

# RISK MANAGEMENT BULLETIN

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## Fireworks Displays

Fireworks displays are part of many local government celebrations, especially during the spring and summer. Although fireworks are exciting and beautiful, there are many dangers associated with putting on a fireworks display.

A local government has two options when putting on a fireworks display. The first is to have local government personnel put on the display, and the second is to hire professional fireworks display operators to do it. Either way, make sure the operators are thoroughly trained in performing fireworks displays.

It is a better option to hire professional fireworks display operators who have gone through a training program and received certification in putting on fireworks displays. They can be hired as independent contractors. The local government should require them to carry the appropriate insurance coverage and liability limits for fireworks activities. The local government should also require the contractor to hold the local government harmless and indemnify the local government for liability arising out of the fireworks display and to name the local government as an additional insured on their insurance policy.

When your local government puts on a fireworks display, you must:

- Adhere to Maryland statutes
- Notify your local fire marshal of planned activities
- Contact the State **Fire Marshal's office at 410-339-4200** to obtain all applicable permits.
- Make sure that all Class B fireworks are transported in accordance with Department of Transportation requirements with respect to certification of drivers and placarding
- Adhere to the provisions of 1123 NFPA (National Fire Protection Association) on shooting fireworks and 1124 on storage and transport of fireworks. These standards are numerous and include such things as distances between mortars, size requirements for shells and mortars, distances between the fireworks and spectators, crowd control measures, safety measures, and the number of personnel that must be available.

If your local government is thinking about doing its own fireworks display, there are many considerations with respect to operator requirements, training, and inspection that local government officials should review including:

*Endorsing Organizations*



1. The display operator should put together a written report which includes the minimum site radius, size (diameter) and number of shells to be fired.
2. Make a map of the display site.
3. Contract LGIT for more information pertaining to the coverage.
4. Know the names of the individuals who will be operators, their license information, previous experience and number and experience of their assistants. If you want to have local government personnel put on the display, send them to one of the fireworks training and certification programs.
5. Store fireworks according to NFPA recommendations before, during, and after the display.
6. Meet all NFPA standards.
7. Review all personal safety equipment.
8. Make sure all necessary emergency equipment is available.
9. Create a policy on what will happen if there is excessive wind drift on shells.
10. Develop a site and fireworks security program to adequately separate the fireworks operations from the general public.
11. Make sure there are enough people to handle crowd security and that appropriate communication equipment is available if a problem occurs.
12. Develop a policy regarding interruption or cancellation of the display due to inclement weather conditions, equipment problems, etc. Appropriate communications should be available to alert the crowd in these situations.
13. Develop a checklist for inspection of the site immediately after the fireworks display and next day to find and remove any unexploded shells.

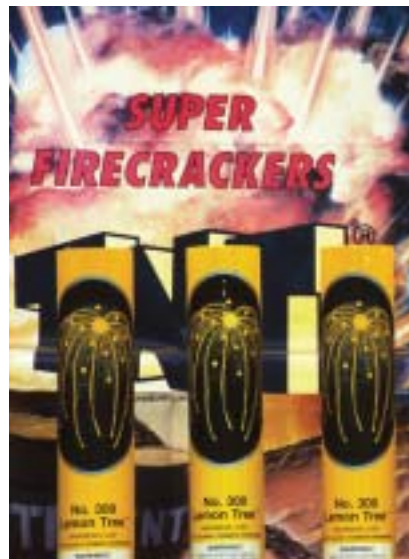
Fireworks can be dangerous. Operators must meet requirements and be aware of other considerations. If your local government does not have anyone who is experienced or trained in putting on a fireworks display, hiring a trained operator is the best option. Having trained personnel helps ensure that your fireworks display is a safe and enjoyable experience for everyone.

For information on fireworks regulations, standards, training and certification, contact or refer to:

Office of the State Fire Marshal  
300 East Joppa Road, Suite 1002  
Towson, MD 21286  
410-339-4200 or 800-525-3124  
FAX 410-339-4215

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# Fireworks: Plan for a Safe Display



Many communities sponsor fireworks displays as part of festivals and celebrations. These displays generally attract large crowds and are the event around which other activities are planned. In the past, many communities staged fireworks displays using their own employees or volunteer organizations. Over the years, however, fireworks displays have become significantly more technical and use larger and more sophisticated shells and electronic triggering devices. These factors, combined with increasing liability concerns, have led to increased use of firms specializing in providing packaged fireworks displays. Contracting with professionals has improved the safety of these events. Consumer Product Safety Commission accident statistics confirm that fireworks are the safest when handled by professionals.

Although fireworks are true crowd-pleasers, considerable care must be focused on the planning of these events to ensure the safety of spectators and of the crew providing the show. Liability concerns are well-founded; every summer we see media accounts of injuries as a result of fireworks displays. Through proper planning and management you can significantly reduce the possibility of injuries in your community.

The overwhelming majority of fireworks-related injuries are the result of firecrackers, rockets and other consumer devices. Injuries from the public displays account for about 3 percent of the total injuries. This fact reflects the success of efforts to control the manufacture, storage and display of fireworks. Understanding and enforcing compliance with the National Fire Protection Association (NFPA) and other standards will

ensure minimum risk of injury, as well as reducing the potential severity of injuries that do occur to those presenting the display and to the public.

Those planning fireworks events should be thoroughly familiar with NFPA standards such as NFPA 1123, Code for the Display for Outdoor Fireworks and NFPA 1124, Code for the Manufacture, Transportation and Storage of Fireworks. In addition, those responsible should identify and be thoroughly familiar with federal regulations, state statutes and local ordinances regarding fireworks. Knowledge of the permitting process and special approvals required for fireworks displays is essential.

There are a number of other issues for risk managers to address when preparing for a fireworks display. Some considerations to keep in mind are:

### Contractual Risk Transfer

Currently, most entities contract for their fireworks displays with specialized firms. Under these contracts, the firm plans the fireworks display, provides the fireworks, is responsible for pre-event storage and handles the transportation of the fireworks. The firm is also responsible for the set-up, operation, tear-down and post-event site inspection. In addition, contracts should include specific language to provide for the financial transfer of risk for the fireworks portion of the event. Properly written, this type of contractual arrangement should relieve the entity of the burden of providing qualified shooters/assistants and developing the expertise necessary to set up displays, configure mortars and plan shows sophisticated enough to

impress the audience. However, the practice of transferring risk through contracts doesn't relieve the entity of the responsibility for providing proper oversight, including event planning and control.

The contract should specifically address the vendor's obligation to comply with all federal, state and local laws, regulations and ordinances as well as the provisions of NFPA 1123 and 1124. As part of the event planning, review contractor procedures including:

- pre-event storage of fireworks
- transportation method
- emergency procedures
- training and age requirements for operators and assistants

Identify a contact person from both your entity and the fireworks vendor, and establish an effective method for them to communicate before, during and after the event. This is especially important should an emergency arise or if the event must be canceled, delayed or suspended. The contract may also include a rain date. The event plan should specify a location for the temporary storage of the fireworks should it become necessary to postpone or cancel the event. Any on-site or nearby storage should be defined.

To obtain citizen involvement, some communities form committees to plan events and festivals. Some establish committees by a nomination process that includes ratification by the elected board (town board, city council, etc.). Others take a less-structured approach and use volunteers on an informal basis. Review this process to determine if committee activities and members are insured under your entity's liability policy. If not,

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**Author's Note: The provisions of the 2004 NFPA 1123 & 1124 have been revised for 2006 which should be consulted for the newest information.**

you may be able to add them by endorsement, insure them separately, obtain coverage through an independent sponsoring organization or make an informed decision to allow them to operate without insurance. The point is, you should analyze the situation and make a decision that best protects the public's interests. Communicate this decision to elected and appointed officials as well as to participants who may be exposed to personal liability.

### Vendor Selection

Assuming the source of funding is established and the planning committee (if any) is in place, your next step is to select a qualified firm with a proven safety and performance record. For purposes of consistency and control, select the fireworks vendor/operator through a request for proposal (RFP) process. An RFP lets you carefully outline requirements vendors must satisfy and provides a framework to equitably evaluate competing proposals. For example, you could require vendors to specify the number and type of shells, the length of show, qualifications of staff, insurance and safety procedures.

It may be equally important to obtain a list of references. However, be aware that vendors are unlikely to provide unfavorable references. For this reason, you may want to obtain personal references from professional associates or your counterparts in other entities. Remember, the references do you no good unless you're diligent in checking them. These contacts are a good source for obtaining tips and suggestions on improving your show. Once you've accomplished this, work closely with the selected firm to ensure compliance with the provisions of NFPA 1123 and 1124.

The event plan should include adequate security to ensure that spectators and vehicles are kept out of the fallout area as well as a plan for getting additional emergency vehicles into and out of the area. If using private security, ensure they're trained and qualified to handle the duties you expect them to perform. Include a representative from the security firm in the planning process. The security firm's contract should clearly state the qualifications of staff, specify duties and responsibilities and provide for effective contractual risk transfer. Other concerns include the security of spectators going to and from the

event. Ensure the ability to adjust security for unforeseen circumstances.

### Site Selection

Selecting an appropriate site to hold the fireworks event is critical. Involve the vendor in the site selection and planning process. Site characteristics will have an impact on how the show is planned. The site must include adequate open space to create a fallout area for fireworks. This fallout area should be free of spectators, vehicles, combustible materials and overhead objects. Minimum distance from the launch area to the spectators should be a radius of at least 70 feet per inch of the internal diameter of the largest mortar used. For example, if the largest mortar is 6 inches, the crowd should be back at least 420 feet. These are minimum distances; you may need to increase them due to site characteristics, weather conditions or other factors.

In addition, aim the mortars away from the primary spectator area. The minimum distance of ground displays from spectator viewing or parking areas is 75 feet. For ground displays with "greater hazard potential" such as large wheels, roman candle batteries and items using large salutes, the distance should be increased to 125 feet or 70 ft./in. of tube diameter, whichever is greater. Separate the spectator area from the display area by ropes, fences or other appropriate means. The criteria should not be what is the easiest barrier to erect but rather the one that provides the most effective method for containing the crowd.

The fallout area should be free of spectators and vehicles prior to, during and after the event. You can minimize these concerns by ensuring the fallout zone will not be used for other purposes immediately prior to or after the event.

Post-event control of the fallout zone is important to allow time for a daylight inspection of the area to recover unexploded shells and clean up other debris that could present a hazard to the public. Complete this inspection as soon as possible to ensure the site is safe for public use. Your planning should include a procedure to take control of and dispose of unexploded shells.

Remember, unexploded shells must be handled, stored and transported in a manner consistent with NFPA and Department of Transportation standards. Only trained and

qualified personnel should mark and handle unexploded shells. One advantage of contracting for the fireworks display is you can transfer this responsibility to the contractor. If you're unable to reach the contractor, notify the fire department and ask that they take possession of the materials until the contractor can pick them up. However, because your employees will likely be involved in post-event cleanup, they should be familiar with these procedures. It would also be advisable to have your employees conduct a post-event site inspection as part of the cleanup to ensure the site is safe.

Once you've selected a site, develop a site map indicating the location and configuration of mortars, ground displays, on-site storage area for fireworks, spectator areas, vendors, entertainment, restrooms, first aid station, parking, etc.

Two essential elements of a successful event are adequate parking and a plan for moving traffic into and out of the area. Layout and control open parking areas so vehicles can get in and out in an orderly manner. This requires careful planning and coordination with the police department, security firm and event organizers. If parking is planned in open areas (fields, vacant land) not normally maintained, mow and inspect these areas to ensure they're safe. For example, a field of tall dry grass could be ignited by contact with a hot catalytic converter or smoking materials.

Complete your event plans far enough in advance to allow for review by key departments, such as police, fire, parks and legal, as well as elected officials. These individuals should be part of the planning process; don't simply consult with them as an afterthought. Timely input will facilitate the process and help avoid pitfalls that could disrupt the event. For example, make provisions to coordinate the arrival of the fireworks at the display site to allow for the proper inspection, separation and storage of fireworks in approved ready boxes. Also be aware that fireworks can't be left unattended or be allowed to get wet.

If an entity employee is responsible for inspecting the premises prior to the event, that individual should be thoroughly familiar with NFPA 1123 and any state or local ordinance that may apply. As indicated earlier, be sure to designate someone within the entity to act as a liaison with the vendor. This person should have the

authority or direct access to the person with authority to cancel the event in case of adverse weather conditions, problems with crowd control or other factors that could create risk of injury or jeopardize the safety of spectators or fireworks personnel.

In addition, fireworks materials must be transported in compliance with Title 49, Code of Federal Regulations, "Federal Regulations for Transport" ; NFPA 1124, Title 27 Code of Federal Regulations, Part 18; and Bureau of Alcohol, Tobacco and Firearms, Part 181, "Commerce in Explosives."

Communities using their own personnel or community volunteers must assume the additional responsibility and corresponding liability. As an added precaution, contact your workers' compensation carrier to verify coverage for employees used as shooters or assistants.

## Training

Communities choosing not to contract for their fireworks display should provide training from qualified individuals for the loaders, shooters and assistants. In addition, they must ensure all operators and their assistants meet the age requirements and are thoroughly familiar with firing and safety procedures. The fireworks vendor may be able to provide this training. Training efforts should be mandatory, well documented and include provisions for providing trained backup personnel in case of illness or no-shows. Training is not a one-time event; provide basic and refresher programs prior to each event for all individuals involved. Clearly define duties so all participants are thoroughly familiar with the tasks they'll be performing as well as the activities that will be going on around them.

You may wish to provide cross training to ensure a sufficient number of trained personnel in case of illness or no-shows. Training should include:

- emergency procedures
- handling instructions
- loading procedures
- firing procedures
- dealing with misfires
- information about the event plan
- details about the lines of authority during the show

In no instance should untrained personnel be used or unauthorized persons be allowed in the shooting area. There should be an absolute ban on smoking in the shooting area, and the possession or consumption of alcoholic beverages prior to or during the event should be prohibited.

If the vendor ships fireworks in advance and your employees store or transport them, take steps to ensure compliance with DOT regulations and provisions of NFPA 1124. The guidelines are important if the public entity is shipping or storing fireworks prior to an event or after an event has been canceled. A significant liability exposure could arise through the improper storage of these materials. Ensure the local fire department is aware of any fireworks stored within its jurisdiction. If you contract for the display, address this issue with the vendor, and transfer the responsibility and risk to the vendor.

## Insurance

Insurance requirements for these events deserve specific attention. Entities contracting for these services can transfer much of the financial risk by imposing insurance requirements on the vendor. Base the specific liability limits you seek on the comfort level of the community, the availability of coverage in the marketplace and the current legal environment in your jurisdiction.

In addition, verify the insurance endorsements and keep them on file. You may also wish to specify the minimum financial strength of the carrier. Remember, the contractual transfer of risk is effective only if the insurance company is financially solvent and policy limits are available to pay claims on your behalf.

Carefully review the contract and insurance policy to ensure it protects your agency, its officers, officials, employees and volunteers as insureds. The coverage should contain no special limitations on the scope of protection provided to your agency, its officers, officials, employees or volunteers. The pricing, availability and limits of this coverage is market sensitive. For this reason, insurance requirements and endorsements should be reviewed prior to each event.

Required coverages will vary, but typically should include liability (including contractual liability), auto liability, workers' compensation and employer liability. This coverage should provide

limits that adequately protect your entity. In the case of workers' compensation coverage, a policy providing statutory limits is best. Be sure to have legal counsel review the contract. Also consult your broker or review other publications that deal specifically with contractual risk transfer if you're not thoroughly familiar with the subject. Other factors you may wish to address are a requirement for dedicated limits, specific policy forms and claims made vs. occurrence coverage.

Communities sponsoring festivals and other activities around fireworks displays can use special event liability programs to provide liability coverage for the entire event including the fireworks display. These policies can be a cost-effective method to obtain other coverages for the event such as liquor liability, coverage for food and other vendors. Coverage for fireworks and liquor liability may require special underwriting; be sure to allow sufficient time in the planning process to accommodate underwriting review.

## Final Thoughts

This article is not intended as a comprehensive review of NFPA 1123 or other regulations. Rather, it is intended to provide an overview and create an awareness of the scope of planning that should be undertaken. Individuals responsible for planning or conducting fireworks displays should be thoroughly familiar with and adhere to the provisions of NFPA 1123, 1124 or any other applicable standards, regulations, statutes or ordinances.

NFPA Standards 1123 and 1124 are inexpensive and should be part of your reference library. In addition to the actual code, these publications include explanatory material that can be of great value in terms of understanding and applying information.

To purchase copies of NFPA standards, contact the National Fire Protection Association, P.O. Box 9101, 1 Batterymarch Park, Quincy, MA 02269-9101, (800) 344-3555. Alternately, your local fire department may have copies available for review.

Compliance with these standards is not burdensome or time consuming. By thoroughly understanding the referenced regulations and guidelines, responsibility and authority can be defined in advance. Pre-event planning and preparation will allow for the immediate and appropriate response should a problem arise. •