on and off stage. Whenever special staged movements are required, your outfits should be customized to make that possible at no discomfort.

Needless to say, they should be clean, stored in pristine conditions and integrate safely with all other elements of the production.

- \* Look out for loose parts, wear & tear and report anything you find suspicious before you wear your costumes
- \* Make sure you inform the company about any allergies that may not allow you to wear a given fabric
- \* Check your costumes before wearing them and make sure they are clean, especially if they are to be used in direct contact with your skin
- \* If possible, make sure you wear the same costumes from the beginning of rehearsal throughout the performance
- \* Try to anticipate the variety of staged movements and test your costumes in all postures you will take during your performance
- \* Do not hesitate to report any impairment caused by your costumes. Pay particular attention to your field of vision and your ability to breathe and hear normally
- \* Should you be required to handle open flames or act near one, find out whether the fabric of your costumes is flame resistant or adequately treated with flame retardant. Do not use the costumes unless they are safe to use next to a flame
- \* After each use, take particular care in handling your costumes and store them neatly where they can be picked up for cleaning and further use



# Fire safety

ALL SAFETY MEASURES AND OPERATIONAL PROCEDURES TO PREVENT THE EFFECTS OF A FIRE.

Fire safety is paramount in live performance, especially in theatres, where flames can quickly spin out of control and become lethal. Emergency procedures and a fire evacuation plan should be made available in writing and fire drills should be routinely scheduled, especially each time someone is new to the environment.

There should be emergency exits, clearly marked, closed but not locked nor obstructed, provided with panic handles and opening towards the exterior.

Fire extinguishers should be functional, maintained as required and their use should be carefully described during fire drills.

All curtains, set, props and scenery should be fireproof. Costumes should be fireproofed if any naked flames are to be used on the production.

All wiring and technical equipment should be in pristine conditions and be regularly checked by the production. All electrical equipment should be waterproof and isolated. Plugs should be firmly inserted in their sockets or disconnected.

- \* Read the written emergency procedures and the fire evacuation plan carefully as you familiarise with your new working environment. If you can see none, ask the set manager

- \* Do not smoke out of designated smoking areas. Always use ashtrays and stub your cigarettes out completely before you leave the smoking area

- \* Only throw paper or other inflammable material in the designated bins. Never dump them on an ashtray or near it

- \* Do not play with fire at any time. Should you be required to handle a naked flame or to smoke on stage, do so in full compliance with the instructions that are given to you

- \* Remember: fire doors are there for your safety and that of others around you. Do not wedge them open, obstruct or block them in any way, anytime

- \* If pyrotechnic effects are to be used, please refer to the specific chapter in these guidelines

- \* Never take fire drills lightly: in case of panic, even the most elementary rules are often overlooked

- \* Remember: fire safety does not stop when you leave the workplace. Make sure you do not leave behind you something that may incidentally cause a fire, e.g. a spray can in direct sunlight, a loosely plugged electrical device, etc.





# Firearms and Weapons

**WEAPON: ANY OBJECT WHICH IS DESIGNED FOR THE PURPOSE OF INFLECTING BODILY HARM**

**FIREARM: ANY WEAPON THAT CAN FIRE SINGLE OR MULTIPLE PROJECTILES PROPELLED BY DEFLAGRATION, OR THAT DISCHARGE EXPLOSIVE GASES (BLANKS)**

Use, storage, maintenance of weapons must fully comply with applicable safety and police regulations. Only firearms that have been deactivated should be used as props. They should be deactivated, modified or repaired by qualified gunsmiths, with the approval of the manufacturer.

The choreography should be carefully studied to ensure no one gets hurt. Firearms and other weapons should never be given to performers on stage without first determining that they are knowledgeable in their proper and safe use.

When not in use, ammunitions, weapons and firearms should be locked by the expert in a safe place, with no smoking signs posted nearby. A sign in sign out procedure should regulate the distribution.

Sound pressure levels should be kept at the lowest possible level. Whenever possible, you should be allowed to wear hearing protection when firearms are used.

Always treat firearms and weapons as if they were loaded! Even blank ammunitions can be deadly!

\* You should be informed in advance of the intention to use weapons in a given production and should not be forced to use one against your will. You should also be given thorough instructions on safe handling by a weapons expert



\* Never use live ammunition on rehearsal AND on stage, even if you personally hold an appropriate licence. You must refuse to do so if the production asks you to

\* Even when firearms with blanks are to be used on stage, rehearsals should preferably be done with non-firing weapons. If blanks are to be fired, a weapons expert should be present and in charge of security

\* You should use the same weapon or firearm at each rehearsal and performance

\* Do not use firearms if they are clogged with dirt or other foreign matter, as you may cause them to explode! Never play around with them

\* Never point a firearm to anyone, even when it is being fired during a scene

\* Never attempt to fix jams or malfunctions. All maintenance should be the responsibility of a weapons expert

\* Check that all swords, knives and blades you are given are blunt before you use them on rehearsals and on stage. Make sure you are aware if the blade is retractable or non retractable

\* Whenever weapons are to be used in a production, your performance should be carefully choreographed to minimise risks

\* When not in use, firearms and weapons should be safely stored by an expert. Should you see any weapon or firearm lying about, report it as soon as possible to the production

\* Never load or unload a weapon or firearm. Let the weapons expert do that for you

# Lighting and electrical equipment

**LIGHTING:** THE ILLUMINATION AND OVERALL VISIBILITY ON STAGE BUT ALSO BACKSTAGE AND ON SERVICE AREAS  
**ELECTRICAL EQUIPMENT:** ANY ELECTRIC ITEM THAT A PERFORMER MAY BE REQUESTED TO CARRY OR HANDLE ON STAGE

Dazzling spotlights or inadequately lit stages and service areas increase the risk of tripping or falling. Sudden variations in lighting intensity may also temporarily blind performers and expose them to a possible injury, especially when combined with movement on or off stage.

Sometimes, performers may be expected to act with their vision deliberately impaired. This is also an additional risk factor that requires special awareness.

When cables are not off the ground, they should be clearly identified and secured in order not to create a tripping hazard.

A qualified electrician or a competent person should be present at all times and test electrical equipment for function before rehearsals or on stage performance.

\* Make sure you become accustomed to the lighting well before each performance. Should lighting levels change abruptly during your performance, restrain your movement until your eyes are fully accustomed. Do not take unnecessary risks unless you can see well around you

\* Watch out for electric wires laid onto the stage: they should be covered by rugs, taped down, pulled into safety pipes or otherwise protected against accidental stumbling, against contacts with sharp edges or heavy loads

\* Total blackouts should not occur. However, should a blackout/dim lighting be an integral and necessary part of a performance, you should have adequate time to rehearse your movements in those conditions and be well aware of all standard operating procedures to ensure your safety

\* Should you be requested to perform with your vision temporarily or permanently impaired, make sure you rehearse in exactly the same conditions you will experience on stage. Should you feel unsafe as your sight is limited, do not hesitate to request extra precautions and/or rehearsing time

\* Service areas should be properly lit at all times. You should allow your eyes some time to adapt to the new lighting as you are leaving the stage. Although alleyways and other service areas should be free from obstacles, props, technical equipment or other fellow performers may accidentally get in the way and cause you to stumble as your vision is temporarily impaired

\* Should you be required to handle electrical devices on stage, make sure you are shown exactly how they work and familiarise with them during rehearsals. If possible, you should not use an electrical item on stage for the first time

\* Check out for any sign of deterioration or poor maintenance in the electrical device that you are requested to manipulate. Should the wiring or plugging look loose or otherwise inadequate, do not use that item for your own safety

\* Make sure that you and the surface you are standing on is not wet as you are about to use electrical devices on rehearsal or on stage. Do not use electrical equipment that appears to be wet, unless it is specially conceived and tested for use on those conditions



# Makeup

FACE PRODUCTS, HAIR PRODUCTS AND OTHERS, INTENDED FOR USE ON THE PERFORMERS' BODY — INCLUDING PROSTHETIC SCULPTING, MOULDING AND CASTING TECHNIQUES TO CREATE ADVANCED COSMETIC EFFECTS.

Makeup is a rather common feature in the life of a performer. It can range from basic facial cosmetic treatment to tattoos or even – though this is more recurrent in film and television – very elaborate creations meant to give to the body and/or face a radically different appearance.

A performer's makeup can raise health and safety concerns and requires particular care. As cosmetics are directly in touch with the skin, hygiene and the prevention of allergy reactions are of paramount importance. The protracted stationary pose required by very extensive makeup sessions might cause body stiffness, cramps and even faints. Sometimes, when makeup is particularly heavy, performers may experience anxiety and a disturbing sense of uneasiness.

Safely removing makeup after a performance is equally important and can also be a rather demanding experience, particularly when added to performance fatigue and to stage-induced emotion or stress. The specific products used to this purpose need to remove all makeup, while restoring the skin's natural tone and moisture.

\* As you are about to makeup for the rehearsal or performance, make sure that the applicators you use are clean. The sharing of sponges, puffs, brushes, sticks, wedges, removers

and other tools is not recommended. You should preferably use your own material. Do not use sprays in a very confined space, with no ventilation

\* If you have a skin condition, sensitive skin or allergies, remember to check the ingredients in the cosmetics before you use them. This should be done every time you buy new or replacement products, since manufacturers sometimes change the components in their products

\* Should your makeup be the task of a professional, make sure he is informed about any allergy you may have and know about

\* After the performance, all makeup should be removed from your body, using non-toxic, specific products. Once again, be aware of the substances in those products, as they too may trigger allergies or be aggressive on your skin, and refrain from using someone else's tools. Check that everything you use is clean and proper

\* Any far-reaching makeup requirement should be accurately discussed with you in advance. It should always be carried out with non-toxic materials and by a makeup professional, as it can be potentially dangerous if carried out incorrectly

\* The tougher the makeup, the more important it is to experience it during the early stages of rehearsal, thus recreating the same conditions that you will later experience on stage





# Naked flames

ANY DEVICE WHERE AN UNPROTECTED FLAME IS USED FOR SPECIAL EFFECTS, INCLUDING CANDLES, TORCHES, RINGS OF FIRE, MATCHES, WALLS OF FLAMES

Naked flames are not uncommon in live performance. For obvious reasons, they represent a serious hazard for performers and must rigorously comply with all applicable safety regulations.

All threats associated with the use of naked flames in a rehearsal and during a performance must be carefully assessed and appropriate measures must be taken by the production to eliminate or minimize the risk.

Outdoor events are subject to unpredictable weather conditions that may interact with the flame and cause a fire. The influence of weather and wind on naked flames must therefore be carefully considered.

The use of naked flames indoors also requires extra precaution. The scenery, costumes, drapes and props should all be fire retarded.

Emergency drills should be carried out on a recurrent basis and fire-fighting equipment – including fire extinguishers – should be checked regularly and kept readily available.

A qualified fire engineer should always be on stage when naked flames are being used and should ensure that the flame is put out and any threat of fire is eliminated after the show.

When naked flames have a fuel source, explosion risks must also be carefully assessed and additional precautions taken for fuel transportation, storage and use.

Never take naked flames lightly! It can take as little as a single match to start a fire!

\* You should be informed in advance of the intention to use naked flames in the production, of the type of flame and the nature of the effect. The briefing should include a description of possible hazards and the precautions that are being taken. It should be repeated before every rehearsal and performance

\* You should not be involved with a naked flame in a production unless you are required to do so and have received previous training, which should also include adequate emergency drills

\* There should be fire extinguishers nearby. Be sure to know their location and how to operate them, even if you are not in charge of them

\* Flames and animals are often an explosive cocktail: unless it is strictly necessary and you have received a specific training, you should never perform next to animals with a naked flame

\* Make sure that your costumes and the props you are required to handle next to a naked flame are all fire resistant or flame retarded. If you are unsure, ask the production

\* Try to keep as much safety distance as possible from you and the naked flame. Be mindful to reduce your exposure to the flame to a minimum

Should you not feel confident next to a naked flame, stop and discuss your worries with the production

\* Never use naked flames on stage for the first time. Should you be asked to do so, you should refuse as it puts your safety and that of others around you at risk. Extended rehearsals should always be allowed to minimise risks



# Outdoor events

ANY PERFORMANCE THAT IS TO TAKE PLACE, IN TOTAL OR IN PART, IN AN OPEN-AIR ENVIRONMENT.

Outdoor events are an often-underestimated source of injury for performers. The weather and environmental conditions may interfere with props, the scene or directly with the performers.

Insects or other animals may get in the way. Daylight may drop and it may become difficult for a performer to see properly, to evaluate the space available, etc. Temperature may also change abruptly and vary dramatically from the one experienced during rehearsals.

Some of those venues may not be specifically conceived for live performances and safety standards may be loose. The audience may also become a hazard and interact violently with the performers. Safety procedures may not be clearly displayed and adequate first-aid facilities may be distant from the venue.

In general, the production should ensure that all equipment is appropriate for use even in extreme weather conditions and power failure. Adequate lighting should be available at all times. Prevailing wind direction and sun position for both rehearsals and performance should be considered when planning the stage, audience location and the time of the performance.

Costumes should be able to be

modified for changing weather conditions, adding or removing layers easily.

- \* Be vigilant when you are about to play in an open-air environment. If at all possible, take it also to yourself to check what the weather conditions will be like, from the beginning of the show until the end
- \* Bring warm clothes with you to retain heat during breaks if the weather gets cold. Breaks should be allowed more frequently and plenty of drinking water made available if the weather gets warm. Isotonic drinks may become appropriate if the weather gets very hot and/or humid
- \* Be extra careful as you handle - or perform near - open flames. A sudden gust of wind may thrust the flame towards you. The same applies for pyrotechnics
- \* Make sure you know where the nearest hospital is. Adequate transportation should be available nearby to reach it quickly in case of need. Always have emergency numbers close at hand. First aid equipment, with cold and heat packs, should also be made available by the production
- \* You should not be expected to perform if it starts raining or if the weather conditions

deteriorate, including if daylight drops significantly, without adequate measures to guarantee your safety

- \* Look out for wet and slippery surfaces before you go on stage, as well as for debris, droppings and other substances that may have accidentally littered the backstage and performance area
- \* Keep an eye on the audience if it is close to you and it is not properly separated from you. Do stop the performance if you notice any behaviour that may put your safety at risk. All backstage area should be secured from public access
- \* You should be advised of the presence of potential environmental allergens. Do let the production know of any environment-related allergy you may have
- \* Be careful before using costumes or handling props and look out for any possible live or dead insect
- \* Be extra cautious when performing outdoors with animals, as they may react unexpectedly to changing environmental factors
- \* In wilderness locations, do not drink untreated water from rivers, streams or lakes





# Props

ANY ITEM EITHER TO BE CARRIED OR HANDLED BY THE PERFORMER

Props are inherent to your work. On rehearsal and during performance you will often be expected to use and interact with objects of different weight, shape and size. Many of them may have some bearing on your body and on your ability to move. It is therefore important that you are watchful about them, detecting hitches that may hinder your ability to perform accurately or even cause injury to you and others around you.

Props should be adequate to your age, size and physical condition. They should be conceived, manufactured and purchased in view of the specific use that is required of you on stage. They should be properly maintained and integrate safely with all other elements of the production.

You should be given detailed handling instructions about the prop ahead of time by the person in charge, especially when the item or its handling may be hazardous.

When performers are to drive a motor vehicle on stage, the production must ensure that they are adequately trained and that exhaust fumes are properly diverted.

Tapestries and other elements made of soft textile should be cleaned regularly from dust. The production should ensure that only non-toxic products are used for painting props.

Do not use props that you feel may be unsafe for you or others around you!

- \* Make sure you are fully briefed by the person in charge about how the prop is to be handled
- \* Make sure you inform the company about any allergies or condition that may not allow you to handle or carry a prop safely
- \* Look out for loose parts, rough edges, damage, wear & tear and report anything you find suspicious before you carry or handle the prop
- \* Get acquainted with the weight, the size and the shape of the prop and report any inconvenience you may experience
- \* Allow yourself ample rehearsal time to familiarise with the prop
- \* Make sure that the prop you use during rehearsal is the same article intended for your performance, or as close to it as possible
- \* If a prop is to be used near an open flame, find out whether it is made of flame resistant materials or whether it has been treated with flame retardant – if not, you should not use it if possible or use extra care otherwise
- \* Do not drive a motor vehicle on stage unless you have the required licence and you have been given enough time to familiarise with the engine and its responsiveness to your commands





# Pyrotechnics

SPECIAL EFFECTS WHERE A CHEMICAL COMBINATION IS USED TO PRODUCE VISIBLE AND/OR AUDIBLE EFFECTS BY COMBUSTION, DEFLAGRATION OR DETONATION

Pyrotechnic special effects are not uncommon in live performance. They often surprise and thrill the audience but need to be handled and be used with great care. With only one blunder, everything may go terribly wrong. By being alert and aware of those risks, you can play a significant role for your safety and for that of others around you.

For the purpose of these guidelines, we will assume full compliance with all applicable regulation and with the manufacturer's guidelines, as far as transport, storage, preparation, handling and use of pyrotechnics are concerned. In addition, a pyrotechnician should be employed by the production and be responsible for the correct use and possible abortion of all operations involving pyrotechnics.

Child performers should not be exposed to pyrotechnic effects, unless this is strictly required by the production and provided there is a written permission from a parent or guardian prior to rehearsal and performance.

Pyrotechnic special effects should be kept to a minimum, because of their inherent danger for human beings and the environment. A special care is required when animals are also included in the production, as they may cause them to react erratically.

Pyrotechnic material should be kept for the shortest necessary time on stage, constantly supervised and stored safely in a dry and smoke-free environment.

\* Pyrotechnic material should be clearly labelled with "no smoking" and "explosives" warning stickers. It must be stored and handled in a safe and dry place. Make sure you know where it is and keep your distance

\* Never smoke close to where pyrotechnics are stored or handled

\* Make sure you are fully briefed about the exact location of the safety equipment, first aid kits, escape routes and telephone. Emergency numbers should be clearly displayed next to the telephone. Emergency routes should be unobstructed. Make sure you are familiar with the emergency procedures: a speedy reaction if things go wrong could really make a difference

\* When you are first informed about the nature and the intended use of pyrotechnics, you must also enquire about possible deviations, excessive noise and other possible hazards you may have to face

\* Do not assume that everything is clear – and do not rehearse – until you have watched a practical demonstration – a "dry run"

\* Never handle, touch or otherwise use explosive material. This should only be done by a pyrotechnician, who shall note all effects in writing on the blocking plan

\* Always keep a safe distance from pyrotechnics, unless your role in the performance requires you to be close, in which case make sure you are fully briefed and carefully review the blocking with the pyrotechnician



# Rake stages and non-resilient floors

**RAKE STAGES: INCLINED FLOORS – PERMANENT OR TEMPORARY DECKS – WHICH CAN BE USED IN THE COURSE OF A GIVEN PRODUCTION AND THAT MAY EITHER CONCERN PARTS OR EXTEND TO THE ENTIRE SURFACE WHERE PERFORMERS ARE TO PLAY, DEPENDING ON HOW THE SET IS DESIGNED FOR THAT PRODUCTION**

Although this can be an issue for every performer, it certainly does affect dancers more than everyone else, and modern dance artists in particular. The latter are likely to stand, leap, jump, run and perform demanding choreographic stunts on a variety of floors, many of which have not been conceived for this purpose.

Floors are a constant worry for dancers on tour. Whenever possible, special portable floors should be used. Dancers in film and television are also frequently subject to non-resilient stages, as the cameras and cranes are too heavy to ride over sprung floors.

Acting or dancing on rakes and on non-resilient stages does expose the performer to a high risk of injury, mostly via repetitive strain to specific parts of his/her body, and calls for specific precautions. Additional factors like costumes, rake angle, time spent on rake or non-resilient floor, footwear and others can exponentially increase the threat of tripping and require additional care.

\* You should not rehearse or perform on steep rakes or on non-resilient floors, unless a specialist has given you proper training, as these are more likely to cause you injury. Should you be required to dance on a dangerous setting, do not hesitate to report it to your union at the earliest opportunity

\* Take extra precautions on non-resilient floors, e.g. by doing careful and focused warm-ups and making doubly sure that when you jump, your “take offs” and “landings” are executed smoothly. Dancing “with” the floor is always better than dancing “against” it

\* Make sure you are fully familiar with each part of the surface you will perform on and be mindful of any substance or object on the floor that may increase the risk of injury – e.g. fog and haze may render the rake slippery; props may unexpectedly thwart your movements, etc. Do not hesitate to run a quick check before every performance

**NON-RESILIENT FLOORS: FLAT OR INCLINED FLOORS MADE OF CONCRETE OR OF ANY OTHER MATERIAL WITH NO SHOCK-ABSORBING PROPERTIES NOR ABILITY TO RELEASE SOME OF THE KINETIC ENERGY AFTER IMPACT**

\* Stage floors should be kept dry and clear of all slippery material. They should be free from splinters, nails or worn-out floorboards. Do not hesitate to run a quick check before every performance. Should you spill something inadvertently, do inform the production as soon as possible

\* Make certain you use the same costumes during rehearsal that you will wear during the performance. In particular, a different footwear may radically alter your balance, impair your performance and your security

\* Watch out for early signs of ache, throbbing or soreness – even days after your performance. Serious injuries may take time to develop and are often caused by repetitive strains and overuse. The foot and ankle region is very vulnerable, as is the knee joint and – more generally – the lower part of your body. Get into the habit of consulting a specialist regularly, even if you have nothing special to report. If you ever happen to get injured, be it only superficially, you need to seek a specialist’s advice immediately





# Rigging and flying of performers

**RIGGING:** WORK AND EQUIPMENT RELATED TO A THEATRICAL FLY SYSTEM, PRIMARILY MEANT TO MOVE LIGHTS, SCENERY AND SOMETIMES PERFORMERS VERTICALLY OVER THE ACTING AREA AND/OR HORIZONTALLY ABOVE THE STAGE DURING REHEARSALS AND THE PERFORMANCE.

Although not very common in the 80's, flying effects can today be found in plays, operas, circuses and many other theatrical events. Needless to say, there is a much greater chance of injury in the event of an accident than during normal performance activities, especially as you may have little or no control over the speed or direction of travel.

Proper equipment must be used as intended and within the designated safe working load factor. All rigging equipment should be inspected and tested regularly before use, especially after any alteration. Chains and ropes should never be shortened by knots and should be immediately replaced when worn or torn. They should also be safely terminated and secured.

Loads should never exceed the safe capacity of the system.

Harnesses are to be considered a part of the rigging and not of the costume. They need to be specially adapted to the size, weight and choreography that the performer is required to follow.

Suitably qualified experts/supervisors should set up the rigging and always be in attendance on set.

\* You should always be informed in advance if the production intends to fly you above the stage. This should never be attempted without appropriate supervision, proper rigging, adequate training and rehearsal time. The latter should reproduce exactly the same conditions that you will experience on stage and also extend to all under-studies – if used by the production

\* The rigging equipment must be suited to your size, the weight that you will generate and the movements that you are required to perform

\* Pay attention to any costume elements worn over the flying harness that may impair your vision or your mobility. In case of doubt, discuss the issue with the production and only perform the flying moves – including at rehearsals – when you feel your safety is not at risk

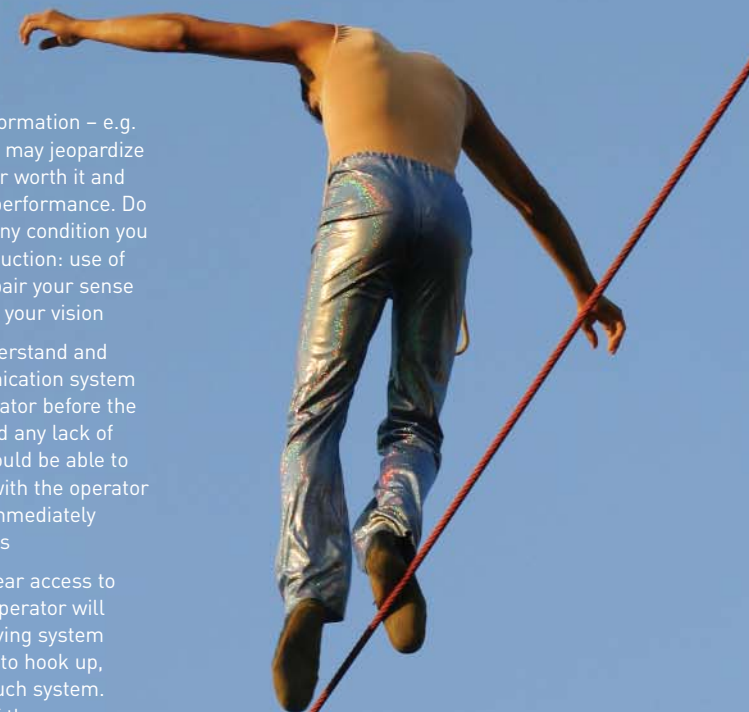
\* Any quick release system must be equipped with a safety lock. Security systems – e.g. a hands-off catch (preventing falls in the event of operator or performer error) or a passive secondary (backing up the rigging system) – should be used and tested before each performance

\* Do not withhold information – e.g. fear of heights – that may jeopardize your safety. It is never worth it and may also alter your performance. Do not forget to report any condition you may have to the production: use of some drugs may impair your sense of balance or trouble your vision

\* Make sure you understand and learn a safe communication system with the rigging operator before the performance, to avoid any lack of coordination. You should be able to keep visual contact with the operator before, during and immediately after flying operations

\* There should be clear access to the area where the operator will hook you up to the flying system and enough visibility to hook up, check and operate such system. Never attempt any of these operations by yourself

\* Double check that the fly area and the landing point are clear of obstructions



# Smoke and fog

**SMOKE:** LOCALISED THEATRICAL EFFECT, USUALLY CREATED BY VAPORISING BURSTS OF A WATER AND GLYCOL-BASED FLUID ON STAGE WITH A DEDICATED MACHINE. **FOG (HAZE):** UNIFORM, LOW-LEVEL THEATRICAL EFFECT, USUALLY CREATED BY GENERATING AN AEROSOL OF MINERAL OIL, BLOWN ON STAGE BY A DEDICATED MACHINE.

Smoke and fog are special effects, frequently used on stage. The first is normally water-based, dense and white. The second is oil based and is more persistent.

Scientific studies have proven that, although there seem to be no serious threats to the safety of performers, health effects may be associated with exposure to elevated or peak levels of smoke and fog. These include respiratory, nasal, eye and throat symptoms and may depend on the positioning of performers, their overall condition, on vapour concentration, intake rate, exposure duration, etc.

Smoke and fog can cause unpredicted consequences, as they may reduce visibility and cause the performer to stumble or even panic. Mineral oil fogs can also leave a slippery residue on floors that may become hazardous.

As a rule, smoke and fog effects should be kept by the production to a minimum. Oils made from food-grade glycols should be favoured for artificial fog, as they contain fewer toxic chemicals.

- \* You should be warned in advance that smoke or fog effects are to be used during your performance. Make sure you understand exactly how the effect will operate, so it does not catch you by surprise and affect your performance

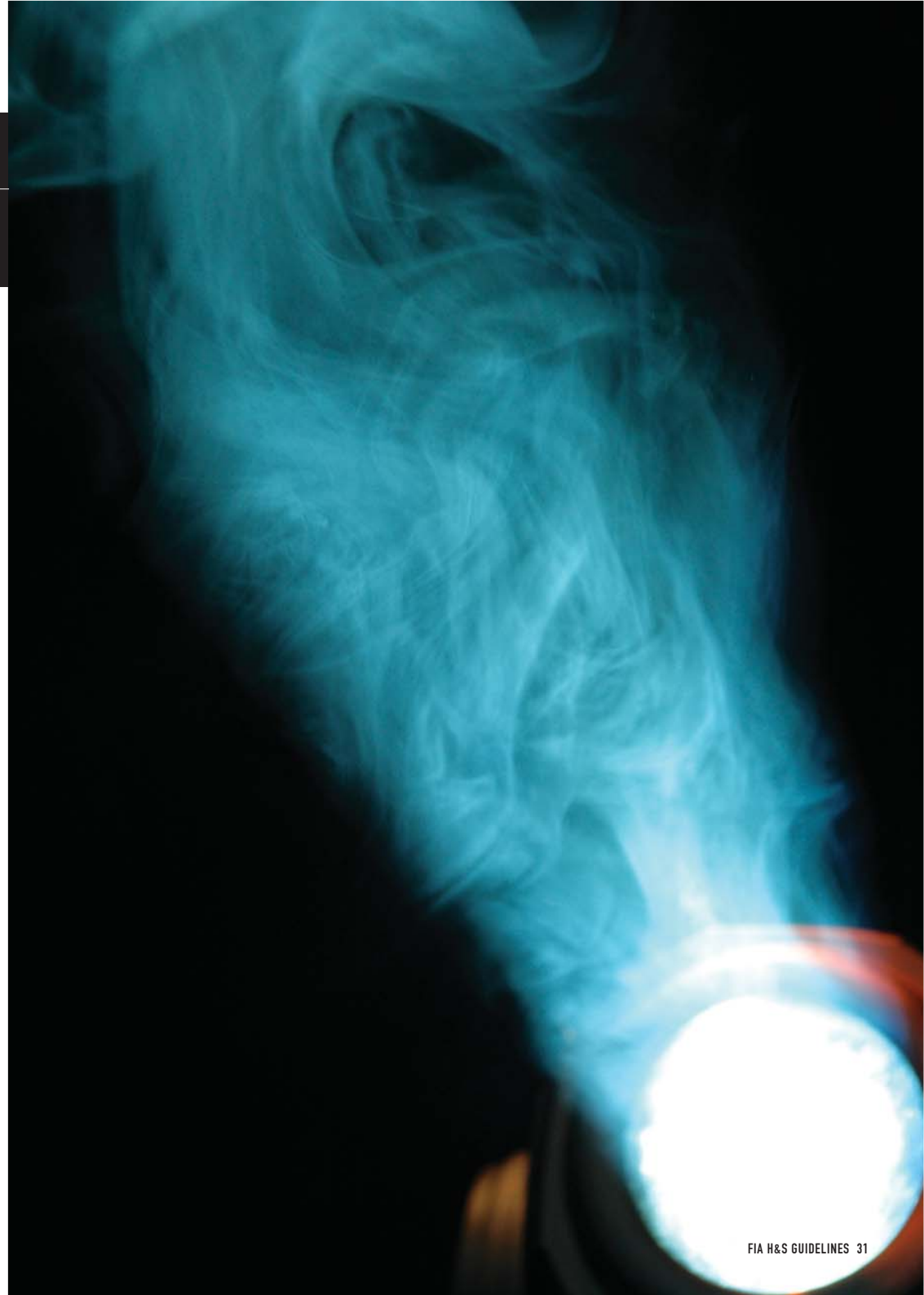
- \* Where possible, a full rehearsal should be carried out with these special effects, to prevent any unforeseen risks and optimise on-stage visibility

- \* Should you notice a thin oily layer on stage, next to where the fog is blown or the machine is located, take extra care not to slip over and report this to the management at the earliest possible opportunity

- \* Make sure you report any allergies or condition you may have (e.g. asthma) which may be affected by the fog or smoke

- \* Should your vision be inadvertently reduced by fog or smoke, restrict your movements until you can orient yourself again. Moving erratically may lead you to stumble on props or bump into fellow performers

- \* Ventilation is particularly important to dissipate the fog and bring in fresh air. Dizziness or breathing difficulties experienced as fog or smoke is vaporised on stage, could be a sign of inadequate oxygen provision. Do not hesitate to alert the production at the earliest possible convenience



# Sound and noise levels

SOUND: VIBRATIONS THAT TRAVEL THROUGH ALL SORT OF MATTER AND THAT CAN BE PERCEIVED BY THE HUMAN EAR

NOISE: ANY UNWANTED SOUND



Performers are critically dependent on their hearing. Yet, they are often exposed to excessive sound or noise levels that can have very damaging consequences. Singers, musicians and dancers are primarily concerned, but so are actors and variety artists when performing against a music background, or when some special effects (e.g. pyrotechnics, stunts) or props (e.g. firearms) are used in the production.

Impulse sounds/noises involve a rapid raise and fall in pressure level and can be very loud. These are typically those produced by gunshots or cymbal crashes. Steady state sounds/noises can be loud but have a more consistent level. Any loud sound can damage hearing if performers are exposed to it for long enough periods or if the sound pressure is high enough to cause immediate damage. Noise induced

hearing loss is generally progressive and inner ear damage is irreversible. Exposure to loud noise can result in sleeplessness, fatigue, stress and communication difficulties. These can then affect concentration and potentially lead to more incidents and injuries.

Appropriate seating, sound deflectors, acoustic shields, performance scheduling, hearing protection, amplification levels, speakers and instruments positioning, safety distance and other precautions should be carefully considered in order to protect the hearing of performers.

\* At your first rehearsal, ask whether you will or may be exposed to loud sounds or noise. If necessary, do not hesitate to enquire about the measures the production has taken to protect your hearing

\* If, at any time, you feel you are too close to the sound or noise source, increase your distance and, if possible, turn your ears away from it

\* Use ear protection whenever possible, if this does not affect your performance. Some spe-

cialised and custom made earmolds can effectively limit high sound pressure, without affecting your ability to hear clearly

\* Be aware of your overall level of fatigue: it may increase the vulnerability of your ear. Be equally aware of other previous exposure to high noise or sounds (e.g. concert, disco, loud iPod, etc)

\* Alcohol and medicines may distort your hearing perception, lessen your sense of discomfort and decrease your vigilance

\* Should you experience a dull hearing or ringing in the years after a sound or a noise exposure, take a break at the earliest opportunity and seek a quiet place to rest. Frequent breaks are recommended even if you do not feel any warning sign, when working in a noisy environment

\* Be weary of any discomfort to your ears that may appear after the performance. It may indicate excessive sound/noise exposure

\* Should this discomfort continue, seek medical advice without hesitatio

\* As a safety routine, have your hearing regularly checked by an audiologist



# Stunts/Stage combats

**STAGE COMBATS:** SERIES OF MOVES DESIGNED TO CREATE THE ILLUSION OF PHYSICAL COMBAT, WITHOUT CAUSING HARM TO THE PERFORMER.

**STUNTS:** ANY ACTION SEQUENCE PERFORMED FOR ARTISTIC PURPOSES AND INVOLVING A POSSIBLE INJURY TO PERFORMERS OR OTHERS ON STAGE



The risks in stunt work and stage combats are always high and every move or position should be carefully choreographed and rehearsed to reduce the risk of injury. Accidents are all but infrequent, due to the increased use of special effects and the trend towards realism.

Stunts should not be performed if they are not strictly necessary to the production. The safest option should always be retained to minimise risks.

A competent person responsible for staging and co-ordinating all fights and stunts should be hired by the production for additional safety.

Professional stunt people should perform all stunts where there is a high risk of injury and where a particular certification is required (e.g. parachuting, scuba diving, etc). Emergency, on-site medical equipment should be available and be appropriate, depending on the distance to adequate hospital facilities, the availability of medical transportation, the degree of risk of the stunt, etc. Safety procedures should be in writing and discussed with all the concerned performers.

Whenever performers are to repeat the stunt or fight simulation every

night or twice for matinees, it should be established whether the action sequence could be shared by more than one stunt person.

- \* When you are hired for a performance, you should be made aware of all stunts and/or stage fights involved. You should be allowed to be doubled by a professional stunt person, if you do not wish to be directly exposed to risk

- \* Never misrepresent or overestimate your technical skills. Be honest about what you know how and what you don't

- \* Never perform a stunt or a stage combat you have not adequately rehearsed before: you could seriously harm yourself or others around you. You should also be allowed to practice several times without the risk factor

- \* Be sure you know who the stunt/fight director is and follow his/her direction. Do not push your body beyond its limits. If you feel the exercise is too testing, let the director know

- \* Do insist on additional rehearsal time if you do not feel confident with your moves. Inadequate train-

ing can have very dire consequences for you and others around you

- \* Before you are to perform a fight or another stunt, you should be briefed on all safety procedures. Regularly run quick mental checks to make sure you remember them well – e.g. the location of the nearest medical and fire protection kit, the emergency number to call, first aid moves, etc

- \* Be especially aware of the presence of children. Children should not perform stunts or be nearby when stunts and/or fights are performed

- \* Stunts and fights can be physically demanding: do not perform them if you do not feel 100% fit. Keep your body hydrated by drinking regularly. Frequent breaks should be provided to limit fatigue

- \* You should never be requested to perform a stage fight or a stunt other than the one you have trained and rehearsed for

- \* Make sure there is no ambiguity concerning cues and signals

- \* Be aware of any debris, ground imperfections or obstacles that may impair your balance and hinder the right execution of the staged fight

# Temperature and ultraviolet radiation

TEMPERATURE: THE DEGREE OF HOTNESS OR COLDNESS IN A BODY OR ENVIRONMENT

ULTRAVIOLET RADIATION: ENERGY RADIATED BY THE SUN IN SHORT WAVELENGTHS, INVISIBLE TO THE HUMAN EYE

The skin and body tissues strive to remain at a constant temperature, despite the fluctuations of external heat. By draining your body's ability to regulate itself, environmental temperature can impinge on your performance and be unsafe, especially when combined with protracted exposure.

Whether you are working indoors or outdoors, cold is not to be taken mildly. Shivers are the first signal that your muscles are artificially trying to generate heat by contraction and to keep your body temperature to its normal level. Protracted exposure to cold temperatures will numb your body, loosen your concentration and lower your efficiency. As your muscles naturally contract, you will be more exposed to sprains, strains and other serious injuries. Conversely, warm/humid conditions will

force your body to cool down, which may be especially tricky if the performance is rather physical. This is typically done by perspiration, which uses up many of the fluids and salts in the body. Dehydration (loss of water and salt in sweating) and hyperthermia (over heating) are dangerous, resulting in early fatigue, impaired performance, loss of consciousness and even heat stroke.

While safety thresholds in live performance vary – depending on your build, on the nature of the performance, on costumes, etc – a rule of thumb is to work between 18° C (65° F) and 32° C (90° F), the ideal being somewhere amid those two extremes.

Ultraviolet (UV) radiation present in sunlight is an environmental human carcinogen. In humans, prolonged exposure to solar UV radiation may result in acute

and chronic health effects on the skin, eye and immune systems.

\* Strengthen your body's resistance to temperature changes by following a healthy diet and keeping fit at all times. Make sure you always give your body the appropriate nutrients

\* If at all possible, try and get acclimated by arriving on location a few days early

\* Make sure you wear/are given adequate clothing. Costumes next to the skin must be effective in transporting moisture away from the body's surface for evaporation or in retaining a layer of warm air around you. If they do not, then you should not have to wear them continuously for extended periods. If at all possible, you should use the same costumes at rehearsal and performance to get your

body accustomed. Remember that as much as half of the body heat is lost through your head and neck, so keep them covered as well

\* Beware of resting times: in a warm environment you will need to keep your body cool and drink plenty of water, preferably not chilled. Conversely, in a cold condition, you must retain body heat, cover up and eat power food. Make sure you have your own supply of water and food. If you do not need to be outside, seek some place warm

\* Pre rehearsal and performance warm-up exercises are very useful. They should focus on individual and groups of muscles. Post rehearsal and performance stretching/cool down exercises are also useful to prevent injury

\* Recognise early symptoms of cold or heat injury. Watch out for shivers, particularly when you

are resting, and for any loss of concentration or coordination, cramps, hunger, sign of early fatigue, slurred speech, slow breathing, heart rate, dizziness or headache, blurred vision.

At the first sign of any of these conditions, notify your supervisor and/or seek medical attention

\* Good ventilation is essential but you should avoid exposing yourself to shafts, particularly in warm and humid conditions. Try and avoid intense sweating and keep your clothing as dry as you can

\* You should not perform in temperatures beyond those recommended here beside, unless you are properly equipped and can take frequent breaks

\* Remember that it is easier to avoid hypothermia/frostbite and heat exhaustion/heatstroke than to treat them

\* Beware of ultraviolet radiation, even on cloudy days. Apply sunscreen regularly and at least 15 minutes before exposure to direct sunlight. Wear industry approved sunglasses. Cover your head and neck, possibly with a wide brim hat. Wear loose fitting clothing, if possible, to keep your skin ventilated and dry, while reducing exposure to sunrays

\* Factors like the time of the day, cloud cover, the season of the year, the geographical location, the altitude, the extent of reflection, etc. all have a direct impact on the intensity of UV radiation. Do not hesitate to enquire about them in advance and to ask for safety advice when preparing your day out. Always bring some protection with you, especially sunscreen and sunglasses, in case the intensity of the exposure increases beyond expectations

# Ventilation

VENTILATION: NATURALLY OR ARTIFICIALLY INDUCED AIRFLOW BETWEEN AN INDOOR SPACE AND THE OUTSIDE. ENSURING AN OPTIMAL BREATHING CONDITION, TEMPERATURE AND CLEAN AIR.

A good ventilation system is a basic health and safety requirement for all indoor venues. This does not only concern the stage but also all areas backstage. Breathing can become difficult due to too much fog or haze or carbon dioxide in the air, displacing the oxygen that our body needs to function properly. Some particular props or masks can also limit the normal intake of air. This can affect all performers, especially those that need to do deep breathing (singers, dancers, etc).

Poor ventilation is often underestimated as a potential hazard for the safety of performers, including by the latter. Low-lying areas and confined spaces – e.g. trap rooms, dressing rooms, stairwells or pits – are obviously the first to be affected. However, the whole stage area could also be concerned, especially in small and packed venues, or where productions make a significant use of vapour or other special effects, etc. These conditions tend to worsen when the overall temperature is high, as the body needs more oxygen intake to get rid of the extra heat.

Ventilation should be continuous, because in many confined spaces the hazardous atmosphere will form again quickly once the flow of air is stopped.

A poor oxygen supply can lead to fainting, asphyxia or worse. It also does impair your concentration, your sense of balance and can induce fatigue, overall body weakness, dizziness and temporary memory loss.

\* As you are rehearsing, pay attention to any stale smell or to the unusual persistence of fog and smoke in the air, when used by the production, or to a rapid increase of the surrounding temperature. These factors may be caused by deficient ventilation or insufficient air conditioning. If not addressed, the situation is likely to get worse with an audience, on stage

\* Should you experience a feeling of discomfort breathing naturally or notice a rise in your natural breathing rhythm unrelated to physical activity, try to slow down and mention this inconvenience as soon as you can to the production

\* Should you be required to work in a confined space or to wear a costume that you feel may limit your ability to breathe normally, do rehearse in exactly the same conditions that you will experience on stage, bearing in mind additional factors like stress, audience, etc. that are likely to further affect your breathing. Ask the production

to provide better ventilation if you notice a discomfort. You should also be allowed to take regular short rest breaks. You should be in constant contact with an observer who can alert the production should you feel unwell

\* Be aware of your overall condition and of the fact that

poor fitness will increase your oxygen intake. Also emotional stress, nasal congestion, influenza and other sickness may interfere with your ability to breathe normally

\* Should you be affected by asthma, make sure the production knows about it to avoid unnecessary risks

