



# GardeFeu

## ENTRAINEMENT - FORMATION

### Rules of training

version 1.5

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## Change log

Version	Changes
<b>1.0</b>	June 16, 2016 1. Initial version
<b>1.1</b>	June 21, 2016 1. Added block : Last-call 2. Added block : About other fire jams 3. Added block : Photographers and musicians 4. Added block : Facebook Group 5. Numbering of blocks to facilitate discussions 6. Corrected the description image of a fire zone
<b>1.2</b>	June 23, 2016 1. Added block : Verification of equipment when forming newcomers
<b>1.3</b>	September 15th 2016 1. Linguistic correction 2. Added block : Shutdown code to stop a performance 3. Added block: To request a fire performance permit 4. Added the drowsiness factor to the awareness elements 5. Added: Thanks
<b>1.4</b>	September 18, 2016 1. Police protocole improvement
<b>1.5</b>	August 24, 2017 1. Added flash point temperatures 2. Specification of Isopar-K instead of only Isopar 3. Specification of clear Kerosene/Kerosene 1-K instead of only Kerosene 4. Adjutement of police protocol 5. Added 3rd degree burning in situations/actions 6. Added a mention to never fire breath with naphta

7. Added a mention to explain when to call Wipe
8. Added a mention to explain when to call shutdown
9. Added a mention to drop props when there is a possible fire on back or head

Thanks to the contributors from close or afar who have made the production of this document possible : Patrick Lagacé, Sonia Legault, Joannie Olivier, Julien Constantineau, Francis Dubé, Alexandre Tanguay, Fannie Lagrange, Valérie Archambault, Jacquelin Duchesne, Sarah Guilbault, NAFAA (North American Fire Arts Association) .

English traduction by Daniel Galipeau

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## 1. Essential rules with fire

### 1.1 – Never practice alone with fire

Make sure you have a *safety* with you at all times. In case of a problem, you cannot put out a flame that you cannot see. A *safety* is essential for every problem that could arise

### 1.2 – Never try a new discipline without a mentor

Many disciplines may prove fatal when improvised without proper knowledge (*fire breathing, vapor tricks*, etc). Make sure you learn with someone who knows what he's doing. If you don't know anyone who can teach you, consult the list of artists that give courses on the Facebook Group or simply post on the group.

### 1.3 – Verify the inflammability of your clothes

Synthetic fabric can melt and stick to your skin while burning it, even if the flames are gone. (On May 2<sup>nd</sup>, Linda Farkas, a professional fire artist, has passed away when her synthetic fabric costume caught fire on her). You can burn a little piece of clothing to see how it reacts. If it melts, do not wear it during your training/performances. The most secure fabrics are Kevlar, wool and cotton.

### 1.4 – Never smoke near the dipping zone

For security reasons, make sure you react quickly if you see someone smoking near the dipping zone. Swiftly invite him to leave the perimeter of said dipping zone.

### 1.5 – Never light your equipment close to the dipping zone

For security reasons, make sure you react quickly if you see someone lighting his props near the dipping zone. Swiftly invite him to leave said perimeter.

### 1.6 – Each artist must ensure security rules are applied

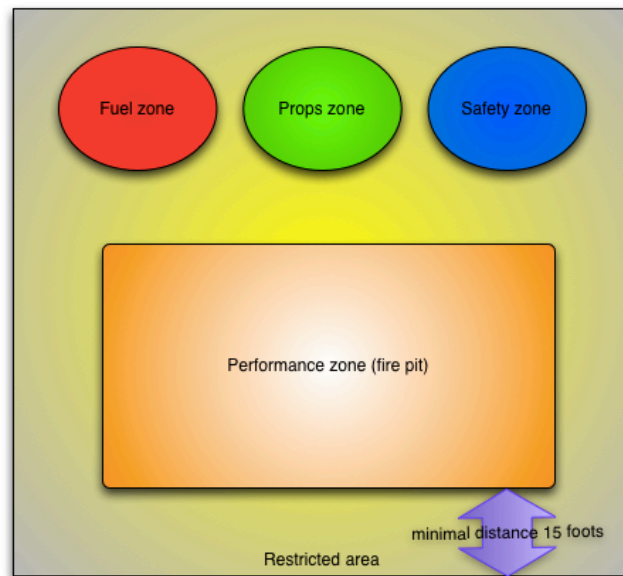
It is the duty of each artist to ensure that security rules are applied at all times in the perimeter reserved for performances. As a fire artist participating to the fire trainings, you have the main responsibility of enforcing the security rules within the perimeter.

## 2. What does a fire zone look like?

Here is what a fire zone looks like

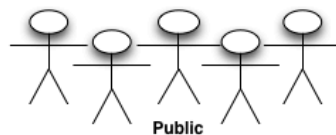
### 2.1 Restricted Zone

- Delimited by a yellow « DANGER » tape, it consists of the physical security perimeter required by firefighters.
- Only performers, *safeties*, or authorized personnel may access this zone.
- No alcoholic beverage tolerated in this zone.



### 2.2 Performance zone (the Pit)

- Reserved to performers and *safeties* only
- Make sure to head towards the center when about to light your props



### 2.3 Safety zone - Blue

- Contains security equipment :
  - Blue wet towels to put out equipment and artists
  - Red towels that serve to wipe off fuel
  - Security vests for *safeties*
  - Extinguisher
  - Fireproof towel
  - First aid equipment
  - Absorbing matter (i.e. cat litter)

### 2.4 Props zone - Green

- Contains only fire equipment, nothing else
- All fire equipment, hot or cold, must be there (no hot fire equipment in the crowd!)
- If you found a lost fire prop, that is where you can come give it back
- Do not play with other artists' equipment without their permission

## 2.5 Dipping Zone, Fuel Zone - Red

- It is the most dangerous zone because all the fuel is there
- Only the artists preparing their props may be there
- No open flame or cigarette in this zone
- No hot equipment in this zone
- There must be ground protection to avoid contamination
- There must be a small red towels to wipe small spills
- Dipping containers must be closable/sealable
- Only dipping equipment and related accessories may be in this zone
- Respect the property of others
- No lighter, torch, or accessory that creates an open flame in this zone
- Fuel containers must be identified with the name of their owners (a green tape and a marker are made available)
- The pink tape indicates that this fuel is shared with everyone (if you don't identify your fuel, it may end up with a pink tape!)
- Permitted fuels are : naphta (*camp fuel*), paraffine, isopar-K and clear kerosene (also called Kerosene 1-K). Kerosen is for outside only

### 3. General rules in the fire zone

#### 3.1 Ecological behavior and cleanliness

We try to be as ecological as possible, and we believe in the « *Leave no trace* » principle. Make sure to leave nothing on the site when quitting.

- Pick up your empty fuel cans.
- After training, if you see garbage on the ground, even if it's not yours, you are encouraged to pick it up.



#### 3.2 Police protocol

If policemen or firefights show up on the site, here is what you must do :

- 1 Warn the organizer of their presence
- 2 Move away from the authorities, they do not like to be surrounded by a crowd
- 3 Artists that are already lit finish their performance
- 4 Stay calm, we have a fire permit and we are totally legal



#### 3.3 The concept of *Last call*

The last call takes place around 23h00.

- If you are **already lit**,  
  
it is your last *burn* for the night, enjoy it to the max!
- If you are **not already lit**, it will be your last *burn* for the night.

After your last *burn*, start picking up your equipment. The perimeter will be taken down when the last *spinner* will have finished his last *burn*. This way, we make sure to have enough time to take the perimeter down, say goodbye to our friends and leave the area before its closing time. Parks close at midnight and the police can give you a fine if you are still present after this hour.

### 3.4 Photographers and musicians

There are often photographers and musicians that come during our trainings. They must remain outside the security perimeter at all times. When photographers share pictures of you on our Facebook group and that you wish to use these photos, make sure you give them proper credits in the picture description. Example: « Photographer : Martin Boulianne »



### 3.5 Regarding other fire jams

It required a lot of efforts to build this tolerance of authorities towards our trainings. If you want to do fire outside of the Wednesday practices or to organize other fire trainings, please do it elsewhere than Lafontaine Park. This way, we make sure that the park authorities keep their trust in our method. All it takes is one incident, one complaint or one intervention that goes wrong for us to lose this tolerance.

The city is vast, there is more than enough place for other fire trainings. Do not forget to publish your event to invite other artists. If you need advice for your event, the organizers of Wednesday practices will help you with pleasure!

### 3.6 Situation / Action

Situation	Applicable procedure
<b>Someone's on fire</b>	<p>If you know the person's name, yell it and warn him that he's on fire (be clear and precise). Example : « PATRICK! YOUR RIGHT LEG IS ON FIRE! »</p> <p>If you don't know the person's name, yell « orange » and the body part on fire. Example : « ORANGE RIGHT LEG »</p> <p>If you have a towel, prepare to put out the person if he cannot do it himself. If it's on his head or back, you warn him and you immediately run to put it out.</p>
<b>Someone smokes or is about to light up close to the dipping zone</b>	Swiftly tell him to move away from the perimeter in question.



<b>A stranger is inside the security perimeter</b>	Go see that person and make him leave immediately. All discussions with that person take place outside the perimeter.						
<b>Someone from the public wants to do fire with us</b>	<p>If he does not have his equipment or his fuel, the answer is simply NO. We make sure that those who wish to join us are serious enough to have the required equipment.</p> <p>If he is under the influence (alcohol/drugs) it's automatically NO, even if he has all his equipment.</p> <p>If he has his equipment, direct him towards the event organizer so that he can inform him of the security rules and procedures to follow.</p> <p>There is no « <i>first burn</i> » when we are close to the <i>Last call</i>.</p>						
<b>Someone has suffered a 1st or 2<sup>nd</sup> degree burn</b>	<table border="0"> <tr> <td>1</td><td>Apply a wet towel on the burn.</td></tr> <tr> <td>2</td><td>Contact the organizer.</td></tr> <tr> <td>3</td><td>In the event of a 2<sup>nd</sup> degree burn, going to the hospital may be necessary.</td></tr> </table> <p>There was never a case of 3<sup>rd</sup> degree burn, in that eventuality the response would be an immediate call to 911</p>	1	Apply a wet towel on the burn.	2	Contact the organizer.	3	In the event of a 2 <sup>nd</sup> degree burn, going to the hospital may be necessary.
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## 4. The role of a safety

### 4.1 Main tasks

- Be completely aware (not be under the influence of drugs/alcohol or be too tired/drowsy) You may have to react rapidly, an accident can happen very quickly and the consequences could be very serious
- Wear the orange security vest and be clearly identifiable
- Have on you at all times :
  - A **wet (with water) blue towel to put out**
  - A **red towel to wipe fuel**
- Make sure that no stranger enter the perimeter
- Make sure you know the people you are watching
- Always be standing and ready to run, fire on skin causes a burn that upgrades of 1 degree every 2 seconds, it goes fast!
- Never leave your vest on the ground. Give it to someone else when you have finished your *safety* turn. If the number of artists has considerably gone down, and does not justify that many *safeties*, you can drop your *safety* equipment in the blue zone.
- When required, yell « WIPE » to the fire breathers and wipe them with the red towel, you need to call WIPE when you see fuel drop on the performer
- Give the immediate stopping code to the artists if the circumstances require it by saying : « SHUTDOWN ». (ex: A children ran into the zone to retrieve its balloon).



### 4.2 Number of safeties

- There must be one *safety* present at all times
- One *safety* can watch 1 new spinner, 2 intermediates or 3 experts at a time
- One *safety* must be dedicated to fire breathings if any are performing

### 4.3 Situation / Action

Situation	Applicable procedure
A fire breather is beginning to have paraffin dripping on his face, neck or	<ul style="list-style-type: none"> <li>• You yell « WIPE »</li> <li>• The breather must stop moving, raise his head and present his torso to help you wipe him</li> <li>• You wipe off the paraffin and then let him</li> </ul>

<b>torso</b>	continue his performance
<b>Someone from the public has questions</b>	You tell them that you cannot help them at the moment because you are watching over the artists. You can ask someone else to answer or go see them after your <i>safety</i> turn.
<b>There is an equipment failure during a performance</b>	You immediately warn the artist to stop, and you put out the equipment. The artist will leave the zone and be able to inspect his equipment securely
<b>Equipment is launched in the public</b>	You immediately go put out the equipment in question. The artist ceases performing, secures his equipment and can go verify it securely outside the perimeter.
<b>An artist comes towards you to put out his equipment</b>	<ul style="list-style-type: none"> <li>• Put your blue towel on the ground</li> <li>• The artist will put his equipment on it</li> <li>• Cover the equipment entirely to snuff out the fire</li> </ul>

## 5. Role of the fire artists

### 5.1 Main tasks

#### Sécurité

- Be completely aware (not under the influence of drugs/alcohol or drowsiness).
- Have verified the inflammability of your clothing
- Make *safety* turns
- Act IMMEDIATELY when you see a dangerous situation (fire or stranger close to the dipping zone, stranger in the perimeter)
- Immediately stop your performance if a *safety* uses the immediate stopping code: « SHUTDOWN »



#### Équipements

- Bring your own fuel, identify it and leave it in the red zone. The permitted fuels are : naphta (camp fuel), paraffin, isopar-K and clear kerosene (outside only)
- Bring your equipment
- Make sure your equipment is in good condition
- Never try a new equipment for the first time in front of the public
- Leave your equipment in the equipment zone (Green zone)
- Make sure you do a *spin-off* before beginning your routine
- Rockets and other projectiles are strictly forbidden

### 5.2 Situation / Action

Situation	Applicable procedure
<b>You hear ORANGE or your name and a body part that you cannot reach</b>	<ul style="list-style-type: none"> <li>• Stop <i>spinning</i></li> <li>• Try to put yourself out by snuffing out the flame</li> </ul> <p>If it does not work :</p> <ul style="list-style-type: none"> <li>• Drop your equipment on the ground</li> <li>• Snuff out the flames with your hands</li> <li>• If you need assistance, yell « <i>SAFETY!</i> »</li> </ul> <p>In case of emergency, roll over on the ground</p>
<b>You hear ORANGE</b>	<ul style="list-style-type: none"> <li>• Stop <i>spinning</i> immediately to facilitate the</li> </ul>

**or your name and**

**« BACK » or**

**« HEAD »**

*safety*'s work, who is probably running towards you. Drop your props if you think you are the one in fire.

- Turn around to make eye contact with the *safety* headed towards you.
- If you find that no *safety* is headed towards you, yell « *SAFETY!* » and roll over on the ground.

**You have finished  
your performance  
and you want to put  
out your equipment**

- Head towards a *safety* while presenting your equipment in an obvious manner and ask him to put you out. The *safety* will put down his blue towel on the ground. Put down your equipment so they can put it out.

## 6. Formation of newcomers

Each artist, whether he is beginner or advanced, who wants to participate in trainings, has to follow this formation before entering the security perimeter.


### 6.1 Theory formation

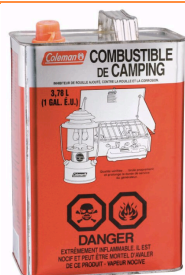
- Review the rules of this document (points 1,2,3,4 and 5)
- Explain the difference between the most commonly used fuels

**Flash point** : The flash point of a volatile material is the lowest temperature at which vapours of the material will ignite, when given an ignition source.

**Inflammable liquid** : At room temperature, vapours ignite making the ignition very violent

**Combustible liquid** : At room temperature, only the liquid ignites

Fuels	Flash point	Properties
<b>Clear Kerosene / Kerosene 1-K</b> 	40C	<ul style="list-style-type: none"> <li>• Only the liquid ignites, not its vapors</li> <li>• Harder to ignite</li> <li>• Cheaper to buy</li> <li>• Excellent for a novice</li> <li>• Forbidden during interior trainings because it emits a lot of smoke; allowed for exterior trainings</li> </ul>
<b>Naphta (camp fuel, white gas)</b>	-7C	<ul style="list-style-type: none"> <li>• Vapors can ignite</li> <li>• Evaporates</li> <li>• Very easy to ignite</li> <li>• Used for vapor tricks, big <i>spin offs</i></li> <li>• Not recommended for a novice</li> <li>• <b>Never ever fire breath with this product</b></li> </ul>



<b>Paraffin</b>	118C	<ul style="list-style-type: none"> <li>• Used by fire breathers</li> <li>• Only the liquid ignites, not its vapors</li> <li>• Harder to ignite</li> </ul>
<b>Isopar K</b>	58C	<ul style="list-style-type: none"> <li>• Has no odor, no color, resembles water in every aspect</li> <li>• VERY important to identify an Isopar K container or otherwise everyone may think it's water!</li> <li>• Only the liquid ignites, not its vapors</li> <li>• Emits little smoke, ideal for exterior shows</li> <li>• Burns for a long period</li> </ul>
<b>Car fuel/gazoline</b>	-46C	<ul style="list-style-type: none"> <li>• Forbidden for our trainings; risks of explosion! NEVER use this fuel for fire arts</li> </ul>

## 6.2 To apply for a fire performance permit

Novices must be aware that there is a difference between our trainings and a public entertainment show, interior show or demonstration, etc.

A federal law forbids the use of fire inside or outside without a permit from the local fire department.

In Montreal, to obtain this permit, one must present a permit application to the SIM at least 10 days before the event. This application must include :

- The form from SIM (<http://ville.montreal.qc.ca/sim/effets-speciaux>)
- A recommendation letter from the owner of the property stipulating that he authorizes a fire show on his property
- A proof of insurance, as a fire artist, of at least 5 million \$ coverage
- A detailed plan of the location clearly identifying security elements or hazards (perimeter, fuel, distance, performance zone, etc.)
- A proof of successful completion of the pyrotechnician courses is often very appreciated by the fire department. This course is called « Special effects Pyrotechnician », and allows you to obtain your pyrotechnician

license card.



This course is offered by PurFX (<http://www.purfx.ca/>)

## 6.3 Practical exercises

### Putting out equipment

- Demonstrate how to put out flaming equipment using a towel
- Have each newcomer practice so they learn how to properly put out flaming equipment

### Putting out an artist

- Demonstrate how to put out a person using a towel
- Have each newcomer practice so they can properly put out a person (simulation)

### Wipe on a firebreather

- Demonstrate how to *wipe* a firebreather
- Have each newcomer practice so that they can call a firebreather and wipe him

## 6.4 Facebook Group

There is a Facebook group reserved to the fire artists, photographers and musicians that attend our events and share their art with us.

## 6.5 Equipment inspection

Sometimes novices build their first fire props or have purchased very low quality equipment, which may represent a certain risk. Make sure to inspect the design of newcomers' equipment, test them **very rigorously** without fire. If you are uncertain of the design because this type of prop is not your specialty, make sure you consult another artist more proficient with said prop. This way, we can avoid



broken equipment that could propulse (flaming) loose parts in the crowd.

### **General elements to inspect**

- Ignited components must use Kevlar, not cotton, wool or other fabrics. **ONLY** kevlar.
- No plastic

### **Particular elements to inspect with Poï**

- No keyrings; with the high temperature and the centrifugal force, the metal becomes weaker and the rings may break open. Use quicklinks (chain link that uses a locking screw)
- Inspect the solidity of the chain, don't forget that metal will become 3 to 5 times weaker under the effects of heat. Be ruthless when testing.

## **6.5 First safety turn**

After having completed the theory and practical formation, newcomers must do at least 5 minutes of *safety* before lighting up and spinning with us. There must be at least one *senior safety* at all times when a newcomer does his first *safety* turn.

## ANNEX – Security requirements for special effects acts of fire artists

Here are the rules of the City of Montreal fire department when there is a fire performance

The following safety requirements apply to any handling of flames for artistic or theatrical purposes during a special event.

1. Have a copy of the specifications for the flame effects and all planned activities.
2. The artist must work in an area that is free of any obstacles (minimum 5 m) and the performance may not be carried out under a roof or near a shelter or any combustible material.
3. The security perimeter must be physically marked off. A distance of at least 5 m must be maintained between the flame and the public at all times.
4. The use of flammable liquids is strictly prohibited.
5. The container of combustible liquid used during the performance must be kept within the security perimeter and must not be accessible to the public.
6. Have a minimum quantity of combustible liquid for carrying out the planned fireworks during the entire presentation.
7. Have a secure soaking and shaking area that is inaccessible to the public.
8. Provide ground protection in the soaking area to prevent contamination.
9. An artist may only have a maximum of two litres of fuel. He/she must keep absorbent material near the soaking area and must ensure that it is disposed of in a safe manner.
10. Ensure that the accessories used during the performance are in good condition.
11. Keep a fire blanket or wet towels within the security perimeter.
12. Keep an approved class 3A-10BC portable fire extinguisher near the security perimeter.
13. Ensure that the flame effect display performed inside a building in no way hinders the operations of the fire safety and ventilation installations.

Source : <http://ville.montreal.qc.ca/sim/en/fire-artists>

## ANNEX – Other sources of information

### **North American Fire Arts Association**

The *North American Fire Arts Association* is an important source of information regarding the safe practice of fire arts. Their method is very similar to ours.

<http://www.nafaa.org/>

### **GardeFeu**

Non-profit Organization aiming to offer a safe and secure framework to fire artists. This organization can provide and manage a security perimeter for your shows

<http://www.gardefeu.ca>