

DRAFT

For discussion on
17 November 2000

LEGISLATIVE COUNCIL PANEL ON INFORMATION TECHNOLOGY AND BROADCASTING

Entertainment Special Effects Ordinance (Cap. 560)

ENTERTAINMENT SPECIAL EFFECTS (GENERAL) REGULATION

ENTERTAINMENT SPECIAL EFFECTS (FEES) REGULATION

ENTERTAINMENT SPECIAL EFFECTS MATERIALS LIST REGULATION

INTRODUCTION

The Entertainment Special Effects Ordinance (Cap. 560) (the Ordinance), which establishes a new regulatory system governing the use of dangerous goods for producing special effects in films, television programmes and theatrical performances, was passed by the Legislative Council and published in the Gazette in June 2000. The Ordinance has not yet come into operation, pending the enactment of the subsidiary legislation. This paper seeks Members' views on the draft regulations to be made under the Ordinance.

BACKGROUND

2. The use of fireworks (including pyrotechnic materials) in Hong Kong has been generally prohibited since 1967. This has resulted in the illegal use of pyrotechnic materials in film shooting for the purpose of producing special effects scenes. In view of the industry's genuine need to produce special effects scenes and to protect public safety, a regulatory system was introduced in March 1993 whereby the use of pyrotechnic materials is allowed in the production of special effects in films, television programmes and theatrical performances, subject to the issue of a permit

under the Dangerous Goods Ordinance (Cap. 295) by the relevant authorities. The use of other dangerous goods (such as petrol and liquefied petroleum gas) in the production of entertainment special effects continues to be regulated under the Dangerous Goods Ordinance and the Gas Safety Ordinance (Cap. 51), as appropriate.

3. The major shortcoming of the existing regulatory system is that the provisions of the Dangerous Goods Ordinance and the Gas Safety Ordinance are not designed to meet the operational needs of the film and entertainment industry. The industry thus encounters considerable difficulties in complying with these statutory requirements. These difficulties include –

- (a) the conveyance, storage, use and discharge of pyrotechnic materials and other dangerous goods are under the jurisdiction of five different departments¹. In the absence of a central licensing authority, the industry has to deal with different departments to obtain all the required approvals. This is time-consuming, inefficient and not user-friendly;
- (b) at present, a permit is required for each and every discharge of pyrotechnic materials. This means that multiple permits are required to cover rehearsals, re-shooting as well as serial discharge in the same scene. The industry has found such a requirement onerous;
- (c) currently, a special effects operator has to register with the Commissioner of Mines (who is the Director of Civil Engineering) for each discharge of pyrotechnic materials. This is a very cumbersome procedure. Moreover, in the absence of a licensing system for local special effects operators, a local person wishing to register with the Commissioner of Mines to discharge pyrotechnic materials must have been trained under the supervision of special effects operators with overseas qualifications. This has severely limited the build up of a local pool of recognised expertise; and
- (d) the existing regulatory regime does not specifically regulate the

¹ The five departments are the Television and Entertainment Licensing Authority, Marine Department, Civil Engineering Department, Fire Services Department and Electrical and Mechanical Services Department.

combined use of pyrotechnic materials and other dangerous goods in producing special effects. Therefore, the concerned regulatory authorities tend to set stringent permit conditions for the proposed discharge. Difficulty in complying with such conditions has led to illegal discharges by the film industry occasionally, thus putting the safety of the production crew and the public in jeopardy.

4. In view of the inadequacies of the current regulatory system, we have conducted a comprehensive review on the use of dangerous goods for the purpose of producing special effects in films, television programmes and theatrical performances. The review concluded that a new regulatory system should be established to meet the operational needs of the film and entertainment industry on the one hand and to ensure public safety and security on the other. We have subsequently engaged a US consultant to advise us on the essential parameters of the new regulatory system, having regard to the specific needs of the local entertainment industry and the Californian regulatory regime for the film industry in Hollywood. Following consultation with the film and entertainment industry, the Film Services Advisory Committee and the Information Technology and Broadcasting Panel of the Legislative Council (LegCo), the Entertainment Special Effects Bill was drafted and introduced into the LegCo in February 2000. The Bill was passed by the LegCo and the Ordinance was subsequently published in the Gazette on 23 June 2000.

The New Regulatory System

5. The Ordinance sets out the framework of the new regulatory system governing the supply, conveyance, storage and use (including discharge) of special effects materials² for the purpose of producing special effects. It establishes the Commissioner for Television and Entertainment Licensing (CTEL) as the new regulatory authority, the Entertainment Special Effects Licensing Authority (the Authority), who will be responsible for the following –

² Special effects materials are dangerous goods which for the purpose of the Ordinance are classified as -

- pyrotechnic special effects materials which contain pyrotechnic and explosive substances; and
- non-pyrotechnic special effects materials which are dangerous goods other than pyrotechnic special effects materials, such as petrol and liquefied petroleum gas.

- (a) licensing of special effects operators;
- (b) issuing permits for the discharge of special effects materials;
- (c) registration of pyrotechnic special effects materials;
- (d) regulating the supply, use, conveyance and storage of pyrotechnic special effects materials;
- (e) approval and issue of codes of practice; and
- (f) surveillance by means of inspections and checks to ensure compliance with the regulatory requirements.

6. The Ordinance also provides that the Authority may, with the approval of the Secretary for Information Technology and Broadcasting, by regulation provide for certain matters for the better carrying out of the provisions of the Ordinance. To enable effective implementation of the new regulatory system, CTEL intends to make the Entertainment Special Effects (General) Regulation, the Entertainment Special Effects (Fees) Regulation and the Entertainment Special Effects Materials List Regulation (the Regulations) to set out the detailed regulatory requirements to complement the framework laid down in the Ordinance. Drafts of the Regulations are at Annexes A, B and C respectively.

A, B, C

Licensing of Special Effects Operators

7. To ensure that special effects materials for use in the production of special effects scenes for entertainment purposes will be discharged by qualified practitioners, the Ordinance stipulates that only licensed special effects operators are permitted to use (including discharge) special effects materials. We propose to set out in the Entertainment Special Effects (General) Regulation (ESE(G)R) the types of licence to be issued, the materials that the holders of each type of licence are allowed to handle, and the eligibility criteria and qualifications and experience required for each type of licence. An outline of the proposed licensing system to be provided for in the ESE(G)R is at Annex D.

D

Transitional Arrangements for Local Special Effects Operators

8. In anticipation of the introduction of the new licensing system for special effects operators, the Television and Entertainment Licensing Authority (TELA) has engaged a First Class Special Effects Operator from Hollywood to conduct training courses for local operators in the entertainment industry between late 1998 and mid 2000. The training courses covered proper practices and procedures in the safe handling, preparation, conveyance, storage and discharge of special effects materials. In addition, trainees were taught how to prepare detailed work records and documentation for the purpose of applying for the licences and permits under the new regulatory system. So far, 75 local operators have received provisional recognition as Special Effects Assistants, 5 as Special Effects Operators Class II (Film/Television) and 7 as Special Effects Operators Class I (Film/Television). These operators already represent the bulk of the local operators. TELA is now organising a re-run of the courses to provide more training opportunities for the local operators.

9. To facilitate migration to the new licensing system, the Ordinance provides that a local special effects operator who has been provisionally recognised by CTEL will, upon the coming into force of the Ordinance, be deemed to have been granted a special effects operator licence for a period of 90 days. He may, before the expiry of this period, apply for a special effects operator licence in the same stream and class of licence as provisionally recognised³, and the Authority will waive the requirements on qualifications, work experience and assessment. For local special effects operators of the theatrical performance stream, they have by and large already acquired the relevant qualifications and experience. CTEL will in due course issue provisional recognition to these operators to ensure that they will be able to continue their practice uninterrupted pending the issue of new licences upon the promulgation of the new licensing system⁴.

³ Depending on the nature of his work, a provisionally recognised Special Effects Assistant may apply for either a Special Effects Assistant (Stream A) licence or a Special Effects Assistant (Stream B) licence. A provisionally recognised Special Effects Operator Class I (Film/Television) and a Special Effects Operator Class II (Film/Television) may apply for a Special Effects Operator Class I (Stream A) licence and a Special Effects Operator Class II (Stream A) licence respectively.

⁴ A provisionally recognised Special Effects Operator (Theatrical) may apply for a Special Effects Operator (Stream B) licence after the coming into force of the Ordinance.

Issue of Permits for the Discharge of Special Effects Materials

10. Under the Ordinance, a permit is required for discharging any special effects materials for the purpose of producing special effects scenes in films, television programmes and theatrical performances. The Authority will be the central body responsible for granting all discharge permits regardless of the type and quantity of materials used. We propose to empower the Authority under the ESE(G)R to issue two types of discharge permits, namely, Stream A for films and television programmes and Stream B for theatrical performances. A discharge permit may cover multiple discharges involving different types and quantities of special effects materials at the same location for a designated period of time. We also propose that the ESE(G)R should set out the information and documents required for an application for a discharge permit and require the applicant to appoint a licensed special effects operator approved by the Authority as the operator-in-charge to produce the proposed special effects.

Registration of Pyrotechnic Special Effects Materials

11. To protect the safety of the operators, the production crew and the general public, the Ordinance stipulates that only those pyrotechnic special effects materials registered with the Authority are allowed to be used in Hong Kong for producing special effects. The Authority will maintain, and make publicly available, a register of the manufacturer, item description, classification, authorisation and restrictions of all pyrotechnic special effects materials approved for use in Hong Kong. Pyrotechnic special effects materials commonly used in Hong Kong by the local entertainment industry will be included in the register by the Authority at the outset. Special effects operators and suppliers of pyrotechnic special effects materials may apply to the Authority for registration of any pyrotechnic special effects material not already included in the register. We propose that the ESE(G)R should set out the documents required for such an application and empower the Authority to classify the material and impose restrictions on the conveyance, storage and use of the material based on its hazard level.

Supply of Pyrotechnic Special Effects Materials

12. To ensure proper control over the import and supply of

pyrotechnic special effects materials, suppliers of such materials are required under the Ordinance to take out a licence. We propose that the ESE(G)R should set out the information and documents required for an application for a supplier licence, require a supplier to engage a licensed special effects operator approved by the Authority as the operator-in-charge throughout the validity period of his licence, and set out the transaction records to be kept and the documents to be submitted to the Authority.

Conveyance of Pyrotechnic Special Effects Materials

13. The Ordinance stipulates that the conveyance of pyrotechnic special effects materials shall be covered by a conveyance permit issued by the Authority. We propose to stipulate in the ESE(G)R that a conveyance permit may cover the conveyance of pyrotechnic special effects materials by land and by sea for the period and routes specified in the permit. To facilitate the day-to-day operation of licensed special effects operators, we propose that the ESE(G)R should provide for exemptions from the conveyance permit requirement in cases where the quantities of pyrotechnic special effects materials involved do not exceed the stipulated levels, the conveyance is for conveying the materials to the discharge venue and the conveyance is supervised by suitably qualified special effects operators.

14. To protect public safety, we also propose that the ESE(G)R should stipulate that only vessels with a permit issued by the Director of Marine may convey pyrotechnic special effects materials, require vehicles conveying pyrotechnic special effects materials to display appropriate signs, impose restrictions on the types and quantities of pyrotechnic special effects materials that can be carried on public vehicles and ferries, and prohibit the conveyance of pyrotechnic special effects materials exceeding a certain quantity in a vehicle unless written permission has been given by the Authority.

Storage of Pyrotechnic Special Effects Materials

15. The Ordinance requires that pyrotechnic special effects materials shall be stored in a licensed pyrotechnic special effects materials store. The types of store licence to be issued by the Authority, the requirements regarding the construction and siting of the stores and other

safety requirements will be set out in the ESE(G)R. There will be two types of store licences, namely, non-movable store licence and movable store licence. In general, special effects materials suppliers and individuals who need to store a large amount of pyrotechnic special effects materials are required to apply for a non-movable store licence. Such stores shall be located in safe and secure non-residential premises approved by the Authority. For the purpose of storing and carrying small amounts of pyrotechnic special effects materials (including detonators, detonating cords and shaped charges) to the discharge venue, licensed special effects operators only need to obtain movable store licences. When not in use, a movable store containing pyrotechnic special effects materials shall be kept in a designated location approved by the Authority. The types and maximum quantity of pyrotechnic special effects materials allowed to be stored in a movable or non-movable store will be governed by the licence conditions attached to the store licence issued by the Authority.

16. The information and documents required for an application for a store licence will be set out in the ESE(G)R. The ESE(G)R will also require the holder of a store licence to engage throughout the validity period of his licence a licensed special effects operator approved by the Authority as the operator-in-charge to manage the store. In addition, the ESE(G)R will require regular inspection of a licensed store and stipulate the records to be kept by the holder of a store licence and the documents to be submitted to the Authority.

Codes of Practice

17. To provide practical guidance on the requirements under the Ordinance to special effects operators and other parties involved in the production of entertainment special effects, the Ordinance provides that the Authority may issue codes of practice. TELA has drawn up draft codes of practice which include the practices and procedures taught in the training courses for local special effects operators and details of the safety measures to be taken in the production of entertainment special effects, with reference to similar materials issued by the relevant overseas authorities. There are also distinct references to and specific advice for the film/television stream as well as the theatrical stream to cater for the different natures of production under these two streams.

18. At the meeting of the Bills Committee on the Entertainment Special Effects Bill held on 24 May 2000, we undertook to provide drafts of the codes of practice to be issued by CTEL to Members for reference when we introduced into LegCo the regulations to be made under the Ordinance. Drafts of the Code of Practice on the Use, Storage and Conveyance of Special Effects Materials and the Code of Practice on the Use of Liquefied Petroleum Gas for the Production of Special Effects are now attached at Annex E for Members' advance information. The film and entertainment industry has been consulted on the drafts and their comments have been incorporated. CTEL intends to finalise the two sets of codes of practice shortly and will issue them upon the coming into force of the Ordinance.

E

19. To facilitate the application for licences and permits under the new regulatory system by special effects operators and other relevant parties and to enhance their understanding of the new system, TELA will also issue guidance notes to address particular areas of concern to the film and entertainment industry, such as the liability of body corporate and partnership involved in the production of entertainment special effects and the information/documents required for applications for licences and permits under the new regulatory system.

THE REGULATIONS

Entertainment Special Effects (General) Regulation

20. The main provisions of the ESE(G)R are -
- (a) Part I will provide for its commencement and define the terms used therein;
 - (b) Part II will provide for the issue, classification, scope of operation and validity period of special effects operator licences and the qualifications required of the licensees;
 - (c) Part III will provide for the classification of, validity period of and requirements for application for discharge permits and set out the conditions under which discharge permits are not required;
 - (d) Part IV will stipulate the requirements for application for

registration of pyrotechnic special effects materials and provide for certain powers of the Authority in relation to the registration of such materials;

- (e) Part V will provide for the validity period of and requirements for application for supplier licences and set out the requirements to be met by holders of supplier licences;
- (f) Part VI will provide for the validity period of conveyance permits, exemptions from the conveyance permit requirement, and restrictions on and other requirements for the conveyance of pyrotechnic special effects materials by different modes of transport;
- (g) Part VII will provide for the issue and validity period of movable and non-movable pyrotechnic special effects materials store licences, requirements on the construction and siting of the stores, requirements for the application for store licences and other requirements to be met by holders of store licences;
- (h) Part VIII will stipulate the accidents and incidents that have to be reported to the Authority and other relevant departments, and the requirements relating to the handling of misfired pyrotechnic special effects materials and the destruction of pyrotechnic special effects materials involved in accidents and incidents; and
- (i) Part IX will deal with miscellaneous issues, including the packaging and labelling of pyrotechnic special effects materials, the disposal of pyrotechnic special effects materials in certain circumstances such as after a licence has been revoked, and the production of a licence or permit for inspection by public officers.

Entertainment Special Effects (Fees) Regulation

21. The Entertainment Special Effects (Fees) Regulation will specify, by way of a schedule, the fees to be charged by the Authority on a full cost recovery basis for the issue of the various licences and permits

under the Ordinance. With the streamlining of procedures under the new regulatory system, the fees for the production of a typical special effect scene will be lower than that under the current regime. We expect that the proposed fees will generate an estimated annual revenue of about \$0.85 million in the first year of implementation.

Entertainment Special Effects Materials List Regulation

22. The Entertainment Special Effects Materials List Regulation will set out, by way of a schedule, the special effects materials that are controlled under the Ordinance.

PUBLIC CONSULTATION

23. In drafting the Regulations, we have taken into account the suggestions made by the Bills Committee on the Entertainment Special Effects Bill. We have also circulated drafts of the Regulations to local special effects operators and major organisations in the film and entertainment industry for comments. They are on the whole supportive and their specific comments have been incorporated into the Regulations. The proposed fee levels are also considered acceptable by the industry.

LEGISLATIVE TIMETABLE

24. Subject to Members' comments, we intend to make the Regulations in early December 2000 and table them before the LegCo for negative vetting. The Regulations will come into operation on a day to be appointed by the Authority by notice in the Gazette. Our plan is to bring the Ordinance together with the Regulations into effect in early 2001.

Information Technology and Broadcasting Bureau
7 November 2000

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Annex A

DMA No. #28442v2

ENTERTAINMENT SPECIAL EFFECTS (GENERAL) REGULATION

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ENTERTAINMENT SPECIAL EFFECTS (GENERAL) REGULATION

(Made by the Entertainment Special Effects Licensing Authority under section 26 of the Entertainment Special Effects Ordinance (Cap. 560) with the approval of the Secretary for Information Technology and Broadcasting)

PART I PRELIMINARY

1. Commencement

This Regulation shall come into operation on a day to be appointed by the Entertainment Special Effects Licensing Authority by notice published in the Gazette.

2. Interpretation

In this Regulation, unless the context otherwise requires -
"competent authority" (有關當局) means any authority outside Hong Kong responsible for -

(a) in respect of qualifications for a special effects operator to be licensed, the issue of special effects operator licences or their equivalents; and

(b) in respect of registration of pyrotechnic special effects materials, the classification and authorization of the conveyance, storage or use of pyrotechnic special effects materials,

in the country, state, province or territory under its jurisdiction;

"designated item" (指定物料) means any pyrotechnic special effects material classified as such in the register denoting that the material poses a high risk to safety;

"detonator" (雷管) includes any materials used or manufactured with a view to producing detonation or initiating another pyrotechnic special effects material by means of detonation;

"operator-in-charge" (負責人) means a person referred to in -

(a) in the case of a discharge permit, section 11(1)(b);

(b) in the case of a pyrotechnic special effects materials supplier licence, section 19(1)(a); and

(c) in the case of a store licence, section 24(1)(a),
of the Ordinance;

"package" (包裹) means the packaging and the pyrotechnic special effects materials contained therein;

"packaging" (包裝用品) means any receptacle and any other component or material necessary for the receptacle to perform its containment function;

"special effects operator" (特別效果技術員) includes a special effects assistant.

PART II

LICENSING OF SPECIAL EFFECTS OPERATORS

3. Issue of special effects operator licences

The Authority may issue any of the licences specified in column 1 of Schedule 2.

4. Classification of special effects operators

(1) The Authority may, for the purposes of section 3, classify a special effect operator according to the stream specified in column 1 of Schedule 1 for the production of entertainment special effects in the type of entertainment programme indicated opposite thereto in column 2 of Schedule 1.

(2) Subject to subsection (3), a special effects operator whose licence is of the type specified in column 1 of Schedule 2 may use the special effects materials included in such parts of the Special Effects Materials List as specified opposite thereto in column 2 of Schedule 2.

(3) Notwithstanding subsection (2) and subject to section 8(2) -

(a) a licensed special effects operator shall operate in accordance with -

- (i) the terms and conditions and scope of operation specified in his licence; and
- (ii) the terms and conditions specified in the discharge permit issued in respect of the occasion; and

(b) a holder of -

- (i) a Special Effects Assistant (Stream A) licence;
- (ii) Special Effects Assistant (Stream B) licence;
- (iii) Special Effects Assistant (Stream A Short term) licence; or

- (iv) Special Effects Assistant (Stream B Short term) licence,

shall not use the special effects materials as specified under subsection (2) unless he is under the supervision of the operator-in-charge named in the discharge permit of the same stream issued in respect of the occasion.

5. Qualifications for special effects operator to be licensed

(1) A person who holds a scheduled qualification specified in column 3 of Schedule 2 is eligible to apply for the type of special effects operator licence indicated opposite thereto in column 1 of Schedule 2.

(2) For the purposes of subsection (1) and Schedule 2, "scheduled qualification" means any of the qualifications set out in Schedule 3.

(3) Notwithstanding subsection (1) and Schedule 2, the Authority may in addition assess the competence of an applicant -

- (a) in the case of an application for a Special Effects Operator Class I (Stream A) licence, Special Effects Operator Class II (Stream A) licence, Special Effects Assistant (Stream A) licence, Special Effects Operator (Stream B) licence or Special Effects Assistant (Stream B) licence, by requiring him -

- (i) to take an examination and attend an interview conducted by the Authority; and
- (ii) to conduct a demonstration as to the use of special effects materials in the presence of

a public officer or person authorized by the Authority; and

(b) in the case of an application for a Special Effects Operator (Stream A Short term) licence, Special Effects Operator (Stream B Short term) licence, Special Effects Assistant (Stream A Short term) licence or Special Effects Assistant (Stream B Short term) licence, by requiring him -

(i) to attend an interview conducted by the Authority; and

(ii) to conduct a demonstration as to the use of special effects materials in the presence of a public officer or person authorized by the Authority.

6. Variation of scope of operation

(1) A holder of a special effect operator licence may apply to the Authority for the variation of the scope of operation specified in his licence.

(2) Where an application is made under subsection (1), section 5(3) shall apply to an application under section 6 of the Ordinance as it applies to an application under this section.

(3) For the avoidance of doubt, any breach of the scope of operation specified in a special effects operator licence shall be taken as a breach of the terms and conditions of the licence.

7. Validity period of special effects operator licences

The special effects operator licence specified in column 1 of Schedule 2 shall be issued or renewed for a period specified opposite thereto in column 4 of Schedule 2.

PART III

DISCHARGE OF SPECIAL EFFECTS MATERIALS

8. Classification of discharge permits

(1) The Authority may issue a discharge permit -

- (a) of a stream specified in column 1 of Schedule 1 in accordance with the type of entertainment programme indicated opposite thereto in column 2 of Schedule 1; and
- (b) in respect of an act of discharge or a series of acts of discharge at a location specified in the permit.

(2) Notwithstanding section 4(3)(a), a holder of any of the following licences -

- (a) in respect of Stream A -
 - (i) Special Effects Operator Class I (Stream A);
 - (ii) Special Effects Operator Class II (Stream A);
 - (iii) Special Effects Operator (Stream A Short term); or
- (b) in respect of Stream B -
 - (i) Special Effects Operator (Stream B);
 - (ii) Special Effects Operator (Stream B Short term),

may assist an operator-in-charge named in a discharge permit of the same stream and use any special effects materials not within the terms and conditions or the permitted scope of operation specified in his licence to the extent that the same are allowed to be used by the operator-in-charge within the terms and conditions of the discharge permit issued in respect of the occasion only if he is under the supervision of the operator-in-charge.

9. Application for discharge permits

An application for a discharge permit shall be accompanied by -

- (a) such information and drawings as may be required by the Authority relating to -
 - (i) the location of the discharge;
 - (ii) the arrangements for producing the proposed entertainment special effects; and
 - (iii) the safety precautions to be taken;
- (b) written statements relating to the types and quantities of special effects materials intended to be used and the manner in which they are to be used; and
- (c) proof of a valid public liability insurance policy in respect of the discharge showing -
 - (i) the amount of insurance cover; and
 - (ii) the terms and conditions of the insurance policy,that are acceptable to the Authority.

10. Operator-in-charge named in discharge permit

(1) An application for a discharge permit shall contain the particulars of a person proposed to be engaged as the operator-in-charge.

(2) The Authority may approve the appointment of an operator-in-charge if he is satisfied that the person proposed to be engaged in that capacity is the holder of a special effects operator licence the type and the scope of operation of which are acceptable to the Authority.

11. Discharge permit not required under certain conditions

A discharge permit is not required for the discharge of non-pyrotechnic special effects materials if the discharge complies with the conditions specified in Schedule 4.

12. Validity period of discharge permits

A discharge permit shall be valid for a period of 24 hours or such shorter period as the Authority may specify in the permit.

PART IV

REGISTRATION OF PYROTECHNIC SPECIAL EFFECTS MATERIALS

13. Application for registration

An application for the registration of any pyrotechnic special effects material shall be accompanied by -

- (a) documents containing the safety data of the material or other similar documents;
- (b) documents relating to the classification and authorisation in respect of the conveyance, storage or

use of the material issued by a competent authority,
where applicable; and

(c) such other particulars as the Authority may require.

14. Registration

(1) Upon registration of any pyrotechnic special effects material,
the Authority may -

- (a) classify the pyrotechnic special effects material,
based on the hazard level associated with its
conveyance, storage and use; and
- (b) impose such restrictions on the conveyance, storage and
use of any such pyrotechnic special effects material
classified under paragraph (a) as he considers
necessary.

(2) The Authority shall enter in the register the classification and
restrictions made under subsection (1).

15. Alterations and cancellation

The Authority may, where he considers it necessary in the interests
of public safety -

- (a) alter any particulars of any pyrotechnic special
effects material entered in the register; or
- (b) cancel the registration of any pyrotechnic special
effects material and remove the same from the register.

PART V

SUPPLY OF PYROTECHNIC SPECIAL EFFECTS MATERIALS

16. Application for pyrotechnic special effects materials supplier licences

An application for the issue or renewal of a pyrotechnic special effects materials supplier licence shall contain -

- (a) documentary proof that the applicant has secured sufficient space for the storage of the pyrotechnic special effects materials that he intends to supply -
 - (i) in a store in respect of which a store licence has been issued; or
 - (ii) in any storage approved by the Authority; and
- (b) the name, qualifications and experience of a special effects operator proposed to be engaged as the operator-in-charge or where the applicant himself intends to be the operator-in-charge, his qualifications and experience as a special effects operator.

17. Qualifications of operator-in-charge

The person proposed to be the operator-in-charge for the purpose of a pyrotechnic special effects materials supplier licence shall hold one of the following licences -

- (a) Special Effects Operator Class I (Stream A) licence;
- (b) Special Effects Operator Class II (Stream A) licence;
- or
- (c) Special Effects Operator (Stream B) licence.

18. Engagement of operator-in-charge

(1) A licensed supplier shall engage throughout the validity period of his licence an operator-in-charge approved by the Authority and named in the licence unless he himself has been approved by the Authority as the operator-in-charge and named in the licence.

(2) A licensed supplier who contravenes subsection (1) commits an offence and is liable to a fine at level 4.

**19. Appointment of replacement
operator-in-charge**

(1) Subject to subsection (3), a licensed supplier shall seek approval from the Authority for the appointment of a replacement operator-in-charge within the period of notice referred to in subsection (2) if -

- (a) the special effects operator licence of the operator-in-charge expires;
- (b) the special effects operator licence of the operator-in-charge is suspended or revoked by the Authority;
- (c) the appointment of the operator-in-charge is terminated; or
- (d) the operator-in-charge is to be absent from Hong Kong for more than 28 consecutive days.

(2) The period of notice required for the seeking of approval from the Authority shall be -

- (a) in the case of subsection (1)(a), (c) or (d), 7 days before the date of the occurrence of the event or such shorter notice period as the Authority may allow; and

(b) in the case of subsection (1)(b), within 7 days after the date of the occurrence of the event or such longer notice period as the Authority may allow.

(3) Notwithstanding subsection (1)(d), a licensed supplier is not required to appoint a replacement operator-in-charge if he does not possess, import and acquire any pyrotechnic special effects material during the period when the operator-in-charge is absent from Hong Kong.

(4) Upon payment of a prescribed fee by the licensed supplier who has obtained approval from the Authority for the appointment of a replacement operator-in-charge under the circumstances referred to in subsection (1)(a), (b) or (c), the Authority may alter the particulars of the supplier's licence regarding the change of the operator-in-charge accordingly.

(5) Any person who fails to seek approval from the Authority as required under subsection (1) commits an offence and is liable to a fine at level 4.

(6) A person who fails to seek approval from the Authority within the notice period required under subsection (2) commits an offence and is liable to a fine at level 3.

20. Records to be kept

(1) A licensed supplier shall keep or cause to be kept a record of pyrotechnic special effects materials transacted by way of -

- (a) importing;
- (b) taking possession of; or
- (c) parting with possession.

(2) The record, in a form specified by the Authority, shall be completed at the completion of each transaction with such particulars as the Authority may require.

(3) In addition to subsections (1) and (2), the supplier shall at the end of each 12 month period during the subsistence of his licence or at the expiry of such other period as the Authority may allow and at any other time required by the Authority -

(a) prepare a statement, in a form specified by the Authority, of the exact quantity and description of all pyrotechnic special effects materials in his possession, including those stored under his name anywhere in Hong Kong, at the relevant date; and

(b) where -

(i) the supplier himself is the operator-in-charge, certify that the statement made under paragraph (a) is true and correct;

(ii) an operator-in-charge is engaged, cause the operator-in-charge to certify that the statement made under paragraph (a) by the supplier is true and correct.

(4) The supplier shall furnish the statement duly certified to the Authority within 21 days of the relevant date.

(5) The supplier shall keep the record and all relevant documents for a minimum of 3 years for the inspection of the Authority at the premises where he carries on business as a supplier.

(6) The supplier shall -

(a) upon expiry, suspension, surrender or revocation of his licence; and

(b) in the case of a body corporate, upon its dissolution, furnish a copy of the record to the Authority showing all the transactions made since he last submitted a statement to the Authority.

(7) For the purposes of subsections (3) and (4), "the relevant date" means the date of the expiration of each 12 month period during the subsistence of the pyrotechnic special effects materials supplier licence held by the supplier in question or any date notified to the supplier by the Authority in writing.

(8) A person who fails to comply with any requirement in subsection (1), (2), (3), (4), (5) or (6) commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

(9) A person who knowingly makes any false or misleading entry in -

(a) the record required to be kept under subsection (1);

(b) the statement required to be furnished under subsection (4); or

(c) the copy of the record required to be furnished under subsection (6),

commits an offence and is liable to a fine at level 6 and to imprisonment for 6 months.

(10) A person who knowingly makes a false certification in the statement required to be furnished under subsection (4) commits an offence and is liable to a fine at level 6 and to imprisonment for 6 months.

21. Validity period of pyrotechnic special effects materials supplier licences

A pyrotechnic special effects materials supplier licence shall be issued or renewed by the Authority for a period of 24 months.

PART VI

CONVEYANCE OF PYROTECHNIC SPECIAL EFFECTS MATERIALS

22. Validity period of conveyance permits

A conveyance permit is valid only once for the period and routes specified in the permit.

23. Conveyance permits not required under certain circumstances

(1) A conveyance permit is not required for the conveyance of pyrotechnic special effects materials which are -

- (a) in transit, that is to say, they are brought into Hong Kong solely for the purpose of taking them out of Hong Kong and they remain at all times in or on the vessel, aircraft or vehicle in or on which they are brought into Hong Kong; or
- (b) being carried on board a type I vessel within the meaning of the Dangerous Goods (Shipping) Regulations (Cap. 295 sub. leg.).

(2) Subject to subsection (3), a conveyance permit is not required for the conveyance of -

- (a) pyrotechnic special effects materials other than designated items having an aggregate net explosive quantity not exceeding 5 kg; or
- (b) not more than 50 detonators; or

(c) designated items other than detonators having an aggregate net explosive quantity not exceeding 200 grams; or

(d) any combination of paragraphs (a), (b) and (c).

(3) Subsection (2) shall apply only if the following conditions are met -

(a) the conveyance -

(i) is for conveying the pyrotechnic special effects materials in question to the location of discharge for the purpose of discharge in accordance with a discharge permit or for conveying any unused pyrotechnic special effects materials left from that discharge to a location for storage in respect of which a store licence has been issued; or

(ii) in any other case, has been approved by the Authority in writing; and

(b) in the case of subsection (2)(a), the conveyance is under the personal supervision of a special effects operator holding a Special Effects Operator Class I (Stream A) licence, Special Effects Operator Class II (Stream A) licence, Special Effects Operator (Stream B) licence, Special Effects Operator (Stream A Short term) licence or Special Effects Operator (Stream B Short term) licence subject to the scope of operation specified in his licence; and

- (c) in the case of subsection (2)(b), (c) or (d), the conveyance is under the personal supervision of a special effects operator holding a Special Effects Operator Class I (Stream A) licence or Special Effects Operator (Stream A Short term) licence subject to the scope of operation specified in his licence; and
- (d) the special effects operator referred to in paragraph (b) or (c), as the case may be, shall have with him at all times during the entire course of conveyance -
 - (i) in the case of paragraph (a)(i), a true copy of the discharge permit; and
 - (ii) in the case of paragraph (a)(ii), the approval letter issued by the Authority, and shall on demand produce it for inspection by any police officer, any officer of the Marine Department not below the rank of Marine Inspector II or any officer of the Authority.

(4) Where a conveyance permit is not required for the conveyance of pyrotechnic special effects materials under this section, a special effects operator who fails to comply with subsection (3)(d)(i) or (ii) commits an offence and is liable to a fine at level 2.

24. Conveyance by vehicles

No person shall convey or cause to be conveyed any pyrotechnic special effects materials having an aggregate net explosive quantity exceeding 200 kg in a vehicle unless permission in respect of the vehicle has been given in writing by the Authority.

25. Conveyance by vessels

(1) Subject to subsection (2), no person shall convey or cause to be conveyed any pyrotechnic special effects material in a vessel unless -

- (a) in respect of a type III vessel within the meaning of the Dangerous Goods (Shipping) Regulations (Cap. 295 sub. leg.), a permission has been given in writing by the Director of Marine; or
- (b) in respect of a vessel other than a type III vessel within the meaning of the Dangerous Goods (Shipping) Regulations (Cap. 295 sub. leg.), a document of compliance as required under section 16 of the Merchant Shipping (Safety)(Dangerous Goods and Marine Pollutants) Regulation (Cap. 413 sub. leg.) has been issued.

(2) Notwithstanding subsection (1), a vessel may convey the following pyrotechnic special effects materials without prior permission from the Director of Marine or a document of compliance if the requirements set out in subsection (3) are met -

- (a) pyrotechnic special effects materials other than designated items having an aggregate net explosive quantity not exceeding 5 kg;
- (b) not more than 50 detonators;
- (c) designated items other than detonators having an aggregate net explosive quantity not exceeding 200 grams; or
- (d) any combination of paragraphs (a), (b) and (c).

(3) The requirements referred to subsection (2) are that -

- (a) the vessel is of a type approved by the Director of Marine from time to time for the conveyance of pyrotechnic special effects materials not exceeding the quantities set out in subsections (2)(a) to (d); and
- (b) the conveyance of such pyrotechnic special effects materials is in accordance with the conditions and manner stipulated by the Director of Marine and the Authority.

(4) A list of the approved types of vessels, the conditions and the manner referred to in subsection (3) shall be made available for public inspection in the office of the Authority.

26. Pyrotechnic special effects materials not permitted in public vehicles, etc.

Except with the approval of the Authority, no person shall convey any pyrotechnic special effects materials on any tramcar, omnibus, taxi or other public vehicle or on any public ferry unless the pyrotechnic special effects materials -

- (a) are not designated items;
- (b) are not items entered in the register as prohibited from being conveyed on such vehicle or ferry; and
- (c) the aggregate net explosive quantity of which does not exceed 5 kg.

27. Display requirements

Unless otherwise approved by the Authority, a person who conveys pyrotechnic special effects materials by land shall display signs

including placards, signals and flags in such form and manner as the Authority may specify.

28. Offences under this Part

(1) The owner or person in charge of any vehicle or any person in possession of pyrotechnic special effects materials in respect of which section 24 or 27 is contravened commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

(2) The owner, agent or master of any vessel or any person in possession of pyrotechnic special effects materials in respect of which section 25(1) is contravened commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

(3) A person who contravenes section 26 commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

(4) In any proceedings for a contravention of section 24, 25(1), 26 or 27, it shall be a defence for the person charged to prove that he did not know and could not with reasonable diligence have known the nature of the material in question.

PART VII**STORAGE OF PYROTECHNIC SPECIAL EFFECTS MATERIALS****29. Types of store licence**

The Authority may issue -

- (a) a store licence in respect of a store at a fixed location in non-residential premises ("non-movable pyrotechnic special effects materials store licence"); or

- (b) a store licence in respect of a movable store ("movable pyrotechnic special effects materials store licence").

30. Construction and siting of stores

(1) A pyrotechnic special effects materials store, whether movable or non-movable, shall be -

- (a) built with fire resistant materials;
- (b) without any exposed ferrous metal in the exterior or interior of the store;
- (c) capable of being securely locked; and
- (d) of a design approved by the Authority.

(2) A movable store shall be kept in an area in non-residential premises approved by the Authority ("designated area") when -

- (a) it contains pyrotechnic special effects materials;
- (b) it is not in use on the production set; and
- (c) it is not in the course of conveyance.

(3) Any person holding a movable pyrotechnic special effects materials store licence who fails to comply with the requirement under subsection (2) commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

31. Application for store licences

An application for the issue or renewal of a store licence shall contain the following -

- (a) information relating to -
 - (i) the storage capacity requested;

- (ii) the types of pyrotechnic special effects materials to be stored;
 - (iii) the proposed security and safety measures to be taken in respect of the store;
 - (iv) the materials used for the construction of the store;
 - (v) in the case of a non-movable store -
 - (A) the location of the store;
 - (B) the means of ventilation of the store;
 - (vi) in the case of a movable store -
 - (A) the location of the designated area;
 - (B) the means of ventilation of the designated area; and
- (b) the name, qualifications and experience of a special effects operator proposed to be engaged as the operator-in-charge or where the applicant himself is proposed to be the operator-in-charge, his qualifications and experience as a special effects operator; and
- (c) in the case of a non-movable store, 4 copies of a scale plan of the store and indication thereon as to -
 - (i) the distance between the store and other premises and public place in the vicinity;
 - (ii) the position of the store in relation to other adjacent premises within the same building;and

- (iii) the position of any staircase, external fire escape, window or other means of egress from the premises in which the store constitutes a part; and
- (d) in the case of a movable store -
 - (i) 4 copies of a scale drawing of the store;
 - (ii) 4 copies of a scale plan of the designated area and indication thereto as to -
 - (A) the distance between the designated area and other premises and public place in the vicinity;
 - (B) the position of the designated area in relation to other adjacent premises within the same building; and
 - (C) the position of any staircase, external fire escape, window or other means of egress from the premises in which the designated area constitutes a part; and
- (e) such other particulars as the Authority may require.

32. Requirements to be complied with by person holding store licence

(1) In addition to any other conditions specified in a store licence, the holder of a store licence shall ensure that -

- (a) the store and its fittings and equipment are maintained at all times in good order to the satisfaction of the Authority;

- (b) except with the permission in writing of the Authority, no alteration or addition to the store or its fittings or equipment shall be made which may result in a deviation in any material particular from the plan or drawing of the store, or from the fittings or equipment thereof, as is, for the time being, approved by the Authority;
- (c) unless access to the store is required, the store, when containing any pyrotechnic special effects materials, shall be kept securely locked;
- (d) all proper precautions have been taken to prevent -
 - (i) fire and explosion in the store;
 - (ii) unauthorized persons from obtaining access to the store;
- (e) the store and the designated area, as the case may be, are provided with such fire extinguishing equipment as the Authority may require;
- (f) all proper precautions have been taken to exclude water from the store if the store contains pyrotechnic special effects materials which may become dangerous upon interaction with water; and
- (g) in the case of a non-movable store -
 - (i) the store is installed with a security alarm system to the satisfaction of the Authority;
 - (ii) the store or the building in which the store constitutes a part is provided with an efficient lightning conductor,

when so required by the Authority.

(2) Any person holding a store licence who fails to comply with subsection (1)(a) or (b) commits an offence and is liable to a fine at level 6 and to imprisonment for 6 months.

(3) Any person holding a store licence who fails to comply with subsection (1)(c), (d)(i) or (ii), (e), (f) or (g)(i) or (ii) commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

33. Qualifications of operator-in-charge

The person proposed to be the operator-in-charge for the purpose of a store licence shall hold one of the following licences -

- (a) Special Effects Operator Class I (Stream A) licence;
- (b) Special Effects Operator Class II (Stream A) licence;
- (c) Special Effects Operator (Stream B) licence;
- (d) Special Effects Operator (Stream A Short term) licence;
- or
- (e) Special Effects Operator (Stream B Short term) licence.

34. Engagement of operator-in-charge

(1) A holder of a store licence shall engage throughout the validity period of his licence an operator-in-charge approved by the Authority and named in the licence unless he himself has been approved by the Authority as the operator-in-charge and named in the licence.

(2) A holder of a store licence who contravenes subsection (1) commits an offence and is liable to a fine at level 4.

35. Appointment of replacement operator-in-charge

(1) Subject to subsection (3), a holder of a store licence shall seek approval from the Authority for the appointment of a replacement operator-in-charge within the period of notice referred to in subsection (2) if -

- (a) the special effects operator licence of the operator-in-charge expires;
- (b) the special effects operator licence of the operator-in-charge is suspended or revoked by the Authority;
- (c) the appointment of the operator-in-charge is terminated; or
- (d) the operator-in-charge is to be absent from Hong Kong for more than 28 consecutive days.

(2) The period of notice required for the seeking of approval from the Authority shall be -

- (a) in the case of subsection (1)(a), (c) or (d), 7 days before the date of the occurrence of the event or such shorter notice period as the Authority may allow; and
- (b) in the case of subsection (1)(b), within 7 days after the date of the occurrence of the event or such longer notice period as the Authority may allow.

(3) Notwithstanding subsection (1)(d), a replacement operator-in-charge shall not be required if no pyrotechnic special effects material is stored in the store during the period when the operator-in-charge is absent from Hong Kong.

(4) Upon payment of a prescribed fee by the holder of a store licence who has obtained approval from the Authority for the appointment of a replacement operator-in-charge under the circumstances referred to in subsection (1)(a), (b) or (c), the Authority may alter the particulars of the store licence regarding the change of the operator-in-charge accordingly.

(5) Any person who fails to seek approval from the Authority as required under subsection (1) commits an offence and is liable to a fine at level 4.

(6) Any person who fails to seek approval from the Authority within the notice period required under subsection (2) commits an offence and is liable to a fine at level 3.

36. Inspection of stores

(1) If the holder of a store licence is the operator-in-charge named in the licence, he shall, or in the case where an operator-in-charge has been engaged, he shall cause the operator-in-charge to -

(a) inspect, at least once in each month unless the Authority allows a longer period and at any other time as may be required by the Authority, the conditions of the store, the pyrotechnic special effects materials contained therein and -

- (i) in the case of a non-movable store, the area immediately adjacent to the store; and
- (ii) in the case of a movable store, the designated area and the area immediately adjacent to the designated area; and

- (b) record in the stock book referred to in section 38 the date, time and findings of the inspection.

(2) Where the inspection shows that -

- (a) there have been changes in the information or particulars provided to the Authority under section 31;
- (b) any requirement specified in section 32 has not been complied with; or
- (c) there are deteriorated or damaged pyrotechnic special effects materials in the store,

the holder of the store licence shall report to the Authority as soon as practicable and submit to the Authority, within 4 working days of the inspection, a report in writing setting out -

- (i) a detailed account of the inspection;
- (ii) the findings of the inspection; and
- (iii) the actions he has taken or he proposes to take to restore the store or designated area, as the case may be, to a condition suitable for its purpose.

(3) Any person who fails to comply with any provision of this section commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

37. Destruction of deteriorated, etc. pyrotechnic special effects materials

(1) Subject to the prior approval of the Authority, a holder of a store licence shall cause any deteriorated or damaged pyrotechnic special effects materials, whether real or apparent, to be -

- (a) removed from the store; and

- (b) disposed of by the operator-in-charge of the store or a licensed special effects operator approved by the Authority in a manner approved by the Authority.

(2) Any person who fails to comply with this section commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

38. Records to be kept

(1) A holder of a store licence shall keep or cause to be kept a stock book in the store in a form to be specified by the Authority.

(2) The stock book shall be kept up-to-date, and shall include -

- (a) the quantity, description and date of delivery of each pyrotechnic special effects material delivered to the store; and
- (b) the quantity, description and date of dispatch of each pyrotechnic special effects material removed from the store, whether for discharge or otherwise.

(3) Each entry in the stock book shall be certified true and correct by the holder of the store licence or the operator-in-charge.

(4) The holder of a store licence shall, at the end of each month during the subsistence of his licence or at the expiry of such other period as the Authority may allow and at any other time required by the Authority -

- (a) record in the stock book a statement of the balance of the stock of each type of pyrotechnic special effects material; and
- (b) where -

- (i) the licence holder himself is the operator-in-charge, certify in the stock book that the statement made under paragraph (a) is true and correct;
- (ii) an operator-in-charge is engaged, cause the operator-in-charge to certify in the stock book that the statement made under paragraph (a) by the licence holder is true and correct.

(5) The holder of a store licence shall keep all stock books and all relevant documents for a minimum of 3 years for the inspection of the Authority when required.

(6) The holder of a store licence shall -

- (a) upon expiry, suspension, surrender or revocation of his licence; and
- (b) in the case of a body corporate, upon its dissolution, furnish a copy of the stock book to the Authority showing -
 - (i) all the entries made during the last three years before the expiry, suspension, surrender, revocation of his licence or dissolution of the body corporate, as the case may be; or
 - (ii) where the holder has held the store licence for less than 3 years, all the entries made during the subsistence of his licence.

(7) A person who fails to comply with any requirement in this section commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

(8) A person who knowingly makes any false or misleading entry or certification in -

- (a) the stock book required to be kept under subsection (1);
- (b) the statement required to be recorded under subsection (4); or
- (c) the copy of the stock book required to be furnished under subsection (6),

commits an offence and is liable to a fine at level 6 and to imprisonment for 6 months.

39. Validity period of store licences

A store licence shall be issued or renewed for a period of 24 months or such shorter period as the Authority may think fit.

PART VIII

REPORT OF ACCIDENTS, ETC.

40. Notification of accidents, etc.

(1) The following occurrences shall be notifiable in accordance with section 41 -

- (a) any theft or loss of pyrotechnic special effects materials;
- (b) any fire relating to special effects materials which requires emergency action by the Fire Services Department;
- (c) any accident relating to the conveyance, storage or use of special effects materials which results in -

- (i) the death of a person;
 - (ii) such bodily injury to a person that the person is admitted to a hospital or clinic for treatment or observation; or
 - (iii) damage to any vehicle, vessel, aircraft, train, building or any other property;
- (d) any incident of misfire (including the failure to fire) of pyrotechnic special effects materials which requires the assistance of the Hong Kong Police Force under section 42.

(2) For the purposes of subsection (1)(c)(iii), "damage" does not include the destruction of properties or portions of a production set that is intended as part of the special effects.

41. Reporting and investigation of accidents, etc.

(1) The following provisions of this section shall apply to any person holding a licence or permit issued under the Ordinance to which the special effects materials involved in an occurrence notifiable under section 40 are related.

(2) In the event of an occurrence referred to in section 40(1)(a), the person who holds the licence or permit, as the case may be, shall report to the Hong Kong Police Force as soon as practicable.

(3) In the event of a fire referred to section 40(1)(b), the person who holds the licence or permit, as the case may be, shall report forthwith either to the Fire Services Department or the Hong Kong Police Force.

(4) In the event of an accident referred to in section 40(1)(c), the person who holds the licence or permit, as the case may be, shall -

- (a) irrespective of whether pyrotechnic special effects materials are involved, report forthwith to the Hong Kong Police Force; and
- (b) where pyrotechnic special effects materials are involved, provide full details of the description and quantities of the pyrotechnic special effects materials when the report required under paragraph (a) is made.

(5) Whenever there is an occurrence notifiable under section 40, the person who holds the licence or permit shall, in addition to any report which he may, where appropriate, have made or is required to make under subsection (2), (3) or (4) -

- (a) report such occurrence to the Authority as soon as practicable; and
- (b) submit a report of the occurrence in writing to the Authority within 3 workings days of the occurrence containing the particulars specified in subsection (6).

(6) A report under subsection (5)(b) shall contain -

- (a) the circumstances and details of the occurrence (including the date, the place and the nature of the occurrence);
- (b) the names, addresses and other details, where available, of all persons involved and witnesses thereto; and
- (c) the description and quantities of special effects materials involved.

(7) The Authority may require the person who has made a report under subsection (5) to -

- (a) conduct a detailed investigation into the causes of the occurrence;
- (b) report in writing the findings of the investigation and the recommendations to prevent future similar occurrences; and
- (c) submit the report in such form and within such period as the Authority may determine.

(8) Any person who fails to -

- (a) report an occurrence in contravention of subsection (2);
 - (b) report a fire in contravention of subsection (3);
 - (c) report an accident in contravention of subsection (4);
- or
- (d) comply with subsection (5)(a),

commits an offence and is liable to a fine at level 2.

(9) Any person who fails to comply with subsection (5)(b) or (7) commits an offence and is liable to a fine at level 3.

42. Handling of misfired pyrotechnic special effects materials

A licensed special effects operator shall request the assistance of the Hong Kong Police Force if there are misfired (including unfired) pyrotechnic special effects materials that -

- (a) may pose a threat to life or property; and
- (b) he cannot safely dispose of.

43. Destruction of pyrotechnic special effects materials involved in certain occurrences

(1) Unless otherwise approved by the Authority, a person holding a licence or permit issued under the Ordinance shall not destroy or cause to be destroyed any pyrotechnic special effects materials involved in any of the occurrences referred to in section 40.

(2) Nothing in this section shall prevent the destruction of such materials under and in accordance with section 32 of the Ordinance.

(3) Any person who contravenes subsection (1) commits an offence and is liable to a fine at level 4 and to imprisonment for 1 month.

PART IX

MISCELLANEOUS

44. Packaging and labelling of pyrotechnic special effects materials

No person shall supply, convey or store any pyrotechnic special effects material in Hong Kong unless such material is packed and -

(a) the package containing such material is marked and labelled; and

(b) the packaging is,

in accordance with -

(i) the Technical Instructions for the Safe Transport of Dangerous Goods by Air for the time being in force approved and published by decision of the Council of the International Civil Aviation Organization;

- (ii) the International Maritime Dangerous Goods Code for the time being in force published by the International Maritime Organization;
- (iii) the United Nations Recommendations on the Transport of Dangerous Goods for the time being in force; or
- (iv) the manner specified or approved by the Authority.

45. Disposal of pyrotechnic special effects materials after revocation, etc. of licence

(1) Upon the suspension, revocation, surrender or expiration of -

- (a) a pyrotechnic special effects materials supplier licence; or
- (b) a special effects operator licence,

the holder of such licence who is in possession of any pyrotechnic special effects materials shall not -

- (i) supply or offer such materials to any person; or
- (ii) otherwise dispose of such materials,

as the case may be, without the approval of the Authority.

(2) Any person who contravenes subsection (1) commits an offence and is liable to a fine at level 6 and to imprisonment for 6 months.

46. Production of licence or permit for inspection

(1) A person who holds a special effects operator licence shall carry at all times in the course of the storage, conveyance and use of special effects materials his licence for inspection by any police officer, any officer of the Marine Department not below the rank of Marine Inspector II or any officer of the Authority.

(2) The operator-in-charge named in a discharge permit shall carry at all times when special effects materials are in use a true copy of the discharge permit for inspection by any of the officers referred to in subsection (1).

(3) Unless a conveyance permit has been exempted, a person who conveys or supervises the conveyance of pyrotechnic special effects materials shall carry at all times in the course of the conveyance of pyrotechnic special effects materials a true copy of a conveyance permit for inspection by any of the officers referred to in subsection (1).

(4) Any person who fails to comply with subsection (1), (2) or (3) commits an offence and is liable to a fine at level 2.

47. Obtaining of information

(1) For the purposes of obtaining any information which the Authority is of the opinion that he needs for the exercise of his functions under the Ordinance, the Authority may serve on any person holding a licence or permit issued under the Ordinance a notice requiring such person to furnish to the Authority such information about such matters as are specified in the notice, and to do so in such form and manner and within such period as are specified in that notice.

(2) Any person who fails to comply with subsection (1) commits an offence and is liable to a fine at level 3.

SCHEDULE 1

[ss. 4(1) & 8(1)]

CLASSIFICATION OF SPECIAL EFFECTS
OPERATORS AND DISCHARGE PERMITS

(1)	(2)
Stream	Entertainment Programme
A	Films, commercials, television programmes (excluding any stage or similar production performed before a proximate audience) and other similar productions
B	Literary, dramatic, musical and artistic works and other similar stage productions normally performed before a proximate audience

SCHEDULE 2

[ss. 3, 4(2) & (3),
5 & 7 & Sch. 3]

SPECIAL EFFECTS OPERATOR LICENCES

(1)	(2)	(3)	(4)
Type of licence	Parts of Special Effects Materials List	Scheduled qualification	Validity period
Special Effects Operator Class I (Stream A)	Parts I, II and III	(a) A and B; or (b) A and K; or (c) A and L.	24 months
Special Effects Operator Class II (Stream A)	Parts II and III	(a) C and D; or (b) C and K; or (c) C and L.	24 months

Special Effects Assistant (Stream A)	Parts I, II and III	K	24 months
Special Effects Operator (Stream B)	Parts II and III	(a) E and F; or (b) E and K; or (c) E and L.	24 months
Special Effects Assistant (Stream B)	Parts II and III	K	24 months
Special Effects Operator (Stream A Short term)	Parts I, II and III	G	6 months or less
Special Effects Operator (Stream B Short term)	Parts II and III	H	6 months or less
Special Effects Assistant (Stream A Short term)	Parts I, II and III	I	6 months or less
Special Effects Assistant (Stream B Short term)	Parts II and III	J	6 months or less

SCHEDULE 3

[s. 5]

SCHEDULED QUALIFICATIONS

1. For the purposes of section 5 of this Regulation and Schedule 2, the qualifications for being eligible to apply for a special effects operator licence are as follows -

- A Possession of a Special Effects Operator Class II (Stream A) licence or equivalent.
- B Relevant experience as a holder of a Special Effects Operator Class II (Stream A) licence or equivalent of not less than 2 years.
- C Possession of a Special Effects Assistant (Stream A) licence or equivalent.
- D Relevant experience as a holder of a Special Effects Assistant (Stream A) licence or equivalent of not less than 2 years.
- E Possession of a Special Effects Assistant (Stream B) licence or equivalent.
- F Relevant experience as a holder of a Special Effects Assistant (Stream B) licence or equivalent of not less than 2 years.
- G A licence issued by a competent authority equivalent to -
 - (a) a Special Effects Operator Class I (Stream A) licence; or
 - (b) a Special Effects Operator Class II (Stream A) licence; or

- (c) a Special Effects Operator (Stream A Short term) licence.
- H A licence issued by a competent Authority equivalent to -
 - (a) a Special Effects Operator (Stream B) licence; or
 - (b) a Special Effects Operator (Stream B Short term) licence.
- I A licence issued by a competent authority equivalent to -
 - (a) a Special Effects Assistant (Stream A) licence; or
 - (b) a Special Effects Assistant (Stream A Short term) licence.
- J A licence issued by a competent Authority equivalent to -
 - (a) a Special Effects Assistant (Stream B) licence; or
 - (b) a Special Effects Assistant (Stream B Short term) licence.
- K Completion of a training course approved by the Authority.
- L Any other experience relevant to the operation of the licence being applied for to the satisfaction of the Authority.

2. In section 1 -

"relevant experience" (有關經驗) means such experience as may from time to time be recognized by the Authority as being relevant to the operation of a special effects operator under this Regulation.

SCHEDULE 4

[s. 11]

DISCHARGE PERMITS NOT REQUIRED FOR
NON-PYROTECHNIC SPECIAL EFFECTS MATERIALS

A discharge permit is not required for the discharge of non-pyrotechnic special effects materials if -

- (a) only non-pyrotechnic special effects materials listed under Division B or C in Part III of the Special Effects Materials List are to be discharged; and
- (b) such materials are not used in conjunction with or ignited by any pyrotechnic special effects materials or liquefied petroleum gas; and
- (c) in relation to materials listed under Division B in Part III of the Special Effects Materials List, the quantity of each of such materials specified by reference to the relevant columns of the tables to the relevant regulations under the Dangerous Goods (General) Regulations (Cap. 295 sub. leg.) as set out in columns B and A of the following table respectively does not exceed the quantity specified in the relevant columns of the corresponding tables to the corresponding regulations as set out opposite thereto in column C.

A	B	C
Relevant regulation under the Dangerous Goods (General) Regulations (Cap. 295 sub.leg.)	Relevant column of the table to the relevant regulation in which materials specified	Relevant column of the table to the relevant regulation in which quantity specified

74(1)	1 st	2 nd
84(6)	1 st	7 th
92(6)	1 st	7 th
99(6)	1 st	7 th
139(6)	1 st	7 th
153(6)	1 st	7 th
159(5)	1 st	6 th
170(5)	1 st	6 th
171B	1 st	2 nd
176(6)	1 st	7 th

Entertainment Special Effects
Licensing Authority

2000

Explanatory Note

The object of this Regulation is to provide for the prerequisite conditions required and the procedures to be followed with respect to applications for various licences and permits under the Entertainment Special Effects Ordinance (Cap. 560) and for the better carrying into effect of the provisions and purposes of that Ordinance.

ENTERTAINMENT SPECIAL EFFECTS (FEES) REGULATION

(Made by the Entertainment Special Effects Licensing Authority under section 26 of the Entertainment Special Effects Ordinance (Cap. 560) with the approval of the Secretary for Information Technology and Broadcasting and section 29 of the Interpretation and General Clauses Ordinance (Cap. 1))

1. Commencement

This Regulation shall come into operation on a day to be appointed by the Entertainment Special Effects Licensing Authority by notice published in the Gazette.

2. Fees

The fees specified in the Schedule shall be payable for the purposes of the Ordinance.

SCHEDULE

[s. 2]

Item	Particular	Fee \$
1.	Issue of discharge permit under section 11(4) of the Ordinance	490
2.	Issue of conveyance permit under section 22(2) of the Ordinance	350
3.	In respect of Special Effects Operator Class I (Stream A) licence -	
	(a) issue under section 6(5) or renewal under section 47(5) of the Ordinance	1,710
	*(b) assessment under section 5(3)(a) of the Regulation	1,500

4. In respect of Special Effects Operator Class II (Stream A) licence -
 - (a) issue under section 6(5) or renewal under section 47(5) of the Ordinance 1,260
 - *(b) assessment under section 5(3)(a) of the Regulation 1,500

5. In respect of Special Effects Assistant (Stream A) licence -
 - (a) issue under section 6(5) or renewal under section 47(5) of the Ordinance 590
 - *(b) assessment under section 5(3)(a) of the Regulation 560

6. In respect of Special Effects Operator (Stream B) licence -
 - (a) issue under section 6(5) or renewal under section 47(5) of the Ordinance 1,480
 - *(b) assessment under section 5(3)(a) of the Regulation 1,500

7. In respect of Special Effects Assistant (Stream B) licence -
 - (a) issue under section 6(5) or renewal under section 47(5) of the Ordinance 590
 - *(b) assessment under section 5(3)(a) of the Regulation 560

Regulation

8. In respect of Special Effects Operator
(Stream A Short term) licence -
- | | |
|---------------------------------------------------------------------------------|-------|
| (a) issue under section 6(5) or renewal
under section 47(5) of the Ordinance | 1,710 |
| *(b) assessment under section 5(3)(b) of the
Regulation | 1,500 |
9. In respect of Special Effects Operator
(Stream B Short term) licence -
- | | |
|---------------------------------------------------------------------------------|-------|
| (a) issue under section 6(5) or renewal
under section 47(5) of the Ordinance | 1,710 |
| *(b) assessment under section 5(3)(b) of the
Regulation | 1,500 |
10. In respect of Special Effects Assistant
(Stream A Short term) licence -
- | | |
|---------------------------------------------------------------------------------|-----|
| (a) issue under section 6(5) or renewal
under section 47(5) of the Ordinance | 590 |
| *(b) assessment under section 5(3)(b) of the
Regulation | 560 |
11. In respect of Special Effects Assistant
(Stream B Short term) licence -
- | | |
|---------------------------------------------------------------------------------|-----|
| (a) issue under section 6(5) or renewal
under section 47(5) of the Ordinance | 590 |
|---------------------------------------------------------------------------------|-----|

	* (b) assessment under section 5(3)(b) of the Regulation	560
12.	Issue of pyrotechnic special effects materials supplier licence under section 19(4) or renewal under section 47(5) of the Ordinance	7,730
*13.	Issue of non-movable pyrotechnic special effects materials store licence under section 29(a) of the Regulation or renewal under section 47(5) of the Ordinance	7,460
*14.	Issue of movable pyrotechnic special effects materials store licence under section 29(b) of the Regulation or renewal under section 47(5) of the Ordinance	850
15.	Issue of replacement licence or permit	140
+16.	Alterations to particulars on licence or permit	140
17.	Issue of certified copy of licence or permit	140

Notes * "the Regulation" means the Entertainment Special Effects (General) Regulation (Cap. 560 sub. leg.)

+ An assessment fee as set out in items 3(b), 4(b), 5(b), 6(b), 7(b), 8(b), 9(b), 10(b) and 11(b) may also be payable for the alteration of the particulars in respect of the permitted scope of operation specified in a special effects operator licence.

Entertainment Special Effects
Licensing Authority

2000

Explanatory Note

This Regulation specifies the fees payable under the Entertainment Special Effects Ordinance (Cap. 560).

ENTERTAINMENT SPECIAL EFFECTS MATERIALS LIST REGULATION

(Made by the Entertainment Special Effects Licensing Authority under section 26 of the Entertainment Special Effects Ordinance (Cap. 560) with the approval of the Secretary for Information Technology and Broadcasting)

1. Commencement

This Regulation shall come into operation on a day to be appointed by the Entertainment Special Effects Licensing Authority by notice published in the Gazette.

2. Special Effects Materials List

The Special Effects Materials List is set out in the Schedule.

SCHEDULE

[s. 2]

THE SPECIAL EFFECTS MATERIALS LIST

PART I

PYROTECHNIC SPECIAL EFFECTS MATERIALS

Item	Description
1.	Soft detonators
2.	Special effects detonating cord
3.	Special effects shaped charges
4.	Special effects shock tubing
5.	Lifters
6.	Pre-assembled pyrotechnic special effects devices including cable cutters and explosive bolts

7. Simulated phosphorus and similar devices
8. Other materials which are designed to produce heat, light, sound, gas, smoke, or a combination of these effects as a result of a self-sustaining and self-contained exothermic chemical reaction by combustion, deflagration or detonation

PART II

PYROTECHNIC SPECIAL EFFECTS MATERIALS

Item	Description
1.	Black powder composition charges and devices
2.	Smokeless powder charges and devices
3.	Trail powder charges and devices
4.	Two component (or binary system) flash powder composition charges and devices
5.	Nitrated cellulose including flash paper, flash cotton, flash string
6.	Smoke composition charges and devices including smoke cookies, smoke granules, smoke pellets, smoke candles, smoke pots, smoke signals and smoke grenades
7.	Pyrotechnic fuses including Visco fuses, quick matches, black matches, arcing matches and silver matches
8.	Electric matches
9.	Pre-assembled pyrotechnic special effects devices other than cable cutters and explosive bolts
10.	Igniter cord

11. Igniters
12. Squibs other than detonators
13. Bullet hits other than detonators

PART III

NON-PYROTECHNIC SPECIAL EFFECTS MATERIALS

Division A

Liquefied petroleum gas (LPG) within the meaning of the Gas Safety Ordinance (Cap. 51)

Division B

Dangerous goods other than those in Category 1 of the Schedule to the Dangerous Goods (Application and Exemption) Regulations (Cap. 295 sub. leg.)

Division C

Anthracene

Lycopodium

Entertainment Special Effects

Licensing Authority

2000

Explanatory Note

This Regulation sets out the special effects materials as defined in the Entertainment Special Effects Ordinance (Cap. 560) which may not be supplied, used, conveyed or stored except under and in accordance with a licence or permit issued by the Entertainment Special Effects Licensing Authority.

An Outline of the Licensing System for Special Effects Operators

Under the new regulatory system, two streams of special effects operator licences will be issued, namely, Stream A licences for films and television programmes and Stream B licences for theatrical performance. For both streams, special effects operators will be graded by their level of professional competence. There will be three different grades for Stream A licence (i.e. Special Effects Operators (SEO) Class I (Stream A), SEO Class II (Stream A) and Special Effects Assistant (SEA) (Stream A)) and two grades for Stream B licence (i.e. SEO (Stream B) and SEA (Stream B)). The validity period of these types of licence will be two years. The Authority will also issue short term licences under Stream A and Stream B, which will be valid for a period of up to six months, to cater for cases where a licence is needed for only a short period of time, e.g. where an overseas expert is engaged to produce special effects in Hong Kong.

2. The basic eligibility criteria for the different types of special effects operator licence are as follows -

- (a) SEO Class I (Stream A): a minimum of two years of active work as an SEO Class II (Stream A) or equivalent;
- (b) SEO Class II (Stream A): a minimum of two years of active work as an SEA (Stream A) or equivalent;
- (c) SEA (Stream A): completion of a basic training course approved by the Authority;
- (d) SEO (Stream B): a minimum of two years of active work as an SEA (Stream B) or equivalent;
- (e) SEA (Stream B): completion of a basic training course approved by the Authority;
and
- (f) SEO (Stream A Short term), SEO (Stream B Short term), SEA (Stream A Short term) and SEA (Stream B Short term): possession of proven qualifications.

The duration of work experience required (i.e. two years) may be reduced if the applicant has completed an approved training course or has acquired other experience relevant to the operation of the licence being applied for to the satisfaction of the Authority. Where appropriate, an assessment of an applicant's professional competence by means of a written examination, an interview and a physical demonstration may be required by the Authority.

**The Government of the Hong Kong
Special Administrative Region**

**Code of Practice
on the
Use, Storage and Conveyance
of
Special Effects Materials**

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1. Scope

1.1 This Code of Practice is issued under section 27(1)(a) of the Entertainment Special Effects Ordinance (the Ordinance) by the Entertainment Special Effects Licensing Authority (the Authority). The purpose of this document is to ensure that special effects operators, production companies and other relevant persons are aware of their obligations with regard to the safe use, storage and conveyance of special effects materials for the production of entertainment special effects. It also provides guidance for good practice to the special effects operators.

1.2 Under section 28 of the Ordinance, failure on the part of any person to observe any provision of a code of practice shall not of itself render that person liable to criminal proceedings of any kind. However, in any legal proceedings, if the court is satisfied that a provision of a code of practice is relevant to determining a matter that is in issue in the proceedings, proof that the person contravened or did not contravene a relevant provision of the code may be relied on by any party as tending to establish or negate that matter. Besides, non-compliance of a code of practice may also lead to disciplinary actions to be taken by the Authority, including warning letters for minor incidents and for serious incidents, suspension or revocation of a licence or a permit issued under the Ordinance.

1.3 In this document, the term “pyrotechnic materials” is used instead of “pyrotechnic special effects materials” for simplicity. In the context of this document, these two terms are interchangeable.

2. Using Special Effects Materials under a Stream A Discharge Permit

2.1 Introduction

2.1.1 Pursuant to Schedule 1 of the Entertainment Special Effects (General) Regulation (the Regulation), use of special effects materials for the production of entertainment special effects is classified into two streams. This section deals with the use of special effects materials under a Stream A discharge permit. A Stream A discharge permit is issued for the production of special effects in films, commercials, television episodes and programmes (excluding any stage or similar productions performed before a proximate audience) and other similar productions. The use of special effects materials under a Stream B discharge permit will be dealt with in Section 3.

2.1.2 The operator-in-charge referred to in this section means the special effect operator named in a discharge permit issued under section 11 of the Ordinance.

2.1.3 Section 11 of the Regulation stipulates that a discharge permit is not required for the discharge of non-pyrotechnic special effects materials under certain conditions. Nevertheless, the guidance given in this section is still relevant to such discharge, but any reference to the operator-in-charge should then refer to the special effects operator(s) responsible for the discharge of such non-pyrotechnic special effects materials.

2.2 General Obligation

2.2.1 Safety of the public, performers, special effects operators and support personnel is the prime consideration in all events involving the use of special effects materials. In order to ensure the safety of all concerned, the operator-in-charge named in a discharge permit has the final decision in all matters pertaining to the discharge of the special effects materials.

2.2.2 If unforeseen hazards develop with regard to the people concerned, properties, weather conditions, the firing venue or the special effects materials, the operator-in-charge and his assistants have the responsibility to stop the production of a particular special effect or all special effects until safety is restored, regardless of the pressure from the production personnel, performers or other sources.

2.2.3 Although the operator-in-charge is responsible for the use of special effects materials, including the final decision to discharge, under section 29(4) of the Ordinance, the Authority and any officer referred to in section 29(1) of the Ordinance may prevent or stop the use of special effects materials when the circumstances under which such use is determined by him to be likely to endanger life or cause serious injury to property.

2.2.4 Notwithstanding any discharge permit issued by the Authority, before allowing special effects materials to be used on any premises, the production company shall obtain permission from the owner of the premises or his agent. In case of a vessel, the permission of the master or person in charge of the vessel shall be obtained. The operator-in-charge responsible for the use of the special effects materials shall verify with the production company that such permission has been duly obtained prior to using the materials.

2.2.5 The production company shall give sufficient advance notice and details of the intended special effects to the operator-in-charge to allow him to safely plan the special effects. If significant changes are made to these plans, then additional time must be provided to safely accommodate the changes.

2.2.6 The production company shall allocate sufficient time for the operator-in-charge and his assistants to safely perform their work including the conveying, storing, assembling, firing and disposing of all special effects materials. While handling such materials, they shall not be interrupted or distracted by the production company from focusing on their work, and shall never be pressured to hurry.

2.2.7 The production company shall obtain permissions from the owner of the premises and/or relevant government departments so as to enable the operator-in-charge to prevent unauthorised persons gaining access to the discharge area until completion of firing and the operator-in-charge has determined the area to be safe and secure.

2.2.8 The production company and the operator-in-charge shall provide effective measures to reduce or remove nuisance caused by the discharge of special effects materials.

2.2.9 The production company and the operator-in-charge shall provide first aid facility at the firing venue not less than those specified in the Occupational Safety and Health Ordinance (Cap. 509).

2.2.10 The production company and all special effects operators shall ensure that there is no breach of the Dangerous Goods Ordinance (Cap. 295) and its subsidiary legislation with respect to the use, storage and conveyance of non-pyrotechnic special effects materials other than liquefied petroleum gas.

2.2.11 The production company and all special effects operators shall ensure that there is no breach of the Gas Safety Ordinance (Cap. 51) and its subsidiary legislation with respect to the storage and conveyance of liquefied petroleum gas (LPG), and shall observe additional requirements for the safe use of LPG which are given in the Code of Practice on the Use of LPG for the Production of Special Effects (CP2).

2.3 General Safety Requirements

2.3.1 No special effects operators shall use special effects materials while under the influence of intoxicating beverages, alcohol, narcotics, prescription or non-prescription drugs or other substances that can impair judgement or movement. The operator-in-charge has the responsibility of ensuring his assistants to comply with this requirement.

2.3.2 The production company shall ensure that any platform, pit or opening, or any container containing a scalding, corrosive or poisonous substance located within a set or shooting location must be fenced to a height of 900 mm or where it is not fenced, is sufficiently well protected.

2.3.3 If the set is inside an enclosure, the production company shall ensure that the area is adequately ventilated by fresh air.

2.3.4 The production company and the operator-in-charge shall ensure that the set is sufficiently well lighted by natural or artificial lighting during the handling and installation of special effects materials.

2.3.5 The production company shall install at the set effective means for draining the set if any activity may make the floor of the set wet or slippery.

2.3.6 No pyrotechnic materials shall be left unattended.

2.3.7 Mobile telephones, radio transmitters and other devices that may cause accidental initiation of any pyrotechnic materials shall be kept away from the pyrotechnic materials as far as practicable. As a general rule and unless otherwise specified in a discharge permit -

- (i) mobile telephones shall be switched off at least within 3.5 m of the pyrotechnic materials; and
- (ii) radio transmitters and other devices shall be switched off at least within 15 m of the pyrotechnic materials.

2.4 Fire Protection and Precautions

2.4.1 While special effects materials are being used, the operator-in-charge shall ensure that -

- (i) at least two fire extinguishers appropriate to the types of special effects materials used are readily available and located within 15 m of the materials, unless specified otherwise in a discharge permit;
- (ii) all fire hoses and additional fire extinguishing equipment as required by the Authority are in working order and readily accessible; and
- (iii) personnel who have a working knowledge of the use of the above fire extinguishing equipment are present at all times while the special effects materials are being used or removed.

2.4.2 The operator-in-charge and his assistants shall ensure that smoking is not permitted within at least 7.6 m of the area where special effects materials are used. The operator-in-charge may, if he considers it safe, allow smoking by performers as part of the act. The operator-in-charge shall ensure signs bearing the words “不准吸烟” and “No Smoking” are posted in suitable locations as close to the special effects materials as practicable.

2.4.3 The production company and the operator-in-charge shall maintain the set where special effects materials are used in a neat and orderly condition, and free of any fire nuisance that can create a fire hazard.

2.4.4 When the set is in use for shooting, the production company shall keep all doors that provide egress from the set for shooting unlocked or are otherwise fastened in such a manner that they can easily be opened from inside the set. A clearly visible sign bearing the words “出口” and “EXIT” must be located at each exit from the set. Such signs may be temporarily removed as necessary when the set appears on camera but must be promptly replaced when filming of that set is completed. Cleared areas for emergency exits must not be blocked by persons or other equipment.

2.4.5 The production company shall provide a clearly visible sign bearing the words “此路不通” and “NO EXIT” to identify false doors and similar set pieces in the set which might otherwise be mistaken for exits in the case of fire or other emergency. Such signs may be temporarily removed as necessary when the set appears on camera but must be promptly replaced thereafter.

2.4.6 The production company, the operator-in-charge and his assistants shall ensure that all means of escape from the set are maintained in a safe condition and kept free from obstruction.

2.4.7 No person shall interfere with any fire alarm systems or life safety systems or do anything to prevent those systems from being used unless they are likely to be mistakenly activated by the discharge of special effects materials. Prior to disarming or disengaging any such systems, the operator-in-charge shall notify the Fire Services Communication Centre (FSCC) at 2723 2233. The operator-in-charge shall restore all disarmed or disengaged systems to normal operating conditions as soon as the likelihood of false alarms from the use of special effects materials has passed and shall inform the FSCC accordingly.

2.5 Safety Orientation Meetings

2.5.1 Prior to any special effects activity, the operator-in-charge shall hold safety orientation meeting with all appropriate personnel including the production crew, performers, stunt performers and all special effects operators involved.

2.5.2 During the meetings, the operator-in-charge shall discuss the planned events and the intended effects, including all aspects and ramifications concerning safety issues as they relate to the safe use of special effects materials. The meetings shall also cover the things that might go wrong and the actions to be taken by various parties with respect to fire fighting and rescue of people. All parties should also be briefed of the fire evacuation plan when the fire is out of control.

2.5.3 When there is any change to the planned events, the intended effects or the use of special effects materials, the operator-in-charge shall hold another safety orientation meeting with all appropriate personnel. The production company shall allocate sufficient time for the operator-in-charge to conduct the meeting prior to the production of any special effects.

2.6 Electrical Firing Circuits

2.6.1 All electrically fired pyrotechnic circuits shall be tested before firing. They shall be tested with a blasting galvanometer or other similar test devices in which the test current is not capable of supplying more than 25 mA or more than one-fifth of the no fire current, whichever is the lesser.

2.6.2 Connecting any electric firing circuit to any power supply is prohibited until all special effects materials in the sequence are connected to firing leads and the firing area is clear of all unauthorized personnel.

2.6.3 Power sources for firing special effects materials shall be restricted to batteries or individually isolated, ungrounded generators used for firing purposes only. Commercial or house power may be used provided the firing system is electrically isolated from the commercial or house power through the use of such items as isolation transformers. Under no condition may commercial or house power be used directly for firing purposes.

2.6.4 All firing systems shall be designed to insure against accidental firing by providing a shunt or other control method in which no firing power can be applied to any firing circuits unless the special effects operator intentionally enables or arms the firing system before applying firing power.

2.6.5 All pyrotechnic materials set in or on the surface of water or other liquids shall be fired by a separate, ungrounded and uncommon two-wire circuit.

2.7 Firing Prerequisites

2.7.1 All pyrotechnic devices and other fire/fireball producing devices shall be mounted in a secure manner to maintain their proper positions and orientations so as to ensure that special effects are produced as intended when fired and any fire, fireball or debris produced does not endanger human lives, result in personal injury or damage properties. Deliberate destruction of properties or portions of the set, where destroyed as part of the special effects, shall not be considered as property damage.

2.7.2 Pyrotechnic materials shall be fired only from equipment specifically constructed for the purpose of firing pyrotechnic materials.

2.7.3 Firing systems shall not be left unattended while connected to pyrotechnic materials.

2.7.4 Where pyrotechnic materials are placed on or in contact with a performer's body, a means of shielding or containment adequate to prevent any injury to the performer shall be provided. This protection shall be sufficient to protect against the normal functioning of the pyrotechnic materials as well as any possible malfunction.

2.7.5 Converted electrical switch boxes, lamp sockets, lamp holders, plug fuses, or other similar thin-walled, brittle devices shall not be used for concussion mortars or flash pots.

2.7.6 Binary systems pyrotechnic materials shall be mixed and used in accordance with the manufacturer's instructions.

2.7.7 Binary systems pyrotechnic materials shall be mixed one unit at a time, and no more units than are needed for immediate use shall be mixed. These materials shall only be mixed in the bottles supplied by the manufacturer. No additional tools shall be used.

2.7.8 All holders shall be constructed and secured so that they remain in a fixed position when pyrotechnic materials are discharged.

2.7.9 Mortars and pots shall be constructed of materials having adequate strength such that the discharge of the pyrotechnic materials contained therein would not cause failure of the mortars or pots, or any distortion to their shapes. Distorted mortars and pots shall not be used.

2.8 Discharge of Special Effects Materials

2.8.1 Immediately before the shooting of any special effects scene, the operator-in-charge shall make a final check of wiring, positions, hookups, and special effects materials to ensure that they are in proper working order. The operator-in-charge shall also ensure that appropriate safety precautions are being provided to the performers, support personnel and other persons, and that all persons will be positioned at sufficient safety distances with adequate safety preventive measures before the discharge of the special effects materials.

2.8.2 Special effects materials shall be fired only when the area where the special effect is to occur is in clear view of the operator-in-charge or his assistant who is in direct communication with the operator-in-charge.

2.8.3 Immediately after each special effects scene and before support personnel remove any properties relating to the scene, the operator-in-charge shall verify that all pyrotechnic materials have been discharged. Any misfired pyrotechnic materials (including pyrotechnic materials that failed to fire) shall either be fired or disposed of in accordance with the manufacturers' instructions.

2.8.4 After all properties and equipment relating to a special effects scene have been removed from the firing venue, the operator-in-charge shall verify that the firing venue is free of any pyrotechnic materials.

2.8.5 All unused pyrotechnic materials shall be disposed of in accordance with the manufacturers' instructions or returned to storage as soon as possible following the production of the special effects scenes. Any unused binary system pyrotechnic materials after mixing shall be disposed of in accordance with the manufacturers' instructions.

2.8.6 Any person holding a licence or permit issued under the Ordinance shall observe the legislative requirements in Part VIII of the Regulation relating to the reporting of notifiable occurrences to the Hong Kong Police Force and the Authority. A notifiable occurrence is defined under section 40 of the Regulation as:

- (i) any theft or loss of pyrotechnic materials;
- (ii) any fire relating to special effects materials which requires emergency action by the Fire Services Department;
- (iii) any accident relating to special effects materials which results in –
 - (a) the death of a person;
 - (b) such bodily injury to a person that the person is admitted to a hospital or clinic for treatment or observation; or
 - (c) damage to any vehicle, vessel, aircraft, train, building or any other property (the destruction of properties or portions of a production set that is intended as part of the special effects is not regarded as “damage”);
- (iv) any incident of misfire (including the failure to fire) of pyrotechnic materials which requires the assistance of the Hong Kong Police Force.

2.8.7 The purpose of notifying the occurrence of a misfire to the Hong Kong Police Force under section 2.8.6 (iv) above is to enable a special effects operator to request assistance from the Explosive Ordnance Disposal Bureau of the Hong Kong Police Force in order to make safe a misfire which the special effects operator considers to be dangerous. This service is provided to ensure the safety of the public as well as the support personnel.

2.8.8 The operator-in-charge shall inform the Vessel Traffic Centre (VTC) of the Marine Department at 2858 2163 before and after discharging of special effects materials on a vessel or on shore when such discharge may impair the look-out of the other vessels in the vicinity in making an appraisal of the situation or of the risk of collision.

2.8.9 When discharging special effects materials at sea or on shore, the special effects produced shall not be mistaken to any lights, shapes or signals described as Distress Signal in Annex IV of the International Regulations for Preventing Collisions at Sea 1972 in the Schedule to the Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations (Cap. 369 sub. leg.).

3. Using Special Effects Materials under a Stream B Discharge Permit

3.1 Introduction

3.1.1 This section deals with the use of special effects materials under a Stream B discharge permit. A Stream B discharge permit is issued for the production of special effects in literary, dramatic, musical and artistic works and other similar stage productions normally performed before a proximate audience.

3.1.2 The operator-in-charge referred to in this section means the special effect operator named in a discharge permit issued under section 11 of the Ordinance.

3.1.3 Section 11 of the Regulation stipulates that a discharge permit is not required for the discharge of non-pyrotechnic special effects materials under certain conditions. Nevertheless, the guidance given in this section is still relevant to such discharge, but any reference to the operator-in-charge should then refer to the special effects operator(s) responsible for the discharge of non-pyrotechnic special effects materials.

3.2 General Obligation

3.2.1 Safety of the public, audience, performers, special effects operators and support personnel is the prime consideration in all events involving the use of special effects materials. In order to ensure the safety of all concerned, the operator-in-charge named in a discharge permit has the final decision in all matters pertaining to the discharge of the special effects materials.

3.2.2 If unforeseen hazards develop with regard to the people concerned, properties, weather conditions, the firing venue, or the special effects materials, the operator-in-charge and his assistants have the responsibility to stop the production of a particular special effect or all special effects until safety is restored, regardless of the pressure from the production personnel, performers, audience or other sources.

3.2.3 Although the operator-in-charge is responsible for the use of special effects materials, including the final decision to discharge, under section 29(4) of the Ordinance, the Authority and any officer referred to in section 29(1) of the Ordinance may prevent or stop the use of special effects materials when the circumstances under which such use is determined by him to be likely to endanger life or cause serious injury to property.

3.2.4 Notwithstanding any discharge permit issued by the Authority, before allowing special effects materials to be used on any premises, the production company shall obtain permission from the owner of the premises or his agent. In case of a vessel, the permission of the master or person in charge of the vessel shall be obtained. The operator-in-charge responsible for the use of the special effects materials shall verify with the production company that such permission has been duly obtained prior to using the materials.

3.2.5 The production company shall give sufficient advance notice and details of the intended special effects to the operator-in-charge to allow him to safely plan the special effects. If significant changes are made to these plans, then additional time must be provided to safely accommodate the changes.

3.2.6 The production company shall allocate sufficient time for the operator-in-charge and his assistants to safely perform their work including the conveying, storing, assembling, firing and disposing of all special effects materials. While handling such materials, they shall not be interrupted or distracted by the production company from focusing on their work, and shall never be pressured to hurry.

3.2.7 The production company shall obtain permissions from the owner of the premises and/or relevant government departments so as to enable the operator-in-charge to prevent unauthorised persons gaining access to the discharge area until completion of firing and the operator-in-charge has determined the area to be safe and secure.

3.2.8 The production company and the operator-in-charge shall provide effective measures to reduce or remove nuisance caused by the discharge of special effects materials.

3.2.9 The production company and the operator-in-charge shall provide first aid facility at the firing venue not less than those specified in the Occupational Safety and Health Ordinance (Cap. 509).

3.2.10 The production company and all special effects operators shall ensure that there is no breach of the Dangerous Goods Ordinance (Cap. 295) and its subsidiary legislation with respect to the use, storage and conveyance of non-pyrotechnic special effects materials other than liquefied petroleum gas.

3.3 General Safety Requirements

3.3.1 No special effects operators shall use special effects materials while under the influence of intoxicating beverages, alcohol, narcotics, prescription or non-prescription drugs or other substances that can impair judgement or movement. The operator-in-charge has the responsibility of ensuring his assistants to comply with this requirement.

3.3.2 The production company and the operator-in-charge shall ensure that the set is sufficiently well lighted by natural or artificial lighting during the handling and installation of special effects materials.

3.3.3 The production company shall install at the set effective means for draining the set if any activity may make the floor of the set wet or slippery.

3.3.4 No pyrotechnic materials shall be left unattended.

3.3.5 Mobile telephones, radio transmitters and other devices that may cause accidental initiation of any pyrotechnic materials shall be kept away from the pyrotechnic materials as far as practicable. As a general rule and unless otherwise specified in a discharge permit -

- (i) mobile telephones shall be switched off at least within 3.5 m of the pyrotechnic materials; and
- (ii) radio transmitters and other devices shall be switched off at least within 15 m of the pyrotechnic materials.

3.4 Fire Protection and Precautions

3.4.1 While special effects materials are being used, the operator-in-charge shall ensure that -

- (i) adequate fire extinguishers appropriate to the types of special effects materials used are readily available and located in the vicinity of the discharge area; and
- (ii) personnel who have a working knowledge of the use of the above fire extinguishing equipment are present at all times while the special effects materials are being used or removed.

3.4.2 The operator-in-charge and his assistants shall ensure that smoking is not permitted within at least 7.6 m of the area where special effects materials are used. The operator-in-charge may, if he considers it safe, allow smoking by performers as part of the act. The operator-in-charge shall ensure signs bearing the words “不准吸烟” and “No Smoking” are posted in suitable locations.

3.4.3 The production company and the operator-in-charge shall maintain the set where special effects materials are used in a neat and orderly condition, and free of any fire nuisance that can create a fire hazard.

3.4.4 The production company, the operator-in-charge and his assistants shall ensure that all means of escape from the set are maintained in a safe condition and kept free from obstruction.

3.4.5 No person shall interfere with any fire alarm systems or life safety systems or do anything to prevent those systems from being used unless they are likely to be mistakenly activated by the discharge of special effects materials. Prior to disarming or disengaging any such systems, the operator-in-charge shall notify the Fire Services Communication Centre (FSCC) at 2723 2233. The operator-in-charge shall restore all disarmed or disengaged systems to normal operating conditions as soon as the likelihood of false alarms from the use of special effects materials has passed and shall inform the FSCC accordingly.

3.5 Safety Briefing and Rehearsals

3.5.1 The operator-in-charge shall warn all performers and support personnel that they are exposed to a hazardous situation when performing or otherwise carrying out their responsibilities in the vicinity of the special effects materials. These performers and support personnel shall be briefed of the planned events and the intended effects. They shall also be briefed of the things that might go wrong and the actions to be taken by various parties when these occur.

3.5.2 Prior to the actual performance, the operator-in-charge shall conduct a rehearsal to demonstrate the intended special effects, the position and the interaction of the performers.

3.5.3 When there is any change to the originally planned event that may pose higher hazard levels to the audience, the performers or other people concerned (such as changes to the use of special effects materials, the position or the interaction of the performers), the operator-in-charge shall conduct another rehearsal prior to the actual performance.

3.5.4 The rehearsals shall be scheduled with sufficient time allowed to reset or reload the pyrotechnic materials before the arrival of the audience.

3.6 Electrical Firing Circuits

3.6.1 All electrically fired pyrotechnic circuits shall be tested before firing. They shall be tested with a blasting galvanometer or other similar test devices in which the test current is not capable of supplying more than 25 mA or more than one-fifth of the no fire current, whichever is the lesser.

3.6.2 Connecting any electric firing circuit to any power supply is prohibited until all special effects materials in the sequence are connected to firing leads and the firing area is clear of all unauthorized personnel.

3.6.3 Power sources for firing special effects materials shall be restricted to batteries or individually isolated, ungrounded generators used for firing purposes only. Commercial or house power may be used provided the firing system is electrically isolated from the commercial or house power through the use of such items as isolation transformers. Under no condition may commercial or house power be used directly for firing purposes.

3.6.4 All firing systems shall be designed to insure against accidental firing by providing a shunt or other control method in which no firing power can be applied to any firing circuits unless the special effects operator intentionally enables or arms the firing system before applying firing power.

3.6.5 All pyrotechnic materials set in or on the surface of water or other liquids shall be fired by a separate, ungrounded and uncommon two-wire circuit.

3.7 Firing Prerequisites

3.7.1 All pyrotechnic devices and other fire/fireball producing devices shall be mounted in a secure manner to maintain their proper positions and orientations so as to ensure that special effects are produced as intended when fired and any fire, fireball or debris produced does not endanger human lives, result in personal injury or damage properties.

3.7.2 Pyrotechnic materials shall be fired only from equipment specifically constructed for the purpose of firing pyrotechnic materials.

3.7.3 Firing systems shall not be left unattended while connected to pyrotechnic materials.

3.7.4 Where pyrotechnic materials are placed on or in contact with a performer's body, a means of shielding or containment adequate to prevent any injury to the performer shall be provided. This protection shall be sufficient to protect against the normal functioning of the pyrotechnic materials as well as any possible malfunction.

3.7.5 Converted electrical switch boxes, lamp sockets, lamp holders, plug fuses, or other similar thin-walled, brittle devices shall not be used for concussion mortars or flash pots.

3.7.6 Binary systems pyrotechnic materials shall be mixed and used in accordance with the manufacturer's instructions.

3.7.7 Binary systems pyrotechnic materials shall be mixed one unit at a time, and no more units than are needed for immediate use shall be mixed. These materials shall only be mixed in the bottles supplied by the manufacturer. No additional tools shall be used.

3.7.8 All holders shall be constructed and secured so that they remain in a fixed position when pyrotechnic materials are discharged.

3.7.9 Mortars and pots shall be constructed of materials having adequate strength such that the discharge of the pyrotechnic materials contained therein would not cause failure of the mortars or pots, or any distortion to their shapes. Distorted mortars and pots shall not be used.

3.7.10 Rotating pyrotechnic devices, such as wheels and saxons, shall be mounted securely so that their rotation does not cause the holder to fail.

3.7.11 Flares shall be placed so that any hazardous debris falls into a safe, flame-resistant area.

3.7.12 Comets, mines and rockets shall be fired so that the trajectory of any projected pyrotechnic materials or debris is not carried over or does not fall into the audience.

3.7.13 Waterfalls shall be placed for firing so that no flammable materials are within the fallout area.

3.7.14 Concussion mortars shall be placed in a secure location that prevents the audience and support personnel from gaining access to the location. The concussion mortars can be secured by placing them under the stage or by placing them behind barricades.

3.8 Discharge of Special Effects Materials

3.8.1 Immediately before the performance, the operator-in-charge shall make a final check of wiring, positions, hookups, and special effects materials to ensure that they are in proper working order. The operator-in-charge also shall ensure that appropriate safety precautions are being provided to the performers, support personnel and other persons, and that all persons will be positioned at sufficient safety distances with adequate safety preventive measures before the discharge of the special effects materials.

3.8.2 Unless specified otherwise in a discharge permit, the production company shall, at the commencement of a performance, announce to the audience attending the performance in live of the use of pyrotechnic materials during the performance including a warning of loud report if concussion effects will be included.

3.8.3 Special effects materials shall be fired only when the area where the special effect is to occur is in clear view of the operator-in-charge or his assistant who is in direct communication with the operator-in-charge.

3.8.4 Immediately after each performance and before support personnel remove any properties relating to a special effects scene, the operator-in-charge shall verify that all pyrotechnic materials have been discharged. Any misfired pyrotechnic materials (including pyrotechnic materials that failed to fire) shall either be fired or disposed of in accordance with the manufacturers' instructions.

3.8.5 After all properties and equipment relating to a special effects scene have been removed from the firing venue, the operator-in-charge shall verify that the firing venue is free of any pyrotechnic materials.

3.8.6 All unused pyrotechnic materials shall be disposed of in accordance with the manufacturers' instructions or returned to storage as soon as possible following the production of the special effects scenes. Any unused binary system pyrotechnic materials after mixing shall be disposed of in accordance with the manufacturers' instructions.

3.8.7 Where pyrotechnics materials are discharged, the quantity of smoke developed shall not obscure the visibility of exit signs or paths of egress travel.

3.8.8 The production company shall ensure that the firing venue is sufficiently ventilated if special effects materials are discharged indoor.

3.8.9 Any person holding a licence or permit issued under the Ordinance shall observe the legislative requirements in Part VIII of the Regulation relating to the reporting of notifiable occurrences to the Hong Kong Police Force and the Authority. A notifiable occurrence is defined under section 40 of the Regulation as:

- (i) any theft or loss of pyrotechnic materials;
- (ii) any fire relating to special effects materials which requires emergency action by the Fire Services Department;
- (iii) any accident relating to special effects materials which results in –
 - (a) the death of a person;
 - (b) such bodily injury to a person that the person is admitted to a hospital or clinic for treatment or observation; or
 - (c) damage to any vehicle, vessel, aircraft, train, building or any other property (the destruction of properties or portions of a production set that is intended as part of the special effects is not regarded as “damage”);

- (iv) any incident of misfire (including the failure to fire) of pyrotechnic materials which requires the assistance of the Hong Kong Police Force.

3.8.10 The purpose of notifying the occurrence of a misfire to the Hong Kong Police Force under section 3.8.9 (iv) above is to enable a special effects operator to request assistance from the Explosive Ordnance Disposal Bureau of the Hong Kong Police Force in order to make safe a misfire which the special effects operator considers to be dangerous. This service is provided to ensure the safety of the public as well as the support personnel.

3.8.11 The operator-in-charge shall inform the Vessel Traffic Centre (VTC) of the Marine Department at 2858 2163 before and after discharging of special effects materials on a vessel or on shore when such discharge may impair the look-out of the other vessels in the vicinity in making an appraisal of the situation or of the risk of collision.

3.8.12 When discharging special effects materials at sea or on shore, the special effects produced shall not be mistaken to any lights, shapes or signals described as Distress Signal in Annex IV of the International Regulations for Preventing Collisions at Sea 1972 in the Schedule to the Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations (Cap. 369 sub. leg.).

4. Storage of Pyrotechnic Materials

4.1 Introduction

This section provides guidance for the safe storage of pyrotechnic materials. The “store” referred to in this section means a location or a container for the storage of pyrotechnic materials where a store licence has been issued under section 24 of the Ordinance. The operator-in-charge referred to in this section means the special effects operator named in the store licence or any replacement operator-in-charge appointed under section 35 of the Regulation.

4.2 General Safety Requirements

4.2.1 All pyrotechnic materials shall be stored at all times in a store licensed or approved by the Authority unless they are being conveyed or used.

4.2.2 All pyrotechnic materials shall be stored in accordance with compatibility requirements specified in the store licence issued by the Authority.

4.2.3 A non-movable store shall be provided with sufficient ventilation and the pyrotechnic materials stored therein shall be arranged so that uniform circulation of air is ensured.

4.2.4 Where lighting is necessary within a store, electric safety lights or electric safety lanterns to the satisfaction of the Authority shall be used.

4.2.5 There shall be no exposed ferrous metal on the interior of a store. The floor of a store shall be constructed of wood or other equivalent material. Floors constructed of materials that can cause sparks shall be covered with a nonsparking surface.

4.2.6 Floors of a store shall be swept regularly and kept clean, dry, and free of grit, dust, empty packing materials and rubbish. Brooms and other cleaning utensils shall not have spark-producing metal parts.

4.2.7 Spills of pyrotechnic composition shall be cleaned up and removed immediately from a store. The spilled material shall be destroyed in a safe and appropriate manner.

4.2.8 Mixing, assembling, wiring or working with any pyrotechnic materials or pyrotechnic composition is prohibited in any store where pyrotechnic materials are stored.

4.2.9 No special effects operators, employees or other persons shall be permitted to enter a store while in possession of or under the influence of intoxicating beverages, alcohol, narcotics, prescription or non-prescription drugs or other substances that can impair judgement or movement. The person holding a store licence shall ensure that all persons comply with this requirement.

4.2.10 Boxes of pyrotechnic materials shall be piled in a store in a stable manner and laid flat with top side up. Boxes shall never be piled too high that it may cause difficulty to handle the top box.

4.2.11 Boxes of pyrotechnic materials shall not be opened, unpacked, or repacked inside of a store or in close proximity to other pyrotechnic materials. The boxes must be properly closed before returning them to the store. However, it is permissible to open a box within a store for inspection of its contents or for the removal of a small quantity of pyrotechnic materials contained therein.

4.2.12 Since pyrotechnic materials deteriorate with age, attention should always be paid to the turnover of stock. The older stock should be used first on a first-in-first-out (FIFO) basis. Care must be taken not to leave old stock at the back of a store when a new supply is brought in.

4.2.13 Mobile telephones, radio transmitters and other devices that may cause accidental initiation of pyrotechnic materials shall not be permitted inside of a store.

4.3 Fire Protection and Precautions

4.3.1 Repair work shall not be carried out inside a store unless all pyrotechnic materials have been removed and all floors swept and clean.

4.3.2 If there is a possibility of causing sparks or fire in the course of repairing the exterior of a store, all pyrotechnic materials shall be removed before commencement of the repair work.

4.3.3 Smoking, matches, open flames, spark-producing devices, and firearms shall not be permitted inside of or within 15 m of a store.

4.3.4 Signs bearing the words “不准吸烟” and “No Smoking” must be fixed on the external face of the door to a non-movable store and also at suitable locations outside and inside of the store.

4.3.5 Appropriate portable fire extinguishers and other fire fighting equipment shall be provided in readily accessible locations in or near a store or the designated area. Employees working at the store should familiarise themselves with the use of fire fighting equipment.

4.3.6 The operator-in-charge of a store shall prepare an emergency action plan that provides specific directions to be followed in the event of a fire or explosion of the store or the designated area. The operator-in-charge shall also brief employees working at the store thoroughly on the emergency action plan.

4.3.7 The emergency plan shall include instructions on the use of portable fire extinguishers and the identification of those fires on which the extinguishers can be used effectively. The emergency plan shall also include an evacuation plan and the direction for all personnel to abandon fire-fighting efforts if the fire appears to be spreading to the pyrotechnic materials.

4.3.8 Binary system pyrotechnic materials shall be stored in a manner that the two components are kept separate from each other in different containers.

4.4 Storage of Pyrotechnic Materials on the Set

4.4.1 A movable store containing pyrotechnic materials shall never be left unattended at any one time.

4.4.2 A movable store when used as a storage of pyrotechnic materials on the set or firing venue shall not be exposed to direct sunlight and shall be placed at a secure and safe location and free of any conditions that can create a fire hazard.

5. Conveyance of Pyrotechnic Materials

5.1 Introduction

5.1.1 Section 21 of the Ordinance provides that no person shall convey any pyrotechnic materials by land or water without a conveyance permit unless otherwise exempted by regulations. Section 23 of the Regulation specifies the circumstances where a conveyance permit is not required.

5.1.2 Whether or not a conveyance permit is required, any persons engaged in or responsible for the loading, unloading or carriage of pyrotechnic materials shall observe the guidance provided in this section for the safe conveyance of pyrotechnic materials.

5.2 General Safety Requirements

5.2.1 Pyrotechnic materials shall be conveyed in accordance with the compatibility requirements specified below:

- (i) the United Nations Recommendations on the Transport of Dangerous Goods;
- (ii) the International Maritime Dangerous Goods Code; or
- (iii) the conditions stipulated in a conveyance permit or otherwise approved by the Authority.

5.2.2 Unless specified otherwise in a conveyance permit, special effects operator carrying pyrotechnic materials in a vehicle or vessel shall provide at least one efficient fire extinguisher, readily available for immediate use in the vehicle or vessel.

5.2.3 Any vehicle or vessel carrying pyrotechnic materials shall never be left unattended at any one time.

5.2.4 No person shall be permitted to load, unload or carry any pyrotechnic materials while in possession of or under the influence of intoxicating beverages, alcohol, narcotics, or prescription or non-prescription drugs or other substances that can impair judgement or movement. The person holding a conveyance permit and/or the special effects operator supervising the conveyance shall ensure that all persons comply with this requirement.

5.2.5 While loading, unloading or carriage of pyrotechnic materials is in progress, all persons engaged in the loading, unloading or carriage shall –

- (i) not smoke or allow any person to smoke within 15 m of the vehicle or vessel; and
- (ii) take all necessary precautions for the prevention of fire, explosions or other accidents, and for preventing unauthorised persons from having access to the pyrotechnic materials being loaded or loaded.

5.2.6 Any persons engaged in the loading, unloading and carriage of pyrotechnic materials shall have received a briefing necessary to perform the work safely. Such briefing, which may be formal, informal or simply on the job, should be provided by a licensed special effects operator, a licensed supplier or other competent persons.

5.2.7 Any container containing pyrotechnic materials shall be handled with care to prevent undue impact or exposure to excessive heat, flame or direct sunlight.

5.2.8 Designated items shall be conveyed in a separate compartment from other pyrotechnic materials. Detonators shall be conveyed in a separate compartment from other designated items and other pyrotechnic materials.

5.2.9 Binary system pyrotechnic materials shall be conveyed in such a manner that the two components are kept separate from each other in different containers.

5.3 Conveyance of Pyrotechnic Materials in a Vehicle

5.3.1 No person shall convey any pyrotechnic materials in any vehicle, unless the vehicle is in good working order and roadworthy.

5.3.2 A vehicle carrying pyrotechnic materials shall be operated at a speed and in a manner conforming to the Road Traffic Ordinance (Cap. 374) and other relevant subsidiary legislation, and that the speed is consistent with road and weather conditions.

5.3.3 Where a conveyance permit is required for the conveyance of any pyrotechnic materials, a vehicle carrying the pyrotechnic materials shall bear signs including placards, signals and flags in the form and manner specified in the conveyance permit.

5.3.4 In the case where a conveyance permit is not required, the special effects operators responsible for the conveyance shall, as far as practicable, attach placards at the rear or sides of the vehicle containing pyrotechnic materials. The placards should bear the highest hazard level imposed by the pyrotechnic materials being conveyed. These placards shall be removed when the vehicle does not carry any pyrotechnic materials.

5.3.5 Before a vehicle is being loaded with pyrotechnic materials, the special effects operator supervising the conveyance shall confirm with the driver of the vehicle that the fuel in the fuel tank is sufficient for the whole journey. In cases where refuelling is needed due to exceptional and unforeseen circumstances, the engine of the vehicle shall be stopped, the ignition shut off and the tank filled only at a place where filling will not pose a hazard to public safety. In any case, filling of the fuel tank at a fuel station or through a fuel truck is prohibited.

5.3.6 The driver and the special effects operators on board of a vehicle carrying pyrotechnic materials shall notify as soon as practicable the Hong Kong Police Force of the details of the materials on board should the vehicle be involved in any traffic accident.

5.4 Conveyance of Pyrotechnic Materials in a Vessel

5.4.1 Conveyance of pyrotechnic materials in a vessel shall comply with the provisions of the Dangerous Goods (Shipping) Regulations (Cap. 295 sub. leg.).

5.4.2 A vessel intended for conveyance of pyrotechnic materials not exceeding those specified in section 25(2) of the Regulation shall be of a type approved by the Director of Marine, the list of which is available in the office of the Authority. The master, the person in charge of the vessel and the special effects operators supervising the conveyance of pyrotechnic materials shall comply with the following requirements:

- (i) the vessel is in good working order, seaworthy and possess a valid licence issued by the Director of Marine;
- (ii) no passengers other than those holding a valid special effects operator licence shall be conveyed in the vessel at the same time as the vessel is conveying pyrotechnic materials;
- (iii) the special effects operators shall not permit the loading or unloading of pyrotechnic materials in inclement weather;
- (iv) the special effects operators shall give sufficient advance notice with details of the pyrotechnic materials to be conveyed to the master or the person in charge of the vessel to allow the installation of the necessary signals or lights in the vessel for the conveyance;
- (v) the special effects operators shall brief the master or the person in charge of the vessel on safety issues before and during the conveyance including the danger of using radio transmitters near the pyrotechnic materials and smoking in the vessel, etc; and
- (vi) any other conditions and manner stipulated by the Director of Marine and the Authority in accordance with section 25(3) of the Regulation.

5.4.3 Conveyance of pyrotechnic materials of quantities not exceeding those specified in section 25(2) of the Regulation with other special effects materials in a vessel may be allowed provided that such conveyance is in accordance with the conditions and manner stipulated by the Director of Marine and the Authority.

5.4.4 A vessel carrying pyrotechnic materials shall display signals in accordance with regulation 37 of the Shipping and Port Control Regulations (Cap. 313 sub. leg.).

5.4.5 The master or the person in charge of a vessel and the special effects operators on board of the vessel carrying pyrotechnic materials shall forthwith notify the Vessel Traffic Centre (VTC) of the Marine Department at 2858 2163 of the materials on board should the vessel be involved in a collision or other accident.

6. Glossary

The definitions given below provide a glossary of common terms and jargons used by the trade. Some terms defined in the Entertainment Special Effects Ordinance (the Ordinance) and the Entertainment Special Effects (General) Regulation (the Regulation) are also included for ease of reference.

Action (開始) means the order given by the director to begin the action within a shot, once the film in the camera and/or the sound recording equipment are running at filming speed.

Aerial shell (禮花彈) means a cylindrical or spherical cartridge containing pyrotechnic materials, a long fuse or electric match wires, and a black powder lift charge. The black powder is used as a lifting charge to project the shell from a mortar.

Air bag (氣墊) means a large air supported membrane designed to withstand the fall from a stunt performer.

Air ram (彈板) means a catapult designed for propelling a stunt performer. This stunt is extremely dangerous if the stunt performer was not properly trained.

Airburst (空中火花) means a pyrotechnic material containing flash powder that is suspended in the air to simulate outdoor aerial fireworks shells without producing hazardous debris.

Anthracene (蒽) means a corrosive material which may easily be ignited by flame or heat. It is not classified as a pyrotechnic material.

Appeal Board (上訴委員會) means an appeal board appointed under section 37 of the Ordinance.

Arcing match (火花線) means a black match that has been made with nodules of sparking compound spaced along the length of the string.

Authority (監督) means the Entertainment Special Effects Licensing Authority established by section 3 of the Ordinance who is the Commissioner for Television and Entertainment Licensing.

Binary system pyrotechnic material (二元煙火物料) means a two-component pyrotechnic material which is shipped as two separate ingredients: an oxidizer and a fuel. The ingredients do not possess the properties of a pyrotechnic material until they are mixed.

Black match (黑藥引|火線) means a fuse made from cotton string impregnated with black powder. Black match is frequently used in conjunction with a squib or electric match to ignite other pyrotechnic materials.

Black powder (黑火藥) means a pyrotechnic material consisting of an intimate mixture of potassium nitrate, sulphur, and charcoal. Black powder is also known as gun powder.

Black powder bomb (黑火藥彈), see lifter.

Blank cartridge (空包彈) means a cartridge designed to simulate firearms discharge constructed from either metal or plastic casing, with a center or rim fire primer filled with various amounts of pyrotechnic materials. Modified firearms are often used for the firing of blank cartridges. Blank cartridges and firearms are controlled under the Firearms and Ammunition Ordinance (Cap. 238).

Blasting galvanometer (爆破電流計) means an electrical resistance measuring device designed specifically and approved for testing of electric firing circuits.

Body burn (身體燃燒) means a fire stunt which involves the total or partial burning of an experienced stunt performer who has taken all necessary safety precautions to protect himself from injury.

Bridgewire (鎢絲) means a fine wire that either heats up or ignites when an electric current is applied. It is used to fire pyrotechnic materials.

Bullet hit (反應彈) means a small pyrotechnic device attached to a performer's clothing or to an object such as a set piece or prop to create the illusion of a bullet impact. Bullet hits may be used to simulate the effects of body hits, wall hits, ground hits or bullets striking on a hard object.

Bullet hit effect (反應彈效果) means a pyrotechnic effect produced by the discharge of bullet hits. Modified firearms firing blank cartridges are often used in conjunction with bullet hit effects.

Camera car (攝影車) means a specially designed vehicle where cameras are mounted for filming driving shots.

Cannon roll (翻車用爆筒) means a device where a large projectile is placed within a mortar fixed to the frame of a vehicle so as to cause the vehicle to roll over during a stunt. The projectile is discharged with pyrotechnic materials.

Capsule (彈囊) means a projectile intended for use in a pneumatic capsule launcher for purposes of creating visual or audible special effects.

Colour pot (顏色火柱筒) means a tube containing pyrotechnic materials. It produces a coloured flame when ignited.

Coloured smoke (顏色煙) means an aerosol of special dyestuffs of chemical reactants dispersed through the discharge of pyrotechnic materials.

Comet (彗星煙花) means a pellet of pyrotechnic composition intended to be used in a mortar tube installed with black powder as a lifting charge. Comets frequently leave a trail of sparks as they rise in the air, and they sometimes burst into smaller fragments at their zenith.

Compatibility (相容性) means the state of a pyrotechnic material being compatible with another pyrotechnic material.

Compatible (相容) means pyrotechnic materials that can be transported together without significantly increasing the probability of an accident or the magnitude of the effects of such an accident.

Competent authority (有關當局), as defined under section 2 of the Regulation, means any authority outside Hong Kong responsible for –

- (a) in the case of qualifications for a special effects operator to be licensed, the issue of special effects operator licences or their equivalents; and

(b) in the case of registration of pyrotechnic special effects materials, the classification and authorisation of the conveyance, storage or use of pyrotechnic special effects materials, in the country, state, province or territory under its jurisdiction.

Concussion effect (響炮效果) means a pyrotechnic effect that produces a loud noise and a violent jarring shock for dramatic effect.

Concussion flash powder (響炮閃光粉) means a kind of flash powder intended to be used in a concussion mortar to produce a concussion effect.

Concussion mortar (響炮爆斗) means a mortar specifically designed and constructed to produce a concussion effect.

Convey (運送), as defined under section 2 of the Ordinance, includes stow.

Conveyance permit (運送許可證) means a permit issued under section 22 of the Ordinance.

Day box (煙火物料儲存箱) means a portable container for immediate storage of pyrotechnic materials for use at the firing venue.

Deflagration (爆燃) means a rapid chemical reaction involving pyrotechnic materials in which the output of heat is sufficient to sustain the reaction. Deflagration is primarily a surface phenomenon, with reaction progresses at less than supersonic velocity and most of the reaction products flowing away from the unreacted materials along the surface. The effect of a deflagration under confinement is an explosion. Confinement of the reaction increases pressure, rate of reaction, and temperature and, in some cases, can cause transition into a detonation.

Designated item (指定物料), as defined under section 2 of the Regulation, means any pyrotechnic special effects material classified as such in the register denoting that the material poses a high risk to safety.

Detonating cord (導爆索) means a flexible cord with pyrotechnic materials inside and encased in a coating of fabric or other material used or manufactured with a view to producing or transmitting detonation. It may also be used as a cutting device.

Detonation (震爆或爆轟) means an extremely rapid chemical reaction involving pyrotechnic materials in which the pressure generated is sufficient to cause the formation of a shock wave, which causes the reaction to continue. Detonation is a phenomenon with reaction progresses at supersonic velocity towards the unreacted materials. The effect of a detonation with or without confinement is an explosion.

Detonator (雷管), as defined under section 2 of the Regulation, includes any materials used or manufactured with a view to producing detonation or initiating another pyrotechnic special effects material by means of detonation.

Discharge or discharging (燃放), as defined under section 2 of the Ordinance, means the ignition, initiation or firing of a material by flame, heat, light, friction, impact, electric current or any other means with a view to producing a visual or audible effect or a combination of both by a chemical reaction.

Discharge permit (燃放許可證) means a permit issued under section 11 of the Ordinance.

Dud (啞彈) means an aerial shell that rises from a mortar but fails to function.

Electric firing (電子點火) means a technique used to discharge special effects materials in which a bridgewire, electric match, igniter or squib and a source of electric current are used to cause ignition of the special effects materials.

Electric match (電火柴) means a pyrotechnic device consisting of a bridgewire coated with a small quantity of heat-sensitive pyrotechnic materials. It ignites when an electric current flows through the bridgewire. An electric match is used to ignite other pyrotechnic materials. Electric matches are often incorrectly called squibs.

Entertainment programme (娛樂節目), as defined under section 2 of the Ordinance, includes –

- (a) any film, commercial and television broadcast programme; and
- (b) any literary, dramatic, musical and artistic works performed before a live audience or otherwise, and similar production,

but does not include fireworks displays.

Entertainment special effects (娛樂特別效果), as defined under section 2 of the Ordinance, means any visual or audible effect or a combination of both created by means of any special effects materials for the production of an entertainment programme.

Explosion (爆炸) means the rapid production of hot gases at a high pressure as the result of a chemical reaction and the sudden release of the energy to cause strong dynamic stresses in the surroundings. The term usually refers to the effects of a detonation but also applies to the effect of a deflagration in certain circumstances such as under heavy confinement. The term also describes a mechanical phenomenon in which there is a sudden release of pressure caused by the bursting of a container.

Fallout area (碎片墜落範圍) means the area in which any hazardous debris falls after a pyrotechnic material is fired. The fallout area is defined as a circle that, in turn, is defined by the fallout radius.

Fallout radius (碎片墜落半徑) means a line that defines the fallout area of a pyrotechnic material after firing. The line is defined by two points. The first point is at the centre of a pyrotechnic material. The second point is the point most distant from the centre of the pyrotechnic material at which any hazardous debris from the material can fall.

Fire nuisance (有礙消防安全的事物) means anything or any act which may increase or cause an increase in the hazard or menace of a fire, or which may obstruct, delay, or hinder, or may become the cause of any obstruction, delay, or hindrance, to the prevention or extinguishment of a fire.

Flash cotton (閃光棉) means a pyrotechnic material with properties similar to flash paper but with a faster burning rate.

Flash paper (閃光紙) means paper treated with nitro-cellulose. It is extremely sensitive to heat and produces a brief flash of fire upon ignition without solid by-products.

Flash pot (閃光罐) means a device used with flash powder that produces a flash of light and is capable of directing the flash in an upward direction.

Flash powder (閃光粉) means a pyrotechnic material intended for use in firecrackers and salutes, and often used for “flash” type effects. Flash powder produces a flash of light when ignited and in some cases an audible report.

Flash string (閃光繩) means a pyrotechnic material with properties similar to flash paper.

Fog effect (霧化效果) means a type of fog, smoke or mist produced from a variety of fog producing machines and equipment.

Fountain (花筒噴花) means a cone-shaped or cylindrical pyrotechnic device. Fountains are normally set off on the ground producing a controlled spray of sparks.

Fuse (引火線) means a flexible cord containing solid pyrotechnic materials by which fire or flame is conveyed at a continuous and uniform rate.

Gerb (花筒) means a pre-assembled pyrotechnic device, usually of a cylindrical shape, designed to produce a controlled spray of sparks with a reproducible and predictable duration, height, and diameter.

Gun powder (黑火藥), see black powder.

Hard pilot (硬火苗), in relation to the use of LPG equipment, means the ignition of LPG by fire or flames produced by a pyrotechnic material or by other means.

Hazardous debris (危險碎片) means any debris, produced or expelled by the functioning or malfunctioning of a pyrotechnic material, that is capable of causing personal injury or unintended property damage. This includes, but is not limited to, hot sparks, heavy casing fragments, duds, misfired pyrotechnic materials and unignited components. Materials such as confetti, lightweight foam pieces, feathers, or novelties, are not to be construed as hazardous debris.

Holder (盛器) means any device used to hold a pyrotechnic material other than a mortar. The purpose of a holder is to maintain the position of a pyrotechnic material. A holder is not to be construed to be a mortar.

Igniter (點火器) means an electrical, chemical, or mechanical device normally used to discharge special effects materials.

Igniter cord (導火索) means a cord containing slow-burning pyrotechnic materials which is mainly used to ignite other pyrotechnic materials or flammable materials.

Integral mortar (整合爆斗) means a mortar preloaded with pyrotechnic materials and is intended for a single firing only.

Isolated power supply (獨立供電裝置) means an ungrounded power supply that provides electricity, in which both output wires are isolated from ground. An isolated power supply can be an ungrounded generator, an ungrounded dc-to-ac converter, or commercial power supplied through an isolation transformer.

Licensed supplier (持牌供應商) means a person who is the holder of a pyrotechnic special effects materials supplier licence issued under section 19 of the Ordinance.

Lifter (升舉彈) means a wrapped black powder charge with an igniter. Lifters are usually fired in a mortar to simulate an explosion or as a lifting charge. The casing of a lifter is made of soft materials such as cardboard and is usually wrapped with several layers of friction tape. Extra wrapping will add to the confinement and subsequent explosion effect. Lifters are also known as black powder bombs.

Lifting charge (升舉彈藥) means a pyrotechnic material designed to propel (lift) objects or other pyrotechnic materials into the air when ignited. It usually consists of a black powder charge and is used with a mortar tube.

Liquefied petroleum gas (石油氣), as defined under section 2 of the Gas Safety Ordinance (Cap. 51), means any gas which is a mixture of –

- (a) hydrocarbons primarily consisting of butanes, butylenes, propane or propylene; or
- (b) all or any of the hydrocarbons referred to in paragraph (a).

Liquefied petroleum gas equipment (石油氣設備) means equipment involving the use of liquefied petroleum gas for fire, fireball and explosion effects.

Liquefied petroleum gas mortar (石油氣爆斗) means equipment for producing fireball effects using liquefied petroleum gas.

LPG (石油氣), an abbreviation for liquefied petroleum gas.

Lycopodium (石松粉) means the spores produced by the genus of mosses called lycopodium. This powdery, organic, yellow material can be agitated and dispersed mechanically into a cloud and then ignited by a spark, pilot flame, or electrical heating device. Although not a pyrotechnic material, this material is used by special effects operators to produce fire effects or in conjunction with other pyrotechnic materials to create a special effect.

Material (物料), as defined under section 2 of the Ordinance, includes –

- (a) a substance whether in the form of a liquid, vapour or solid;
- (b) a mixture of substance; and
- (c) article or device containing one or more such substance.

Mine (地雷煙花) means a pyrotechnic device, usually pre-assembled, that projects multiple pellets of pyrotechnic materials producing sparks or flame. It is usually supplied with an integral mortar.

Model rocket engine (火箭引擎模型) means a commercially manufactured, non-reusable rocket propulsion device which is constructed of a nonmetallic casing and solid propellant, wherein all of the ingredients are self-contained so as not to require mixing or handling by the user and which have design and construction characteristics to provide a reasonable degree of safety to the user.

Mortar (爆斗) means a tube or a pot-like device used to direct and control the effect of special effects materials.

Naphthalene (萘) means a white, crystalline, volatile material in flake or granular form having a mothball odour that gives off flammable vapours when heated. These vapours form a flammable mixture with air. It is a non-pyrotechnic material. When it is mixed with black powder and used in conjunction with a lifter, a fireball effect can be produced.

Net explosive quantity (爆炸品淨量), as defined under section 2 of the Ordinance, in relation to pyrotechnic special effects –

- (a) means the net weight of the chemical material in a pyrotechnic special effects material designed to produce heat, gas, sound, light, or a combination of these effects resulting from a self-sustaining and self-contained exothermic chemical reaction by combustion, deflagration or detonation;
- (b) does not include the packaging, wiring or casing in which such chemical material is contained.

Non-electric detonator (非電雷管) means a detonator that does not need electric energy to function.

Non-pyrotechnic special effects material (非煙火特別效果物料) means any material specified as non-pyrotechnic special effect material in the Special Effects Materials List Regulation.

Non-PSEM (非煙火特別效果物料), an abbreviation for non-pyrotechnic special effects material.

Notifiable occurrence (須具報的事件) means any occurrence notifiable under section 40 of the Regulation.

Operator-in-charge (負責人) means a licensed special effects operator –

- (a) in the case of a discharge permit, responsible for the use of special effects materials within the terms and conditions of the discharge permit;
- (b) in the case of a pyrotechnic special effects materials supplier licence, responsible for the safety management of the activities incidental to the licensed supplier; or
- (c) in the case of a store licence, responsible for the safety management of the storage of the pyrotechnic special effects materials.

Package (包裹), as defined under section 2 of the Regulation, means the packaging and the pyrotechnic special effects materials contained therein.

Packaging (包裝用品), as defined under section 2 of the Regulation, means any receptacle and any other component or material necessary for the receptacle to perform its containment function.

Pan type mortar (盤狀爆斗) means a shallow metal container that is used to hold special effects materials.

Performer (表演者) means any person active in a special effects scene excluding the audience or support personnel. Performers can include, but are not limited to, actors, singers, musicians, dancers, stunt performers and acrobats.

Photoflash flash powder (閃燈閃光粉) means a pyrotechnic material that yields a very large amount of light for a small fraction of a second on ignition.

Pneumatic capsule launcher (充氣式彈囊發射器) means an instrument designed and used for expelling a projectile by pneumatic means for the purpose of creating visual or audible special effects in motion picture, television, and theatrical productions. Pneumatic capsule launchers are controlled under the Firearms and Ammunition Ordinance (Cap. 238).

Pre-assembled (已組裝), in relation to pyrotechnic materials, means a pyrotechnic material or device which has been measured, compounded, assembled, packaged, prepared for ignition and labelled prior to its delivery to the firing venue.

Prescribed (訂明) means prescribed by regulations made under section 26 of the Ordinance.

Producer (監製) means an individual who has the overall responsibility for the operation and management of an entertainment programme, which includes, where applicable, the production of any entertainment special effects. Generally, the producer is an employee of a film company, promotion company, advertising company, entertainment company, festival, theme parks, or other entertainment group.

PSEM (煙火特別效果物料), an abbreviation for pyrotechnic special effects material.

Pyrotechnic device (煙火裝置) means a device containing pyrotechnic materials.

Pyrotechnic material (煙火物料) means a chemical material which is designed to produce heat, light, sound, gas, smoke, or a combination of these effects as a result of a self-sustaining and self-contained exothermic chemical reaction by combustion, deflagration or detonation.

Pyrotechnic special effects material (煙火特別效果物料) means any material specified as pyrotechnic special effects material in the Special Effects Materials List Regulation. All pyrotechnic special effects materials contain pyrotechnic materials.

Quick match (快燃引火線) means a black match that is encased in a loose-fitting paper sheath. Although exposed black match burns slowly, quick match burns extremely rapidly and almost instantaneously.

Register (登記冊) means the register of pyrotechnic special effects materials kept in accordance with section 17 of the Ordinance.

Registered pyrotechnic special effects material (已登記煙火特別效果物料) means any pyrotechnic special effects materials listed in the register.

Rocket (火箭) means a pyrotechnic device that moves by the internal combustion of propellants.

Safety fuse (安全引火線) means a flexible cord containing pyrotechnic materials by which fire or flame is conveyed at a constant and relatively uniform rate from the point of ignition to the point of use.

Salute powder (響藥) see sonic flash.

Saxon (風車煙花) means a pyrotechnic device consisting of a tube that rotates around a pivot point to produce a circular shower of sparks.

SEM (特別效果物料), an abbreviation for special effects material.

Shaped charge (錐形裝藥) means a pyrotechnic device with a hollow space or cavity used or manufactured with a view to perforating into steel or other hard objects by means of detonation.

Shock tubing (非電引爆索) means a small-diameter plastic tube containing a small amount of pyrotechnic materials. The energy transmitted through the tube by means of detonation wave is guided through and confined within the walls of the tube. It is also used to simulate lightning strikes.

Shunt (封線尾) means a deliberate short-circuit of an electrically fired pyrotechnic device or a means contained within its firing system to protect it from accidental ignition by extraneous electricity.

Simulated phosphorus (模擬磷) means a pyrotechnic device that produces the effect of stars or burning phosphorus.

Smoke composition (煙霧成分) means a pyrotechnic material made in various forms, most often granular or powder, and comes in various colours when ignited. It can be fired manually either with an open flame, fuse, or heated surface, or electrically, with a squib.

Smoke pot (煙霧罐) means a pyrotechnic device which contains smoke compositions and is used to create smoke.

Smokeless powder (無煙粉末) means a pyrotechnic material of a mixture of nitrocellulose and nitroglycerin and/or nitroguanidine.

Soft detonator (軟殼雷管) means a detonator with no metallic elements or jacket.

Soft pilot (軟火苗), in relation to the use of LPG equipment, means the ignition of LPG by spark gaps or any other means not involving hard pilot.

Sonic flash (聲波閃光粉) means a kind of flash powder specifically formulated to produce a loud concussion effect. It includes salute powder, extra-fast flash, concussion flash powder.

Sparkle flash powder (火花閃光粉) means a kind of flash powder that produces a bright flash of light and a shower of sparks when ignited.

Sparkle pot (火花罐) means a device intended to contain and control the discharge of sparkle flash powder.

Special effects material (特別效果物料) means any of the material specified in the Special Effects Materials List Regulation. It is either listed as a pyrotechnic special effects material or as a non-pyrotechnic special effects material.

Special effects operator (特別效果技術員) means a person who uses special effects materials for producing entertainment special effects. It includes a special effects assistant.

Special effects operator licence (特別效果技術員牌照) means a licence issued under section 6 of the Ordinance.

Squib (爆管) means a small, electrically fired pyrotechnic device consisting of an electric match plus a charge of pyrotechnic material and made in various sizes. It is used for many applications such as ignitors, small flame projectors, noise effects and bullet hit effects.

Stars (光珠) means small masses of pyrotechnic materials that are projected from aerial shells, mines, or roman candles. Stars burn while in the air, producing colour or streamer effects.

Store licence (貯存所牌照) means a licence issued under section 24 of the Ordinance for the storage of pyrotechnic special effects materials.

Stunt (特技) means a calculated performance of dangerous act or action performed by an actor who is a specially trained stunt performer.

Stunt performer (特技演員) means a performer or actor who is trained and experienced to carry out and perform a stunt.

Support personnel (支援人員) means any individual who is not a performer or member of the audience or the general public. Among others, support personnel include the production crew, camera crew, special effects operators, stage hands, property masters, security guards, fire watch officers, janitors, or any other employees.

Theatrical flash powder (舞台閃光粉) means a pyrotechnic material intended for use in theatrical shows. Theatrical flash powder produces a flash of light when

ignited. Typical theatrical flash powders burn more slowly than salute powder and might also produce a shower of sparks. Theatrical flash powder is not intended to produce a loud report.

Trail powder (慢燃粉末) means a kind of slow-burning pyrotechnic material in granular shape used to simulate the effect of burning a trail of black powder or a fuse.

Use (使用), as defined under section 2 of the Ordinance, in relation to special effects materials, includes assembling, handling, mixing, compounding, installing and discharging.

Vessel (船隻) means a vessel within the meaning of section 2 of the Shipping and Port Control Ordinance (Cap. 313).

Waterfall (瀑布煙花) means an effect of a cascade of sparks that are usually produced by multiple pyrotechnic devices fired simultaneously.

Wheel (車輪煙花) means a pyrotechnic device that rotates on a central axis consisting of multiple gerbs or rockets attached to a framework.

**The Government of the Hong Kong
Special Administrative Region**

**Code of Practice
on the
Use of LPG
for the
Production of Special Effects**

Entertainment Special Effects Licensing Authority
Draft Version 2.2
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Television and Entertainment Licensing Authority
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1. Scope

1.1 This Code of Practice is issued under section 27(1)(a) of the Entertainment Special Effects Ordinance (the Ordinance) by the Entertainment Special Effects Licensing Authority (the Authority). The purpose of this document is to ensure that special effects operators and other relevant persons are aware of the requirements with regard to the safe use of liquefied petroleum gas (LPG) and associated equipment for the production of entertainment special effects. It also provides guidance for good practice.

1.2 Under section 28 of the Ordinance, failure on the part of any person to observe any provision of a code of practice shall not of itself render that person liable to criminal proceedings of any kind. However, in any legal proceedings, if the court is satisfied that a provision of a code of practice is relevant to determining a matter that is in issue in the proceedings, proof that the person contravened or did not contravene a relevant provision of the code may be relied on by any party as tending to establish or negate that matter. Besides, non-compliance of a code of practice may also lead to disciplinary actions to be taken by the Authority, including warning letters for minor incidents and for serious incidents, suspension or revocation of a licence or a permit issued under the Ordinance.

2. Legislative Requirements

2.1 The use of LPG for and incidental to the production of entertainment special effects is regulated under the Ordinance and its subsidiary legislation.

2.2 Under the Ordinance and the Entertainment Special Effects (General) Regulation, a discharge permit is required for the use of LPG for the production of entertainment special effects and the discharge shall only be conducted by a licensed special effects operator named as the operator-in-charge in the discharge permit. Special effects assistants and other special effects operators may be allowed to use LPG under the supervision of the operator-in-charge and in accordance with a discharge permit.

2.3 Conveyance of LPG is regulated under the Gas Safety Ordinance (Cap. 51). Any person may carry in a vehicle an LPG cylinder or cylinders with aggregate water capacity of less than 130 litres. However, a LPG cylinder wagon permit issued by the Gas Authority is required if the vehicle is carrying an LPG cylinder or cylinders with aggregate water capacity of not less than 130 litres.

2.4 Under the Gas Safety Ordinance, the storage or placing of LPG containers in any premises or part of any premises with aggregate water capacity of not less than 130 litres constitutes the construction of a notifiable gas installation and the approval of the Gas Authority is required. When the total aggregate water capacity of the LPG containers is less than 130 litres, the placing and/or storage of containers is exempted from the approval requirements.

2.5 No person shall use any container for the storage of LPG unless the container has been approved by the Gas Authority for that purpose. Temporary holding of LPG in an accumulator of an LPG mortar for producing entertainment special effects is not regarded as “storage”.

2.6 Any process which involves the transfer of LPG in liquid form from one container (other than a disposable cylinder) to another container is prohibited under the Gas Safety Ordinance unless the approval of the Gas Authority has been obtained.

3. Technical Requirements of LPG Equipment

3.1 Introduction

3.1.1 In the production of entertainment special effects, it is often desirable to produce fire and/or fireball effects through the rapid, controlled release of fuel gas. This method offers important safety advantages over the use of other special effects materials because of its relatively high degree of repeatability and predictability.

3.1.2 The type of fuel gas commonly used is liquefied petroleum gas (LPG) which is readily available commercially in steel cylinders. As defined under the Ordinance and the Gas Safety Ordinance (Cap. 51), LPG includes propane.

3.1.3 Fireball effects are often produced through the release of LPG in vapour form using equipment known as “LPG mortars”.

3.2 LPG Mortars

3.2.1 An LPG mortar (or sometimes known as an LPG cannon) is used to produce fireball effects through the rapid release of LPG. While there is a wide variety of designs, an LPG mortar normally consists of the following elements:

- (i) an accumulator which temporarily holds LPG prior to its release;
- (ii) a means of filling LPG into the accumulator and of measuring its pressure; and
- (iii) a means of rapidly releasing the accumulated LPG.

3.2.2 The accumulator can be of many different types and sizes but for reasons of economy and practicality it is often a steel cylinder. It must be noted that the accumulator shall only be used to hold LPG in vapour form for immediate use and shall never be used as a device for the long term storage or conveyance of LPG.

3.2.3 The means of filling LPG into the accumulator is in some cases the valve originally installed in the LPG cylinder but in most cases, it is replaced by a pipe assembly which consists of:

- (i) a quick-release fitting to allow rapid connection and disconnection of the supply of LPG in the field;

- (ii) a manually-operated valve to allow the user to control the flow of LPG into the accumulator;
- (iii) a pressure gauge to allow the user to measure the pressure of LPG inside the accumulator and to determine the amount of LPG and the rate at which it will be released; and
- (iv) in applicable cases, a relief valve may be included to prevent an excessively high pressure from developing inside the accumulator.

3.2.4 The means of rapidly releasing the accumulated LPG may also take different forms but in general it consists of a large diameter, quick-acting valve. This valve is generally of one of the following three types:

- (i) an electrically actuated, usually in the form of a normally closed, full-port and internal pilot operated solenoid valve;
- (ii) a pneumatically actuated, in the form of a ball valve assembly with an integrated pneumatic actuator or an external actuator assembly consisting simply of a pneumatic cylinder attached to the handle of the ball valve; or
- (iii) a mechanically actuated, in the form of a lever or similar mechanical valve (this type of valve is relatively uncommon).

3.3 Construction of Accumulators

3.3.1 An accumulator of an LPG mortar shall conform to the United States Department of Transportation (DOT) 4BA cylinder standard specified in the Code of Federal Regulations, United States, Title 49, Section 178.51 or other standards accepted by the Authority.

3.3.2 The DOT 4BA cylinders commonly available in Hong Kong have a single opening which consists of a fitting, boss, or pad and is securely attached to the container by welding. In general, this fitting holds a valve which serves both as the inlet for filling the cylinder and as an outlet for withdrawing the gas for use. Though this fitting is suitable for filling the cylinder, its diameter is too small to allow the required rapid release of the LPG necessary to provide a visually acceptable fireball effect.

3.3.3 To allow the necessary rapid release of the accumulated LPG, additional outlet or outlets of larger diameter are required. These outlets may be added to the cylinder (the accumulator) in accordance with the following standards:

- (i) the regulations set forth in the Code of Regulations, United States, Title 49, Section 178.51 (which can be found at www.epa.gov/fedrgstr on the internet);
- (ii) the regulations set forth in the Code of Regulations, United States, Title 49, Section 173.34(i) governing the repair by welding or brazing of DOT-4 series cylinders (which can be found at hazmat.dot.gov/regs on the internet); or
- (iii) other welding or brazing standards accepted by the Authority.

3.3.4 In cases where the modifications are not made by the manufacturer of the cylinder, the additional outlets shall be installed in a process similar to that used in manufacturing the cylinder and in compliance with clause 3.3.5 or 3.3.6.

3.3.5 For adding outlets to cylinders of plain carbon steel with carbon over 0.25% or manganese over 1.00% or of alloy steel, the modifications must be in compliance with the following requirements:

- (i) such modifications must be made by a competent person;
- (ii) the welder shall have available to him information as to the procedure, equipment and rod used during manufacture of the cylinders and shall use a suitable method for the modifications;
- (iii) modifications must be made by metal arc welding only;
- (iv) welds shall not be made on or near a brazed joint to prevent the possibility of copper penetration;
- (v) the cylinders to be modified are free of defects in welded joints in or on any pressure parts;
- (vi) the cylinders during welding must be free of any materials that may impair the serviceability of the metal in or adjacent to the weld;
- (vii) after modifications, the welds are to be inspected visually for weld quality; and
- (viii) after modifications, the cylinder must be reheat treated and leak tested at a test pressure of at least two times the service pressure of the cylinder and show no defects.

3.3.6 For adding outlets to cylinders of plain carbon steel with carbon 0.25% or less and manganese 1.00% or less, the modifications must be in compliance with the following requirements:

- (i) such modifications must be made by a competent person;
- (ii) the welder shall have available to him information as to the procedure, equipment, and rod used during manufacture and shall use a suitable method for the modifications;
- (iii) welds shall not be made on or near a brazed joint to prevent the possibility of copper penetration;
- (iv) the cylinders to be modified are free of defects in welded joints in or on any pressure parts;
- (v) the cylinders during welding must be free of any materials that may impair the serviceability of the metal in or adjacent to the weld;
- (vi) after modifications, the welds are to be inspected visually for weld quality;
- (vii) after modifications, the cylinder must be reheat treated and leak tested at a test pressure of at least two times the service pressure and show no defects; and
- (viii) in case the test shows leakage through the weld, repair to the weld may be made provided that:
 - (a) the leakage is not caused by cracking in the weld;
 - (b) weld defects must be removed by grinding or chipping before repair by the metal arc process. The tungsten inert gas shielded arc process may be used only when the repair can be made by puddling;
 - (c) if metal arc process is used, only electrodes of type E7015, 7016 or 7018 not larger than 3.2 mm (0.125 in) diameter or equivalent shall be used; and
 - (d) subsequent reheat treatment of the cylinder after repair is not required.

3.3.7 It is often necessary to install non-pressure attachments to the accumulator to facilitate mounting of the accumulator itself or other components. Addition of these attachments to the top or bottom of the accumulator may be made without reheat treatment provided that the following requirements are met:

- (i) the attachments are made of steel of low carbon content;
- (ii) the parts of the cylinder for installing the attachments are of similar weldable material and have been previously welded or brazed to the top or bottom of the accumulator and properly heat treated; and
- (iii) the welding or brazing does not produce a temperature in excess of 205° C (400° F) in any part of the top or bottom material.

3.3.8 LPG cylinders belonging to the Registered Gas Supply Companies approved by the Gas Authority for containing LPG shall not be used or modified as an accumulator.

3.4 Means of Filling LPG and Measuring the Pressure in the Accumulator

3.4.1 Threaded or other suitable fittings as described in clause 3.3.2 may be used to form a suitable pipe assembly. Such an assembly shall be compatible with the LPG being used and have a pressure rating of not less than the maximum service pressure rating of the LPG mortar.

3.5 Means of Rapidly Releasing the Accumulated LPG

3.5.1 Valves connected to the outlets of an accumulator as described in clauses 3.3.2 to 3.3.6 may be used as a means of rapidly releasing the accumulated LPG provided that:

- (i) the valve components must be compatible with the LPG being used; and
- (ii) the valve must have a pressure rating of not less than the maximum service pressure rating of the LPG mortar.

3.6 Maximum Service Pressure Rating of LPG Mortars

3.6.1 The maximum service pressure rating of an LPG mortar is the maximum pressure in the LPG mortar which must not be exceeded during use. It shall be taken as:

- (i) not more than one half of the maximum pressure rating of the accumulator; or

- (ii) not more than the maximum pressure rating of any components attached to the accumulator,

whichever is the less.

3.6.2 Special effects operators shall clearly mark the LPG mortar with the maximum service pressure rating.

3.6.3 Any new LPG mortar before being put into service shall be subject to the following leakage tests:

- (i) the accumulator shall be leak tested at a test pressure of twice the maximum service pressure rating and show no defects; and
- (ii) the LPG mortar shall be leak tested at the maximum service pressure rating and show no defects.

3.7 Use of Existing LPG Mortars

3.7.1 Existing LPG mortars in the possession of licensed special effects operators which have been in safe and successful use prior to the first issue of this Code of Practice may continue to be used by licensed special effects operators provided that the following requirements have been complied with:

- (i) the LPG mortar was designed and constructed by a competent person;
- (ii) the LPG mortar has a history of safe and effective use and is free from defects in design, construction and workmanship;
- (iii) the LPG mortar has been maintained by the owner in such a condition that it can be operated safely and effectively;
- (iv) the interior of the accumulator has been inspected visually and there was no evidence of excessive corrosion or other deterioration;
- (v) the welds have been inspected visually for weld quality and no defects were observed;
- (vi) all components of the LPG mortar are compatible with the LPG being used;
- (vii) all components of the LPG mortar have a pressure rating at least equal to the maximum service pressure rating of the LPG mortar;

- (viii) the owner has clearly marked the LPG mortar with the maximum service pressure rating which must not be exceeded during use;
- (ix) the accumulator has been leak tested at a test pressure of twice the maximum service pressure rating and shown no defects; and
- (x) the LPG mortar has been leak tested at the maximum service pressure rating and shown no defects.

4. Safe Practices

4.1 Characteristics and Potential Hazards of LPG

4.1.1 At normal atmospheric pressure and temperature, LPG exists as a gas. However, it is normally stored as a liquid inside pressurised containers. Liquid LPG is colourless and odourless.

4.1.2 In general, LPG inside a steel cylinder at normal ambient temperature will have a pressure of approximately 480 kPa (about 70 psi). However, if the cylinder is stored at an elevated temperature, near a heat source or under direct sunlight, its pressure could increase considerably. In a fire situation the cylinder would burst and an explosion would result.

4.1.3 When liquid LPG escapes from a container it will expand rapidly to form LPG vapour approximately 250 times the equivalent volume of liquid released. If brought into contact with the skin, liquid LPG will cause severe frost burns due to the rapid vaporisation.

4.1.4 When LPG is mixed with air in a proportion between approximately 2% and 10%, a flammable LPG-air mixture is formed. Small quantities of LPG, particularly in liquid form, escaping from a container can therefore give rise to large volumes of LPG-air mixture and thus produce considerable hazard, especially if it happens indoors or in confined areas.

4.1.5 If an LPG-air mixture within the flammable range is ignited, a flash fire will occur. If the mixture is ignited within a confined space with insufficient ventilation, an explosion will result.

4.1.6 LPG is heavier than air and it will tend to fall to low level and flow along the ground into drains, cellars and basements and other low lying places. In still air with little or no ventilation at low level the vapour will persist for a very long time. Any LPG-air mixture arising from leakage may be accidentally ignited some distance from the point of leakage and the resulting flame may travel back to the point of leakage. Explosion could also occur if the LPG is not diluted below its flammability limit.

4.1.7 The LPG stored in steel cylinders is normally odorised to enable detection of escaping gas by smell, well before the LPG-air mixture reaches the lower flammability limit. However, for some disposable containers, the LPG is not odorised and therefore leakage may go by undetected.

4.1.8 In some circumstances, leakage of LPG (especially as liquid) may be noticed by sight. It should be noted that at the point of leakage, the cooling effect on the air surrounding causes condensation and even freezing of the water vapour.

4.1.9 A lighted match or other naked flames should not be used to trace a point of leakage. Not only is this extremely dangerous but it is also an offence under the Gas Safety Ordinance. Leakage may be detected with the use of soapy water solution.

4.2 Safety at Work

4.2.1 Special effects operators should always take practicable steps to mitigate the risks of using LPG, including:

- (i) conducting safety orientation meetings with all appropriate personnel in the manner specified in section 2.5 of the Code of Practice on the Use, Storage and Conveyance of Special Effects Materials (CP1);
- (ii) setting up the equipment as close to the time of producing the special effect as practicable so as to minimize the duration of exposure to the hazards;
- (iii) activities of highest hazard levels, such as filling up of LPG and installing the ignition system, should only be carried out immediately prior to discharge;
- (iv) minimizing the likelihood of ignition failure at the release of LPG by using a reliable source of ignition:
 - (a) always use hard pilots whenever practical and avoid to use soft pilots unless it is really necessary. In cases where soft pilot is used, the devices must be tested thoroughly prior to use (gas effects ignited by fire or flames, whether pyrotechnic or otherwise, are termed as “hard piloted” and those ignited by other means, such as spark gaps, are termed as “soft piloted”);

- (b) use good firing and circuit design techniques and test the circuits before firing to reduce the chances of a misfire or failure of the ignition source(s); and
- (c) use redundant ignition sources if necessary;
- (v) preparing to deal with any accidental fire quickly and effectively;
- (vi) during periods of elevated risk levels (such as when the ignition system and LPG are in place), special effects assistants and trained personnel shall stand by near the firing venue with effective fire extinguishers; and
- (vii) taking appropriate precautionary measures to reduce the tendency for fireballs containing combinations of LPG and other materials to spread fires.

4.2.2 Special effects operators should always remember that changes in atmospheric conditions such as pressure, ambient temperature, wind speed and direction can have a pronounced influence upon the effects of LPG fireballs.

4.2.3 Special effects operators shall ensure that all performers, and the crew members have taken adequate protective measures, taking into account the radiant heat emitted which can cause burns over considerable distances. Adequate safety gears and precautionary measures that would be commensurate with performers' proximity to and the size of the fireballs shall also be provided to and taken out for them. All other people shall be kept away from the potentially hazardous area.

4.2.4 Special effects operators should never attempt to use LPG to produce any special effects unless it is safe to do so, after taking into consideration the circumstances at the time of discharge.

4.2.5 LPG mortars or accumulators shall not be used as a means of conveyance or storage of LPG or other fuel gases.

4.2.6 LPG mortars shall only be filled with LPG immediately prior to use. Prior to charging and when purging-out the accumulator after use, special effects operators shall ensure that flammable LPG-air mixture is not present inside the accumulator.

4.2.7 Special effects operators and all parties concerned shall observe the relevant clauses in the Code of Practice on the Use, Storage and Conveyance of Special Effects Materials (CP1).

4.3 Maintenance of LPG Equipment

4.3.1 All LPG mortars and LPG equipment shall be maintained in such a condition that they can be operated safely and effectively. All components must be compatible with the fuel gas being used.

4.3.2 All LPG mortars shall be clearly marked with the maximum service pressure rating, date of last leakage test, name of manufacturer/owner, etc.

4.3.3 Special effects operators shall conduct at 6-month intervals visual inspection of the LPG mortar and the accumulator, and ensure that the interior of the accumulator does not show signs of excessive corrosion or other deterioration.

4.3.4 Special effects operators shall conduct at least once in each 12-month period the following leakage tests:

- (i) the accumulator shall be leak tested at a test pressure of twice the maximum service pressure rating; and
- (ii) the LPG mortar shall be leak tested at the maximum service pressure rating,

LPG mortars that showed any defects in any of the above tests shall not be used.