

Guidance on the identification of potential matters of evident concern at firework display operators premises

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1 Introduction

This guidance has been produced by HSE's Explosives Inspectorate in conjunction with West Yorkshire Fire and Rescue Service and representatives of the fireworks display industry. It seeks to assist inspectors appointed by local authorities to identify potential matters of evident concern that may become apparent at inspections of premises licensed or registered by firework display operators. It goes on to provide lines of inquiry with respect to these matters and identifies further more detailed sources of guidance.

The guidance is initially intended to support the programme of fact-finding visits to firework display operators that is being conducted by inspectors working under the provisions of licences and registrations issued by local authorities, the results from which are being collated by West Yorkshire Fire and Rescue Service.

This guidance is not intended to serve as an inspection checklist.

2 Sources of ignition

2.1 The issue

It is fundamental to safety in all explosives operations that sources of ignition are controlled.

2.2 Relevant regulation

Regulation 4 (1) (a) of MSER makes the requirement that

Any person who manufactures or stores explosives shall take appropriate measures...to prevent fire or explosion.

2.3 Potential issues of evident concern

- Is the workplace or store untidy or cluttered?
 - Are tools, components and loose fireworks present in an apparently haphazard manner?
 - Are extraneous flammable materials including waste or torn packaging present?
 - Is the workplace or store clean and are tools and equipment clean and free from rust?
- Is any electrical installation of an obviously poor standard or obviously overloaded?
- Are any sources of heating and light inappropriate for use in an explosives area?
- Is there any evidence of smoking?

2.4 General fire precautions

- Is the means of escape, from the room and/or building where the fusing work is carried out, adequate.
 - Any doubt as to the adequacy of the general fire precautions should be referred to the fire & rescue service.

3 Evidence of fireworks fusing

3.1 The issue

MSER allows for the preparation of fireworks at a licensed storage site in advance of firework displays to be carried out by the occupier¹. Even when correctly undertaken this work may introduce new hazards which may affect the amount of explosives which may be stored and their location and may also impact on transport operations.

3.2 Relevant regulation

MSER Regulation 9(2)(e) exempts from the requirement to have a licence for the manufacture of explosives

“the preparation, assembly and fusing of fireworks, in quantities of no more than 10 kilograms at a time, at a site in relation to which a person holds a licence or registration for the storage of explosives, for the purposes of a firework display to be put on by that person;”

3.3 Potential issues of evident concern

- Is the fusing being undertaken in accord with MSER Reg 9(2)(e)?
 - Is work carried out in accord with para 496-497 of the ACOP.
 - Are the principles set out in the ACOP and guidance to Reg 4 of MSER – in particular paras 370 to 373 being met? In particular, is the place of fusing at a safe distance and location – for example, line of sight to an open magazine door would not be a safe situation.
 - Is the ‘site’² of a sufficient size for the operator to achieve the 15m safety distance from the store³? This could be relevant for the storage of up to 300 kg of HT3⁴ where the separation distances are on the borderline.
- Is the fusing process creating a new hazard or a new explosive article? For example:
 - The linking of shells by fusing is effectively creating a new explosive article comprising of several shells. In a fire the fuse could lead to the simultaneous functioning of the shells and could increase the hazard. A change in hazard is more

¹ The preparation, assembly, disassembly and fusing of fireworks displays at the place of intended use is exempted for the requirement for a licence for manufacture by Regulation 9 (2) (d) of MSER.

² As defined by Regulation 2 of MSER.

³ If the 15m “safety distance” cannot be met what alternative measures are in place to prevent the communication of fire or explosion? Compliance with paragraphs 370 – 373 and 496 – 497 of the ACOP takes on even greater significance.

⁴ For this quantity, a separation distance of **14m** from a footpath or lightly used road is mandatory.

likely where roman candle type fireworks or others with potentially significant projected effects have been put onto frames and are no longer contained within boxes.

- Has the display operator fused shells and loaded them into mortar tubes ready for carriage to a display?

- Verify whether the fused items are being returned to storage or being shipped onwards.
 - Obtain details and establish whether the occupier has assessed the impact of the fusing operation on the hazard type and/or obtained classifications for the items from the HSE.
 - Where the fused items are being stored, what is the effect on the amounts and hazard types of explosives being kept when compared to the amounts, hazard types and safety distances set out in the licence?
- Are the modified fireworks shipped onwards to displays?
 - Establish whether the company has obtained classifications for the items from the HSE.
 1. Ask to see Competent Authority Documents (CADs).
 2. Check [HSE online classification database](#) – LOCEF.
 3. Contact HSE classification section e-mail: cad.explosives@hse.gsi.gov.uk tel: 0151 951 4025
 - If no evidence of classification is found, contact relevant Explosives Inspectorate team for follow up in connection with compliance with The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007.

4 Storage of fireworks other than in sealed transport packs

4.1 The issue

Displays operators will not necessarily carry only complete transport packs of fireworks to a display. Very often they will compile the display by removing a few of each type of firework from boxes held in stock. The outcome is that they will store part filled and previously opened boxes of fireworks. Repeated opening and resealing can lead to damaged boxes. Some display operators prefer to remove the fireworks from boxes and keep them in bins or cubby holes.

4.2 Potential issues of evident concern

- Is the operator storing part packs of fireworks or loose fireworks?
 - Is the operator aware of the possible effects of the method of storage on the hazard type presented by the fireworks? Has he, for example stored them in such a way that a synergistic increase in hazard could arise? (It is accepted that local authority inspectors may not have the technical knowledge to judge this for themselves but the responses to questions should indicate the level of appreciation by the operator and whether advice is required from the Explosives Inspectorate).
 - What measures has the operator taken to comply with the requirements of MSER regulation 4(1) to prevent fire and explosion and the spread of fire amongst such fireworks?

5 Risk Assessment

Has the operator carried out a risk assessment as is required of him/her under regulation 5 of the Dangerous Substances & Explosive Atmospheres Regulations 2002⁵.

6 Competence

Can the operator demonstrate that they understand the competence issues associated with the fusing of fireworks?⁶ Evidence that could be taken to demonstrate some understanding would include the operator making reference to membership of professional or trade bodies or associations, or by making reference to assessment schemes such as that operated by the British Pyrotechnicians Association (BPA) and CBI's Explosive Industry Group (CBI-EIG). Similarly can the operator produce any copies of relevant industry or HSE guidance including the ACOP to MSER?

⁵ The issues that can be expected to have been considered in a DSEAR risk assessment can be found amongst the topics discussed at paragraphs 31 to 45 & 48 of the ACOP to MSER

⁶ Outline guidance on this topic can be found in paragraphs 66 to 73 of the ACOP to MSER