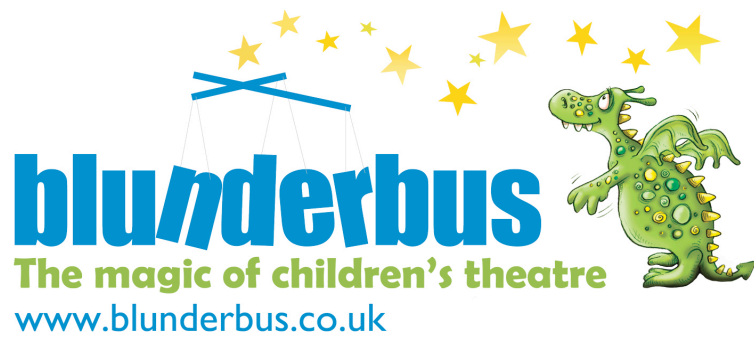


Pyrotechnic Risk Assessment

Hazard & Effect	Risk to whom	Severity x likelihood= risk rating			Control risks by	Residual Risk
1/ Storage of Flammable substances <ul style="list-style-type: none"> • Fire • Contact with flammable substances 	Event Staff	8	4	32	<ul style="list-style-type: none"> • Pyrotechnic cartridges to be stored in accordance with HSE regulations. • Storage facilities off-site. • MSDS Recommendations adhered to. • Appropriate PPE's to be worn during use and handling. • Only trained personnel to use and operate the equipment. • Have appropriate fire extinguishers readily to hand 	2
2/. Flammable Hazardous substances and use of pyrotechnical devices. <ul style="list-style-type: none"> • Toxic vapours • Fire and explosion 	Event Staff	6	4	24	<ul style="list-style-type: none"> • Only trained personnel to use the equipment and pyrotechnic effects. • Cartridges to be stored in accordance with HSE regulations. • MSDS Recommendations adhered to. • Appropriate PPE's to be worn during use and handling. • Extensive technical rehearsals. • Communication with those in vicinity of the operations. • No known toxic effects. • Advice medical personnel of possible problems for asthmatics. • Have appropriate fire extinguishers readily to hand 	2
3/. Fire <ul style="list-style-type: none"> • Injury to persons • Destruction of property 	Event Staff	6	2	12	<ul style="list-style-type: none"> • Only trained personnel to use the equipment and pyrotechnic effects. • Appropriate PPE's and clothing to be worn. • Surrounding materials to be fireproofed. • Equipment self-extinguishing. • Extensive technical rehearsals. • Minimise pyrotechnics on site. • Store equipment and Pyrotechnics in designated packaging; in secure area away from Escape routes and hazards. • Communicate requirements to the site safety officer and others in vicinity • Have appropriate fire extinguishers readily to hand 	2



<p>4/. Tampering with the pyrotechnics and other unauthorised actions.</p> <ul style="list-style-type: none"> • Unauthorised explosions • Risk of fire • Injury to performers, backstage personnel and operatives. 	Event Staff / Visitor	8	4	32	<ul style="list-style-type: none"> • Minimise exposure time when pyrotechnics available. • Audit use. • Minimise access to pyrotechnics when in position • Keep guarded • Secure and check all circuitry • Limit safety key access to named holders. • Use minimum of 2# personnel in area at all times. • Double check placement of all pyrotechnic effects. • Have required extinguishers and trained personnel available • Carry out checklist before firing. 	2
<p>5/. Misplacement of pyrotechnics from the designated positions.</p> <ul style="list-style-type: none"> • Injury to performers, backstage personnel and operatives. • fire 	Event Staff	6	4	24	<ul style="list-style-type: none"> • Make all devices site specific wherever possible • Ensure devices placed and fused properly and check the integrity of the circuits. • Only trained personnel to use and place the equipment and pyrotechnic effects • Have separate check on all placed devices by second trained person as audit. • Have required extinguishers and trained personnel available • Carry out checklist before firing. 	2
<p>6/. Misfires.</p> <ul style="list-style-type: none"> • Injury to performers and operatives. • Fire 	Event Staff / Public	6	4	24	<ul style="list-style-type: none"> • Misfiring pyrotechnics to be handled as per the MSDS sheet. • Circuitry to be checked at completion of show and before commencement of next as per the Check List. • Only trained personnel to use and place the equipment and pyrotechnic effects • Carry out checklist before firing. 	2



<p>7/. Miscuing, premature or late firing.</p> <ul style="list-style-type: none"> • Injury to performers, backstage personnel and operatives. • Fire 	Event Staff	6	4	24	<ul style="list-style-type: none"> • Only trained personnel to use and place the equipment and pyrotechnic effects • Have required extinguishers and trained personnel available • Circuitry to be checked at completion of show and before commencement of next as per the Check List. • Extensive technical rehearsals. • Ensure minimum distance requirements met as per any manufacturers recommendations or risk assessment. • Ensure that the key holding firing personnel are familiar with the act and sequencing. • Production to give clear voice signal with agreed wording. • Equip the firing station with a means of monitoring the area. • Remove or protect all flammable materials. • Ensure clear means of escape, clearly signed and lighted. • Carry out checklist before firing. 	2
<p>8/. Break-in to the circuitry by unauthorised personnel or mechanical damage.</p> <ul style="list-style-type: none"> • Misfiring • Injury to performers, backstage personnel and operatives • Fire 	Event Staff	8	4	32	<ul style="list-style-type: none"> • Clearly mark and separate pyrotechnics circuits. • Use only qualified electricians and advise of wiring. • Check circuit integrity utilising built in test facilities. • Ensure firing box tamper proof. • Carry out checklist before firing. 	2
<p>9/. Spilled pyrotechnic materials</p>	Event Staff	2	2	4	<ul style="list-style-type: none"> • Handle as MSDS sheet and evacuate area. 	2

Any other points to note, risks and control measures.



Safety is a priority for Blunderbus Theatre Company.

All pyrotechnic equipment used by Blunderbus is manufactured by Le Maitre.

Blunderbus will trigger the pyrotechnic **T1** flash bang from either the side of the stage area or from behind the set. Prior to the event, appropriate spacing will be arranged to ensure that no obstacles or personnel will be in its way. If our pre-assessment check deems unsafe use of any such pyrotechnics, then Blunderbus will review all areas and consider alternative measures or may even withdraw the installation of the pyrotechnic from the show.

In the event of a misfire, Blunderbus will adhere to the venues own containment and disposal procedure.

Blunderbus trusts the integrity and validity of appropriate venue specific fire extinguishers.

There are no other pyrotechnic devices used.

Blunderbus will be responsible for the clean-up operation of these items.



Severity	M Death	S Death	MajorI	3Day	MinorI		
Certain 10	10	8	6	4	2	Primary Risk average	Residual Risk average
	100	80	60	40	20	23.11	2
V Likely 8	80	64	48	32	16		
Probable 6	60	48	36	24	12		
Possible 4	40	32	24	16	8		
Unlikely 2	20	16	12	8	4		
V Unlikely 1	10	8	6	4	2		

100-48 Unacceptable
40-32 Risk reduction necessary
24-16 Control measures essential
12-2 Monitor

M Death
S Death
MajorI
3Day
MinorI

Multiple Deaths
Single death
Major Injury as defined by RIDDOR
3 Days off sick or injured
All other injuries

Es-Staff, Ep-performers, V-Visitors, C-Contractors, P-Public

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