

SANTA ROSA FIRE DEPARTMENT FIRE PREVENTION BUREAU INSPECTION CHECKLIST

July 1, 2010



FIREWORKS PUBLIC DISPLAY

Address:		Permit #:
Inspector:	Date:	Status:
Inspector:	Date:	Status:
A-Approved, R-Re-inspection Required		

This Checklist outlines general requirements. Information contained herein applies to typical instances and may not address all circumstances

PAPERWORK

- | | | | |
|----|--------------------------|--------------------------|------------------------|
| | Y | N | |
| 1. | <input type="checkbox"/> | <input type="checkbox"/> | Fire Department Permit |
| 2. | <input type="checkbox"/> | <input type="checkbox"/> | Approved Site Plan |

Review safety plans and procedures and personal protective equipment (NFPA 1126.6.5.7)

PERSONNEL

- | | | | |
|----|--------------------------|--------------------------|--|
| | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3. | <input type="checkbox"/> | <input type="checkbox"/> | Verify and record pyrotechnic operator identity |
| 4. | <input type="checkbox"/> | <input type="checkbox"/> | Verify pyrotechnic operator possesses valid license of proper type <ul style="list-style-type: none"> ○ Special Effects - First Class <ul style="list-style-type: none"> ▪ may conduct and is restricted to the use, preparation for transportation and the preparation and use of all types of fireworks and special effects pyrotechnics, for the sole purpose of producing a visible or audible effect where and when such use is a necessary part of a motion picture, television, theatrical or operatic production, as permitted by the AHJ. ○ Theatrical <ul style="list-style-type: none"> ▪ authorizes the use of special effects, blank cartridges, colored fire, flash paper, flash, smoke composition, and the preparation of use of binary A and B flash composition in stage or theatrical productions only. See <i>Title 19 "Fireworks In California" For More Licenses</i> |
| 5. | <input type="checkbox"/> | <input type="checkbox"/> | Verify and record information on the identity and ages of all assistants, helpers, etc. |
| 6. | <input type="checkbox"/> | <input type="checkbox"/> | Interview licensed operator to gain understanding: years experience with public display. |
| 7. | <input type="checkbox"/> | <input type="checkbox"/> | Years of experience at this site, ask to describe the show and how he/she will manage the event. |

Inspection Checklist
Pyrotechnic Effects In Indoor Or Outdoor Use

SECURITY

8. Verify site security of storage area, discharge area, display area and fallout area as indicated on approved plan and methods for restricting un-authorized persons.. See "SPECIFIC REQUIREMENTS" below.
9. Verify arrangements for traffic and crowd control before, during and after display.

TRANSPORTATION AND STORAGE ARRANGEMENTS

10. Transportation shipping documents match product in vehicle
11. Vehicle placards are provided as required
12. Fireworks storage is in an approved manner and location
14. Storage container(s) is locked and secured

FIRE PROTETION AND SAFETY EQUIPMENT

15. Fire extinguishers available and accessible
16. Shovel and container available for retrieving duds
17. Appropriate protective gear (i.e. hard hat, long sleeved shirt, etc) available for persons manually discharging fireworks
18. Verify quantities, locations, and cueing of devices to be used

MORTOR INSPECTION

19. Compare list of mortar racks, etc. with actual equipment
20. Mortars are approved for use with type of shells to be fired
21. Mortars are inspected prior to use for defects, debris, etc.
22. Base plugs are securely attached to bottom of mortars
23. Mortars are proper length for size of shells to be fired (NFPA 1126: 5.1, 5.2, 5.3, 5.4)

RACK INSPECTION

24. Racks have no more than 10 tubes per unit
25. Base and ends of racks are nominal 2" thick lumber
26. Racks have blocks (nominally 2" x 4") separating individual mortars
27. Racks for mortars 3 inches or larger have side braces of 1" x 6" nominal lumber or ½" x 4" plywood
28. All racks with more than 5 tubes have diagonal side braces
29. Racks are secured to prevent falling over

TROUGH INSPECTION

- | | Y | N | |
|-----|--------------------------|--------------------------|---|
| 30. | <input type="checkbox"/> | <input type="checkbox"/> | No trough is more than 8 feet in length |
| 31. | <input type="checkbox"/> | <input type="checkbox"/> | Bottom surface of trough is provided with 3/4" plywood if not sufficiently stable to support firing of the mortar |
| 32. | <input type="checkbox"/> | <input type="checkbox"/> | Troughs are constructed of minimum 3/4" plywood and secured with 3/8" through-bolts, rods or angle iron "U" brackets at each end and center |
| 33. | <input type="checkbox"/> | <input type="checkbox"/> | Sand or soft dirt, free of rocks or debris, is on-hand to fill trough |
| 34. | <input type="checkbox"/> | <input type="checkbox"/> | Minimum separation distance between mortars is provided |
| 35. | <input type="checkbox"/> | <input type="checkbox"/> | Trough is of adequate height to securely bury mortars 2/3 of their minimum legal length |

DRUM INSPECTION

- | | | | |
|-----|--------------------------|--------------------------|---|
| 36. | <input type="checkbox"/> | <input type="checkbox"/> | Drums are in good condition |
| 37. | <input type="checkbox"/> | <input type="checkbox"/> | Sand or soft dirt, free of rocks or debris, is on-hand to fill drum |
| 38. | <input type="checkbox"/> | <input type="checkbox"/> | Drums are of adequate size to provide minimum separation distances between mortars |
| 39. | <input type="checkbox"/> | <input type="checkbox"/> | Drums are of adequate height to securely bury mortars 2/3 of their minimum legal length |

TRENCHES, ETC. TO BURY MORTARS IN GROUND

- | | | | |
|-----|--------------------------|--------------------------|---|
| 40. | <input type="checkbox"/> | <input type="checkbox"/> | Planking below mortars is provided for unstable or unlevelled surfaces |
| 41. | <input type="checkbox"/> | <input type="checkbox"/> | Trenches are of sufficient depth to securely bury mortars 2/3 of their minimum legal length |
| 42. | <input type="checkbox"/> | <input type="checkbox"/> | Minimum separation distance between mortars is provided |
| 43. | <input type="checkbox"/> | <input type="checkbox"/> | Sand or soft dirt, free of rocks or debris, is on-hand to fill trench |

AERIAL SHELL INSPECTION

- | | | | |
|-----|--------------------------|--------------------------|--|
| 44. | <input type="checkbox"/> | <input type="checkbox"/> | Number of shells matches quantity listed on permit |
| 45. | <input type="checkbox"/> | <input type="checkbox"/> | Shells properly labeled for use in California |
| 46. | <input type="checkbox"/> | <input type="checkbox"/> | Operator examines shells for damage |
| 47. | <input type="checkbox"/> | <input type="checkbox"/> | Operator sizes shell for proper fit in mortars |

GROUND DEVICE INSPECTION

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|-----|--------------------------|--------------------------|--|
| 48. | <input type="checkbox"/> | <input type="checkbox"/> | Ground devices match items listed on permit |
| 49. | <input type="checkbox"/> | <input type="checkbox"/> | Location and spacing of devices is per approved permit |
| 50. | <input type="checkbox"/> | <input type="checkbox"/> | Equipment available to secure and brace ground devices |

DISCHARGE FALL/OUT AREA INSPECTION

- | | Y | N | |
|-----|--------------------------|--------------------------|---|
| 51. | <input type="checkbox"/> | <input type="checkbox"/> | Location is as per approved permit |
| 52. | <input type="checkbox"/> | <input type="checkbox"/> | Minimum required fall out area is provided |
| | | | <ul style="list-style-type: none">o Minimum 15ft or 2X fallout radius (NFPA 1126: 6.4.1)o Concussion mortars min 25ft in secured area (NFPA 1126: 6.4.2)o Trajectory of comets/mines not over audience (NFPA 1126: 6.2.11)o Waterfall effect area to be free of flammable materials (NFPA 1126: 6.2.12)o Wire rocket effects to be properly secured and terminated (NFPA 1126: 6.2.9)o Airbursts over audience to be minimum height of 3 times the diameter of effect, and no sparks within 15 ft of floor (NFPA 1126: 6.2.14(1) & (2)) |
| 52. | <input type="checkbox"/> | <input type="checkbox"/> | Arrangements provided to secure fall out area when shell loading begins |

ELECTRICALLY FIRED DISPLAY INSPECTION

- | | | | |
|-----|--------------------------|--------------------------|---|
| 53. | <input type="checkbox"/> | <input type="checkbox"/> | Power source is restricted to batteries or individually isolated generators |
| 54. | <input type="checkbox"/> | <input type="checkbox"/> | Firing system is protected against accidental firing |
| 55. | <input type="checkbox"/> | <input type="checkbox"/> | Method for circuit testing is available |
| 56. | <input type="checkbox"/> | <input type="checkbox"/> | Firing panel is located a minimum of 100 feet from devices |
| 57. | <input type="checkbox"/> | <input type="checkbox"/> | Devices are located within continuously unobstructed full view of operator |

MANUALLY FIRED DISPLAY INSPECTION

- | | | | |
|-----|--------------------------|--------------------------|--|
| 58. | <input type="checkbox"/> | <input type="checkbox"/> | Safety caps protecting fuses remain in place until immediately before firing |
|-----|--------------------------|--------------------------|--|

RELOADED MORTARS DISPLAY INSPECTION

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|-----|--------------------------|--------------------------|---|
| 59. | <input type="checkbox"/> | <input type="checkbox"/> | No HDPE mortars will be reloaded |
| 60. | <input type="checkbox"/> | <input type="checkbox"/> | Ready box (es) are located more than 25 feet upwind of the closest mortar |
| 61. | <input type="checkbox"/> | <input type="checkbox"/> | Ready box (es) are divided into separate compartments for each shell size |
| 62. | <input type="checkbox"/> | <input type="checkbox"/> | Ready box (es) are covered with a flame-resistive canvas cover |

OPERATION OF DISPLAY

- | | | | |
|-----|--------------------------|--------------------------|---|
| 63. | <input type="checkbox"/> | <input type="checkbox"/> | Attend safety briefing by operator |
| 64. | <input type="checkbox"/> | <input type="checkbox"/> | Discharge, display, and fall out areas are cleared of all unauthorized personnel prior to loading shells |
| 65. | <input type="checkbox"/> | <input type="checkbox"/> | No one under the age of 18 is in discharge, display, and fall out areas once loading of shells begins |
| 66. | <input type="checkbox"/> | <input type="checkbox"/> | Mortars are aimed over fall out area and away from spectators |
| 67. | <input type="checkbox"/> | <input type="checkbox"/> | On electrically fired shows, discharge area is cleared of all persons prior to electrical circuit testing |

Inspection Checklist
Pyrotechnic Effects In Indoor Or Outdoor Use

- | | Y | N | |
|-----|--------------------------|--------------------------|--|
| 68. | <input type="checkbox"/> | <input type="checkbox"/> | All devices are ONLY fired upon order or signal of the licensed operator |
| 69. | <input type="checkbox"/> | <input type="checkbox"/> | During discharging of shells, operator observes activities to ensure wind and trajectory are adequate and makes adjustments if necessary |
| 70. | <input type="checkbox"/> | <input type="checkbox"/> | If a misfire occurs, mortar shall be identified, marked and left undisturbed |

POST DISPLAY ACTIVITIES

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|-----|--------------------------|--------------------------|--|
| 71. | <input type="checkbox"/> | <input type="checkbox"/> | NO ONE permitted to enter display, discharge or fall out areas until pyrotechnic operator has determined the area to be safe and secure. |
| 72. | <input type="checkbox"/> | <input type="checkbox"/> | Entire firing area is inspected by pyrotechnic operator and crew to locate any unexploded shells. |
| 73. | <input type="checkbox"/> | <input type="checkbox"/> | Shells located are properly disposed of. |
| 74. | <input type="checkbox"/> | <input type="checkbox"/> | Unfired shells removed and returned directly to supplier or stored in manner approved on permit |

NOTIFICATION

- | | | | |
|-----|--------------------------|--------------------------|--|
| 75. | <input type="checkbox"/> | <input type="checkbox"/> | PYROTECHNIC OPERATOR provides verbal reports to State Fire Marshal for any incident involving injury or death to public or crew, or for any fire requiring emergency action or response resulting from the firing of the show. |
| 76. | <input type="checkbox"/> | <input type="checkbox"/> | AUTHORITY HAVING JURISDICTION files charges of violations that would be cause for revocation or denial of a license to the State Fire Marshal within three years of the alleged act or omission. |
| 77. | <input type="checkbox"/> | <input type="checkbox"/> | AUTHORITY HAVING JURISDICATION reports fireworks seized pursuant to 12722 Heath & Safety Code to State Fire Marshal within 3 days. |

STATE FIRE MARSHAL LICENSING REQUIREMENTS:

GENERAL REQUIRMENTS (Refer to NFPA 1126 for more)

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|-----|--------------------------|--------------------------|---|
| 78. | <input type="checkbox"/> | <input type="checkbox"/> | Verify audience separation by a minimum of 15 ft. or twice the fallout radius of the device, whichever is greater. (NFPA 1126 Section 8.4.1) |
| 79. | <input type="checkbox"/> | <input type="checkbox"/> | Verify pyrotechnic material or device will not be propelled so that it damages overhead properties, equipment, ceiling or walls. (NFPA 1126 Section 8.6.2) |
| 80. | <input type="checkbox"/> | <input type="checkbox"/> | Verify there will be no glowing or flaming particles within 10 ft. of the audience. (NFPA 1126 Sec. 8.4.3) |
| 81. | <input type="checkbox"/> | <input type="checkbox"/> | Verify means of shielding or containment is adequate to prevent any injury to the performer when pyrotechnic special effects are placed on or in contact with a performer's body. (NFPA 1126 Sec. 8.2.2.3.1) |
| 82. | <input type="checkbox"/> | <input type="checkbox"/> | Confirm that the pyrotechnic devices shall be fired only when the area where the effect is to occur, is in clear view of the pyrotechnic operator or an assistant who is in direct communication with the operator. (NFPA 1126 Sec. 8.3.5.1) |
| 83. | <input type="checkbox"/> | <input type="checkbox"/> | Verify a secured location for unattended pyrotechnics. (NFPA 1126 Section 8.5.6) |
| 84. | <input type="checkbox"/> | <input type="checkbox"/> | Verify the availability of at least four extinguishers. (NFPA 1126 Section 8.1.1) |

Inspection Checklist
Pyrotechnic Effects In Indoor Or Outdoor Use

- | | Y | N | |
|-----|--------------------------|--------------------------|---|
| 85. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that at least one is located on each side of the performance where pyrotechnics are used. (NFPA 1126 Section 8.1.1.2) |
| 86. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that performers and support personnel will not disturb the placement and wiring of all pyrotechnic devices during the performance. (NFPA 1126 Section 8.6.4) |
| 87. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that the venue manager has provide a separate, lockable room or facility for the preparation of pyrotechnic materials and devices, to prevent unauthorized access. (NFPA 1126 Section 8.1.3) |
| 88. | <input type="checkbox"/> | <input type="checkbox"/> | Verify manufacturers mark for pyrotechnic devices and materials to be used indoors. (NFPA 1126 Section 8.2.12) |
| 89. | <input type="checkbox"/> | <input type="checkbox"/> | Verify the presence of qualified "Fire Watch" personnel. (NFPA 1126 Appendix Section A..8.1.6.(3)) |

SPECIFIC REQUIRMENTS BY TYPE OF DEVICE

Prior to approving a particular device

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|-----|--------------------------|--------------------------|--|
| 90. | <input type="checkbox"/> | <input type="checkbox"/> | Verify the outer edge, top and side of the sphere does not touch an audience seat, walls, cielings or other objects/structure. |
| 91. | <input type="checkbox"/> | <input type="checkbox"/> | Verify actors or other participant will not be within the sphere while the device is fired. |

AIRBURSTS

- | | | | |
|-----|--------------------------|--------------------------|--|
| 92. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that all "airbursts" are pyrotechnic devices that are suspended in the air to simulate outdoor aerial fireworks shells without producing hazardous debris. (NFPA 1126 Sec. 3.3.2) |
| 93. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that if Airbursts are to be fired above the audience, the following conditions exist: (NFPA 1126.8.2.13) |
| 94. | <input type="checkbox"/> | <input type="checkbox"/> | The airburst shall be suspended by a minimum 30-gauge metal wire that is attached securely to a secure support acceptable to the AHJ. |
| 95. | <input type="checkbox"/> | <input type="checkbox"/> | The airburst shall occur at a minimum height of three times the diameter of the effect. |
| 96. | <input type="checkbox"/> | <input type="checkbox"/> | Where the effect is demonstrated, there shall be no burning or glowing particles less than 15 ft. above the floor. |

BINARY MATERIALS / SYSTEMS

- | | | | |
|------|--------------------------|--------------------------|--|
| 97. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that all "Binary Systems" are a two-component pyrotechnic system. |
| 98. | <input type="checkbox"/> | <input type="checkbox"/> | Verify person mix material possesses a Special Effects First Class license. |
| 99. | <input type="checkbox"/> | <input type="checkbox"/> | Exception: Binary A and B flash composition pre-packaged by a licensed manufacturer may be mixed and utilized by a Special Effects Second Class license or a Theatrical license. (Title 19 Section 992.12) |
| 100. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that Binary systems are to be mixed and used in accordance with the manufacturer's instructions. (NFPA 1126 Section 8.2.3) |
| 101. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that Binary systems will be mixed one unit at a time, and no more units than are needed for immediate use shall be mixed. (NFPA 1126 Section 8.2.3.1) |

Inspection Checklist
Pyrotechnic Effects In Indoor Or Outdoor Use

- | | Y | N | |
|------|--------------------------|--------------------------|---|
| 102. | <input type="checkbox"/> | <input type="checkbox"/> | Verify Binary Systems are only mixed in the bottles supplied by the manufacturer. (NFPA 1126 Section 8.2.3.2) |
| 103 | <input type="checkbox"/> | <input type="checkbox"/> | Verify that no additional tools shall be used in the mixing of binary systems. (NFPA 1126 Section 8.2.3.3) |

COMETS

- | | | | |
|------|--------------------------|--------------------------|--|
| 104. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that all “Comets” are a single pellet of pyrotechnic composition that is ignited and simultaneously propelled into the air from a mortar or tube; a comet is self-consuming as it rises into the air and can be designed to split apart. Includes roman candles (NFPA 1126 Section 3.3.9) |
| 105. | <input type="checkbox"/> | <input type="checkbox"/> | Verify the trajectory of Comets and mines does not carry over the audience. (NFPA 1126 Sec. 8.2.10) |

CONCUSSION EFFECT

- | | | | |
|------|--------------------------|--------------------------|---|
| 106. | <input type="checkbox"/> | <input type="checkbox"/> | .Verify that Concussion effects are pyrotechnic effects that produce a loud noise and a violent jarring shock dramatic effect. |
| 107. | <input type="checkbox"/> | <input type="checkbox"/> | Verify the effects are secured by being placed under the stage or behind barricades made of equipment road cases to prevent access by the audience, performers, and support personnel. (NFPA 1126 Sec. 8.3.7) |
| 108. | <input type="checkbox"/> | <input type="checkbox"/> | Verify effects are separated from the audience by a minimum of 25 ft. (NFPA 1126 Sec. 8.4.2) |

FLASH POT / FLASH POWDER

- | | | | |
|------|--------------------------|--------------------------|---|
| 109. | <input type="checkbox"/> | <input type="checkbox"/> | Verify “smoke and mine pots are Heavy schedule steel pots welded to a steel base. Professional grade for frequent use. |
| 110. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that “flash Pots” are a device used with flash powder that produces a flash of light and directs the flash. |
| 111 | <input type="checkbox"/> | <input type="checkbox"/> | Verify that Flash Powders are a specific pyrotechnic material in powder form composed of fuel(s) and oxidizer (s) that upon ignition produces a flash of light, sparkles, an audible report, or a combination of these effects. |
| 112. | <input type="checkbox"/> | <input type="checkbox"/> | Verify flash pots are constructed so that they do not fragment when the pyrotechnic material is fired and so that their shapes are not distorted after use. (NFPA 1126 Sec. 8.2.5.1) |

GERBS/FOUNTAINS

- | | | | |
|------|--------------------------|--------------------------|--|
| 113. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that Gerbs and Fountains are a cylindrical preload pyrotechnic device, intended to produce a controlled spray of sparks with a reproducible and predictable duration, height, and diameter. |
| 114. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that no flammable materials are within their fallout area. (NFPA 1126 Sec. 8.2.11) |

LANCE

- | | | | |
|------|--------------------------|--------------------------|--|
| 115. | <input type="checkbox"/> | <input type="checkbox"/> | Verify that “Lances” are a thin cardboard tube packed with a color-producing pyrotechnic composition. Usually used in a set piece. |
|------|--------------------------|--------------------------|--|

Inspection Checklist
Pyrotechnic Effects In Indoor Or Outdoor Use

LINE ROCKET

- | Y | N | |
|----------|--------------------------|--|
| 116. | <input type="checkbox"/> | Verify that "Line Rockets" are a pyrotechnic device guided along a wire or cable. |
| 117. | <input type="checkbox"/> | Verify the rockets are attached securely to a guide wire or cable with both ends attached and placed on an impact-resistant surface located at the terminal end of the guide. (NFPA 1126 Sec. 8.2.8.1) |
| 118. | <input type="checkbox"/> | Verify the guide wire or cable required by 8.2.8.1 is of sufficient strength and flame resistance to withstand the exhaust from the rocket. (NFPA 1126 Sec. 8.2.8.2) |
| 119. | <input type="checkbox"/> | Verify an effective arrangement to stop the rocket. (NFPA 1126 Sec. 8.2.8.3) |

MINE

- | | | |
|------|--------------------------|---|
| 120. | <input type="checkbox"/> | Verify "Mines" are a device containing multiple pyrotechnic effects that are simultaneously ignited and dispersed into the air from a mortar or tube. |
| 121. | <input type="checkbox"/> | Verify the trajectory of the pyrotechnic material is not carried over the audience. NFPA 1126 Sec. 8.2.10 |

SAXON

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|------|--------------------------|---|
| 122. | <input type="checkbox"/> | Verify "Saxon" is a pyrotechnic device consisting of a tube that rotates around a pivot point to produce a circular shower of sparks. |
| 123. | <input type="checkbox"/> | Verify they are mounted securely so that their rotation does not cause the holder to fail. (NFPA 1126 Sec. 8.2.7) |

WATERFALLS, FALLS, PARK CURTAIN

- | | | |
|------|--------------------------|---|
| 124. | <input type="checkbox"/> | Verify as an effect of a cascade of sparks usually produced by multiple devices fired simultaneously. |
| 125. | <input type="checkbox"/> | Verify they are placed for firing so that no flammable materials are within their fallout area. (NFPA 1126 Sec. 8.2.11) |

WHEEL

- | | | |
|------|--------------------------|--|
| 126. | <input type="checkbox"/> | Verify "Wheels" are pyrotechnic device that rotates on a central axis consisting of multiple gerbs or rockets attached to a framework. |
| 127. | <input type="checkbox"/> | Verify the devices are mounted securely so that their rotation does not cause the holder to fail. (NFPA 1126 Sec. 8.2.7) |