

Create explosive and pyrotechnic effects

Overview

This Standard is about your ability to design and create an explosive or pyrotechnic effect safely. This may relate to firing single or multiple charges and testing circuits.

It assumes you already have experience of physical special effects and need to apply this specific area of expertise to your work.

You will need to know about the dangers involved with using different explosive materials, the ignition and extinguishing methods and the health and safety management which surrounds this work area. This Standard is for you if you create explosive or pyrotechnic special effects.

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Performance criteria*You must be able to:*

1. create explosive or pyrotechnic effects in line with production breakdown and budget constraints
2. identify and use pyrotechnic or explosive techniques that are most appropriate for the job
3. source, purchase, store and transport explosive and pyrotechnic materials in compliance with current legislation
4. provide and maintain required documentation in expected formats
5. calculate current, voltage, resistance, power, with parallel and series circuits using accurate information
6. select and use firing systems and ignition sources appropriate for the job
7. prepare charges in mortars to boost or reduce explosive effects
8. design chemical and explosive mixtures that simulate the desired scale
9. document all aspects of risk assessment and risk management in appropriate formats
10. ensure safety zones are specified and adhered to by all people
11. communicate with cast and crew to maintain safety at all times
12. ensure appropriate Personal Protective Equipment (PPE) is used by all people as required for the job
13. stop a shoot with immediate effect when you consider it unsafe to proceed
14. specify all safety requirements with clear firing position and line of sight to the effect
15. create effects that satisfy directorial requirements
16. use reliable information to assess the impact of effects on the location and its environment
17. liaise with enforcing authorities to ensure all legal protocols have been adhered to
18. make sure that all materials used are disposed of in line with legal and production requirements
19. make sure that locations are returned to a safe state
20. make sure that suitable and competent fire cover is present
21. provide alternative solutions within budget and schedule when effects cannot be produced to original design or budget

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Knowledge and understanding

You need to know and understand:

1. script breakdown, budget and schedule for the physical special effects
2. health and safety regulations and legislation relating to explosive and pyrotechnic materials including: storage, licensing, transportation, purchasing and manufacture licensing
3. enforcing authorities and other relevant bodies you need to liaise with and the legal protocols with which you need to comply when using explosives
4. how to convert a script idea into reality through using explosives or pyrotechnics
5. the dangers involved with different types of explosive material and products available commercially and how they can be used
6. the general principles of using minimum force to achieve a visual result
7. basic safety relating to using explosives including: means of initiation, avoidance of inadvertent initiation, suitable storage, safe handling and working practices
8. how to effectively communicate with production and all relevant departments
9. the most appropriate film speeds to use for the effect, particularly with miniatures and different scales
10. how to create an impression of a full scale effect with miniatures
11. the environmental considerations and the effect on a location both during testing and execution
12. how to design basic electrical circuits for use with pyrotechnics
13. how to use mortars to isolate and direct charges, and control power
14. how to dress an explosion to add visual impact
15. bullet hits on people and objects
16. specialist constructs and materials in pyrotechnic miniature work
17. how to control and supervise an effect on set
18. the safe operating positions for special effects crew on set
19. how to make sets safe post effect
20. the procedure for dealing with misfires and making safe
21. the different protective clothing and Personal Protective Equipment (PPE) for cast and crew
22. how to ensure the camera is appropriately protected

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23. how to act in an emergency or accident
24. possible alternatives to pyrotechnics and when they can be implemented, including: air mortars, air line bullet hits and mechanical rigs
25. how to liaise with and advise fire service and paramedics
26. the appropriate levels of special effects staff coverage to ensure the safety of cast and crew at all times
27. what can be achieved by post production and visual effects

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Suite Physical Special Effects

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