

# DMR PYRO METHOD STATEMENT



## PROFESSIONAL DISPLAYS

DMR Pyro takes all reasonable steps in complying with the Health & Safety at Work Act 1974 and all other surrounding legislation made under the Act to ensure the health, safety and welfare of its employees, spectators, property and the general public. This document must be read in conjunction with the Health & Safety Policy.

DMR Pyro has a set procedure that is followed when planning, setting up and firing a display. This ensures that the risk of injury and damage is kept at a minimum. The procedure is as follows:

### Display Site

Prior to the event, a member of the display team will visit the proposed site and complete a full risk assessment and site survey. This risk assessment is designed to cover the following:

- To decide what category/type of fireworks are suitable for the venue.
- To ensure the site is suitable for the size and type of display.
- To ensure that a safe distance between the “firing area” and the spectator area can be maintained
- The minimum distance required by DMR Pyro for fireworks is:
  - 30 Metres – for all Category 4 items
  - When Category 2 or 3 items are used, 1.5 times the manufacturer’s safety distance or 30m whichever is lower.
  - 1m for every millimetre of nominal mortar shell calibre.
- Indoor, Stage and Battlefield SFX pyrotechnics may be used in closer proximity to audience and participants and role-players providing that:
  - Audiences are controlled behind “hard” barriers (fence, crowd control barriers)
  - Battlefield SFX - A safety brief of the types of effect in any given scenario are explained to participants before the event in an out of character setting. i.e. during a game briefing.
  - Strict “No-Go” areas applied to the immediate area surrounding the effects themselves.
  - Effects can be isolated and not used if Operators are not satisfied of safe detonation operation.
- To ensure a ‘fall out area’ can be established to the back and sides of the firing site, this zone should be free from vehicles and buildings and must be clear of the general public.
- To ensure that the ‘firing site’ is clear of overhead obstructions e.g. power cables, trees etc., as well as for other potential hazards such as fuel storage tanks.
- To ascertain the proximity of hospitals or nursing homes.
- To ascertain the proximity of neighbouring buildings (residential and/or commercial)
- To ascertain the proximity of airfields
- To ascertain the proximity of the firing site to coastal areas
- To ascertain the proximity of main roads
- To ascertain the proximity of any livestock
- To ensure the adequate provision of fire fighting equipment.
- To liaise and arrange with the Client/Organiser with regard to the provision of crowd barriers or stewarding of the display.

### Transport

All goods will be transported to site by road vehicle. In the majority of cases the fireworks and set up equipment will be carried on the same vehicle. All vehicles will carry the relevant transport emergency markings, Emergency Instructions in Writing, suitable fire fighting equipment and first aid kits. Only

ADR trained drivers will be permitted to carry any fireworks on behalf of DMR Pyro where the load is in excess of 50kg NEQ. All drivers will adhere to ADR and UK legislation for the transportation of explosives by road. No smoking is permitted during the transportation of any quantity of fireworks or pyrotechnic articles.

### Packaging

The fireworks will be packed in suitable fully sealed containers of either cardboard, timber, plastic or metal construction. The contents will not exceed the recommended NEQ for the relevant container.

### Site Set Up

No work will be carried out until an exclusion zone has been established around the set up and safety area. In the case of small single operator shows at least one steward will be in attendance throughout the display set up.

A Wind Rocket or Flare may be fired to assess the wind speed and its direction. All racks will be angled to compensate for this. The senior operator (as named on the risk assessment) holds the overall responsibility of judging the safety of the display and if necessary, curtailing or cancelling due to inclement weather.

**Shells and Mines** will be fired from either cardboard, fibreglass or polyethylene mortar tubes. The tubes will be secured in timber or metal racks that are staked to the ground and secured together with high tension loading straps and/or sandbags.

Any shells with a diameter in excess of 150mm will be secured individually with a single pin (located on the far side to the audience of the mortar tube) and sandbags.

**Rockets** will be fired from either metal or polyethylene tubes or from timber racks with eyelets.

**Roman Candles** will be fired from either cardboard or polyethylene tubes. These will be secured in position by either: Pin and tape or secured to a timber/metal rack by cable tie. The rack will then be secured to the ground or other racks as per Shells and Mines

**Roman Candle Barrages (Cakes)** will be placed on the ground and, where practicable or if necessary, secured with a metal pin or timber post and attached by tape. Alternatively a significant timber or metal framework may be used, similar to Roman Candles.

**Fountains and Gerbs** will either be secured to a timber or metal post with tape or wire, or fired from a purpose built gerb holder. Waterfall gerbs will be suspended from a taught carrier rope or wire. Large fountains will be buried to two thirds depth or sandbagged to the same depth, dependant on manufacture's advice.

**Set Pieces and Wheels** will be affixed to either a timber post or scaffold structure by the fixing supplied with the firework or by other recommended means.

When a display is fired by low voltage electric fuse wires, all cables will be carefully positioned and routed in a neat and tidy manner. A track plan will be established by the Senior Operator, any wires which cross the track plan will be secured by pegs where possible and/or marked by means of glow sticks

During the ignition of a display an operator will be on the firing site to observe the display effects for safety reasons. They will be in direct communication with the person who is detonating the display by telephone or two-way radio.

The only alteration made to fireworks will be in the form of fusing alterations for timing purposes or for the insertion of an electric fuse wire.

Once the display is set up it will never be left unattended, the stewards supplied by venue/event organiser may be used to supervise fireworks on the condition any radio remote detonators are removed from the firing site and with suitable briefing.

Smoking in the 'firing area' is strictly prohibited.

Only authorised personnel will be allowed access to the 'firing area'.

### Firing

The display will only be fired once the senior operator is satisfied that:

- The second Event Day risk assessment has been carried out.
- The firing site is free from members of the public; and
- The agreed numbers of stewards are in the required positions.

The display will be fired ensuring debris falls into the designated fall out zone.

Only authorised and trained operators will fire the display; by using electric fuses and/or portfires in reserve.

### Safety

Safety will be the main priority in all circumstances.

The senior operator on site will at all times be responsible for the safety of the firing team and any authorised persons on the site. If there is, at any point, a dangerous occurrence the Senior Operator will take action to restore a safe situation. In the event that the senior operator is incapacitated the employee appointed second in command will take the responsibilities of the Senior Operator.

Crowd spillage into any designated safety area during the display will result in the display being stopped, no further pyrotechnic articles (including portfires) will be lit until the area is clear.

All Operators will wear flame retardant clothing, ear protection and impact resistant headgear.

If the Senior Operator in charge of the display is not completely satisfied with any safety issue in respect of the event e.g. crowd control, safety zones or inclement weather conditions, he or she has the complete backing of the company to take the following actions:

- Withhold from the display any fireworks, which due to the safety concerns may put persons or property at risk.
- Stop, or refuse to fire the display, until such time as the safety issues have been resolved.

In the event that a safety issue cannot be reasonably resolved to the Senior Operator's satisfaction, the display will be cancelled and cleared away.

The crowd should be adequately controlled at an event. This is entirely the responsibility of the client/organiser. We recommend that the crowd line, stipulated by DMR Pyro, should be guarded off by use of tape or some form of physical barrier.

The Client/Organiser is advised that the following organisations should be notified of the display:

- The local Fire Brigade
- The local Police
- Coast Guard (where the display is visible to shipping)
- Local Harbour Authority (if applicable)
- Local aerodromes (where the site is within 3 miles)
- Air Traffic Control (if the site is within 7 miles of an Airport)
- The local Council

- Neighbouring landowners - especially livestock owners.
- Nearby Hospitals, Nursing homes etc (if noise may cause concern)

### Training

All staff are trained in the responsibilities, safety, set up, firing and emergency procedures involved in the safe completion of a firework display in house (For items of a specialist nature, and where statutory obliged, external training is provided.)

All ADR, fire fighting and emergency aid is provided by approved external trainers.

### Pollution

Noise pollution is also caused by fireworks, this can be reduced by non-inclusion of certain products from the display i.e. maroons, salutes and air bombs. Care should be taken in situations where there is livestock in the vicinity i.e. cattle stampeding. Where practicable, attempts will be made to have the livestock moved to a different area.

### Site Clearance

Once the display is over, the safety barriers and stewards must remain in place until the team leader gives the all clear.

Checks are made for any unfired or live material, and they will be disposed of in accordance with the manufacturers guidelines. It should be noted that much of the material waste is biodegradable; however reasonable clearance of debris caused by the firing of the display will be disposed of where feasible.

### General Risk Assessment

The following items are possible risks to the public and operators from the firing of a firework display:

- Loss of Life due to poor manufacturing/implementation safety rules
- Lung damage from smoke inhalation
- Skin Damage by fire, heat and/or explosion
- Hearing Damage by loud whistles, humming and bangs.
- Eye Damage by flash or sparks

These risks are minimised due to the high level of training of our company and its operators.

Additional risks to crew on site include other vehicles, on site scaffolding injuries, tripping, falling etc. As each site has its own aspect and potential risks, these will be outlined in the individual risk assessment for that site.

A "Daily Risk Assessment" will be carried out on arrival at any site on the event day and a "Second Risk Assessment" 30 minutes prior to firing the display. It is the responsibility of the Senior Operator to make the assessments, take any decisions and action them following those assessments with regard to changes or weather to commence with the event. It is the responsibility of the Senior Operator to record any such changes or decisions on the "Daily Risk Assessment".